LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 9

2018

Bate Stamp Numbers
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Longhorn Army Ammunition Plant

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LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX

VOLUME 9

2018

A. Title: Report (cont'd) – Quarterly Evaluation Report, 1st Quarter (January-March) 2017, Groundwater Treatment Plant, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: August 2017
Bate Stamp: 00846666 – 00848515

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW25-032017	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607572	**Analyst:**	TMB	**Run Date:**	03/24/2017 19:52
Collect Date:	03/20/2017 13:25	**Dilution:**	1	**File ID:**	8M418504
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.48	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	98.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	98.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW10-032017	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607572	**Analyst:**	TMB	**Run Date:**	03/24/2017 20:21
Collect Date:	03/20/2017 14:25	**Dilution:**	1	**File ID:**	8M418505
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.80	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.447	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	97.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	97.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/25/2017 21:24
Workgroup #:	WG607454	**Analyst:**	JDS	**Run Date:**	03/23/2017 16:04
Collect Date:	03/20/2017 00:01	**Dilution:**	1	**File ID:**	11M16979
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.18	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

	Example
where:	
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

	Example
where:	
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

	Example
where:	
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**
Dry weight correction:	
Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

MICROBAC®

TCLP Volatile

Analyst(s): BNB
Date: 3-22-17
Filter Lot #: 9772550

Agitator Speed 30 ± 2 rpm ☑

Balance ID: BAL020
pH Probe ID: 75
Temp probe ID: ☒ 1025 ☐ 1023

Analyst / Date		Analyst / Date	
BNB 3-22-17		BNB 3-23-17	
Time On	Temp On °C	Time Off	Temp Off °C
15:17	22.1	807	22.5

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A	03-1192-02	✓	BNB 3-22-17 10	10	1311	F-221	S	100		✓	25.00	500
B												
C												
D												
E												
F												
G												
H												
I												
J												
K												
L												
M												
N												
O												
P												
Q												
R												
S												
NA	FB11C	NA	NA	NA	1311	F-221	NA	NA	NA	NA	NA	40

BNB 3-23-17

BNB 3-23-17

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: NA

Peer Review By:

MICROBAC®

TCLP Volatile

Analyst(s): BNB
Date: 3-21-17
Filter Lot #: 9772550

Agitator Speed 30 ± 2 rpm ☑

Balance ID: BAL020
pH Probe ID: T5
Temp probe ID: ☒ 1025 ☐ 1023

Analyst / Date		Analyst / Date	
BNB 3-21-17		BNB 3-22-17	
Time On	Temp On °C	Time Off	Temp Off °C
14:48	22.1	808	22.5

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G	03-1131-02	✓	10	10	1311	F_1-221	S	100		✓	25.00	500
H												
I	03-1133-02	✓	10	10	1311	F_1-221	S	100		✓	25.02	500
J												
K												
L												
M												
N	03-1024-01	✓	10	10	1311	F_1-221	S	100		✓	25.01	500
O												
P												
Q												
R												
S												
NA	FBLK	NA	NA	NA	1311	F_1-221	NA	NA	NA	NA	40	40

BNB 3-22-17
BNB 3-22-17
BNB 3-22-17
BNB 3-22-17

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: NA

Peer Review By:

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 112916
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD78962 Surrogate Standard: STD78963
CCV: STD79185 LCS: STD79186 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG593075

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M15410	WG593075-01 BFB 50ng 8260	NA	1	1	STD78474	11/29/16 14:38
11M15411	RINSE	NA	1	1		11/29/16 15:02
11M15412	RINSE	NA	1	1		11/29/16 16:35
11M15413	WG593075-02 5ug/L ICAL A9	NA	1	1	STD79185	11/29/16 17:04
11M15414	WG593075-03 20ug/L ICAL A9	NA	1	1	STD79185	11/29/16 17:33
11M15415	WG593075-04 50ug/L ICAL A9	NA	1	1	STD79185	11/29/16 18:02
11M15416	WG593075-05 100ug/L ICAL A9	NA	1	1	STD79185	11/29/16 18:30
11M15417	WG593075-06 200ug/L ICAL A9	NA	1	1	STD79185	11/29/16 19:00
11M15418	WG593075-07 300ug/L ICAL A9	NA	1	1	STD79185	11/29/16 19:29
11M15419	WG593075-08 400ug/L ICAL A9	NA	1	1	STD79185	11/29/16 19:58
11M15420	WG593075-09 500ug/L ICAL A9	NA	1	1	STD79185	11/29/16 20:28
11M15421	RINSE	NA	1	1		11/29/16 20:57
11M15422	WG593075-10 100ug/L ALT SRC A9	NA	1	1	STD79186	11/29/16 21:26
11M15423	RINSE	NA	1	1		11/29/16 21:55
11M15424	RINSE	NA	1	1		11/29/16 22:24

Approved: December 01, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53988

Internal Standard: STD78987 Surrogate Standard: STD78987
CCV: STD79185; STD79330 LCS: STD79186; STD78319 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG594051; WG594142

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M416518	WG594051-01 50ng BFB STD A9/FOO	NA	1	1	STD78995	12/08/16 08:55
8M416519	WG594051-02 5ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 09:19
8M416520	WG594051-03 20ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 09:48
8M416521	WG594051-04 50ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 10:17
8M416522	WG594051-05 100ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 10:47
8M416523	WG594051-06 200ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 11:16
8M416524	WG594051-07 300ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 11:46
8M416525	WG594051-08 400ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 12:16
8M416526	WG594051-09 500ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 12:45
8M416527	RINSE	NA	1	1		12/08/16 13:14
8M416528	RINSE	NA	1	1		12/08/16 13:43
8M416529	WG594051-10 100ug/L STD A9/FOO	NA	1	1	STD79186	12/08/16 14:12
8M416530	WG594141-01 50ng BFB STD 8260	NA	1	1	STD78995	12/08/16 14:40
8M416531	WG594141-01 50ng BFB STD 8260	NA	1	1	STD78995	12/08/16 14:54
8M416532	WG594141-01 50ng BFB STD 8260	NA	1	1	STD78995	12/08/16 15:17
8M416533	WG594141-02 50ug/L CCV STD 8260	NA	1	1	STD79330	12/08/16 15:44
8M416534	WG594141-02 50ug/L CCV STD 8260	NA	1	1	STD79330	12/08/16 16:15
8M416535	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD78971	12/08/16 16:45
8M416536	WG594142-01 VBLK1208 BLANK STD 826	NA	1	1		12/08/16 17:16
8M416537	WG594142-02 20ug/L LCS STD 8260	NA	1	1	STD79319	12/08/16 17:45
8M416538	L16120424-04 A MS 826-SPE	<2	1	1	STD79319	12/08/16 18:14
8M416539	L16120424-05 A MSD 826-SPE	<2	1	1	STD79319	12/08/16 18:43
8M416540	L16120315-05 B TB 826-SPE	<2	1	1		12/08/16 19:12
8M416541	L16120315-03 B EB 826-SPE	<2	1	1		12/08/16 19:41
8M416542	L16120424-01 A TB 826-SPE	<2	1	1		12/08/16 20:10
8M416543	L16120424-03 A RS 826-SPE	<2	1	1		12/08/16 20:39
8M416544	L16120424-06 A 826-SPE	<2	1	1		12/08/16 21:09
8M416545	L16120424-02 A 826-SPE	<2	1	1		12/08/16 21:40
8M416546	L16120315-01 B 826-SPE	<2	1	1		12/08/16 22:08
8M416547	L16120315-02 B 826-SPE	<2	1	1		12/08/16 22:37
8M416548	L16120315-04 B 826-SPE	<2	1	1		12/08/16 23:06
8M416549	L16120424-07 A 826-SPE	<2	1	1		12/08/16 23:35
8M416550	WG594142-06 20ug/L LCS2 STD 8260	NA	1	1	STD79319	12/09/16 00:04
8M416551	CCV	NA	1	1		12/09/16 00:33

Approved: December 09, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 120816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53988

Internal Standard: STD78987 Surrogate Standard: STD78987
CCV: STD79185; STD79330 LCS: STD79186; STD78319 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG594051; WG594142

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M416552	RINSE	NA	1	1		12/09/16 01:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X			
File ID: 8M416530				
	Tune failed, DNR.			
15	X			
File ID: 8M416531				
	Tune failed, DNR.			
16				
File ID: 8M416532				
	Purged BFB.			
17	X			
File ID: 8M416533				
	DNR. Bromomethane was low.			
19				
File ID: 8M416535				
	Not needed, DNR.			
27	X	10	Over Calibration Range	PCE
File ID: 8M416543				

Approved: December 09, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 022517
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 24
Method: 5035/5030B/5030C SOP: PAT01 Rev: 19

Maintenance Log ID:

Internal Standard: STD80490 Surrogate Standard: STD80489
CCV: STD80492 LCS: STD80410 MS/MSD: STD80410

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG601938

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M16435	WG601938-01 50ng BFB	NA	1	1	STD79950	02/25/17 16:09
11M16437	WG601938-02 0.3ug/L STD	NA	1	1	STD80492	02/25/17 17:04
11M16438	WG601938-03 0.4ug/L STD	NA	1	1	STD80492	02/25/17 17:32
11M16439	WG601938-04 1.0ug/L STD	NA	1	1	STD80492	02/25/17 18:01
11M16440	WG601938-05 2.0ug/L STD	NA	1	1	STD80492	02/25/17 18:30
11M16441	WG601938-06 5.0ug/L STD	NA	1	1	STD80492	02/25/17 18:59
11M16442	WG601938-07 20.0ug/L STD	NA	1	1	STD80492	02/25/17 19:28
11M16443	WG601938-08 50.0ug/L STD	NA	1	1	STD80492	02/25/17 19:58
11M16444	WG601938-09 100.0ug/L STD	NA	1	1	STD80492	02/25/17 20:26
11M16445	WG601938-10 200.0ug/L STD	NA	1	1	STD80492	02/25/17 20:55
11M16446	WG601938-11 300.0ug/L STD	NA	1	1	STD80492	02/25/17 21:24
11M16447	RINSE	NA	1	1		02/25/17 21:53
11M16448	WG601938-12 50.0ug/L ALT	NA	1	1	STD80410	02/25/17 22:22

Approved: March 01, 2017

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032117
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54101

Internal Standard: STD80702 Surrogate Standard: STD80702
CCV: STD81040 LCS: STD81038 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607066

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418406	WG607066-01 50ng BFB STD 8260	NA	1	1	STD80989	03/21/17 15:10
8M418407	RINSE	NA	1	1		03/21/17 15:39
8M418408	WG607066-02 0.3ug/L STD 8260	NA	1	1	STD810	03/21/17 16:09
8M418409	WG607066-03 0.4ug/L STD 8260	NA	1	1	STD81040	03/21/17 16:39
8M418410	WG607066-04 1ug/L STD 8260	NA	1	1	STD81040	03/21/17 17:09
8M418411	WG607066-05 2ug/L STD 8260	NA	1	1	STD81040	03/21/17 17:40
8M418412	WG607066-06 5ug/L STD 8260	NA	1	1	STD81040	03/21/17 18:10
8M418413	WG607066-07 20ug/L STD 8260	NA	1	1	STD81040	03/21/17 18:41
8M418414	WG607066-08 50ug/L STD 8260	NA	1	1	STD81040	03/21/17 19:11
8M418415	WG607066-09 100ug/L STD 8260	NA	1	1	STD81040	03/21/17 19:42
8M418416	WG607066-10 200ug/L STD 8260	NA	1	1	STD81040	03/21/17 20:12
8M418417	WG607066-11 300ug/L STD 8260	NA	1	1	STD81040	03/21/17 20:43
8M418418	RINSE	NA	1	1		03/21/17 21:13
8M418419	RINSE	NA	1	1		03/21/17 21:44
8M418420	WG607066-12 50ug/L ALT SRC STD 8260	NA	1	1	STD81038	03/21/17 22:14
8M418421	RINSE	NA	1	1		03/21/17 22:45
8M418422	RINSE	NA	1	1		03/21/17 23:15
8M418423	RINSE	NA	1	1		03/21/17 23:45

Approved: March 24, 2017

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 032317
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 25 / 0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 1
Maintenance Log ID: 54102

Internal Standard: STD80956 Surrogate Standard: STD80957
CCV: STD80847 LCS: STD80765 MS/MSD: STD80765

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607454, WG607519

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M16973	WG607453-01 50ng BFB	NA	1	1	STD80536	03/23/17 13:10
11M16974	WG607453-02 50ug/L CCV	NA	1	1	STD80847	03/23/17 13:34
11M16975	WGXXXXXX-01 A9FOO	NA	1	1	STD80642	03/23/17 14:05
11M16976	WG607454-01 BLK 8260	NA	1	1		03/23/17 14:35
11M16977	WG607454-02 20ug/L LCS 8260	NA	1	1	STD80765	03/23/17 15:05
11M16978	L17031025-01 10X 826-TC	NA	17	10		03/23/17 15:35
11M16979	L17031161-10 A TB 826-LOW	<2	1	1		03/23/17 16:04
11M16980	L17031128-02 A TB 826-SPE	<2	1	1		03/23/17 16:33
11M16981	L17031141-02 A TB 826-SPE	<2	1	1		03/23/17 17:02
11M16982	L17031161-02 A MS 826-LOW	<2	1	1	STD80765	03/23/17 17:32
11M16983	L17031161-03 A MSD 826-LOW	<2	1	1	STD80765	03/23/17 18:01
11M16984	L17030992-02 D1 500X 826-TC	NA	17	500		03/23/17 18:30
11M16985	L17030870-01 A1 10X 826-TC	NA	17	10		03/23/17 19:00
11M16986	L17031161-01 A REF 826-LOW	<2	1	1		03/23/17 19:30
11M16987	L17031161-05 A 826-LOW	<2	1	1		03/23/17 20:00
11M16988	L17031161-06 A 826-LOW	<2	1	1		03/23/17 20:29
11M16989	L17031161-08 A 826-LOW	<2	1	1		03/23/17 20:59
11M16990	L17031161-04 A 826-LOW	<2	1	1		03/23/17 21:28
11M16991	L17031128-01 A 5X 826-SPE	<2	1	5		03/23/17 21:58
11M16992	L17031141-01 A 826-SPE	5	1	5		03/23/17 22:27
11M16993	L17031024-01 10X AF 826-TC	NA	17	10		03/23/17 22:56
11M16994	L17031192-02 10X AF 826-TC	NA	17	10		03/23/17 23:25
11M16995	RINSE	NA	2	1		03/23/17 23:54
11M16996	WG607519-01 20ug/L LCS 624	NA	2	1	STD80765	03/24/17 00:23
11M16997	WG607519-02 20ug/L LCS2 624	NA	2	1	STD80765	03/24/17 00:53
11M16998	RINSE	NA	2	1		03/24/17 01:22
11M16999	WG607519-03 BLANK 624	NA	2	1		03/24/17 01:51
11M17000	L17031228-04 A 624	<2	2	1		03/24/17 02:21
11M17001	L17031228-07 A 624	<2	2	1		03/24/17 02:50
11M17002	L17031282-01 A 624-SPE	6	2	1		03/24/17 03:19
11M17003	L17031283-01 A 624-SPE	7	2	1		03/24/17 03:48
11M17004	L17031285-01 A 624-SPE4	<2	2	1		03/24/17 04:17
11M17005	L17031288-01 A 624-SPE4	<2	2	1		03/24/17 04:46
11M17006	CCV	NA	2	1		03/24/17 05:15

Approved: March 30, 2017

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 032317
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 25 / 0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 1
Maintenance Log ID: 54102

Internal Standard: STD80956 Surrogate Standard: STD80957
CCV: STD80847 LCS: STD80765 MS/MSD: STD80765

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607454, WG607519

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M17007	RINSE	NA	2	1		03/24/17 05:44
11M17008	RINSE	NA	2	1		03/24/17 06:14
11M17009	WG606999-01 10X AF FBLK 826-TC	NA	17	10		03/24/17 06:43
11M17010	WG607234-01 10X AF FBLK 826-TC	NA	17	10		03/24/17 07:12

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X		Internal standard failure	
File ID: 11M16980				
	L17031128-02 int. failed low			
54	X	1	Internal standard failure	
File ID: 11M16982				
	L17031161-02 MS			
55	X	1	Internal standard failure	
File ID: 11M16983				
	L17031161-03 MSD foam sensor activated. purge aborted prematurely. RR DNR			
12	X	500	Internal standard failure	
File ID: 11M16984				
	L17030992-02 foam sensor activated. purge aborted prematurely. RR DNR			
16	X	1	Internal standard failure	
File ID: 11M16988				
	L17031161-06			
17	X	1	Internal standard failure	
File ID: 11M16989				
	L17031161-08			
18	X	1	Internal standard failure	
File ID: 11M16990				
	L17031161-04			
19	X	1	Internal standard failure	
File ID: 11M16991				
	L17031128-01			
20	X	1	Internal standard failure	
File ID: 11M16992				
	L17031141-01			

Approved: March 30, 2017

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032417
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54105

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: STD81038

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607572; WG607645

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418483	WG607571-01 50ng BFB STD 8260	NA	1	1	STD80989	03/24/17 09:24
8M418484	WG607571-02 50ug/L CCV STD 8260	NA	1	1	STD81106	03/24/17 09:47
8M418485	WG607571-02 50ug/L CCV STD 8260	NA	1	1	STD81106	03/24/17 10:21
8M418486	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD80642	03/24/17 10:50
8M418487	WG607572-01 VBLK0324 BLANK STD 826	NA	1	1		03/24/17 11:21
8M418488	L17030773-05 A RS 826-SPE	<2	1	1		03/24/17 11:52
8M418489	L17030773-06 A MS 826-SPE	<2	1	1	STD81038	03/24/17 12:22
8M418490	L17030773-07 A 826-SPE	<2	1	1		03/24/17 12:52
8M418491	L17030773-08 A 826-SPE	<2	1	1		03/24/17 13:21
8M418492	L17030773-17 A 826-SPE	<2	1	1		03/24/17 13:51
8M418493	WG607572-02 20ug/L LCS STD 8260	NA	1	1	STD81038	03/24/17 14:22
8M418494	L17031161-02 B MS 826-LOW	<2	1	1	STD81038	03/24/17 14:51
8M418495	L17031161-03 B MSD 826-LOW	<2	1	1	STD81038	03/24/17 15:21
8M418496	L17030992-02 B 500X 826-TC D1	6	17	500		03/24/17 15:51
8M418497	L17031131-02 A 10X 826-TC	NA	17	10		03/24/17 16:22
8M418498	L17031133-02 A 10X 826-TC	NA	17	10		03/24/17 16:52
8M418499	L17030997-09 B 1000X 826-SPE D1	<2	1	1000		03/24/17 17:22
8M418500	L17030997-08 B 200X 826-SPE 00	<2	1	200		03/24/17 17:52
8M418501	L17030997-07 B 200X 826-SPE 00	<2	1	200		03/24/17 18:22
8M418502	L17031161-01 B RS 826-LOW	<2	1	1		03/24/17 18:52
8M418503	L17031161-04 B 826-LOW	<2	1	1		03/24/17 19:23
8M418504	L17031161-06 B 826-LOW	<2	1	1		03/24/17 19:52
8M418505	L17031161-08 B 826-LOW	<2	1	1		03/24/17 20:21
8M418506	L17031141-01 B 826-SPE	4	1	1		03/24/17 20:52
8M418507	L17030997-10 B 826-SPE	<2	1	1		03/24/17 21:21
8M418508	WG607645-02 20ug/L LCS STD 624	NA	2	1	STD81038	03/24/17 21:50
8M418509	WG607645-03 20ug/L LCS2 STD 624	NA	2	1	STD81038	03/24/17 22:20
8M418510	RINSE	NA	2	1		03/24/17 22:50
8M418511	WG607645-01 VBLK0324 BLANK STD 624	NA	2	1		03/24/17 23:20
8M418512	L17031331-01 A 624-SPE	7	2	1		03/24/17 23:50
8M418513	L17031332-01 A 624-SPE	7	2	1		03/25/17 00:20
8M418514	L17031333-02 A 624-SPE	7	2	1		03/25/17 00:51
8M418515	L17031334-01 A 624-SPE	<2	2	1		03/25/17 01:22
8M418516	L17031371-01 A 624-SPE	7	2	1		03/25/17 01:52

Approved: March 27, 2017
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032417
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54105

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: STD81038

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607572; WG607645

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418517	L17031378-01 A 624-SPE	7	2	1		03/25/17 02:22
8M418518	L17031379-01 A 624-SPE	7	2	1		03/25/17 02:52
8M418519	L17031379-03 A 624-SPE	7	2	1		03/25/17 03:22
8M418520	L17031379-05 A 624-SPE	7	2	1		03/25/17 03:53
8M418521	CCV	NA	1	1		03/25/17 04:23
8M418522	RINSE	NA	1	1		03/25/17 04:53
8M418523	RINSE	NA	1	1		03/25/17 05:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M418484				
1,4-Dioxane was high, DNR.				
4				
File ID: 8M418486				
Not needed, DNR.				
30	X	20	Over Calibration Range	CHLOROFORM
File ID: 8M418512				
32	X	10	Over Calibration Range	CHLOROFORM
File ID: 8M418514				
37	X	25	Over Calibration Range	12-DCA, CB
File ID: 8M418519				
38	X	200	Over Calibration Range	12-DCA, CB
File ID: 8M418520				

Approved: March 27, 2017
Sarah Vandenberg

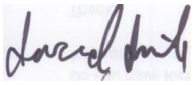
Microbac Laboratories Inc.

Data Checklist

Date: 29-NOV-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 78972
Analytical Workgroups: WG593075

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	NA
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-NOV-2016



Secondary Reviewer:
01-DEC-2016



CHECKLIST1 - Modified 03/05/2008
Generated: DEC-01-2016 16:10:41

Microbac Laboratories Inc.

Data Checklist

Date: 08-DEC-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 79117
Analytical Workgroups: WG594051; WG594142

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-DEC-2016
Tiffany Bailey

Secondary Reviewer:
09-DEC-2016
Wade D

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-09-2016 15:20:50

Microbac Laboratories Inc.

Data Checklist

Date: 01-MAR-2017
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 80704
Analytical Workgroups: WG601938 (ICAL)

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-MAR-2017

Secondary Reviewer:
01-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-01-2017 10:34:39

Microbac Laboratories Inc.

Data Checklist

Date: 21-MAR-2017
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 81123
Analytical Workgroups: WG607066

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAR-2017
Tiffany Bailey

Secondary Reviewer:
24-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2017 16:23:54

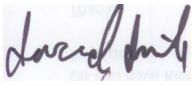
Microbac Laboratories Inc.

Data Checklist

Date: 23-MAR-2017
Analyst: JDS
Analyst: NA
Method: 8260
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 81216
Analytical Workgroups: WG607454 WG607519

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-MAR-2017



Secondary Reviewer:
30-MAR-2017



CHECKLIST1 - Modified 03/05/2008
Generated: MAR-30-2017 08:43:43

Microbac Laboratories Inc.

Data Checklist

Date: 24-MAR-2017
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 81176
Analytical Workgroups: WG607572; WG607645

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-MAR-2017
Tiffany Bailey

Secondary Reviewer:
27-MAR-2017
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-27-2017 15:42:47

Microbac

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B AAB#: WG607454

Login Number: L17031161

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW24-032017	05	03/20/17					03/23/2017	3.4	14		03/23/17	3.4	14	
TRIP BLANK	10	03/20/17					03/23/2017	3.7	14		03/23/17	3.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5217372
Report generated 03/30/2017 10:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B **AAB#:** WG607572

Login Number: L17031161

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW08-032017	01	03/20/17					03/24/2017	4.4	14		03/24/17	4.4	14	
18WW08MS-032017	02	03/20/17					03/24/2017	4.3	14		03/24/17	4.3	14	
18WW08MSD-032017	03	03/20/17					03/24/2017	4.3	14		03/24/17	4.3	14	
18CPTMW23SW-032017	04	03/20/17					03/24/2017	4.4	14		03/24/17	4.4	14	
18WW25-032017	06	03/20/17					03/24/2017	4.3	14		03/24/17	4.3	14	
MW10-032017	08	03/20/17					03/24/2017	4.2	14		03/24/17	4.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5217372
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031161
Instrument Id: HPMS8
Workgroup (AAB#): WG607572

Method: 8260
CAL ID: HPMS8-21-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031161-01	1.00	01	97.2	94.3	98.5	101
L17031161-02	1.00	01	94.4	95.5	95.7	100
L17031161-03	1.00	01	94.6	97.3	94.3	99.6
L17031161-04	1.00	01	96.8	95.2	97.0	101
L17031161-06	1.00	01	98.3	96.2	98.3	101
L17031161-08	1.00	01	97.3	96.2	97.4	101
WG607572-01	1.00	01	94.1	95.7	98.1	100
WG607572-02	1.00	01	93.0	96.5	94.3	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5217383
Report generated: 03/30/2017 10:03

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031161
Instrument Id: HPMS11
Workgroup (AAB#): WG607454

Method: 8260
CAL ID: HPMS11-25-FEB-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031161-05	1.00	01	107	99.2	102	103
L17031161-10	1.00	01	109	103	107	107
WG607454-01	1.00	01	108	104	106	106
WG607454-02	1.00	01	103	101	103	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5217383
Report generated: 03/30/2017 10:03

METHOD BLANK SUMMARY

Login Number:	L17031161	**Work Group:**	WG607454
Blank File ID:	11M16976	**Blank Sample ID:**	WG607454-01
Prep Date:	03/23/17 14:35	**Instrument ID:**	HPMS11
Analyzed Date:	03/23/17 14:35	**Method:**	8260B
Analyst:	JDS		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607454-02	11M16977	03/23/17 15:05	01
TRIP BLANK	L17031161-10	11M16979	03/23/17 16:04	01
18WW24-032017	L17031161-05	11M16987	03/23/17 20:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 5218735
Report generated 03/30/2017 10:02

METHOD BLANK SUMMARY

Login Number: L17031161
Work Group: WG607572
Blank File ID: 8M418487
Blank Sample ID: WG607572-01
Prep Date: 03/24/17 11:21
Instrument ID: HPMS8
Analyzed Date: 03/24/17 11:21
Method: 8260B
Analyst: TMB

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607572-02	8M418493	03/24/17 14:22	01
18WW08MS-032017	L17031161-02	8M418494	03/24/17 14:51	01
18WW08MSD-032017	L17031161-03	8M418495	03/24/17 15:21	01
18WW08-032017	L17031161-01	8M418502	03/24/17 18:52	01
18CPTMW23SW-032017	L17031161-04	8M418503	03/24/17 19:23	01
18WW25-032017	L17031161-06	8M418504	03/24/17 19:52	01
MW10-032017	L17031161-08	8M418505	03/24/17 20:21	01

Report Name: BLANK_SUMMARY
PDF File ID: 5218735
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number:L17031161 Prep Date:03/23/17 14:35 Sample ID:WG607454-01
Instrument ID:HPMS11 Run Date:03/23/17 14:35 Prep Method:5030B/5030C/503
File ID:11M16976 Analyst:JDS Method:8260B
Workgroup (AAB#):WG607454 Matrix:Water Units:ug/L
Contract #: Cal ID:HPMS11-25-FEB-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 5217373
30-MAR-2017 10:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031161 Prep Date: 03/23/17 14:35 Sample ID: WG607454-01
Instrument ID: HPMS11 Run Date: 03/23/17 14:35 Prep Method: 5030B/5030C/503
File ID: 11M16976 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG607454 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-25-FEB-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	108	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5217373
30-MAR-2017 10:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number:L17031161 Prep Date:03/24/17 11:21 Sample ID:WG607572-01
Instrument ID:HPMS8 Run Date:03/24/17 11:21 Prep Method:5030B/5030C/503
File ID:8M418487 Analyst:TMB Method:8260B
Workgroup (AAB#):WG607572 Matrix:Water Units:ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 5217373
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number:L17031161 Prep Date:03/24/17 11:21 Sample ID:WG607572-01
Instrument ID:HPMS8 Run Date:03/24/17 11:21 Prep Method:5030B/5030C/503
File ID:8M418487 Analyst:TMB Method:8260B
Workgroup (AAB#):WG607572 Matrix:Water Units:ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.7	85 - 115	PASS
1,2-Dichloroethane-d4	94.1	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	98.1	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5217373
30-MAR-2017 10:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607454-02
Instrument ID: HPMS11 Run Time: 15:05 Prep Method: 5030B/5030C/503
File ID: 11M16977 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG607454 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD81038 Cal ID: HPMS11-25-FEB-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	25.8	129	40 - 140	
Benzene	20.0	22.9	114	80 - 120	
Bromobenzene	20.0	22.1	110	75 - 125	
Bromochloromethane	20.0	22.4	112	65 - 130	
Bromodichloromethane	20.0	21.5	108	75 - 120	
Bromoform	20.0	21.0	105	70 - 130	
Bromomethane	20.0	18.1	90.3	30 - 145	
2-Butanone	20.0	25.3	126	30 - 150	
n-Butylbenzene	20.0	22.5	112	70 - 135	
sec-Butylbenzene	20.0	21.7	109	70 - 125	
tert-Butylbenzene	20.0	20.5	103	70 - 130	
Carbon disulfide	20.0	18.1	90.3	35 - 160	
Carbon tetrachloride	20.0	21.5	108	65 - 140	
Chlorobenzene	20.0	22.1	111	80 - 120	
Chlorodibromomethane	20.0	21.4	107	60 - 135	
Chloroethane	20.0	21.9	109	60 - 135	
Chloroform	20.0	22.3	111	65 - 135	
Chloromethane	20.0	19.1	95.6	40 - 125	
2-Chlorotoluene	20.0	19.2	96.1	75 - 125	
4-Chlorotoluene	20.0	23.1	115	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.3	116	50 - 130	
1,2-Dibromoethane	20.0	22.3	112	80 - 120	
Dibromomethane	20.0	22.6	113	75 - 125	
1,2-Dichlorobenzene	20.0	23.2	116	70 - 120	
1,3-Dichlorobenzene	20.0	22.0	110	75 - 125	
1,4-Dichlorobenzene	20.0	21.9	110	75 - 125	
Dichlorodifluoromethane	20.0	23.6	118	30 - 155	
1,1-Dichloroethane	20.0	22.1	110	70 - 135	
1,2-Dichloroethane	20.0	22.9	115	70 - 130	
1,1-Dichloroethene	20.0	21.6	108	70 - 130	
cis-1,2-Dichloroethene	20.0	21.8	109	70 - 125	
trans-1,2-Dichloroethene	20.0	22.1	111	60 - 140	
1,2-Dichloropropane	20.0	22.3	112	75 - 125	
1,3-Dichloropropane	20.0	23.5	118	75 - 125	
2,2-Dichloropropane	20.0	21.7	108	70 - 135	
cis-1,3-Dichloropropene	20.0	22.8	114	70 - 130	
trans-1,3-Dichloropropene	20.0	22.3	112	55 - 140	
1,1-Dichloropropene	20.0	22.0	110	75 - 130	
Ethylbenzene	20.0	22.7	113	75 - 125	
2-Hexanone	20.0	25.8	129	55 - 130	
Hexachlorobutadiene	20.0	20.5	102	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 5217374
Report generated: 03/30/2017 10:02

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607454-02
Instrument ID: HPMS11 Run Time: 15:05 Prep Method: 5030B/5030C/503
File ID: 11M16977 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG607454 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD81038 Cal ID: HPMS11-25-FEB-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.1	106	75 - 125	
p-Isopropyltoluene	20.0	22.3	111	75 - 130	
4-Methyl-2-pentanone	20.0	23.9	120	60 - 135	
Methylene chloride	20.0	21.9	110	55 - 140	
Naphthalene	20.0	25.9	129	55 - 140	
n-Propylbenzene	20.0	21.2	106	70 - 130	
Styrene	20.0	22.8	114	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.2	106	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	24.3	121	65 - 130	
Tetrachloroethene	20.0	21.2	106	45 - 150	
Toluene	20.0	21.3	106	75 - 120	
1,2,3-Trichlorobenzene	20.0	23.6	118	55 - 140	
1,2,4-Trichlorobenzene	20.0	23.8	119	65 - 135	
1,1,1-Trichloroethane	20.0	21.8	109	65 - 130	
1,1,2-Trichloroethane	20.0	22.8	114	75 - 125	
Trichloroethene	20.0	21.0	105	70 - 125	
Trichlorofluoromethane	20.0	20.3	101	60 - 145	
1,2,3-Trichloropropane	20.0	24.0	120	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.1	106	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.4	107	75 - 130	
Vinyl chloride	20.0	20.4	102	50 - 145	
o-Xylene	20.0	22.3	112	80 - 120	
m-,p-Xylene	40.0	45.2	113	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 5217374
Report generated: 03/30/2017 10:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031161 Run Date: 03/24/2017 Sample ID: WG607572-02
Instrument ID: HPMS8 Run Time: 14:22 Prep Method: 5030B/5030C/503
File ID: 8M418493 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG607572 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD81038 Cal ID: HPMS8-21-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.0	89.8	40 - 140	
Benzene	20.0	19.8	99.1	80 - 120	
Bromobenzene	20.0	18.7	93.6	75 - 125	
Bromochloromethane	20.0	19.2	96.2	65 - 130	
Bromodichloromethane	20.0	18.9	94.5	75 - 120	
Bromoform	20.0	18.6	93.2	70 - 130	
Bromomethane	20.0	18.0	90.1	30 - 145	
2-Butanone	20.0	17.6	88.1	30 - 150	
n-Butylbenzene	20.0	19.0	94.9	70 - 135	
sec-Butylbenzene	20.0	19.1	95.5	70 - 125	
tert-Butylbenzene	20.0	18.0	90.0	70 - 130	
Carbon disulfide	20.0	16.5	82.7	35 - 160	
Carbon tetrachloride	20.0	20.5	102	65 - 140	
Chlorobenzene	20.0	18.7	93.4	80 - 120	
Chlorodibromomethane	20.0	18.6	92.9	60 - 135	
Chloroethane	20.0	19.7	98.5	60 - 135	
Chloroform	20.0	18.5	92.6	65 - 135	
Chloromethane	20.0	20.8	104	40 - 125	
2-Chlorotoluene	20.0	18.9	94.6	75 - 125	
4-Chlorotoluene	20.0	18.7	93.4	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.2	90.9	50 - 130	
1,2-Dibromoethane	20.0	19.1	95.5	80 - 120	
Dibromomethane	20.0	20.2	101	75 - 125	
1,2-Dichlorobenzene	20.0	18.7	93.3	70 - 120	
1,3-Dichlorobenzene	20.0	18.5	92.4	75 - 125	
1,4-Dichlorobenzene	20.0	18.5	92.7	75 - 125	
Dichlorodifluoromethane	20.0	19.5	97.5	30 - 155	
1,1-Dichloroethane	20.0	19.1	95.3	70 - 135	
1,2-Dichloroethane	20.0	18.8	93.8	70 - 130	
1,1-Dichloroethene	20.0	18.8	94.0	70 - 130	
cis-1,2-Dichloroethene	20.0	19.4	96.9	70 - 125	
trans-1,2-Dichloroethene	20.0	18.7	93.7	60 - 140	
1,2-Dichloropropane	20.0	19.4	96.9	75 - 125	
1,3-Dichloropropane	20.0	19.9	99.6	75 - 125	
2,2-Dichloropropane	20.0	17.8	88.9	70 - 135	
cis-1,3-Dichloropropene	20.0	20.0	99.8	70 - 130	
trans-1,3-Dichloropropene	20.0	18.9	94.5	55 - 140	
1,1-Dichloropropene	20.0	19.4	96.8	75 - 130	
Ethylbenzene	20.0	19.3	96.3	75 - 125	
2-Hexanone	20.0	18.3	91.5	55 - 130	
Hexachlorobutadiene	20.0	16.2	81.1	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 5217374
Report generated: 03/30/2017 10:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031161 Run Date: 03/24/2017 Sample ID: WG607572-02
Instrument ID: HPMS8 Run Time: 14:22 Prep Method: 5030B/5030C/503
File ID: 8M418493 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG607572 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD81038 Cal ID: HPMS8-21-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.4	96.9	75 - 125	
p-Isopropyltoluene	20.0	19.5	97.3	75 - 130	
4-Methyl-2-pentanone	20.0	17.3	86.3	60 - 135	
Methylene chloride	20.0	18.8	93.9	55 - 140	
Naphthalene	20.0	17.7	88.5	55 - 140	
n-Propylbenzene	20.0	19.0	95.1	70 - 130	
Styrene	20.0	20.0	99.9	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	18.0	90.1	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.6	92.8	65 - 130	
Tetrachloroethene	20.0	18.9	94.5	45 - 150	
Toluene	20.0	19.8	99.2	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.2	86.0	55 - 140	
1,2,4-Trichlorobenzene	20.0	17.3	86.3	65 - 135	
1,1,1-Trichloroethane	20.0	20.1	100	65 - 130	
1,1,2-Trichloroethane	20.0	18.9	94.6	75 - 125	
Trichloroethene	20.0	19.3	96.6	70 - 125	
Trichlorofluoromethane	20.0	18.7	93.4	60 - 145	
1,2,3-Trichloropropane	20.0	19.3	96.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.3	96.6	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.3	96.6	75 - 130	
Vinyl chloride	20.0	21.0	105	50 - 145	
o-Xylene	20.0	18.9	94.6	80 - 120	
m-,p-Xylene	40.0	39.0	97.4	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.5	85 - 115	PASS
1,2-Dichloroethane-d4	93.0	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	94.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 5217374
Report generated: 03/30/2017 10:02

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L17031161 Cal ID: HPMS8- 21-MAR-17 Worknum: WG607572

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L17031161-01 File ID: 8M418502 Dil: 1 Method: 5035A

Sample ID: L17031161-02 MS File ID: 8M418494 Dil: 1 Matrix: 8260B

Sample ID: L17031161-03 MSD File ID: 8M418495 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	17.9	89.6	20.0	17.6	87.9	1.92	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	19.5	97.5	20.0	19.6	97.8	0.279	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	20.2	101	20.0	19.1	95.7	5.35	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.7	98.4	20.0	18.8	94	4.63	75 - 125	30	
1,1-Dichloroethane	U	20.0	18.6	92.9	20.0	18.7	93.7	0.910	70 - 135	30	
1,1-Dichloroethene	U	20.0	18.6	92.8	20.0	18.3	91.3	1.55	70 - 130	30	
1,1-Dichloropropene	U	20.0	18.7	93.4	20.0	18.6	93.1	0.347	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	17.5	87.3	20.0	16.8	84.2	3.67	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	20.1	100	20.0	19.5	97.4	2.99	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	17.5	87.6	20.0	17.0	85	3.04	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	18.9	94.6	20.0	18.6	92.9	1.75	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	19.6	98.2	20.0	17.2	86.2	13.1	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.3	96.7	20.0	18.5	92.7	4.16	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.0	95	20.0	18.4	92	3.21	70 - 120	30	
1,2-Dichloroethane	U	20.0	19.0	95.2	20.0	18.8	94.2	1.12	70 - 130	30	
1,2-Dichloropropane	U	20.0	19.2	96	20.0	19.0	94.8	1.24	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	18.7	93.5	20.0	18.5	92.3	1.26	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	18.3	91.7	20.0	17.8	89.1	2.93	75 - 125	30	
1,3-Dichloropropane	U	20.0	20.2	101	20.0	19.3	96.3	4.83	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	18.4	92	20.0	18.0	90.2	1.97	75 - 125	30	
2,2-Dichloropropane	U	20.0	18.8	93.9	20.0	18.8	93.8	0.110	70 - 135	30	
2-Butanone	U	20.0	17.7	88.3	20.0	17.1	85.4	3.31	30 - 150	30	
2-Chlorotoluene	U	20.0	18.2	91.1	20.0	17.9	89.7	1.46	75 - 125	30	
2-Hexanone	U	20.0	20.0	100	20.0	18.6	93.1	7.34	55 - 130	30	
4-Chlorotoluene	U	20.0	19.0	95	20.0	18.5	92.6	2.54	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	18.7	93.3	20.0	17.4	86.8	7.25	60 - 135	30	
Acetone	10.3	20.0	21.2	54.6	20.0	24.7	71.8	15.0	40 - 140	30	
Benzene	U	20.0	19.1	95.4	20.0	19.1	95.5	0.0456	80 - 120	30	
Bromobenzene	U	20.0	18.4	92.2	20.0	18.2	91.2	1.17	75 - 125	30	
Bromochloromethane	U	20.0	19.5	97.3	20.0	19.2	96.1	1.26	65 - 130	30	
Bromodichloromethane	U	20.0	19.3	96.7	20.0	19.2	95.8	0.843	75 - 120	30	
Bromoform	U	20.0	20.2	101	20.0	19.1	95.4	5.88	70 - 130	30	
Bromomethane	U	20.0	18.3	91.3	20.0	18.6	93.2	2.07	30 - 145	30	
Carbon disulfide	U	20.0	16.2	80.9	20.0	16.3	81.3	0.515	35 - 160	30	
Carbon tetrachloride	U	20.0	19.5	97.7	20.0	19.3	96.4	1.32	65 - 140	30	
Chlorobenzene	U	20.0	18.3	91.5	20.0	18.0	90	1.70	80 - 120	30	
Chloroethane	U	20.0	19.5	97.5	20.0	19.6	98.2	0.744	60 - 135	30	
Chloroform	U	20.0	17.9	89.7	20.0	17.9	89.5	0.221	65 - 135	30	
Chloromethane	U	20.0	19.8	99.1	20.0	19.8	99.1	0.0080	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	19.0	94.8	20.0	19.1	95.4	0.656	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	20.3	101	20.0	20.2	101	0.605	70 - 130	30	

MS_MSD - Modified 03/06/2008

PDF File ID: 5217375

Report generated 03/30/2017 10:02

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L17031161 Cal ID: HPMS8 21-MAR-17 Worknum: WG607572

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L17031161-01 File ID: 8M418502 Dil: 1 Method: 5035A

Sample ID: L17031161-02 MS File ID: 8M418494 Dil: 1 Matrix: 8260B

Sample ID: L17031161-03 MSD File ID: 8M418495 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	19.2	96	20.0	18.6	92.9	3.34	60 - 135	30	
Dibromomethane	U	20.0	20.7	104	20.0	20.4	102	1.49	75 - 125	30	
Dichlorodifluoromethane	U	20.0	19.8	99.1	20.0	19.8	99.1	0.0469	30 - 155	30	
Ethylbenzene	U	20.0	18.7	93.3	20.0	18.5	92.3	1.11	75 - 125	30	
Hexachlorobutadiene	U	20.0	16.0	79.9	20.0	16.0	80.2	0.436	50 - 140	30	
Isopropylbenzene	U	20.0	19.1	95.4	20.0	18.6	93.2	2.32	75 - 125	30	
m-,p-Xylene	U	40.0	38.2	95.4	40.0	37.5	93.9	1.66	75 - 130	30	
Methylene chloride	U	20.0	19.0	94.9	20.0	18.8	94.2	0.729	55 - 140	30	
n-Butylbenzene	U	20.0	18.7	93.7	20.0	18.4	92	1.88	70 - 135	30	
n-Propylbenzene	U	20.0	18.5	92.7	20.0	18.2	91.1	1.74	70 - 130	30	
Naphthalene	U	20.0	18.5	92.3	20.0	17.4	87	5.93	55 - 140	30	
o-Xylene	U	20.0	18.4	92.1	20.0	17.9	89.3	3.11	80 - 120	30	
p-Isopropyltoluene	U	20.0	19.1	95.3	20.0	18.8	94.1	1.24	75 - 130	30	
sec-Butylbenzene	U	20.0	18.6	93	20.0	18.2	91	2.21	70 - 125	30	
Styrene	U	20.0	19.5	97.7	20.0	19.2	96	1.73	65 - 135	30	
tert-Butylbenzene	U	20.0	17.3	86.7	20.0	17.1	85.5	1.39	70 - 130	30	
Tetrachloroethene	U	20.0	18.3	91.4	20.0	17.9	89.7	1.91	45 - 150	30	
Toluene	U	20.0	19.4	97.1	20.0	19.1	95.3	1.93	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	18.3	91.6	20.0	18.5	92.3	0.712	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.5	97.5	20.0	18.7	93.5	4.14	55 - 140	30	
Trichloroethene	U	20.0	18.3	91.7	20.0	18.4	91.9	0.173	70 - 125	30	
Trichlorofluoromethane	U	20.0	18.4	92	20.0	18.4	91.9	0.185	60 - 145	30	
Vinyl chloride	U	20.0	19.9	99.3	20.0	20.1	100	1.09	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 5217375

Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031161
Instrument: HPMS11
Analyst: JDS
Workgroup: WG593075

Tune ID: WG593075-01
Run Date: 11/29/2016
Run Time: 14:38
File ID: 11M15410
Cal ID: HPMS11-29-NOV-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.9	10170	PASS
75.0	95.0	30.0	60.0	50.2	18975	PASS
95.0	95.0	100	100	100	37813	PASS
96.0	95.0	5.00	9.00	6.54	2474	PASS
173	174	0	2.00	0.358	114	PASS
174	95.0	50.0	100	84.1	31818	PASS
175	174	5.00	9.00	7.62	2425	PASS
176	174	95.0	101	95.8	30490	PASS
177	176	5.00	9.00	6.21	1892	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG593075-02	STD	01	11/29/2016 17:04	
WG593075-03	STD	01	11/29/2016 17:33	
WG593075-04	STD	01	11/29/2016 18:02	
WG593075-05	STD-CCV	01	11/29/2016 18:30	
WG593075-06	STD	01	11/29/2016 19:00	
WG593075-07	STD	01	11/29/2016 19:29	
WG593075-08	STD	01	11/29/2016 19:58	
WG593075-09	STD	01	11/29/2016 20:28	
WG593075-10	SSCV	01	11/29/2016 21:26	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5217377
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031161
Instrument: HPMS11
Analyst: ADC
Workgroup: WG601938

Tune ID: WG601938-01
Run Date: 02/25/2017
Run Time: 16:09
File ID: 11M16435
Cal ID: HPMS11-25-FEB-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.4	10084	PASS
75.0	95.0	30.0	60.0	49.2	21156	PASS
95.0	95.0	100	100	100	43029	PASS
96.0	95.0	5.00	9.00	6.87	2956	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.1	31034	PASS
175	174	5.00	9.00	7.26	2254	PASS
176	174	95.0	101	97.9	30369	PASS
177	176	5.00	9.00	6.79	2061	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG601938-02	STD	01	02/25/2017 17:04	
WG601938-03	STD	01	02/25/2017 17:32	
WG601938-04	STD	01	02/25/2017 18:01	
WG601938-05	STD	01	02/25/2017 18:30	
WG601938-06	STD	01	02/25/2017 18:59	
WG601938-07	STD	01	02/25/2017 19:28	
WG601938-08	STD-CCV	01	02/25/2017 19:58	
WG601938-09	STD	01	02/25/2017 20:26	
WG601938-10	STD	01	02/25/2017 20:55	
WG601938-11	STD	01	02/25/2017 21:24	
WG601938-12	SSCV	01	02/25/2017 22:22	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5217377
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031161
Instrument: HPMS11
Analyst: JDS
Workgroup: WG607453

Tune ID: WG607453-01
Run Date: 03/23/2017
Run Time: 13:10
File ID: 11M16973
Cal ID: HPMS11-25-FEB-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.3	10218	PASS
75.0	95.0	30.0	60.0	48.7	22306	PASS
95.0	95.0	100	100	100	45805	PASS
96.0	95.0	5.00	9.00	6.69	3063	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.6	35101	PASS
175	174	5.00	9.00	7.85	2754	PASS
176	174	95.0	101	97.5	34237	PASS
177	176	5.00	9.00	6.61	2264	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607453-02	CCV	01	03/23/2017 13:34	
WG607454-01	BLANK	01	03/23/2017 14:35	
WG607454-02	LCS	01	03/23/2017 15:05	
L17031161-10	TRIP BLANK	01	03/23/2017 16:04	
L17031161-05	18WW24-032017	01	03/23/2017 20:00	
WG606999-01	FBLK1	DL01	03/24/2017 06:43	*
WG607234-01	FBLK1	DL01	03/24/2017 07:12	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5217377
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031161
Instrument: HPMS8
Analyst: TMB
Workgroup: WG594051

Tune ID: WG594051-01
Run Date: 12/08/2016
Run Time: 08:55
File ID: 8M416518
Cal ID: HPMS8-08-DEC-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	15.9	3959	PASS
75.0	95.0	30.0	60.0	50.2	12523	PASS
95.0	95.0	100	100	100	24967	PASS
96.0	95.0	5.00	9.00	6.61	1651	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.9	18700	PASS
175	174	5.00	9.00	7.25	1355	PASS
176	174	95.0	101	96.0	17959	PASS
177	176	5.00	9.00	6.08	1092	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG594051-02	STD	01	12/08/2016 09:19	
WG594051-03	STD	01	12/08/2016 09:48	
WG594051-04	STD	01	12/08/2016 10:17	
WG594051-05	STD-CCV	01	12/08/2016 10:47	
WG594051-06	STD	01	12/08/2016 11:16	
WG594051-07	STD	01	12/08/2016 11:46	
WG594051-08	STD	01	12/08/2016 12:16	
WG594051-09	STD	01	12/08/2016 12:45	
WG594051-10	SSCV	01	12/08/2016 14:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5217377
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031161
Instrument: HPMS8
Analyst: TMB
Workgroup: WG607066

Tune ID: WG607066-01
Run Date: 03/21/2017
Run Time: 15:10
File ID: 8M418406
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.8	6993	PASS
75.0	95.0	30.0	60.0	52.2	20477	PASS
95.0	95.0	100	100	100	39240	PASS
96.0	95.0	5.00	9.00	6.89	2704	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.6	31623	PASS
175	174	5.00	9.00	6.77	2141	PASS
176	174	95.0	101	98.6	31189	PASS
177	176	5.00	9.00	6.60	2060	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607066-02	STD	01	03/21/2017 16:09	
WG607066-03	STD	01	03/21/2017 16:39	
WG607066-04	STD	01	03/21/2017 17:09	
WG607066-05	STD	01	03/21/2017 17:40	
WG607066-06	STD	01	03/21/2017 18:10	
WG607066-07	STD	01	03/21/2017 18:41	
WG607066-08	STD-CCV	01	03/21/2017 19:11	
WG607066-09	STD	01	03/21/2017 19:42	
WG607066-10	STD	01	03/21/2017 20:12	
WG607066-11	STD	01	03/21/2017 20:43	
WG607066-12	SSCV	01	03/21/2017 22:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5217377
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031161
Instrument: HPMS8
Analyst: TMB
Workgroup: WG607571

Tune ID: WG607571-01
Run Date: 03/24/2017
Run Time: 09:24
File ID: 8M418483
Cal ID: HPMS8-21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.9	6077	PASS
75.0	95.0	30.0	60.0	51.3	17371	PASS
95.0	95.0	100	100	100	33877	PASS
96.0	95.0	5.00	9.00	6.57	2226	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	82.8	28050	PASS
175	174	5.00	9.00	7.12	1998	PASS
176	174	95.0	101	99.2	27824	PASS
177	176	5.00	9.00	6.61	1840	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607571-02	CCV	01	03/24/2017 10:21	
WG607572-01	BLANK	01	03/24/2017 11:21	
WG607572-02	LCS	01	03/24/2017 14:22	
L17031161-02	18WW08MS-032017	01	03/24/2017 14:51	
L17031161-03	18WW08MSD-032017	01	03/24/2017 15:21	
L17031161-01	18WW08-032017	01	03/24/2017 18:52	
L17031161-04	18CPTMW23SW-032017	01	03/24/2017 19:23	
L17031161-06	18WW25-032017	01	03/24/2017 19:52	
L17031161-08	MW10-032017	01	03/24/2017 20:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5217377
Report generated 03/30/2017 10:02

Calibration Table Report
Method: A9FOOW.M
Title: Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Calibration: Wed Nov 30 09:30:53 2016
Curve: WG593075
Calibration Files

	Compound	5 11M15413.D	20 11M15414.D	50 11M15415.D	100 11M15416.D	200 11M15417.D	300 11M15418.D	400 11M15419.D	500 11M15420.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.050	0.054	0.054	0.054	0.055	0.059	0.057	0.057	0.055	5.040		
T	3-Chloro-1-propene	0.742	0.811	0.773	0.805	0.838	0.841	0.818	0.794	0.803	4.135		
T	2-Chloro-1,3-butadiene	0.561	0.648	0.619	0.662	0.703	0.705	0.685	0.674	0.657	7.309		
T	Methacrylonitrile	0.274	0.298	0.302	0.299	0.312	0.324	0.315	0.310	0.304	5.013		
T	Isobutyl Alcohol		0.013	0.013	0.014	0.014	0.016	0.016	0.016	0.015	8.489		
T	1-Butanol				0.005	0.005	0.006	0.006	0.006	0.006	11.030		
T	Cyclohexanone			0.009	0.010	0.011	0.013	0.013	0.013	0.012	15.277	0.995	
T	2-Nitropropane			0.103	0.104	0.119	0.125	0.124	0.125	0.117	9.019		
T	Ethyl Acetate	0.341	0.384	0.396	0.397	0.421	0.439	0.427	0.422	0.403	7.714		
T	Methyl methacrylate	0.313	0.355	0.374	0.384	0.409	0.425	0.415	0.410	0.386	9.754		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Wed Nov 30 09:43:07 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Calibration: Tue Feb 28 14:56:34 2017
Curve: WG601938
Calibration Files

Compound	0.3 11M16437.D	0.4 11M16438.D	1 11M16439.D	2 11M16440.D	5 11M16441.D	20 11M16442.D	50 11M16443.D	100 11M16444.D	200 11M16445.D	300 11M16446.D	Avg	%RSD	R^2 Linear	 Quadratic
Fluorobenzene	ISTD													
Dichlorodifluoromethane			0.370	0.378	0.381	0.427	0.449	0.415	0.376	0.330	0.391	9.644		
Chloromethane			0.568	0.604	0.506	0.510	0.509	0.431			0.521	11.367		
Vinyl Chloride		0.518	0.408	0.412	0.418	0.407	0.423	0.392	0.341		0.415	11.827		
1,3-Butadiene			0.345	0.321	0.273	0.227	0.176	0.184	0.170		0.242	29.638	0.994	
Bromomethane			0.314	0.309	0.272	0.239	0.242	0.241	0.249	0.235	0.262	12.304		
Chloroethane			0.248	0.259	0.259	0.260	0.281	0.268	0.268	0.252	0.262	3.916		
Trichlorofluoromethane		0.530	0.465	0.459	0.479	0.466	0.501	0.476	0.464	0.429	0.474	5.930		
Diethyl ether			0.285	0.290	0.292	0.305	0.296	0.287		0.266	0.289	4.100		
Isoprene		0.492	0.455	0.469	0.461	0.506	0.513	0.502	0.481	0.437	0.479	5.369		
Acrolein			0.022	0.023	0.029	0.029	0.029	0.028		0.029	0.027	11.450		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.245	0.261	0.253	0.249	0.274	0.265	0.269	0.260	0.260	3.808		
Acetone				0.081	0.074	0.080	0.072	0.070	0.072	0.069	0.074	6.248		
1,1-Dichloroethene		0.600	0.511	0.533	0.520	0.519	0.565	0.530	0.500	0.450	0.525	7.891		
Tert-Butyl Alcohol			0.014	0.014	0.017	0.020	0.015	0.014		0.015	0.016	14.922		
Dimethyl Sulfide		0.422	0.376	0.404	0.404	0.428	0.432	0.417	0.398	0.362	0.405	5.788		
Iodomethane				0.049	0.126	0.289	0.379	0.373	0.355	0.328	0.271	48.335	0.995	
Methyl acetate				0.239	0.231	0.242	0.234	0.233	0.225	0.217	0.231	3.678		
Methylene Chloride		0.363	0.328	0.311	0.308	0.309	0.329	0.315	0.310	0.289	0.318	6.479		
Carbon Disulfide			0.927	0.934	0.899	0.939	0.926	0.844	0.702		0.881	9.730		
Acrylonitrile			0.108	0.085	0.106	0.118	0.119	0.118		0.124	0.111	11.597		
Methyl Tert Butyl Ether		0.830	0.808	0.816	0.819	0.840	0.864	0.813	0.761	0.675	0.803	6.874		
trans-1,2-Dichloroethene		0.301	0.264	0.295	0.291	0.290	0.312	0.301	0.298	0.276	0.292	4.891		
n-Hexane				0.444	0.452	0.500	0.514	0.509	0.485	0.432	0.477	7.041		
Diisopropyl ether			1.289	1.290	1.261	1.253	1.198	0.999			1.215	9.149		
Vinyl Acetate				0.608	0.605	0.642	0.597	0.539	0.525	0.463	0.568	10.897		
1,1-Dichloroethane		0.740	0.621	0.647	0.645	0.658	0.685	0.638	0.573	0.504	0.634	10.510		
Ethyl-Tert-Butyl ether			1.150	1.166	1.133	1.145	1.095	0.933		0.779	1.057	13.841		
2-Butanone				0.130	0.121	0.131	0.126	0.121	0.122	0.122	0.125	3.396		
Propionitrile			0.035	0.031	0.037	0.040	0.036	0.034		0.035	0.035	7.088		
2,2-Dichloropropane		0.509	0.454	0.491	0.459	0.455	0.473	0.446	0.426	0.393	0.456	7.511		
cis-1,2-Dichloroethene		0.383	0.325	0.343	0.328	0.334	0.359	0.348	0.331	0.309	0.340	6.367		
Chloroform	0.603	0.688	0.580	0.553	0.540	0.543	0.567	0.532	0.487	0.433	0.553	12.246		
1-Bromopropane			0.050	0.059	0.061	0.066	0.069	0.069	0.070	0.067	0.064	10.584		
Bromochloromethane		0.185	0.173	0.169	0.188	0.185	0.199	0.195	0.195	0.185	0.186	5.363		
Tetrahydrofuran			0.098	0.087	0.090	0.098	0.091	0.088		0.084	0.091	5.787		
Dibromofluoromethane					0.279	0.247	0.260	0.261	0.247		0.259	5.106		
1,1,1-Trichloroethane		0.536	0.478	0.483	0.490	0.488	0.525	0.499	0.473	0.430	0.489	6.294		
Cyclohexane		0.740	0.630	0.667	0.653	0.678	0.696	0.664	0.610	0.534	0.652	8.871		
1,1-Dichloropropene		0.434	0.397	0.428	0.419	0.415	0.446	0.425	0.400	0.362	0.414	5.975		
Carbon Tetrachloride		0.417	0.377	0.410	0.418	0.424	0.461	0.436	0.418	0.380	0.416	6.256		
Tert-Amyl-Methyl ether			0.919	0.918	0.902	0.933	0.879	0.761		0.647	0.85125	12.5958		
1,2-Dichloroethane-d4					0.335	0.303	0.321	0.318	0.295		0.31459	4.99364		
1,2-Dichloroethane		0.48	0.424	0.447	0.454	0.456	0.474	0.442	0.409	0.362	0.4385	8.2628		
Benzene		1.36	1.263	1.247	1.292	1.222	1.235	1.067	0.841		1.19091	13.7615		
Trichloroethene		0.318	0.269	0.301	0.299	0.307	0.33	0.318	0.301	0.274	0.30197	6.55196		
Methylcyclohexane		0.558	0.493	0.512	0.507	0.536	0.551	0.532	0.496	0.437	0.51363	7.20246		
1,2-Dichloropropane		0.317	0.337	0.368	0.372	0.373	0.392	0.375	0.357	0.328	0.35749	6.96053		
1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.00117	8.85864		
Bromodichloromethane		0.444	0.38	0.399	0.402	0.411	0.443	0.424	0.395	0.357	0.40624	6.97938		
Dibromomethane		0.17	0.162	0.178	0.171	0.173	0.189	0.181	0.182	0.173	0.17535	4.50686		
2-Chloroethyl Vinyl Ether			0.176	0.205	0.195	0.218	0.226	0.222	0.219	0.206	0.20838	8.05089		
4-Methyl-2-Pentanone			0.106	0.093	0.106	0.117	0.118	0.118	0.122	0.119	0.11237	8.88713		
cis-1,3-Dichloropropene		0.579	0.496	0.472	0.496	0.499	0.533	0.496	0.444	0.388	0.48925	10.946		
Dimethyl Disulfide		0.334	0.265	0.273	0.285	0.309	0.327	0.32	0.311	0.284	0.30097	8.29914		
Chlorobenzene-d5	ISTD													
Toluene-d8					1.58	1.388	1.484	1.408	1.171		1.40609	10.7899		
Toluene		2.139	1.906	1.917	1.924	1.827	1.858	1.538			1.87278	9.52462		
Ethyl Methacrylate			0.451	0.46	0.504	0.543	0.551	0.535	0.5	0.434	0.49722	8.97289		
trans-1,3-Dichloropropene			0.61	0.591	0.634	0.633	0.684	0.638	0.562	0.481	0.60405	10.1732		
1,1,2-Trichloroethane		0.37	0.342	0.362	0.365	0.362	0.39	0.371	0.358	0.325	0.36064	5.0695		
2-Hexanone					0.262	0.283	0.286	0.28	0.275	0.254	0.2733	4.63677		
1,3-Dichloropropane		0.685	0.579	0.647	0.653	0.641	0.677	0.624	0.559	0.479	0.6159	10.7344		
Tetrachloroethene		0.351	0.325	0.34	0.346	0.343	0.381	0.363	0.349	0.317	0.34621	5.43752		
Dibromochloromethane		0.393	0.369	0.399	0.413	0.421	0.468	0.449	0.426	0.384	0.41355	7.58206		
1,2-Dibromoethane		0.328	0.313	0.316	0.331	0.339	0.365	0.35	0.338	0.31	0.33224	5.45009		
1-Chlorohexane		0.645	0.529	0.567	0.564	0.609	0.63	0.606	0.551	0.476	0.57514	9.25746		
Chlorobenzene		1.253	1.116	1.168	1.187	1.146	1.196	1.048	0.838		1.11899	11.4913		
1,1,1,2-Tetrachloroethane		0.402	0.402	0.404	0.428	0.427	0.466	0.441	0.42	0.382	0.41909	5.98021		
Ethylbenzene			0.575	0.659	0.648	0.64	0.701	0.657	0.592	0.51	0.62254	9.71902		
m-,p-Xylene		0.831	0.735	0.752	0.79	0.771	0.798	0.674	0.512		0.73286	13.7756		
o-Xylene		0.821	0.712	0.744	0.779	0.772	0.837	0.769	0.673	0.574	0.74231	10.9034		
Styrene		1.279	1.125	1.215	1.247	1.259	1.341	1.187	0.945		1.19969	10.1127		
Bromoform			0.219	0.229	0.244	0.273	0.302	0.295	0.295	0.275	0.26654	12.0327		
Isopropylbenzene		2.181	1.895	1.983	2.002	1.94	1.964	1.606			1.93889	8.8707		
1,4-Dichlorobenzene-d4	ISTD													
1,1,2,2-Tetrachloroethane		0.909	0.825	0.856	0.89	0.907	0.922	0.838	0.821	0.771	0.8597	5.89676		
p-Bromofluorobenzene					1.095	1.014	1.095	1.048	0.983		1.04727	4.7231		
1,2,3-Trichloropropane			0.213	0.248	0.235	0.262	0.263	0.245	0.255	0.253	0.24673	6.56332		
trans-1,4-Dichloro-2-Butene			0.241	0.254	0.3	0.323	0.319	0.317	0.332	0.321	0.30078	11.4103		

n-Propylbenzene		5.475	4.396	4.811	4.962	4.763	4.491	3.415			4.61629	13.7667
Bromobenzene	0.93	0.985	0.964	1.001	1.011	0.996	1.055	0.972	0.915	0.848	0.96776	5.98719
1,3,5-Trimethylbenzene		3.685	3.016	3.263	3.39	3.332	3.288	2.678			3.23586	9.75773
2-Chlorotoluene		3.68	3.057	3.257	3.283	3.198	3.165	2.589			3.17543	10.2165
4-Chlorotoluene		3.139	2.519	2.743	2.759	2.714	2.661	2.137			2.66742	11.2623
a-Methylstyrene		1.806	1.388	1.601	1.67	1.82	1.856	1.667	1.41	1.21	1.60297	13.9202
tert-Butylbenzene		0.677	0.687	0.663	0.699	0.725	0.761	0.716	0.684	0.664	0.69722	4.57901
1,2,4-Trimethylbenzene		3.737	3.176	3.404	3.566	3.43	3.37	2.714			3.34219	9.7727
sec-Butylbenzene			3.817	4.128	4.213	4.214	4.079	3.198			3.94148	9.95962
p-Isopropyltoluene			3.089	3.436	3.492	3.502	3.474	2.789			3.29697	8.91447
1,3-Dichlorobenzene		2.058	1.686	1.775	1.92	1.896	1.953	1.709	1.425		1.80252	11.0178
1,4-Dichlorobenzene		2.272	1.684	1.844	1.895	1.894	1.929	1.689	1.403		1.82613	13.6919
n-Butylbenzene		3.577	2.848	2.987	3.145	3.255	3.298	2.676			3.11217	9.71282
1,2-Dichlorobenzene	1.851	1.969	1.615	1.715	1.84	1.819	1.871	1.637	1.375	1.196	1.68878	14.346
1,2-Dibromo-3-Chloropropane			0.119	0.148	0.174	0.171	0.175	0.163	0.165	0.175	0.16125	11.8162
1,2,4-Trichlorobenzene		1.443	1.119	1.197	1.237	1.278	1.344	1.209	1.109	1.03	1.21837	10.3951
Hexachlorobutadiene		0.605	0.574	0.544	0.6	0.617	0.663	0.647	0.628	0.65	0.61416	6.24307
Naphthalene		2.899	2.589	2.683	2.847	2.884	2.773	2.262	1.801		2.59228	14.7304
1,2,3-Trichlorobenzene	1.266	1.27	1.117	1.16	1.199	1.208	1.243	1.13	1.077	0.993	1.16615	7.63638

Tue Feb 28 15:13:32 2017

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Calibration: Thu Dec 08 13:41:47 2016
Curve: WG594051
Calibration Files

	Compound	5 8M416519.D	20 8M416520.D	50 8M416521.D	100 8M416522.D	200 8M416523.D	300 8M416524.D	400 8M416525.D	500 8M416526.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.007	0.007	0.008	0.007	0.007	0.007	0.007	0.007	2.734
T	3-Chloro-1-propene	0.285	0.281	0.282	0.286	0.290	0.298	0.298	0.306	0.291	3.019
T	2-Chloro-1,3-butadiene	0.282	0.298	0.305	0.315	0.325	0.335	0.338	0.343	0.318	6.789
T	Ethyl Acetate		0.065	0.063	0.064	0.066	0.064	0.067	0.066	0.065	2.080
T	Methacrylonitrile	0.032	0.041	0.043	0.043	0.044	0.044	0.046	0.045	0.042	10.556
T	Isobutyl Alcohol			0.002	0.002	0.002	0.002	0.002	0.002	0.002	6.131
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.055	0.067	0.068	0.069	0.071	0.070	0.074	0.074	0.068	8.866
T	2-Nitropropane		0.020	0.020	0.021	0.023	0.023	0.024	0.024	0.022	7.043
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.007	0.008	0.008	0.008	0.008	0.008	0.008	7.809

Thu Dec 08 15:05:15 2016

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Calibration: Thu Mar 23 09:07:42 2017
Curve: WG607066
Calibration Files

	Compound	0.3 8M418408.D	0.4 8M418409.D	1 8M418410.D	2 8M418411.D	5 8M418412.D	20 8M418413.D	50 8M418414.D	100 8M418415.D	200 8M418416.D	300 8M418417.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.365	0.339	0.354	0.406	0.433	0.432	0.413		0.392	9.845		
P	Chloromethane			0.561	0.481	0.480	0.467	0.465	0.449	0.420		0.475	9.181		
C	Vinyl Chloride		0.522	0.492	0.462	0.450	0.440	0.425	0.399	0.360		0.444	11.541		
T	1,3-Butadiene				0.256	0.253	0.235	0.174	0.111	0.091	0.088	0.173	44.128		0.994
T	Bromomethane			0.220	0.210	0.215	0.212	0.225	0.237	0.254		0.225	6.976		
T	Chloroethane		0.164	0.177	0.169	0.176	0.181	0.186	0.192	0.194		0.180	5.764		
T	Trichlorofluoromethane		0.491	0.482	0.451	0.464	0.469	0.491	0.497	0.497		0.480	3.565		
T	Diethyl ether			0.156	0.146	0.151	0.153	0.159	0.155		0.167	0.155	4.339		
T	Isoprene					0.354	0.350	0.368	0.382	0.374	0.398	0.371	4.814		
T	Acrolein				0.021	0.019	0.020	0.020	0.020		0.020	0.020	3.525		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.254	0.238	0.260	0.252	0.269	0.272	0.264		0.258	4.444		
T	Acetone					0.028	0.031	0.031	0.028	0.032	0.029	0.030	5.215		
C	1,1-Dichloroethene		0.377	0.363	0.325	0.352	0.349	0.366	0.375	0.375		0.360	4.930		
T	Tert-Butyl Alcohol				0.009	0.009	0.010	0.010	0.009		0.010	0.010	5.290		
T	Dimethyl Sulfide					0.242	0.246	0.255	0.258	0.268	0.268	0.256	4.156		
T	Iodomethane			0.227	0.204	0.235	0.261	0.298	0.318	0.317	0.290	0.269	16.181	0.997	
T	Methyl acetate					0.083	0.082	0.084	0.084	0.090	0.089	0.085	4.049		
T	Methylene Chloride			0.290	0.251	0.262	0.267	0.276	0.281	0.294		0.274	5.692		
T	Carbon Disulfide			0.876	0.782	0.819	0.813	0.836	0.848	0.830	0.764	0.821	4.336		
T	Acrylonitrile			0.040	0.040	0.040	0.042	0.046	0.045		0.041	0.042	5.937		
T	Methyl Tert Butyl Ether			0.519	0.484	0.503	0.533	0.556	0.536	0.567		0.528	5.471		
T	trans-1,2-Dichloroethene		0.369	0.352	0.326	0.338	0.338	0.348	0.360	0.365		0.349	4.283		
T	n-Hexane					0.312	0.279	0.293	0.297	0.289	0.307	0.296	4.010		
T	Diisopropyl ether			0.683	0.641	0.674	0.668	0.683	0.670		0.654	0.668	2.316		
T	Vinyl Acetate					0.283	0.262	0.254	0.246	0.280	0.252	0.263	5.853		
P	1,1-Dichloroethane		0.457	0.446	0.429	0.451	0.446	0.464	0.476	0.477		0.456	3.523		
T	Ethyl-Tert-Butyl ether			0.634	0.600	0.636	0.649	0.667	0.645		0.643	0.639	3.163		
T	2-Butanone					0.047	0.048	0.048	0.047	0.050	0.048	0.048	2.346		
T	Propionitrile			0.012	0.015	0.014	0.015	0.015	0.014		0.015	0.014	7.137		
T	2,2-Dichloropropane		0.445	0.414	0.394	0.409	0.385	0.398	0.406	0.403		0.407	4.403		
T	cis-1,2-Dichloroethene		0.294	0.289	0.270	0.290	0.293	0.302	0.314	0.321		0.297	5.370		
C	Chloroform	0.670	0.608	0.515	0.477	0.491	0.484	0.500	0.506	0.504		0.528	12.418		
T	1-Bromopropane			0.050	0.050	0.056	0.056	0.057	0.060	0.061	0.064	0.057	8.723		
T	Bromochloromethane		0.151	0.160	0.150	0.153	0.157	0.166	0.166	0.171		0.159	4.835		
T	Tetrahydrofuran			0.036	0.029	0.029	0.030	0.032	0.029		0.030	0.031	8.295		
S	Dibromofluoromethane				0.277	0.275	0.278	0.277	0.289	0.294	0.295	0.284	3.074		
T	1,1,1-Trichloroethane		0.405	0.426	0.387	0.429	0.422	0.450	0.469	0.488		0.435	7.610		
T	Cyclohexane			0.377	0.348	0.367	0.359	0.378	0.387	0.392	0.396	0.376	4.441		
T	1,1-Dichloropropene			0.377	0.349	0.366	0.363	0.376	0.389	0.392		0.373	4.028		
T	Tert-Amyl-Methyl ether			0.580	0.564	0.592	0.603	0.628	0.607		0.602	0.596	3.411		
T	Carbon Tetrachloride		0.375	0.364	0.334	0.379	0.381	0.41	0.437	0.431		0.3888	9.01028		
S	1,2-Dichloroethane-d4				0.251	0.234	0.245	0.242	0.246	0.252	0.249	0.2457	2.56178		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.299	0.294	0.276	0.286	0.294	0.305	0.308	0.324		0.2982	4.87776		
T	Benzene		1.144	1.082	1.017	1.09	1.066	1.09	1.099	1.022		1.0761	3.85617		
T	Trichloroethene		0.282	0.267	0.261	0.279	0.282	0.297	0.31	0.324		0.2877	7.45091		
T	Methylcyclohexane					0.428	0.409	0.425	0.438	0.433	0.462	0.4323	4.01264		
C	1,2-Dichloropropane		0.227	0.243	0.232	0.245	0.248	0.253	0.261	0.27		0.2474	5.70702		
T	Bromodichloromethane		0.332	0.33	0.314	0.328	0.348	0.371	0.38	0.395		0.3498	8.26577		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0012	10.0042		
T	Dibromomethane		0.093	0.132	0.126	0.131	0.137	0.144	0.143	0.155		0.1326	13.823		
T	2-Chloroethyl Vinyl Ether				0.101	0.107	0.108	0.112	0.114	0.123	0.122	0.1125	7.11154		
T	4-Methyl-2-Pentanone					0.042	0.046	0.049	0.047	0.053	0.052	0.0481	8.06815		
T	cis-1,3-Dichloropropene		0.393	0.387	0.371	0.388	0.405	0.425	0.432	0.448		0.406	6.45571		

T	Dimethyl Disulfide					0.159	0.196	0.22	0.231	0.257	0.257	0.2197	17.2311	0.998
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.195	1.269	1.261	1.225	1.302	1.283	1.269	1.2576	2.85929	
C	Toluene		1.544	1.543	1.406	1.506	1.485	1.517	1.549	1.346		1.4869	4.94343	
T	Ethyl Methacrylate			0.249	0.239	0.265	0.298	0.304	0.302	0.323	0.32	0.2875	11.2531	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.416	0.378	0.415	0.44	0.463	0.469	0.489		0.4386	8.75675	
T	1,1,2-Trichloroethane		0.223	0.226	0.208	0.232	0.237	0.243	0.244	0.261		0.2342	6.81927	
T	2-Hexanone					0.045	0.055	0.058	0.056	0.062	0.06	0.0562	10.7796	
T	1,3-Dichloropropane		0.421	0.417	0.393	0.405	0.421	0.427	0.427	0.443		0.4194	3.60274	
T	Tetrachloroethene		0.305	0.327	0.287	0.315	0.303	0.321	0.347	0.372		0.3222	8.35255	
T	Dibromochloromethane		0.203	0.251	0.243	0.271	0.296	0.323	0.336	0.366		0.2861	18.8764	1.000
T	1,2-Dibromoethane		0.228	0.236	0.217	0.232	0.244	0.251	0.249	0.267		0.2403	6.53165	
T	1-Chlorohexane		0.543	0.505	0.46	0.498	0.479	0.489	0.52	0.528	0.54	0.5067	5.53864	
P	Chlorobenzene		1.019	1.011	0.957	0.997	0.997	1.074	1.173	1.145		1.0465	7.3529	
T	1,1,1,2-Tetrachloroethane		0.31	0.305	0.304	0.326	0.363	0.413	0.48	0.542		0.3805	23.6944	1.001
C	Ethylbenzene		0.541	0.546	0.515	0.556	0.559	0.628	0.722			0.5808	12.244	
T	m-,p-Xylene		0.677	0.666	0.631	0.672	0.683	0.74	0.8	0.704		0.6966	7.49879	
T	o-Xylene			0.635	0.63	0.648	0.659	0.698	0.763	0.802		0.6907	9.76299	
T	Styrene		1.018	1.033	0.999	1.083	1.118	1.195	1.273	1.201		1.1151	8.93255	
P	Bromoform			0.129	0.136	0.14	0.173	0.197	0.207	0.236		0.1739	23.4918	1.000
T	Isopropylbenzene		1.697	1.683	1.58	1.688	1.672	1.757	1.776	1.517		1.6711	5.13622	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.449	0.51	0.451	0.492	0.495	0.505	0.483	0.514		0.4873	5.14107	
S	p-Bromofluorobenzene				0.947	0.928	0.921	0.899	0.942	0.956	1.03	0.946	4.39688	
T	1,2,3-Trichloropropane			0.131	0.131	0.135	0.138	0.146	0.14	0.149		0.1387	5.09526	
T	trans-1,4-Dichloro-2-Butene			0.098	0.097	0.117	0.116	0.125	0.125	0.119	0.117	0.1143	9.45734	
T	n-Propylbenzene		4.01	3.885	3.661	3.908	3.753	3.8	3.622	2.819		3.6822	10.0999	
T	Bromobenzene	0.851	0.768	0.757	0.755	0.783	0.79	0.837	0.875	0.919		0.815	7.14151	
T	1,3,5-Trimethylbenzene		2.725	2.624	2.532	2.686	2.662	2.801	2.829	2.417		2.6595	5.12759	
T	2-Chlorotoluene		2.64	2.51	2.341	2.519	2.505	2.539	2.593	2.155		2.4751	6.29617	
T	4-Chlorotoluene		2.183	2.216	2.162	2.151	2.107	2.241	2.221	2.018		2.1623	3.34861	
T	a-Methylstyrene					1.37	1.407	1.493	1.584	1.552	1.514	1.4867	5.5986	
T	tert-Butylbenzene			0.531	0.54	0.556	0.549	0.595	0.646	0.694		0.5873	10.4863	
T	1,2,4-Trimethylbenzene		2.785	2.797	2.613	2.808	2.805	2.92	2.929	2.463		2.7649	5.63985	
T	sec-Butylbenzene			3.451	3.251	3.466	3.33	3.466	3.399	2.744		3.3012	7.81848	
T	p-Isopropyltoluene			2.668	2.562	2.751	2.717	2.871	2.905	2.455		2.7041	5.93081	
T	1,3-Dichlorobenzene		1.611	1.613	1.52	1.6	1.577	1.671	1.734	1.67		1.6245	4.04016	
T	1,4-Dichlorobenzene	1.768	1.634	1.651	1.54	1.572	1.56	1.651	1.703	1.647		1.6362	4.40361	
T	n-Butylbenzene			2.731	2.594	2.706	2.618	2.734	2.719	2.264		2.6236	6.41729	
T	1,2-Dichlorobenzene	1.417	1.362	1.414	1.333	1.376	1.38	1.468	1.496	1.494		1.4155	4.16177	
T	1,2-Dibromo-3-Chloropropane				0.068	0.066	0.077	0.082	0.079	0.085		0.0765	9.84774	
T	1,2,4-Trichlorobenzene		1.096	1.056	0.929	0.997	1.007	1.067	1.129	1.19		1.0587	7.74032	
T	Hexachlorobutadiene		0.539	0.533	0.478	0.493	0.469	0.503	0.544	0.582		0.5176	7.43716	
T	Naphthalene		1.385	1.388	1.295	1.341	1.404	1.5	1.427	1.446		1.3983	4.5068	
T	1,2,3-Trichlorobenzene	0.853	0.929	0.879	0.798	0.801	0.839	0.89	0.91	0.981		0.8755	6.84769	

Thu Mar 23 12:32:39 2017

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031161 Run Date: 02/25/2017 Sample ID: WG601938-12
Instrument ID: HPMS11 Run Time: 22:22 Method: 8260B
File ID: 11M16448 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG601938 Cal ID: HPMS11 - 25-FEB-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/L	0.560	1.40	20	
1,1-Dichloroethene	CCC	50.0	49.7	ug/L	0.522	0.600	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.372	4.00	20	
Ethylbenzene	CCC	50.0	54.2	ug/L	0.675	8.40	20	
Toluene	CCC	50.0	47.2	ug/L	1.77	5.50	20	
Vinyl Chloride	CCC	50.0	47.2	ug/L	0.391	5.60	20	
Bromoform	SPCC	50.0	52.1	ug/L	0.278	4.30	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	1.14	2.10	20	
Chloromethane	SPCC	50.0	43.7	ug/L	0.456	12.5	20	
1,1-Dichloroethane	SPCC	50.0	51.4	ug/L	0.652	2.70	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.7	ug/L	0.804	6.50	20	
Acetone		50.0	42.3	ug/L	0.0626	15.3	20	
Benzene		50.0	50.4	ug/L	1.20	0.800	20	
Bromobenzene		50.0	50.3	ug/L	0.973	0.500	20	
Bromochloromethane		50.0	52.7	ug/L	0.196	5.40	20	
Bromodichloromethane		50.0	51.2	ug/L	0.416	2.40	20	
Bromomethane		50.0	46.7	ug/L	0.245	6.60	20	
2-Butanone		50.0	42.9	ug/L	0.107	14.2	20	
n-Butylbenzene		50.0	49.0	ug/L	3.05	2.10	20	
sec-Butylbenzene		50.0	47.1	ug/L	3.71	5.80	20	
tert-Butylbenzene		50.0	50.7	ug/L	0.707	1.40	20	
Carbon Disulfide		50.0	41.2	ug/L	0.726	17.6	20	
Carbon Tetrachloride		50.0	53.4	ug/L	0.444	6.80	20	
Dibromochloromethane		50.0	52.3	ug/L	0.432	4.50	20	
Chloroethane		50.0	51.3	ug/L	0.269	2.70	20	
2-Chlorotoluene		50.0	45.0	ug/L	2.86	9.90	20	
4-Chlorotoluene		50.0	46.2	ug/L	2.46	7.60	20	
1,2-Dibromo-3-Chloropropane		50.0	47.6	ug/L	0.154	4.80	20	
1,2-Dibromoethane		50.0	51.6	ug/L	0.343	3.30	20	
Dibromomethane		50.0	51.0	ug/L	0.179	2.00	20	
1,2-Dichlorobenzene		50.0	51.2	ug/L	1.73	2.30	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.77	1.80	20	
1,4-Dichlorobenzene		50.0	49.5	ug/L	1.81	0.900	20	
Dichlorodifluoromethane		50.0	47.8	ug/L	0.374	4.30	20	
1,2-Dichloroethane		50.0	50.8	ug/L	0.446	1.70	20	
cis-1,2-Dichloroethene		50.0	51.0	ug/L	0.347	2.00	20	
trans-1,2-Dichloroethene		50.0	52.4	ug/L	0.306	4.80	20	
1,3-Dichloropropane		50.0	52.7	ug/L	0.650	5.50	20	
2,2-Dichloropropane		50.0	47.2	ug/L	0.431	5.50	20	
cis-1,3-Dichloropropene		50.0	53.7	ug/L	0.525	7.30	20	
trans-1,3-Dichloropropene		50.0	52.4	ug/L	0.634	4.90	20	
1,1-Dichloropropene		50.0	51.9	ug/L	0.430	3.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5217376
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031161 Run Date: 02/25/2017 Sample ID: WG601938-12
Instrument ID: HPMS11 Run Time: 22:22 Method: 8260B
File ID: 11M16448 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG601938 Cal ID: HPMS11 - 25-FEB-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	47.5	ug/L	0.260	5.00	20	
Hexachlorobutadiene		50.0	50.5	ug/L	0.621	1.10	20	
Isopropylbenzene		50.0	48.0	ug/L	1.86	4.00	20	
p-Isopropyltoluene		50.0	48.8	ug/L	3.22	2.30	20	
4-Methyl-2-Pentanone		50.0	47.9	ug/L	0.108	4.30	20	
Methylene Chloride		50.0	49.9	ug/L	0.318	0.100	20	
Naphthalene		50.0	49.1	ug/L	2.55	1.80	20	
n-Propylbenzene		50.0	43.6	ug/L	4.03	12.7	20	
Styrene		50.0	54.4	ug/L	1.30	8.70	20	
1,1,1,2-Tetrachloroethane		50.0	52.1	ug/L	0.437	4.30	20	
Tetrachloroethene		50.0	54.0	ug/L	0.374	8.00	20	
1,2,3-Trichlorobenzene		50.0	49.9	ug/L	1.16	0.300	20	
1,2,4-Trichlorobenzene		50.0	52.1	ug/L	1.27	4.10	20	
1,1,1-Trichloroethane		50.0	53.1	ug/L	0.520	6.20	20	
1,1,2-Trichloroethane		50.0	50.8	ug/L	0.367	1.70	20	
Trichloroethene		50.0	53.4	ug/L	0.323	6.80	20	
Trichlorofluoromethane		50.0	48.0	ug/L	0.456	4.00	20	
1,2,3-Trichloropropane		50.0	48.6	ug/L	0.240	2.90	20	
1,2,4-Trimethylbenzene		50.0	46.4	ug/L	3.10	7.20	20	
1,3,5-Trimethylbenzene		50.0	46.9	ug/L	3.04	6.20	20	
o-Xylene		50.0	53.9	ug/L	0.801	7.90	20	
m-,p-Xylene		100	105	ug/L	0.768	4.80	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5217376
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031161 Run Date: 03/21/2017 Sample ID: WG607066-12
Instrument ID: HPMS8 Run Time: 22:14 Method: 8260B
File ID: 8M418420 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG607066 Cal ID: HPMS8 - 21-MAR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.3	ug/L	0.489	7.40	20	
1,1-Dichloroethene	CCC	50.0	48.5	ug/L	0.349	3.10	20	
1,2-Dichloropropane	CCC	50.0	48.9	ug/L	0.242	2.20	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.601	3.50	20	
Toluene	CCC	50.0	48.4	ug/L	1.44	3.10	20	
Vinyl Chloride	CCC	50.0	42.7	ug/L	0.379	14.7	20	
Bromoform	SPCC	50.0	48.4	ug/L	0.185	3.10	20	
Chlorobenzene	SPCC	50.0	48.7	ug/L	1.02	2.60	20	
Chloromethane	SPCC	50.0	46.2	ug/L	0.439	7.60	20	
1,1-Dichloroethane	SPCC	50.0	48.4	ug/L	0.441	3.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/L	0.462	5.10	20	
Acetone		50.0	47.4	ug/L	0.0284	5.20	20	
Benzene		50.0	48.8	ug/L	1.05	2.30	20	
Bromobenzene		50.0	48.7	ug/L	0.794	2.50	20	
Bromochloromethane		50.0	49.5	ug/L	0.158	1.10	20	
Bromodichloromethane		50.0	49.6	ug/L	0.347	0.700	20	
Bromomethane		50.0	38.2	ug/L	0.172	23.6	20	*
2-Butanone		50.0	45.8	ug/L	0.0441	8.50	20	
n-Butylbenzene		50.0	49.9	ug/L	2.62	0.300	20	
sec-Butylbenzene		50.0	49.7	ug/L	3.28	0.600	20	
tert-Butylbenzene		50.0	48.5	ug/L	0.570	3.00	20	
Carbon Disulfide		50.0	43.8	ug/L	0.720	12.3	20	
Carbon Tetrachloride		50.0	52.7	ug/L	0.409	5.30	20	
Dibromochloromethane		50.0	47.4	ug/L	0.300	5.20	20	
Chloroethane		50.0	51.8	ug/L	0.187	3.60	20	
2-Chlorotoluene		50.0	48.4	ug/L	2.40	3.10	20	
4-Chlorotoluene		50.0	48.5	ug/L	2.10	3.10	20	
1,2-Dibromo-3-Chloropropane		50.0	49.1	ug/L	0.0751	1.80	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.234	2.50	20	
Dibromomethane		50.0	52.4	ug/L	0.139	4.80	20	
1,2-Dichlorobenzene		50.0	48.8	ug/L	1.38	2.40	20	
1,3-Dichlorobenzene		50.0	48.3	ug/L	1.57	3.30	20	
1,4-Dichlorobenzene		50.0	48.0	ug/L	1.57	4.00	20	
Dichlorodifluoromethane		50.0	52.0	ug/L	0.407	4.00	20	
1,2-Dichloroethane		50.0	48.5	ug/L	0.290	2.90	20	
cis-1,2-Dichloroethene		50.0	49.4	ug/L	0.293	1.10	20	
trans-1,2-Dichloroethene		50.0	48.3	ug/L	0.338	3.40	20	
1,3-Dichloropropane		50.0	49.1	ug/L	0.412	1.90	20	
2,2-Dichloropropane		50.0	45.8	ug/L	0.372	8.40	20	
cis-1,3-Dichloropropene		50.0	51.7	ug/L	0.420	3.40	20	
trans-1,3-Dichloropropene		50.0	48.2	ug/L	0.423	3.60	20	
1,1-Dichloropropene		50.0	48.9	ug/L	0.365	2.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5217376
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031161 Run Date: 03/21/2017 Sample ID: WG607066-12
Instrument ID: HPMS8 Run Time: 22:14 Method: 8260B
File ID: 8M418420 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG607066 Cal ID: HPMS8 - 21-MAR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.6	ug/L	0.0557	0.800	20	
Hexachlorobutadiene		50.0	46.8	ug/L	0.485	6.30	20	
Isopropylbenzene		50.0	50.0	ug/L	1.67	0	20	
p-Isopropyltoluene		50.0	51.2	ug/L	2.77	2.40	20	
4-Methyl-2-Pentanone		50.0	48.8	ug/L	0.0470	2.40	20	
Methylene Chloride		50.0	48.9	ug/L	0.269	2.20	20	
Naphthalene		50.0	49.3	ug/L	1.38	1.50	20	
n-Propylbenzene		50.0	47.8	ug/L	3.52	4.30	20	
Styrene		50.0	52.3	ug/L	1.17	4.70	20	
1,1,1,2-Tetrachloroethane		50.0	46.3	ug/L	0.385	7.30	20	
Tetrachloroethene		50.0	49.0	ug/L	0.316	2.00	20	
1,2,3-Trichlorobenzene		50.0	48.1	ug/L	0.842	3.80	20	
1,2,4-Trichlorobenzene		50.0	47.9	ug/L	1.01	4.30	20	
1,1,1-Trichloroethane		50.0	51.7	ug/L	0.449	3.30	20	
1,1,2-Trichloroethane		50.0	48.4	ug/L	0.227	3.30	20	
Trichloroethene		50.0	49.8	ug/L	0.286	0.500	20	
Trichlorofluoromethane		50.0	49.0	ug/L	0.470	2.10	20	
1,2,3-Trichloropropane		50.0	50.0	ug/L	0.139	0.100	20	
1,2,4-Trimethylbenzene		50.0	50.2	ug/L	2.77	0.300	20	
1,3,5-Trimethylbenzene		50.0	50.1	ug/L	2.67	0.300	20	
o-Xylene		50.0	48.9	ug/L	0.675	2.30	20	
m-,p-Xylene		100	103	ug/L	0.716	2.80	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5217376
Report generated 03/30/2017 10:02

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607453-02
Instrument ID: HPMS11 Run Time: 13:34 Method: 8260B
File ID: 11M16974 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG607454 Cal ID: HPMS11 - 25-FEB-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.2	ug/L	0.511	7.59	20	
1,1-Dichloroethene	CCC	50.0	49.0	ug/L	0.515	2.00	20	
1,2-Dichloropropane	CCC	50.0	49.9	ug/L	0.357	0.280	20	
Ethylbenzene	CCC	50.0	49.4	ug/L	0.615	1.23	20	
Toluene	CCC	50.0	44.0	ug/L	1.65	12.1	20	
Vinyl Chloride	CCC	50.0	49.9	ug/L	0.414	0.256	20	
Bromoform	SPCC	50.0	47.4	ug/L	0.253	5.14	20	
Chlorobenzene	SPCC	50.0	47.0	ug/L	1.05	5.93	20	
Chloromethane	SPCC	50.0	40.6	ug/L	0.424	18.7	20	
1,1-Dichloroethane	SPCC	50.0	48.7	ug/L	0.617	2.70	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.4	ug/L	0.815	5.19	20	
Xylenes		150	144	ug/L	0.709	4.10	20	
Acetone		50.0	55.8	ug/L	0.0826	11.7	20	
Benzene		50.0	47.1	ug/L	1.12	5.77	20	
Bromobenzene		50.0	45.8	ug/L	0.886	8.45	20	
Bromochloromethane		50.0	48.5	ug/L	0.180	3.05	20	
Bromodichloromethane		50.0	48.4	ug/L	0.393	3.28	20	
Bromomethane		50.0	40.5	ug/L	0.213	19.0	20	
2-Butanone		50.0	51.7	ug/L	0.129	3.47	20	
n-Butylbenzene		50.0	48.2	ug/L	3.00	3.56	20	
sec-Butylbenzene		50.0	44.7	ug/L	3.53	10.6	20	
tert-Butylbenzene		50.0	44.4	ug/L	0.619	11.2	20	
Carbon Disulfide		50.0	45.1	ug/L	0.796	9.75	20	
Carbon Tetrachloride		50.0	47.7	ug/L	0.397	4.59	20	
Dibromochloromethane		50.0	48.8	ug/L	0.404	2.32	20	
Chloroethane		50.0	49.2	ug/L	0.258	1.52	20	
2-Chlorotoluene		50.0	39.5	ug/L	2.51	21.1	20	*
4-Chlorotoluene		50.0	47.4	ug/L	2.53	5.14	20	
1,2-Dibromo-3-Chloropropane		50.0	46.1	ug/L	0.149	7.83	20	
1,2-Dibromoethane		50.0	47.8	ug/L	0.318	4.31	20	
Dibromomethane		50.0	48.2	ug/L	0.169	3.67	20	
1,2-Dichlorobenzene		50.0	47.0	ug/L	1.59	5.96	20	
1,3-Dichlorobenzene		50.0	46.6	ug/L	1.68	6.73	20	
1,4-Dichlorobenzene		50.0	46.0	ug/L	1.68	7.98	20	
Dichlorodifluoromethane		50.0	55.5	ug/L	0.434	11.0	20	
1,2-Dichloroethane		50.0	48.2	ug/L	0.423	3.54	20	
cis-1,2-Dichloroethene		50.0	47.7	ug/L	0.324	4.68	20	
trans-1,2-Dichloroethene		50.0	49.8	ug/L	0.291	0.325	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.594	3.55	20	
2,2-Dichloropropane		50.0	51.1	ug/L	0.466	2.13	20	
cis-1,3-Dichloropropene		50.0	48.9	ug/L	0.478	2.24	20	
trans-1,3-Dichloropropene		50.0	49.9	ug/L	0.603	0.111	20	

CCV - Modified 03/05/2008
PDF File ID: 5217378
Report generated 03/30/2017 10:02

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607453-02
Instrument ID: HPMS11 Run Time: 13:34 Method: 8260B
File ID: 11M16974 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG607454 Cal ID: HPMS11 - 25-FEB-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.4	ug/L	0.409	1.30	20	
2-Hexanone		50.0	48.2	ug/L	0.263	3.69	20	
Hexachlorobutadiene		50.0	45.1	ug/L	0.554	9.81	20	
Isopropylbenzene		50.0	44.8	ug/L	1.74	10.4	20	
p-Isopropyltoluene		50.0	45.8	ug/L	3.02	8.43	20	
4-Methyl-2-Pentanone		50.0	47.9	ug/L	0.108	4.27	20	
Methylene Chloride		50.0	47.6	ug/L	0.303	4.84	20	
Naphthalene		50.0	47.0	ug/L	2.44	5.91	20	
n-Propylbenzene		50.0	43.2	ug/L	3.99	13.6	20	
Styrene		50.0	49.7	ug/L	1.19	0.527	20	
1,1,1,2-Tetrachloroethane		50.0	47.1	ug/L	0.395	5.78	20	
Tetrachloroethene		50.0	48.2	ug/L	0.334	3.62	20	
1,2,3-Trichlorobenzene		50.0	46.6	ug/L	1.09	6.73	20	
1,2,4-Trichlorobenzene		50.0	49.3	ug/L	1.20	1.33	20	
1,1,1-Trichloroethane		50.0	46.7	ug/L	0.457	6.51	20	
1,1,2-Trichloroethane		50.0	48.0	ug/L	0.347	3.91	20	
Trichloroethene		50.0	47.4	ug/L	0.286	5.26	20	
Trichlorofluoromethane		50.0	48.4	ug/L	0.460	3.11	20	
1,2,3-Trichloropropane		50.0	45.1	ug/L	0.223	9.83	20	
1,2,4-Trimethylbenzene		50.0	43.0	ug/L	2.87	14.1	20	
1,3,5-Trimethylbenzene		50.0	43.4	ug/L	2.81	13.2	20	
o-Xylene		50.0	48.5	ug/L	0.720	3.06	20	
m-,p-Xylene		100	95.4	ug/L	0.699	4.61	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5217378
Report generated 03/30/2017 10:02

Login Number: L17031161 Run Date: 03/24/2017 Sample ID: WG607571-02
Instrument ID: HPMS8 Run Time: 10:21 Method: 8260B
File ID: 8M418485 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG607572 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	45.8	ug/L	0.484	8.41	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.349	3.29	20	
1,2-Dichloropropane	CCC	50.0	49.5	ug/L	0.245	0.932	20	
Ethylbenzene	CCC	50.0	50.1	ug/L	0.582	0.234	20	
Toluene	CCC	50.0	48.6	ug/L	1.45	2.79	20	
Vinyl Chloride	CCC	50.0	49.1	ug/L	0.436	1.74	20	
Bromoform	SPCC	50.0	52.1	ug/L	0.200	4.21	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	1.02	2.88	20	
Chloromethane	SPCC	50.0	48.4	ug/L	0.459	3.28	20	
1,1-Dichloroethane	SPCC	50.0	49.3	ug/L	0.450	1.36	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.9	ug/L	0.505	3.73	20	
Xylenes		150	148	ug/L	0.676	1.56	20	
Acetone		50.0	49.6	ug/L	0.0296	0.855	20	
Benzene		50.0	49.3	ug/L	1.06	1.38	20	
Bromobenzene		50.0	48.5	ug/L	0.791	2.97	20	
Bromochloromethane		50.0	50.1	ug/L	0.160	0.215	20	
Bromodichloromethane		50.0	52.2	ug/L	0.365	4.33	20	
Bromomethane		50.0	46.5	ug/L	0.209	7.08	20	
2-Butanone		50.0	49.5	ug/L	0.0477	1.04	20	
n-Butylbenzene		50.0	48.5	ug/L	2.54	3.03	20	
sec-Butylbenzene		50.0	48.7	ug/L	3.21	2.66	20	
tert-Butylbenzene		50.0	46.5	ug/L	0.546	7.03	20	
Carbon Disulfide		50.0	53.6	ug/L	0.881	7.27	20	
Carbon Tetrachloride		50.0	51.7	ug/L	0.402	3.30	20	
Dibromochloromethane		50.0	49.1	ug/L	0.311	1.71	20	
Chloroethane		50.0	48.8	ug/L	0.176	2.45	20	
2-Chlorotoluene		50.0	47.8	ug/L	2.37	4.37	20	
4-Chlorotoluene		50.0	47.9	ug/L	2.07	4.14	20	
1,2-Dibromo-3-Chloropropane		50.0	51.3	ug/L	0.0784	2.59	20	
1,2-Dibromoethane		50.0	49.8	ug/L	0.239	0.414	20	
Dibromomethane		50.0	52.6	ug/L	0.140	5.26	20	
1,2-Dichlorobenzene		50.0	49.2	ug/L	1.39	1.51	20	
1,3-Dichlorobenzene		50.0	48.9	ug/L	1.59	2.28	20	
1,4-Dichlorobenzene		50.0	48.2	ug/L	1.58	3.69	20	
Dichlorodifluoromethane		50.0	53.7	ug/L	0.420	7.30	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.292	2.05	20	
cis-1,2-Dichloroethene		50.0	50.0	ug/L	0.296	0.0830	20	
trans-1,2-Dichloroethene		50.0	47.6	ug/L	0.333	4.79	20	
1,3-Dichloropropane		50.0	48.5	ug/L	0.407	3.07	20	
2,2-Dichloropropane		50.0	52.5	ug/L	0.427	5.08	20	
cis-1,3-Dichloropropene		50.0	51.8	ug/L	0.421	3.64	20	
trans-1,3-Dichloropropene		50.0	51.3	ug/L	0.450	2.60	20	

CCV - Modified 03/05/2008
PDF File ID: 5217378
Report generated 03/30/2017 10:02

Login Number: L17031161 Run Date: 03/24/2017 Sample ID: WG607571-02
Instrument ID: HPMS8 Run Time: 10:21 Method: 8260B
File ID: 8M418485 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG607572 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.1	ug/L	0.367	1.76	20	
2-Hexanone		50.0	50.3	ug/L	0.0565	0.572	20	
Hexachlorobutadiene		50.0	44.3	ug/L	0.458	11.5	20	
Isopropylbenzene		50.0	48.7	ug/L	1.63	2.68	20	
p-Isopropyltoluene		50.0	49.4	ug/L	2.67	1.30	20	
4-Methyl-2-Pentanone		50.0	50.5	ug/L	0.0486	0.958	20	
Methylene Chloride		50.0	48.4	ug/L	0.266	3.23	20	
Naphthalene		50.0	48.9	ug/L	1.37	2.19	20	
n-Propylbenzene		50.0	48.1	ug/L	3.54	3.75	20	
Styrene		50.0	51.3	ug/L	1.14	2.53	20	
1,1,1,2-Tetrachloroethane		50.0	47.0	ug/L	0.391	5.91	20	
Tetrachloroethene		50.0	46.8	ug/L	0.302	6.39	20	
1,2,3-Trichlorobenzene		50.0	46.6	ug/L	0.816	6.83	20	
1,2,4-Trichlorobenzene		50.0	47.3	ug/L	1.00	5.36	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.435	0.134	20	
1,1,2-Trichloroethane		50.0	49.7	ug/L	0.233	0.697	20	
Trichloroethene		50.0	48.4	ug/L	0.279	3.15	20	
Trichlorofluoromethane		50.0	48.9	ug/L	0.469	2.25	20	
1,2,3-Trichloropropane		50.0	49.9	ug/L	0.139	0.141	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.75	0.502	20	
1,3,5-Trimethylbenzene		50.0	48.9	ug/L	2.60	2.25	20	
o-Xylene		50.0	47.3	ug/L	0.653	5.42	20	
m-,p-Xylene		100	100	ug/L	0.699	0.370	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5217378
Report generated 03/30/2017 10:02

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031161
Instrument ID: HPMS11
Workgroup (AAB#): WG607454

ICAL CCV Number: WG601938-08
CAL ID: HPMS11-25-FEB-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG601938-08	NA	NA	208770	403537	585816
Upper Limit	NA	NA	417540	807074	1171632
Lower Limit	NA	NA	104385	201769	292908
L17031161-05	1.00	01	110466	224225	324489
L17031161-10	1.00	01	116189	235863	337525
WG607454-01	1.00	01	123635	249570	354178
WG607454-02	1.00	01	117841	229108	327137

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5218736
Report generated 03/30/2017 10:03

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031161
Instrument ID: HPMS8
Workgroup (AAB#): WG607572

ICAL CCV Number: WG607066-08
CAL ID: HPMS8 - 21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	345493	635449	821515
Upper Limit	NA	NA	690986	1270898	1643030
Lower Limit	NA	NA	172747	317725	410758
L17031161-01	1.00	01	242132	466642	607335
L17031161-02	1.00	01	300753	544208	704356
L17031161-03	1.00	01	307089	554654	704019
L17031161-04	1.00	01	240959	458663	596393
L17031161-06	1.00	01	236026	456671	591320
L17031161-08	1.00	01	236660	452279	587947
WG607572-01	1.00	01	286866	546958	708511
WG607572-02	1.00	01	296683	539518	702130

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5218736
Report generated 03/30/2017 10:03

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031161
Instrument ID: HPMS11
Workgroup (AAB#): WG607454

ICAL CCV Number: WG601938-08
CAL ID: HPMS11 - 25-FEB-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG601938-08	NA	NA	17	14.19	10.55
Upper Limit	NA	NA	17.5	14.69	11.05
Lower Limit	NA	NA	16.5	13.69	10.05
L17031161-05	1.00	01	16.98	14.17	10.54
L17031161-10	1.00	01	16.98	14.17	10.54
WG607454-01	1.00	01	16.98	14.17	10.54
WG607454-02	1.00	01	16.98	14.17	10.54

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5218737
Report generated: 03/30/2017 10:03

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number:L17031161
Instrument ID:HPMS8
Workgroup (AAB#):WG607572

ICAL CCV Number:WG607066-08
CAL ID: HPMS8-21-MAR-17
Matrix:WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	17.83	14.81	10.94
Upper Limit	NA	NA	18.33	15.31	11.44
Lower Limit	NA	NA	17.33	14.31	10.44
L17031161-01	1.00	01	17.83	14.81	10.94
L17031161-02	1.00	01	17.82	14.8	10.94
L17031161-03	1.00	01	17.82	14.81	10.94
L17031161-04	1.00	01	17.83	14.8	10.94
L17031161-06	1.00	01	17.82	14.8	10.94
L17031161-08	1.00	01	17.83	14.81	10.94
WG607572-01	1.00	01	17.83	14.8	10.94
WG607572-02	1.00	01	17.83	14.81	10.94

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5218737
Report generated: 03/30/2017 10:03

2.1.1.3 Sample Data

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418502.D Vial: 20
Acq On : 24 Mar 2017 18:52 Operator: TMB
Sample : L17031161-01 B RS 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:23:50 2017 Quant Results File: 8260WTR.RES

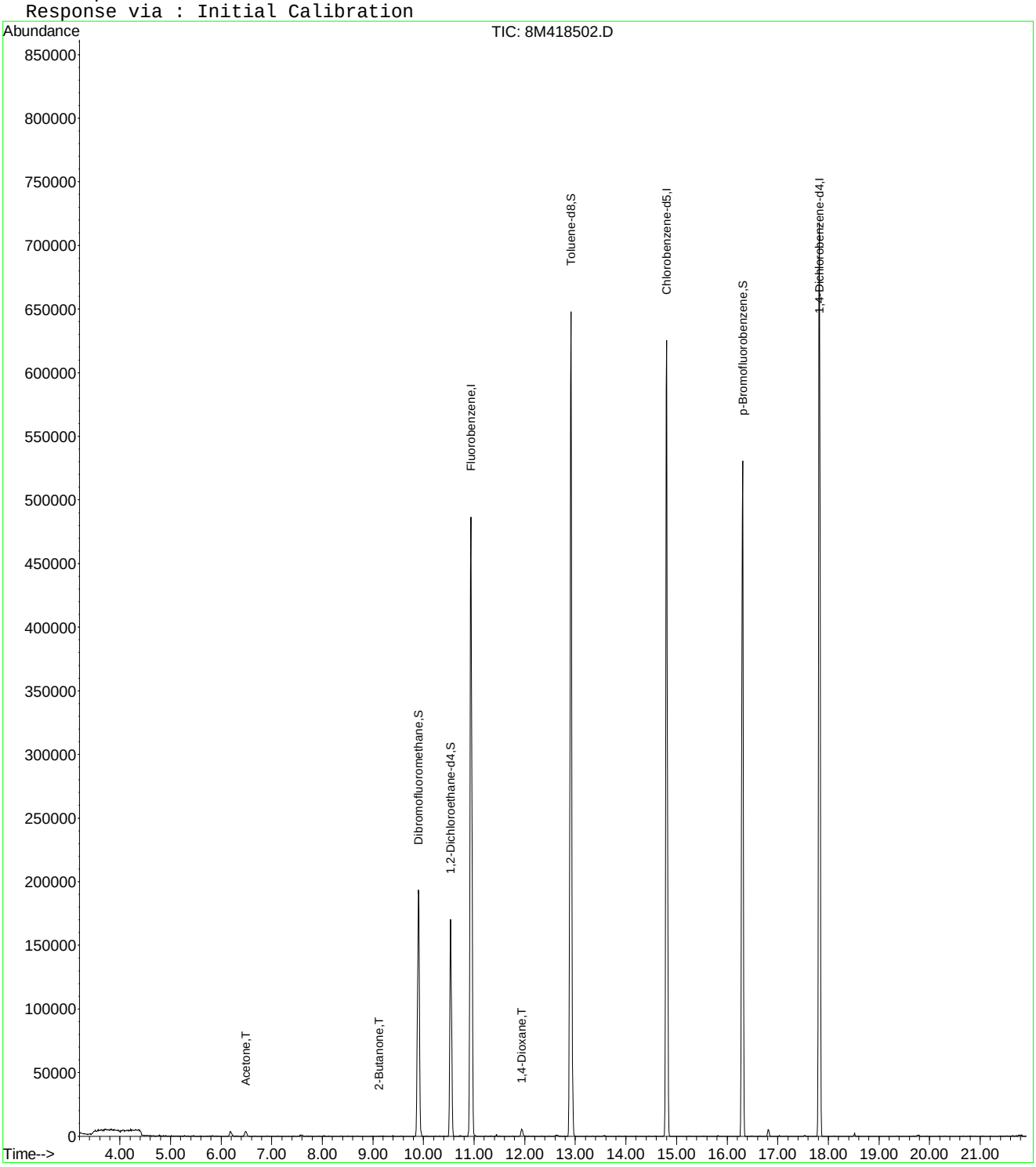
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

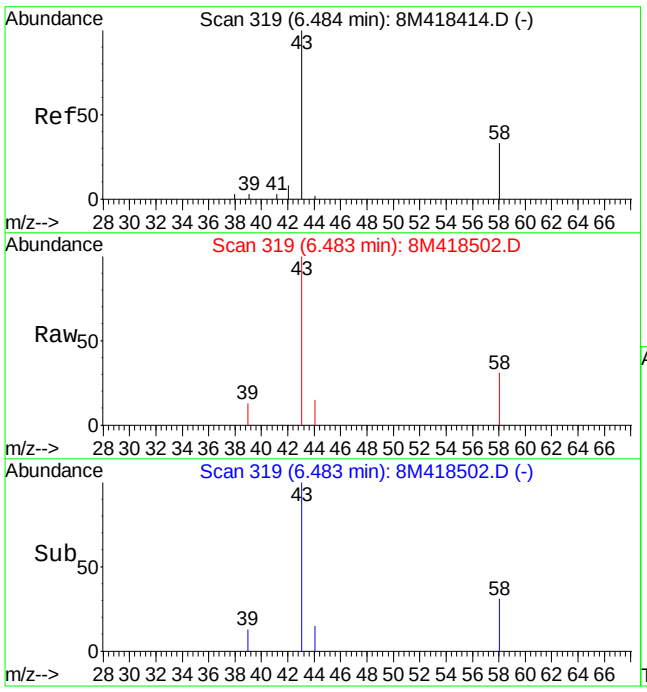
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	607335	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	466642	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	242132	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	162360	23.5714	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.28%			
43) 1,2-Dichloroethane-d4	10.54	65	145117	24.3113	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%			
58) Toluene-d8	12.91	98	592404	25.2373	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%			
80) p-Bromofluorobenzene	16.31	95	225636	24.6258	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.52%			
Target Compounds						Qvalue
13) Acetone	6.48	43	7486	10.3070	ug/L	93
29) 2-Butanone	9.12	43	212	0.1812	ug/L #	44
51) 1,4-Dioxane	11.94	88	6670	230.9356	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M418502.D 8260WTR.M Mon Mar 27 08:23:53 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418502.D Vial: 20
Acq On : 24 Mar 2017 18:52 Operator: TMB
Sample : L17031161-01 B RS 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:23 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

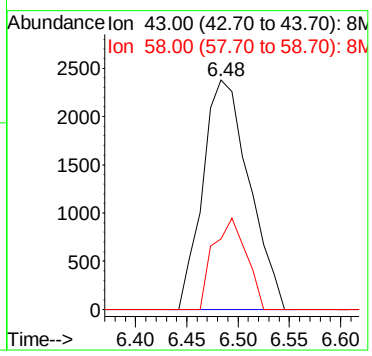


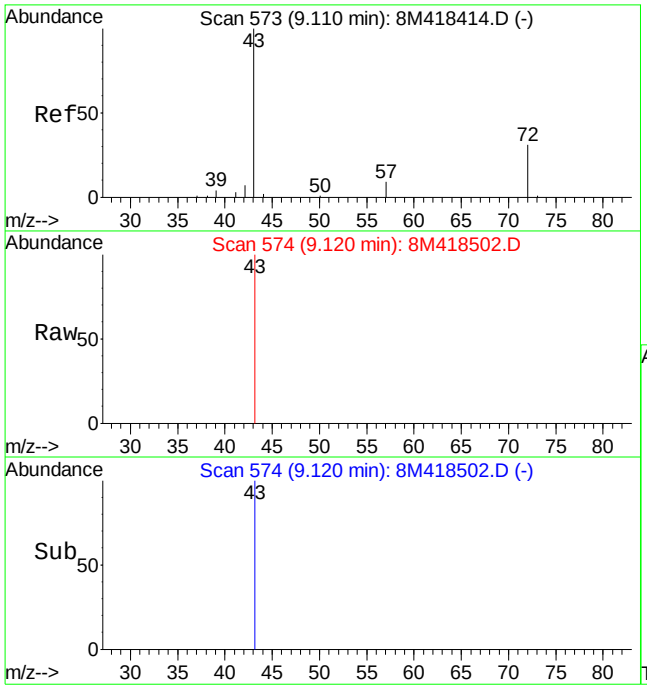


#13
Acetone
Concen: 10.31 ug/L
RT: 6.48 min Scan# 319
Delta R.T. -0.00 min
Lab File: 8M418502.D
Acq: 24 Mar 2017 18:52

Tgt Ion: 43 Resp: 7486

Ion	Ratio	Lower	Upper
43	100		
58	28.3	19.4	45.4

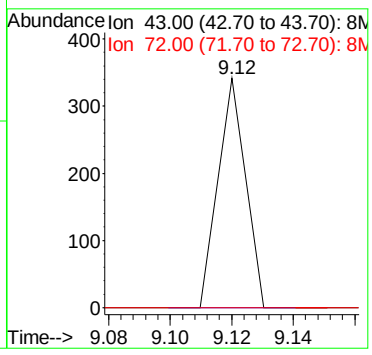


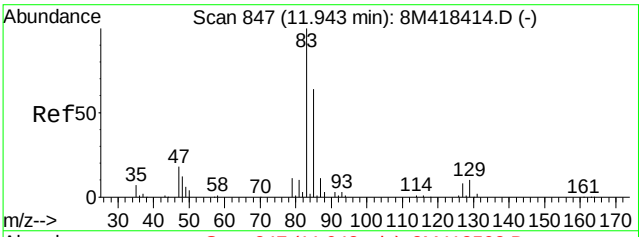


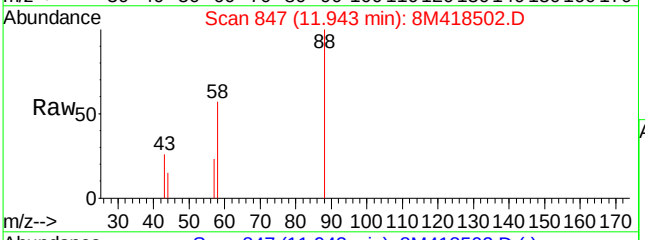
#29
2-Butanone
Concen: 0.18 ug/L
RT: 9.12 min Scan# 574
Delta R.T. 0.01 min
Lab File: 8M418502.D
Acq: 24 Mar 2017 18:52

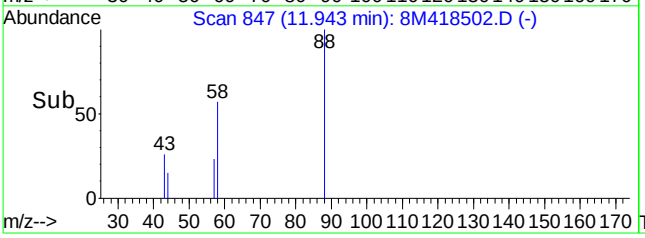
Tgt Ion: 43 Resp: 212

Ion	Ratio	Lower	Upper
43	100		
72	0.0	18.4	42.8#





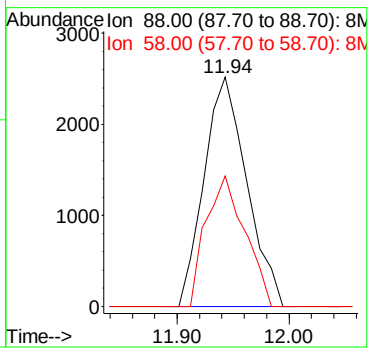




#51
1,4-Dioxane
Concen: 230.94 ug/L
RT: 11.94 min Scan# 847
Delta R.T. -0.00 min
Lab File: 8M418502.D
Acq: 24 Mar 2017 18:52

Tgt Ion: 88 Resp: 6670

Ion	Ratio	Lower	Upper
88	100		
58	51.8	30.0	70.0



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418494.D Vial: 12
Acq On : 24 Mar 2017 14:51 Operator: TMB
Sample : L17031161-02 B MS 826-LOW Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 15:18:28 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	704356	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.80	117	544208	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	300753	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	190655	23.8666 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.48%		
43) 1,2-Dichloroethane-d4	10.53	65	163357	23.5973 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.40%		
58) Toluene-d8	12.91	98	687110	25.0998 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.40%		
80) p-Bromofluorobenzene	16.30	95	272173	23.9150 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.35	85	218686	19.8195 ug/L	100
3) Chloromethane	3.82	50	264971	19.8165 ug/L	99
4) Vinyl Chloride	4.05	62	248365	19.8651 ug/L	100
5) 1,3-Butadiene	4.09	54	448	Below Cal #	1
6) Bromomethane	4.97	94	115578	18.2503 ug/L	98
7) Chloroethane	5.13	64	98906	19.5039 ug/L	100
8) Trichlorofluoromethane	5.62	101	249011	18.4049 ug/L	100
10) Isoprene	6.18	67	195980	18.7475 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	144174	19.8110 ug/L	99
13) Acetone	6.48	43	17882	21.2292 ug/L	99
14) 1,1-Dichloroethene	6.71	61	188379	18.5504 ug/L	99
15) Tert-Butyl Alcohol	6.80	59	1246	4.6476 ug/L #	59
16) Dimethyl Sulfide	6.98	62	142511	19.7427 ug/L	98
17) Iodomethane	7.24	142	131764	15.9491 ug/L	98
18) Methyl acetate	7.24	43	42064	17.4632 ug/L	97
19) Methylene Chloride	7.49	84	146712	18.9731 ug/L	99
20) Carbon Disulfide	7.54	76	374250	16.1806 ug/L	100
21) Acrylonitrile	7.67	53	24498	20.7934 ug/L	94
22) Methyl Tert Butyl Ether	7.70	73	290635	19.5264 ug/L	99
23) trans-1,2-Dichloroethene	7.94	61	180441	18.3260 ug/L	99
24) n-Hexane	8.01	57	158165	18.9636 ug/L	97
27) 1,1-Dichloroethane	8.56	63	238533	18.5753 ug/L	100
29) 2-Butanone	9.11	43	23971	17.6628 ug/L	98
31) 2,2-Dichloropropane	9.34	77	215157	18.7815 ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	158481	18.9639 ug/L	99
33) Chloroform	9.60	83	267064	17.9436 ug/L	100
34) 1-Bromopropane	9.75	122	39682	24.8544 ug/L	99
35) Bromochloromethane	9.84	130	87380	19.4647 ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	238832	19.5093 ug/L	99
39) Cyclohexane	10.17	56	174818	16.5242 ug/L	99
40) 1,1-Dichloropropene	10.34	75	196373	18.6782 ug/L	99
41) Tert-Amyl-Methyl ether	10.34	73	29663	1.7652 ug/L #	57
42) Carbon Tetrachloride	10.48	117	213969	19.5346 ug/L	99
45) 1,2-Dichloroethane	10.65	62	160018	19.0432 ug/L	99
46) Benzene	10.70	78	578636	19.0862 ug/L	98
47) Trichloroethene	11.44	130	148693	18.3425 ug/L	100
48) Methylcyclohexane	11.53	83	210871	17.3114 ug/L	98
49) 1,2-Dichloropropane	11.65	63	133817	19.1973 ug/L	99
50) Bromodichloromethane	11.96	83	190494	19.3308 ug/L	99
51) 1,4-Dioxane	11.94	88	256	7.6426 ug/L #	27

(#) = qualifier out of range (m) = manual integration
8M418494.D 8260WTR.M Fri Mar 24 15:18:31 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418494.D Vial: 12
Acq On : 24 Mar 2017 14:51 Operator: TMB
Sample : L17031161-02 B MS 826-LOW Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 15:18:28 2017 Quant Results File: 8260WTR.RES

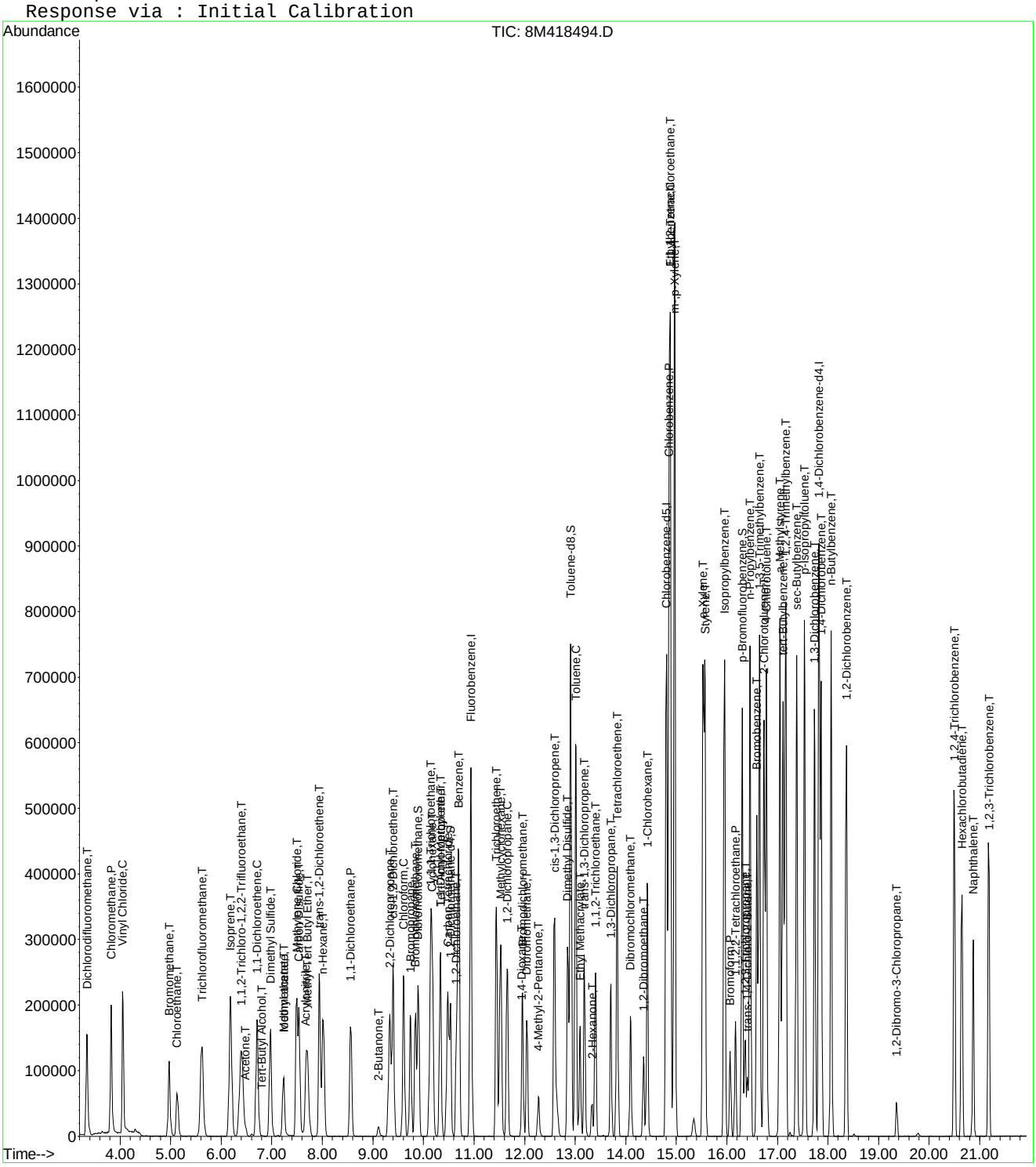
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
52)	Dibromomethane	12.04	93	77339	20.7037 ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	25326	18.6692 ug/L	99
55)	cis-1,3-Dichloropropene	12.59	75	231914	20.2756 ug/L	99
56)	Dimethyl Disulfide	12.85	79	116787	19.1306 ug/L	90
59)	Toluene	13.02	91	628878	19.4289 ug/L	98
60)	Ethyl Methacrylate	13.10	69	133421	21.3175 ug/L	96
62)	trans-1,3-Dichloropropene	13.18	75	186101	19.4922 ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	100360	19.6838 ug/L	100
64)	2-Hexanone	13.34	58	24481	20.0283 ug/L	97
65)	1,3-Dichloropropane	13.71	76	184479	20.2068 ug/L	97
66)	Tetrachloroethene	13.83	164	128265	18.2886 ug/L	99
67)	Dibromochloromethane	14.09	129	127647	19.2096 ug/L	100
68)	1,2-Dibromoethane	14.35	107	101127	19.3306 ug/L	100
69)	1-Chlorohexane	14.43	91	203694	18.4655 ug/L	99
70)	Chlorobenzene	14.86	112	417065	18.3077 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	151742	17.9210 ug/L	100
72)	Ethylbenzene	14.88	106	235877	18.6573 ug/L	92
73)	m-,p-Xylene	14.97	106	578783	38.1708 ug/L	94
74)	o-Xylene	15.53	106	277077	18.4275 ug/L	99
75)	Styrene	15.57	104	474128	19.5328 ug/L	99
76)	Bromoform	16.07	173	79424	20.2362 ug/L	100
77)	Isopropylbenzene	15.95	105	694157	19.0819 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.17	83	118329	20.1868 ug/L	100
81)	1,2,3-Trichloropropane	16.37	110	33496	20.0719 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	16.41	53	24048	17.4904 ug/L	89
83)	n-Propylbenzene	16.46	91	821359	18.5419 ug/L	98
84)	Bromobenzene	16.59	156	180863	18.4479 ug/L	98
85)	1,3,5-Trimethylbenzene	16.65	105	597990	18.6904 ug/L	99
86)	2-Chlorotoluene	16.74	91	542224	18.2104 ug/L	96
87)	4-Chlorotoluene	16.78	91	494360	19.0045 ug/L	98
88)	a-Methylstyrene	17.05	118	327626	18.3179 ug/L	99
89)	tert-Butylbenzene	17.11	134	122478	17.3337 ug/L	95
90)	1,2,4-Trimethylbenzene	17.16	105	629240	18.9174 ug/L	98
91)	sec-Butylbenzene	17.38	105	738610	18.5985 ug/L	98
92)	p-Isopropyltoluene	17.53	119	619841	19.0542 ug/L	98
93)	1,3-Dichlorobenzene	17.73	146	358559	18.3474 ug/L	99
94)	1,4-Dichlorobenzene	17.87	146	362150	18.3986 ug/L	100
95)	n-Butylbenzene	18.06	91	591518	18.7416 ug/L	98
96)	1,2-Dichlorobenzene	18.36	146	323617	19.0043 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.35	75	18076	19.6494 ug/L	96
98)	1,2,4-Trichlorobenzene	20.50	180	223141	17.5196 ug/L	99
99)	Hexachlorobutadiene	20.65	225	99481	15.9754 ug/L	98
100)	Naphthalene	20.87	128	310553	18.4610 ug/L	99
101)	1,2,3-Trichlorobenzene	21.18	180	183948	17.4644 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418494.D 8260WTR.M Fri Mar 24 15:18:31 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418494.D Vial: 12
Acq On : 24 Mar 2017 14:51 Operator: TMB
Sample : L17031161-02 B MS 826-LOW Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 15:18 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418495.D Vial: 13
Acq On : 24 Mar 2017 15:21 Operator: TMB
Sample : L17031161-03 B MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 10:28:54 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	704019	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	554654	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	307089	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	194280	24.3320 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.32%		
43) 1,2-Dichloroethane-d4	10.53	65	163649	23.6508 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.60%		
58) Toluene-d8	12.91	98	694667	24.8980 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.60%		
80) p-Bromofluorobenzene	16.30	95	274023	23.5807 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.32%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.34	85	218684	19.8288 ug/L	100
3) Chloromethane	3.82	50	264823	19.8149 ug/L	99
4) Vinyl Chloride	4.05	62	250970	20.0831 ug/L	99
5) 1,3-Butadiene	4.10	54	431	Below Cal #	1
6) Bromomethane	4.97	94	117937	18.6317 ug/L	99
7) Chloroethane	5.13	64	99597	19.6496 ug/L	99
8) Trichlorofluoromethane	5.62	101	248433	18.3709 ug/L	100
10) Isoprene	6.19	67	196643	18.8200 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	147860	20.3272 ug/L	98
13) Acetone	6.48	43	20772	24.6720 ug/L	100
14) 1,1-Dichloroethene	6.71	61	185400	18.2658 ug/L	100
16) Dimethyl Sulfide	6.98	62	142161	19.7036 ug/L	98
17) Iodomethane	7.24	142	137190	16.5928 ug/L	99
18) Methyl acetate	7.24	43	39906	16.5752 ug/L	99
19) Methylene Chloride	7.50	84	145577	18.8353 ug/L	98
20) Carbon Disulfide	7.55	76	376003	16.2642 ug/L	99
21) Acrylonitrile	7.67	53	23289	19.7767 ug/L	99
22) Methyl Tert Butyl Ether	7.70	73	285203	19.1707 ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	181644	18.4570 ug/L	99
24) n-Hexane	8.02	57	157179	18.8544 ug/L	98
27) 1,1-Dichloroethane	8.56	63	240598	18.7450 ug/L	100
29) 2-Butanone	9.12	43	23179	17.0874 ug/L	99
31) 2,2-Dichloropropane	9.34	77	214818	18.7609 ug/L	100
32) cis-1,2-Dichloroethene	9.41	96	159447	19.0886 ug/L	99
33) Chloroform	9.61	83	266346	17.9039 ug/L	100
34) 1-Bromopropane	9.75	122	39289	24.6200 ug/L	99
35) Bromochloromethane	9.84	130	86242	19.2204 ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	239385	19.5639 ug/L	99
39) Cyclohexane	10.17	56	174961	16.5457 ug/L	100
40) 1,1-Dichloropropene	10.34	75	195599	18.6135 ug/L	100
41) Tert-Amyl-Methyl ether	10.34	73	29182	1.7374 ug/L #	57
42) Carbon Tetrachloride	10.48	117	211071	19.2792 ug/L	99
45) 1,2-Dichloroethane	10.66	62	158154	18.8304 ug/L	100
46) Benzene	10.70	78	578623	19.0949 ug/L	99
47) Trichloroethene	11.44	130	148879	18.3742 ug/L	99
48) Methylcyclohexane	11.53	83	209740	17.2268 ug/L	98
49) 1,2-Dichloropropane	11.65	63	132102	18.9603 ug/L	100
50) Bromodichloromethane	11.96	83	188804	19.1684 ug/L	99
52) Dibromomethane	12.04	93	76156	20.3968 ug/L	99
54) 4-Methyl-2-Pentanone	12.28	58	23542	17.3624 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M418495.D 8260WTR.M Sat Mar 25 10:28:57 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418495.D Vial: 13
Acq On : 24 Mar 2017 15:21 Operator: TMB
Sample : L17031161-03 B MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 10:28:54 2017 Quant Results File: 8260WTR.RES

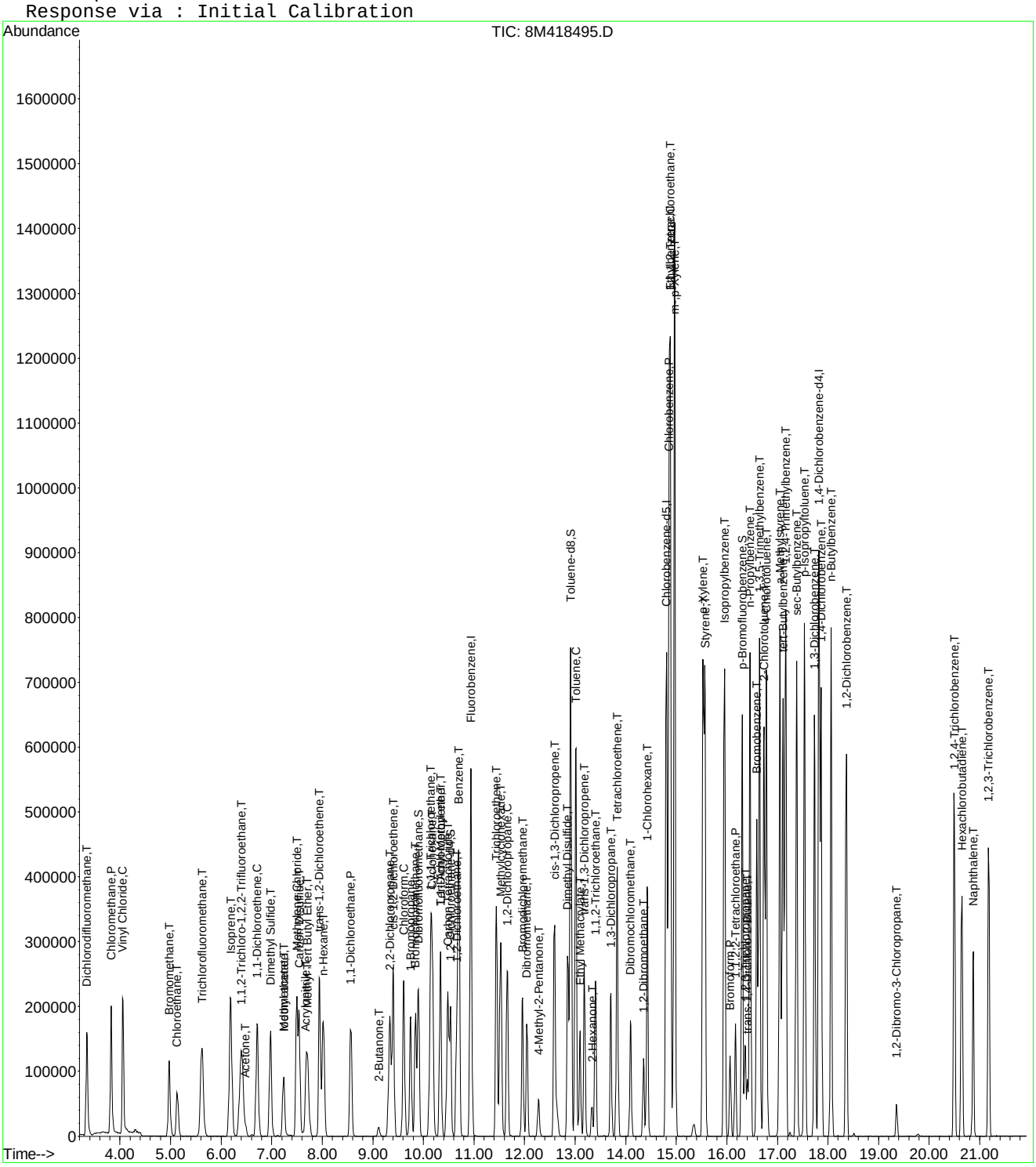
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.59	75	230404	20.1532 ug/L	98
56)	Dimethyl Disulfide	12.85	79	116173	19.0525 ug/L	91
59)	Toluene	13.02	91	628694	19.0575 ug/L	98
60)	Ethyl Methacrylate	13.10	69	131679	20.6429 ug/L	94
62)	trans-1,3-Dichloropropene	13.18	75	181984	18.7020 ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	97661	18.7937 ug/L	100
64)	2-Hexanone	13.34	58	23184	18.6100 ug/L	98
65)	1,3-Dichloropropane	13.71	76	179151	19.2536 ug/L	96
66)	Tetrachloroethene	13.83	164	128248	17.9418 ug/L	100
67)	Dibromochloromethane	14.09	129	125692	18.5778 ug/L	100
68)	1,2-Dibromoethane	14.35	107	98868	18.5428 ug/L	100
69)	1-Chlorohexane	14.42	91	203942	18.1398 ug/L	99
70)	Chlorobenzene	14.86	112	417890	17.9984 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.88	131	151578	17.5808 ug/L	100
72)	Ethylbenzene	14.88	106	237742	18.4506 ug/L	93
73)	m-,p-Xylene	14.97	106	580188	37.5428 ug/L	94
74)	o-Xylene	15.53	106	273752	17.8635 ug/L	96
75)	Styrene	15.57	104	474933	19.1975 ug/L	98
76)	Bromoform	16.07	173	76085	19.0808 ug/L	98
77)	Isopropylbenzene	15.95	105	691240	18.6439 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.17	83	114530	19.1356 ug/L	99
81)	1,2,3-Trichloropropane	16.37	110	33195	19.4812 ug/L	78
82)	trans-1,4-Dichloro-2-Buten	16.41	53	23206	16.5297 ug/L	92
83)	n-Propylbenzene	16.46	91	824171	18.2215 ug/L	98
84)	Bromobenzene	16.59	156	182519	18.2327 ug/L	100
85)	1,3,5-Trimethylbenzene	16.65	105	602942	18.4564 ug/L	98
86)	2-Chlorotoluene	16.74	91	545606	17.9459 ug/L	96
87)	4-Chlorotoluene	16.78	91	492119	18.5280 ug/L	99
88)	a-Methylstyrene	17.05	118	325798	17.8399 ug/L	99
89)	tert-Butylbenzene	17.11	134	123331	17.0943 ug/L	96
90)	1,2,4-Trimethylbenzene	17.16	105	631369	18.5898 ug/L	98
91)	sec-Butylbenzene	17.38	105	737653	18.1912 ug/L	98
92)	p-Isopropyltoluene	17.53	119	625088	18.8191 ug/L	98
93)	1,3-Dichlorobenzene	17.73	146	355550	17.8181 ug/L	98
94)	1,4-Dichlorobenzene	17.87	146	362554	18.0391 ug/L	100
95)	n-Butylbenzene	18.06	91	592748	18.3930 ug/L	98
96)	1,2-Dichlorobenzene	18.36	146	319992	18.4037 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.35	75	16191	17.2372 ug/L	94
98)	1,2,4-Trichlorobenzene	20.50	180	221009	16.9942 ug/L	99
99)	Hexachlorobutadiene	20.65	225	102021	16.0453 ug/L	100
100)	Naphthalene	20.87	128	298829	17.3975 ug/L	100
101)	1,2,3-Trichlorobenzene	21.17	180	181049	16.8345 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418495.D 8260WTR.M Sat Mar 25 10:28:57 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418495.D Vial: 13
Acq On : 24 Mar 2017 15:21 Operator: TMB
Sample : L17031161-03 B MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 10:28 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418503.D Vial: 21
Acq On : 24 Mar 2017 19:23 Operator: TMB
Sample : L17031161-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:23:55 2017 Quant Results File: 8260WTR.RES

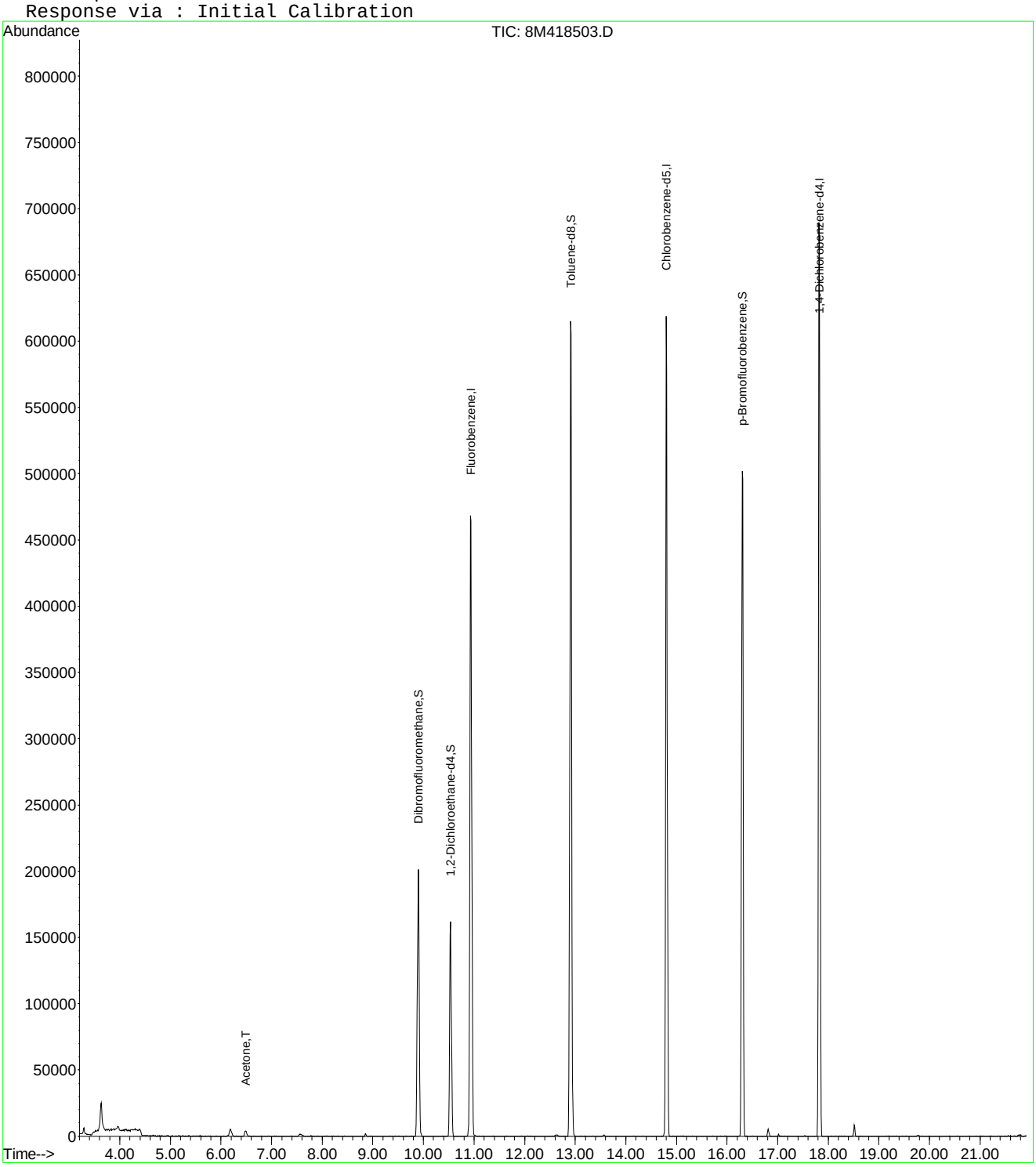
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

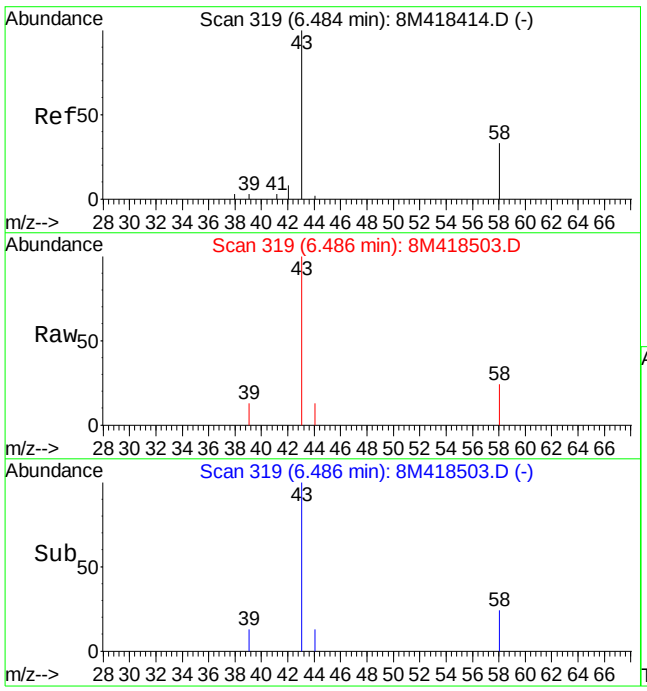
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	596393	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.80	117	458663	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	240959	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	161004	23.8034	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.20%			
43) 1,2-Dichloroethane-d4	10.54	65	141863	24.2022	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.80%			
58) Toluene-d8	12.92	98	581121	25.1873	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%			
80) p-Bromofluorobenzene	16.30	95	221086	24.2467	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.00%			
Target Compounds						Qvalue
13) Acetone	6.49	43	7741	10.8536	ug/L	91

(#) = qualifier out of range (m) = manual integration
8M418503.D 8260WTR.M Mon Mar 27 08:23:58 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418503.D Vial: 21
Acq On : 24 Mar 2017 19:23 Operator: TMB
Sample : L17031161-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:23 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

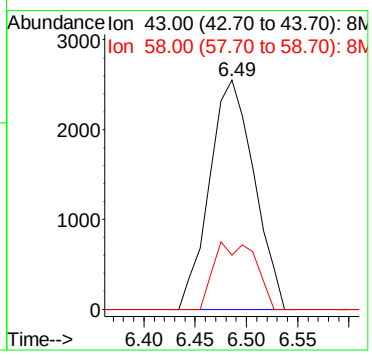




#13
Acetone
Concen: 10.85 ug/L
RT: 6.49 min Scan# 319
Delta R.T. 0.00 min
Lab File: 8M418503.D
Acq: 24 Mar 2017 19:23

Tgt Ion: 43 Resp: 7741

Ion	Ratio	Lower	Upper
43	100		
58	27.3	19.4	45.4



Data File : C:\MSDCHEM\1\DATA\032317\11M16987.D Vial: 14
Acq On : 23 Mar 2017 20:00 Operator: JDS
Sample : L17031161-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:43:36 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

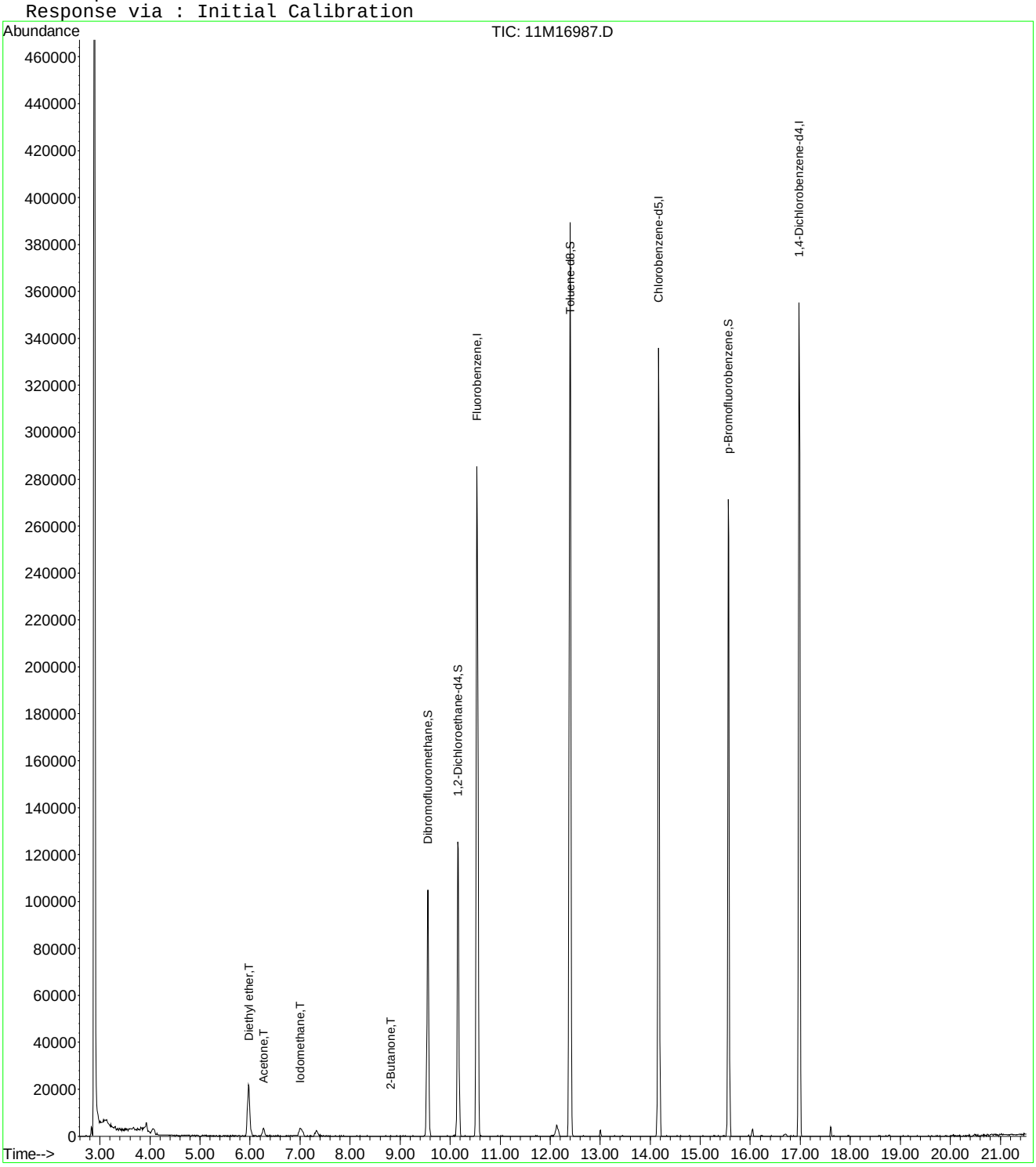
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.54	96	324489	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.17	117	224225	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	16.98	152	110466	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	9.55	111	83349	24.8058 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.24%		
43) 1,2-Dichloroethane-d4	10.15	65	108881	26.6656 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.68%		
57) Toluene-d8	12.40	98	325442	25.8058 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
78) p-Bromofluorobenzene	15.56	95	118566	25.6221 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.48%		
Target Compounds					Qvalue
9) Diethyl ether	5.98	59	1454	0.3881 ug/L #	1
13) Acetone	6.27	43	6673	6.9490 ug/L	94
17) Iodomethane	7.00	142	584	2.1307 ug/L #	32
29) 2-Butanone	8.81	43	242	0.1496 ug/L #	55

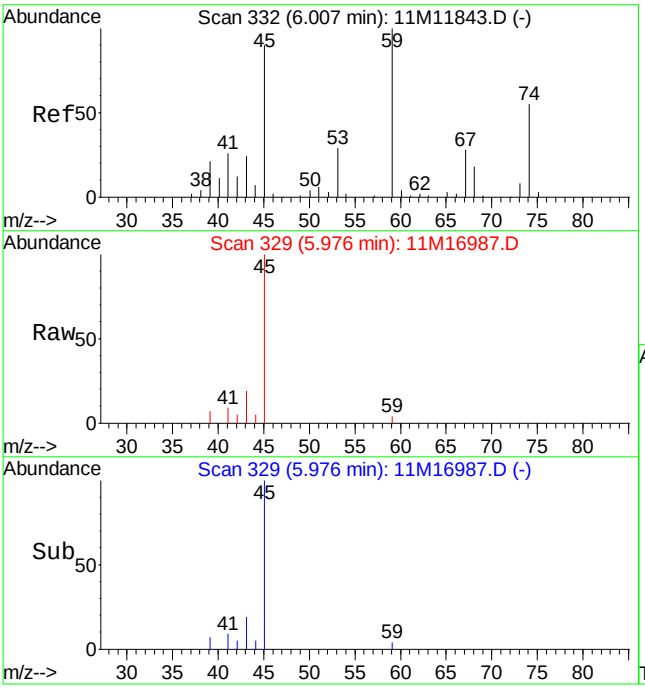
(#) = qualifier out of range (m) = manual integration
11M16987.D 8260WTR.M Wed Mar 29 18:43:38 2017 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032317\11M16987.D Vial: 14
Acq On : 23 Mar 2017 20:00 Operator: JDS
Sample : L17031161-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:43 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration

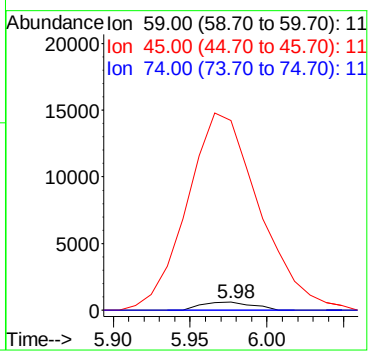


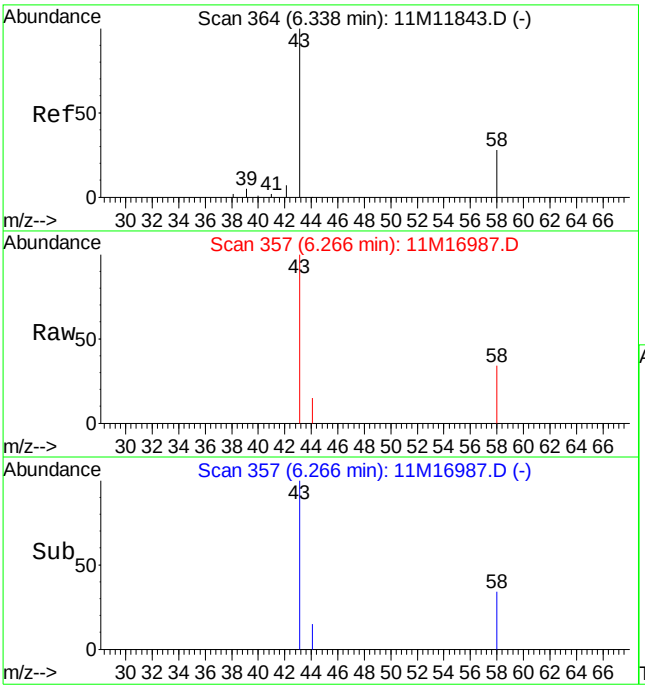


#9
Diethyl ether
Concen: 0.39 ug/L
RT: 5.98 min Scan# 329
Delta R.T. 0.03 min
Lab File: 11M16987.D
Acq: 23 Mar 2017 20:00

Tgt Ion: 59 Resp: 1454

Ion	Ratio	Lower	Upper
59	100		
45	3349.7	46.5	108.5#
74	0.0	37.4	87.4#

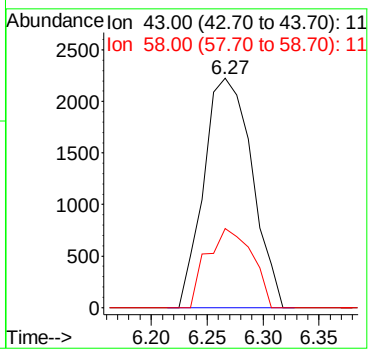


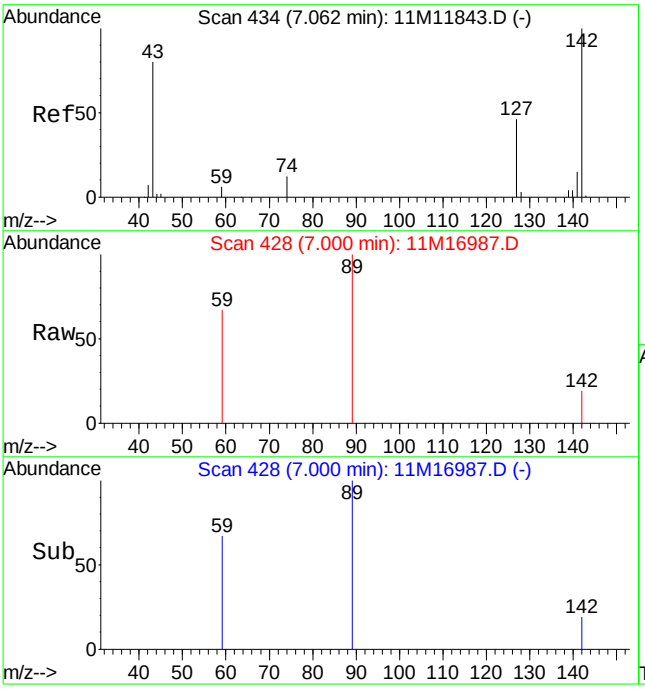


#13
Acetone
Concen: 6.95 ug/L
RT: 6.27 min Scan# 357
Delta R.T. -0.01 min
Lab File: 11M16987.D
Acq: 23 Mar 2017 20:00

Tgt Ion: 43 Resp: 6673

Ion	Ratio	Lower	Upper
43	100		
58	32.2	17.5	40.7

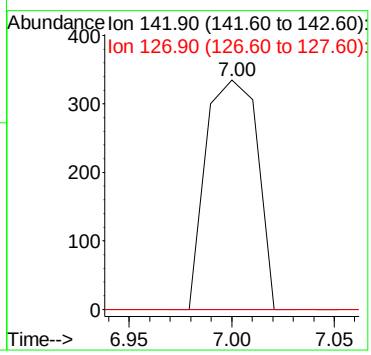


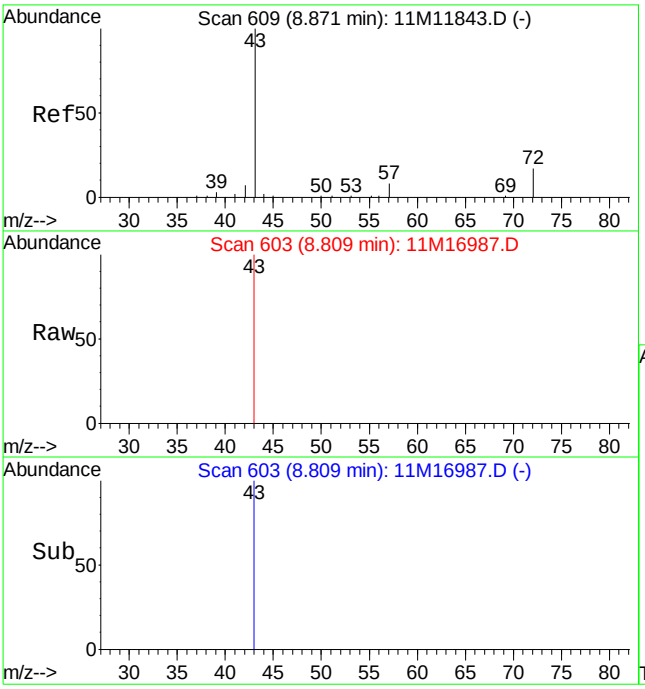


#17
Iodomethane
Concen: 2.13 ug/L
RT: 7.00 min Scan# 428
Delta R.T. -0.00 min
Lab File: 11M16987.D
Acq: 23 Mar 2017 20:00

Tgt Ion:142 Resp: 584

Ion	Ratio	Lower	Upper
142	100		
127	0.0	26.2	61.2#

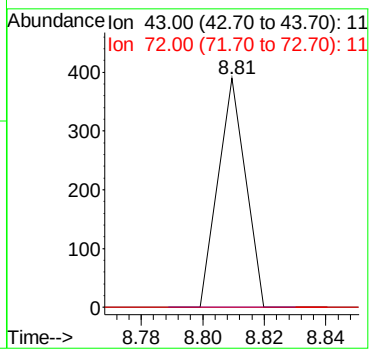




#29
2-Butanone
Concen: 0.15 ug/L
RT: 8.81 min Scan# 603
Delta R.T. -0.01 min
Lab File: 11M16987.D
Acq: 23 Mar 2017 20:00

Tgt Ion: 43 Resp: 242

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418504.D Vial: 22
Acq On : 24 Mar 2017 19:52 Operator: TMB
Sample : L17031161-06 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:23:59 2017 Quant Results File: 8260WTR.RES

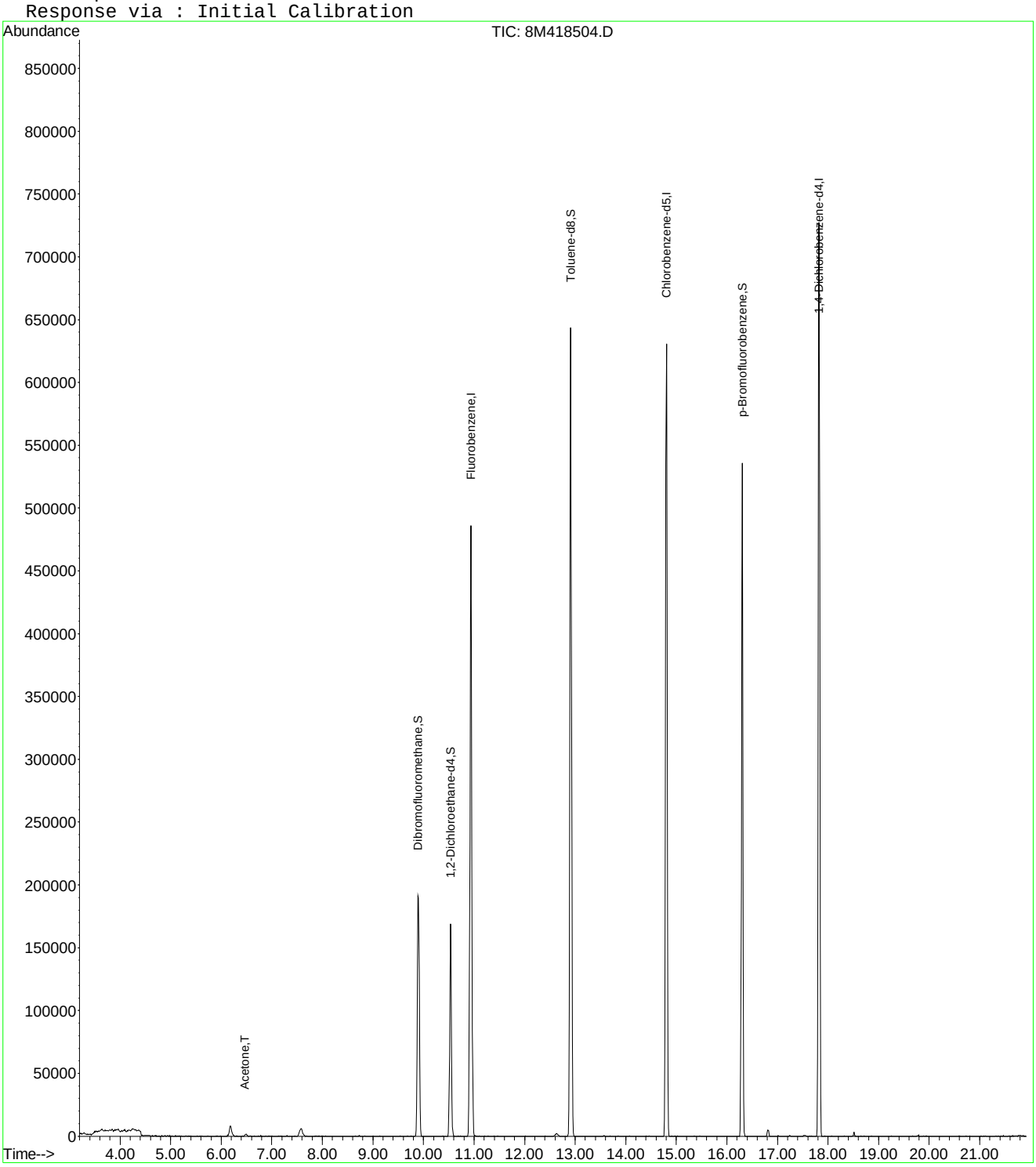
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

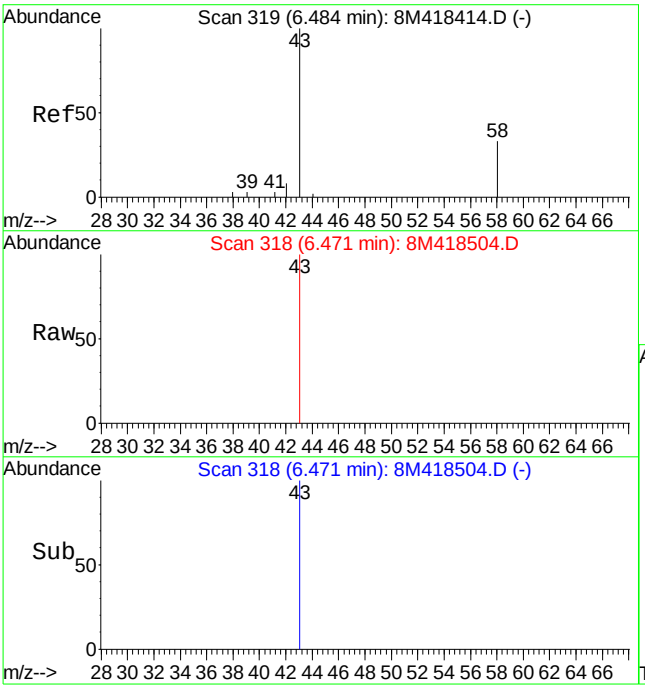
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	591320	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.80	117	456671	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	236026	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	161233	24.0417	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.16%			
43) 1,2-Dichloroethane-d4	10.53	65	142755	24.5633	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%			
58) Toluene-d8	12.91	98	579705	25.2356	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%			
80) p-Bromofluorobenzene	16.30	95	219575	24.5843	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.32%			
Target Compounds						Qvalue
13) Acetone	6.47	43	3170	4.4828	ug/L #	75

(#) = qualifier out of range (m) = manual integration
8M418504.D 8260WTR.M Mon Mar 27 08:24:02 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418504.D Vial: 22
Acq On : 24 Mar 2017 19:52 Operator: TMB
Sample : L17031161-06 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:23 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

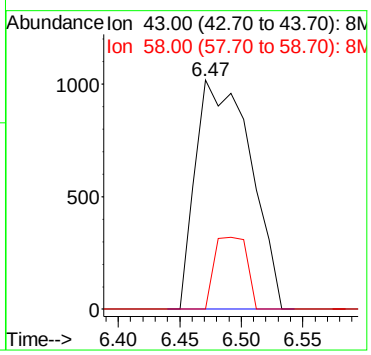




#13
Acetone
Concen: 4.48 ug/L
RT: 6.47 min Scan# 318
Delta R.T. -0.01 min
Lab File: 8M418504.D
Acq: 24 Mar 2017 19:52

Tgt Ion: 43 Resp: 3170

Ion	Ratio	Lower	Upper
43	100		
58	18.5	19.4	45.4#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418505.D Vial: 23
Acq On : 24 Mar 2017 20:21 Operator: TMB
Sample : L17031161-08 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:24:04 2017 Quant Results File: 8260WTR.RES

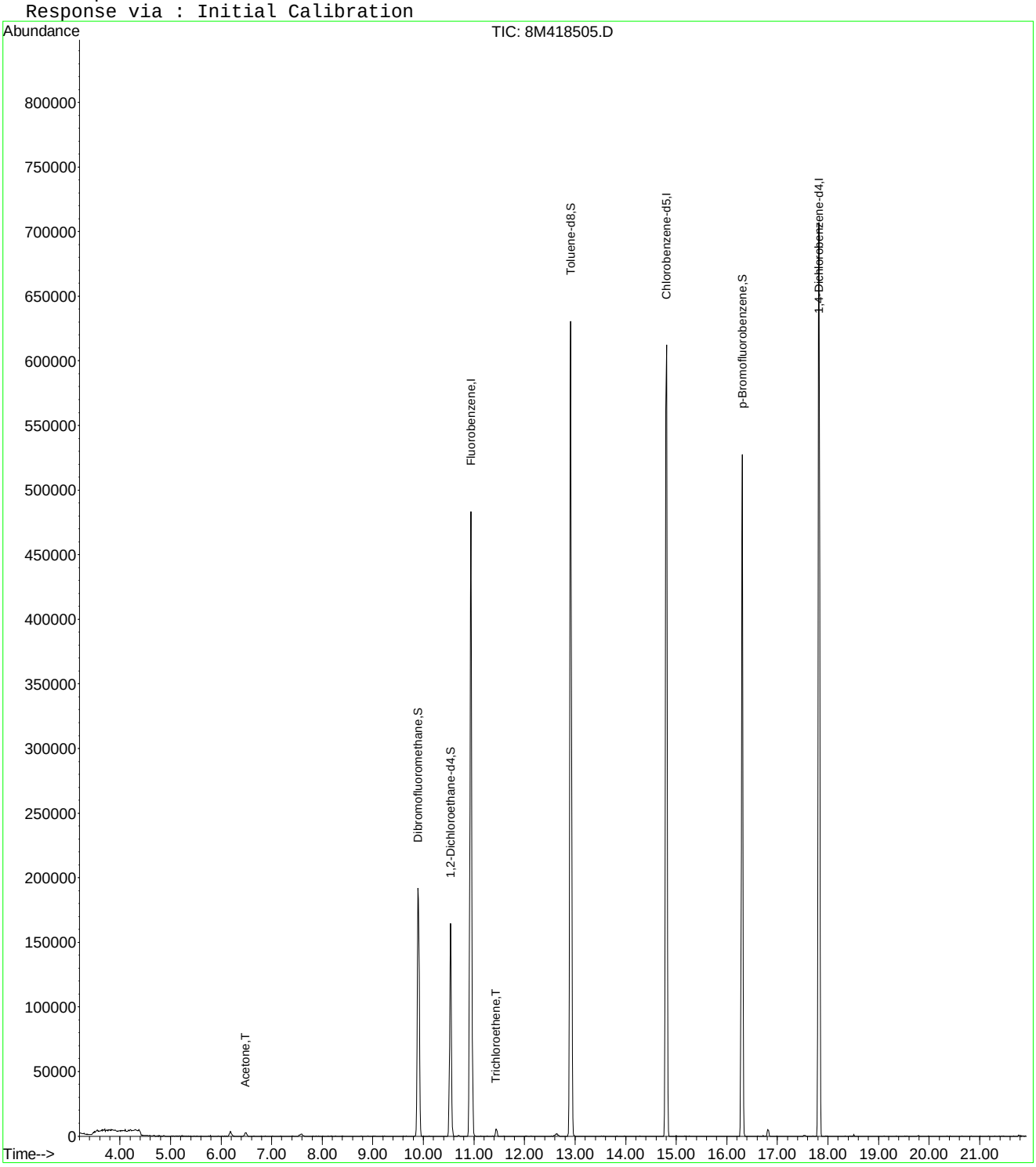
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

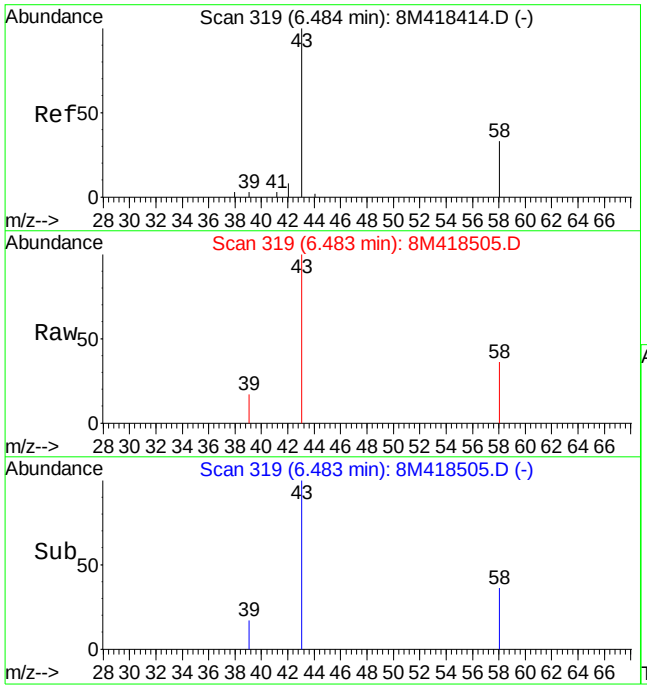
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	587947	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	452279	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	236660	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	160303	24.0402	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.16%			
43) 1,2-Dichloroethane-d4	10.54	65	140607	24.3325	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.32%			
58) Toluene-d8	12.91	98	575073	25.2770	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.12%			
80) p-Bromofluorobenzene	16.31	95	218005	24.3431	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.36%			
Target Compounds						Qvalue
13) Acetone	6.48	43	5483	7.7981	ug/L	91
47) Trichloroethene	11.44	130	3026	0.4472	ug/L	96

(#) = qualifier out of range (m) = manual integration
8M418505.D 8260WTR.M Mon Mar 27 08:24:07 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418505.D Vial: 23
Acq On : 24 Mar 2017 20:21 Operator: TMB
Sample : L17031161-08 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:23 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

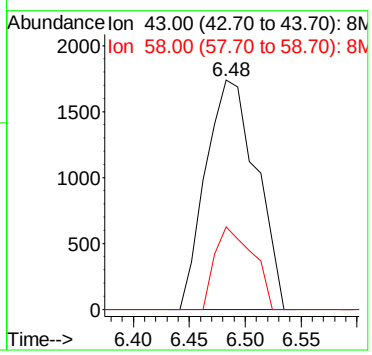


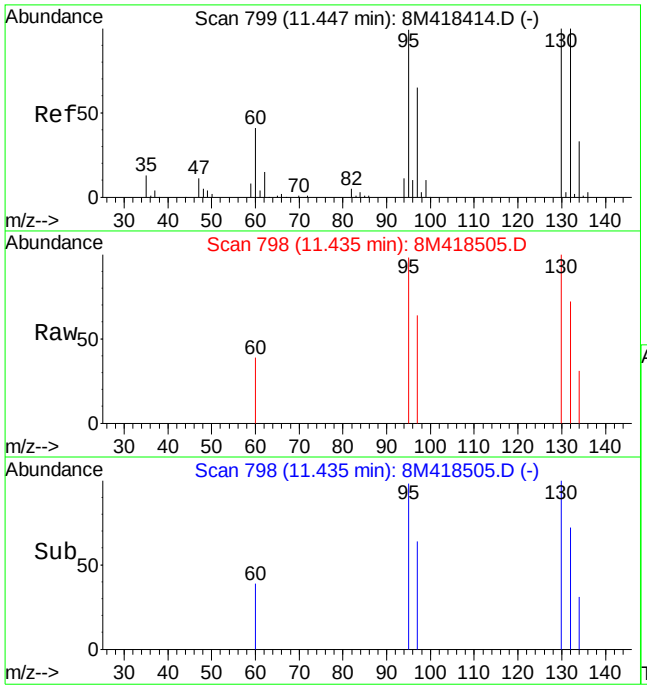


#13
Acetone
Concen: 7.80 ug/L
RT: 6.48 min Scan# 319
Delta R.T. -0.00 min
Lab File: 8M418505.D
Acq: 24 Mar 2017 20:21

Tgt Ion: 43 Resp: 5483

Ion	Ratio	Lower	Upper
43	100		
58	27.1	19.4	45.4

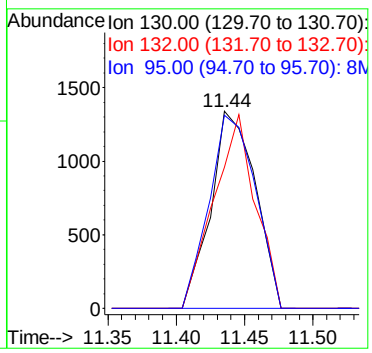




#47
Trichloroethene
Concen: 0.45 ug/L
RT: 11.44 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M418505.D
Acq: 24 Mar 2017 20:21

Tgt Ion:130 Resp: 3026

Ion	Ratio	Lower	Upper
130	100		
132	92.2	59.4	138.6
95	102.1	60.1	140.3



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032317\11M16979.D Vial: 6
Acq On : 23 Mar 2017 16:04 Operator: JDS
Sample : L17031161-10 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:43:19 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

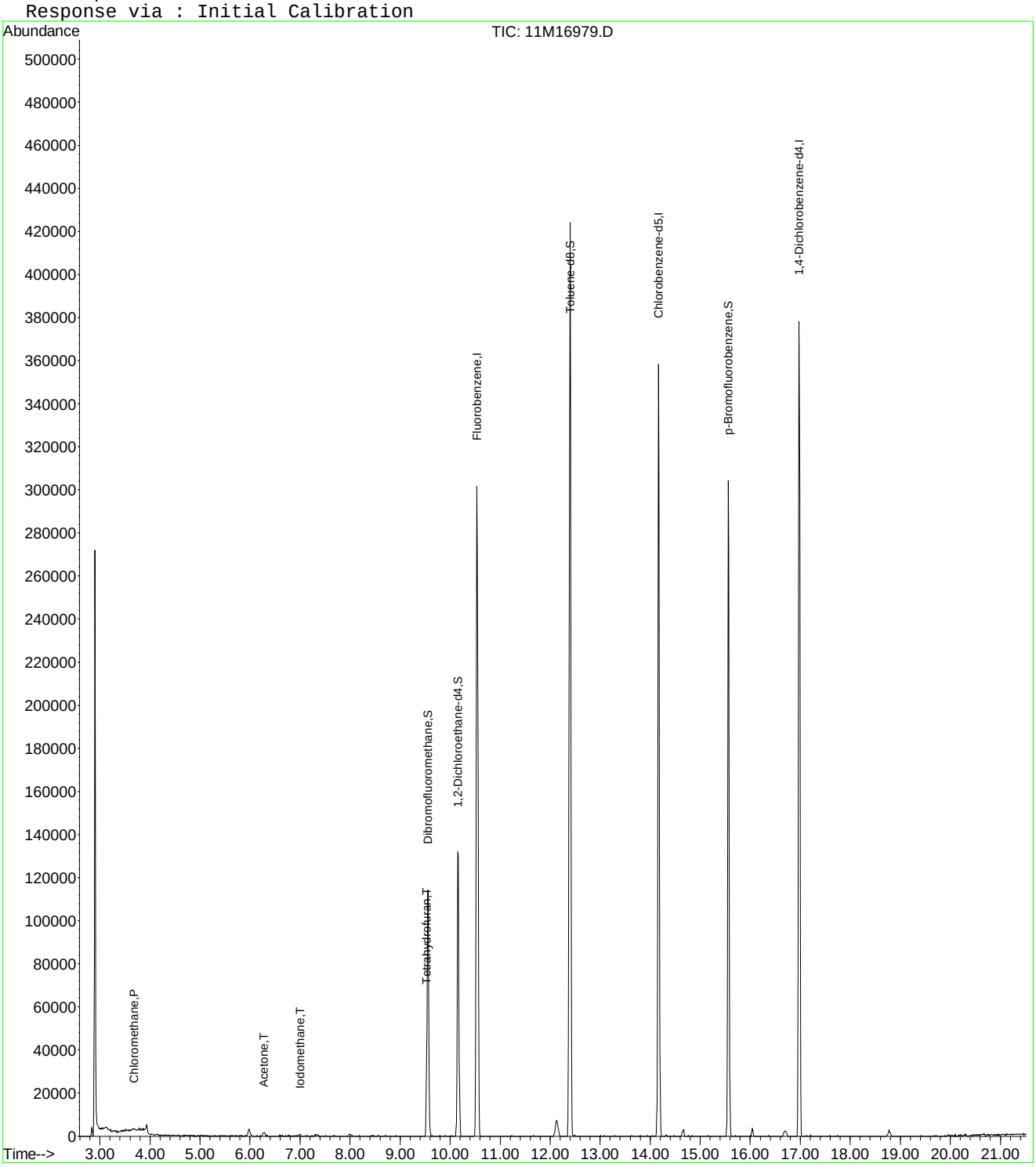
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	337525	25.00	ug/L	-0.01
56) Chlorobenzene-d5	14.17	117	235863	25.00	ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	16.98	152	116189	25.00	ug/L	-0.02
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	90178	25.8017	ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.20%			
43) 1,2-Dichloroethane-d4	10.15	65	116199	27.3587	ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.44%			
57) Toluene-d8	12.40	98	354674	26.7361	ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.96%			
78) p-Bromofluorobenzene	15.56	95	130575	26.8273	ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.32%			
Target Compounds						Qvalue
3) Chloromethane	3.68	50	1208	0.1716	ug/L #	68
13) Acetone	6.28	43	4180	4.1848	ug/L #	73
17) Iodomethane	7.00	142	1381	2.2943	ug/L	75
36) Tetrahydrofuran	9.53	42	740	0.6032	ug/L #	41

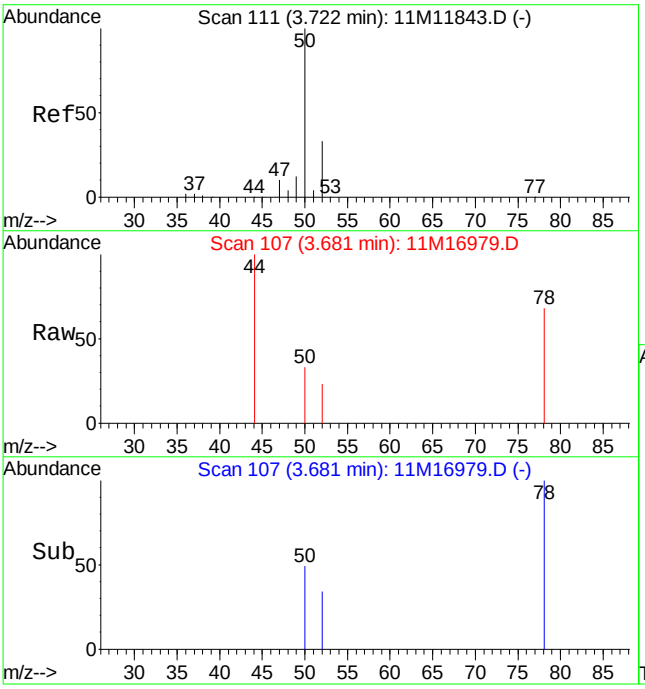
(#) = qualifier out of range (m) = manual integration
11M16979.D 8260WTR.M Wed Mar 29 18:43:20 2017 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032317\11M16979.D Vial: 6
Acq On : 23 Mar 2017 16:04 Operator: JDS
Sample : L17031161-10 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:43 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration

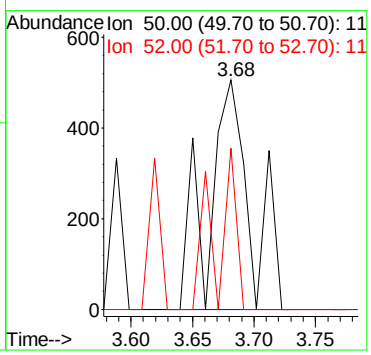


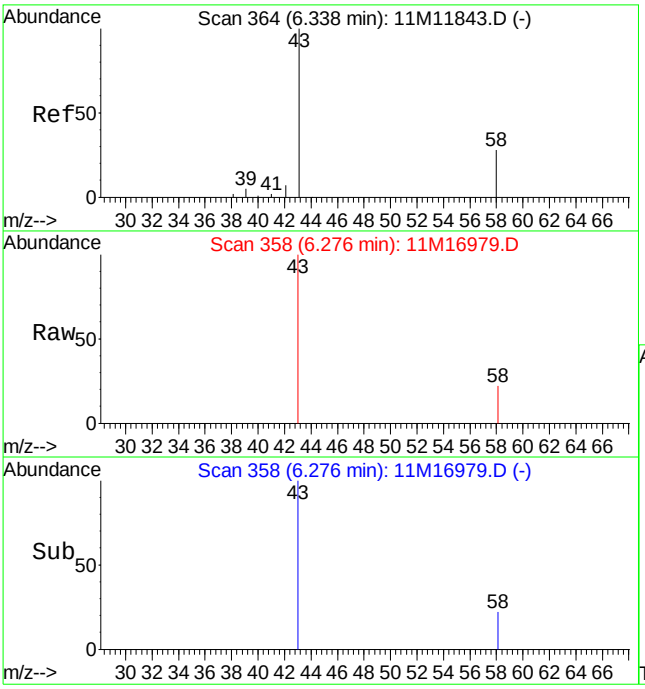


#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.68 min Scan# 107
Delta R.T. 0.01 min
Lab File: 11M16979.D
Acq: 23 Mar 2017 16:04

Tgt Ion: 50 Resp: 1208

Ion	Ratio	Lower	Upper
50	100		
52	15.6	20.3	47.3#

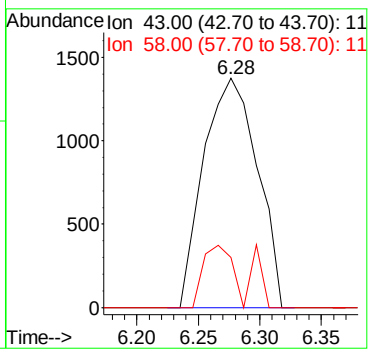


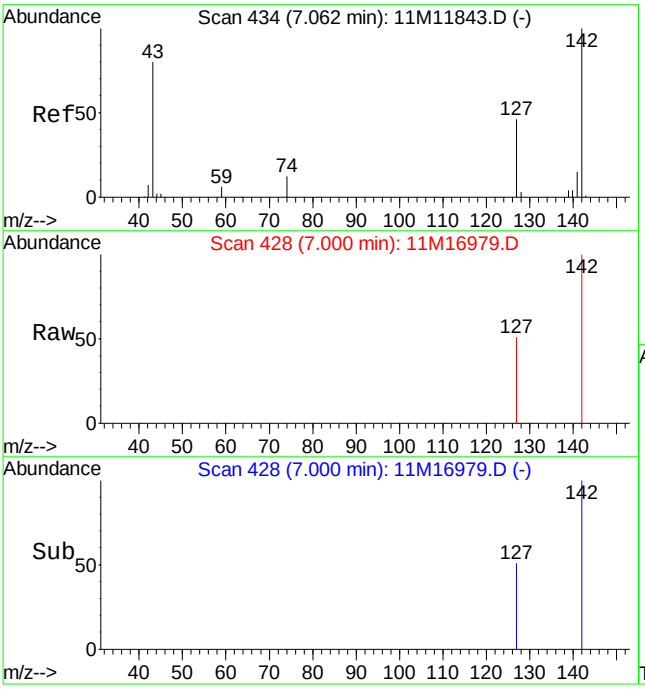


#13
Acetone
Concen: 4.18 ug/L
RT: 6.28 min Scan# 358
Delta R.T. -0.00 min
Lab File: 11M16979.D
Acq: 23 Mar 2017 16:04

Tgt Ion: 43 Resp: 4180

Ion	Ratio	Lower	Upper
43	100		
58	14.8	17.5	40.7#

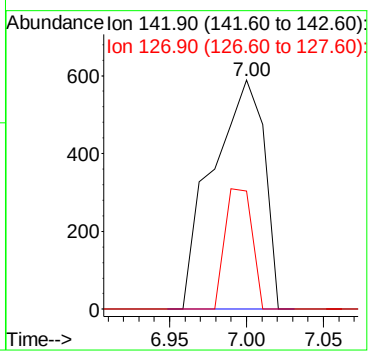


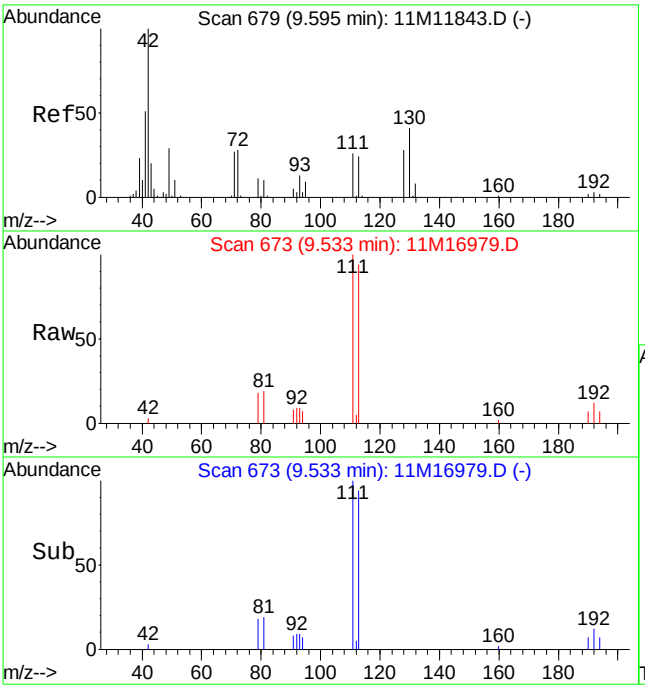


#17
Iodomethane
Concen: 2.29 ug/L
RT: 7.00 min Scan# 428
Delta R.T. 0.00 min
Lab File: 11M16979.D
Acq: 23 Mar 2017 16:04

Tgt Ion:142 Resp: 1381

Ion	Ratio	Lower	Upper
142	100		
127	27.5	26.2	61.2

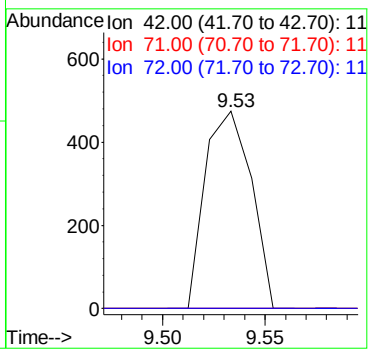




#36
Tetrahydrofuran
Concen: 0.60 ug/L
RT: 9.53 min Scan# 673
Delta R.T. -0.00 min
Lab File: 11M16979.D
Acq: 23 Mar 2017 16:04

Tgt Ion: 42 Resp: 740

Ion	Ratio	Lower	Upper
42	100		
71	0.0	19.9	46.3#
72	0.0	21.0	49.0#



2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15413.D Vial: 3
Acq On : 29 Nov 2016 17:04 Operator: JDS
Sample : WG593075-02 5ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:33 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

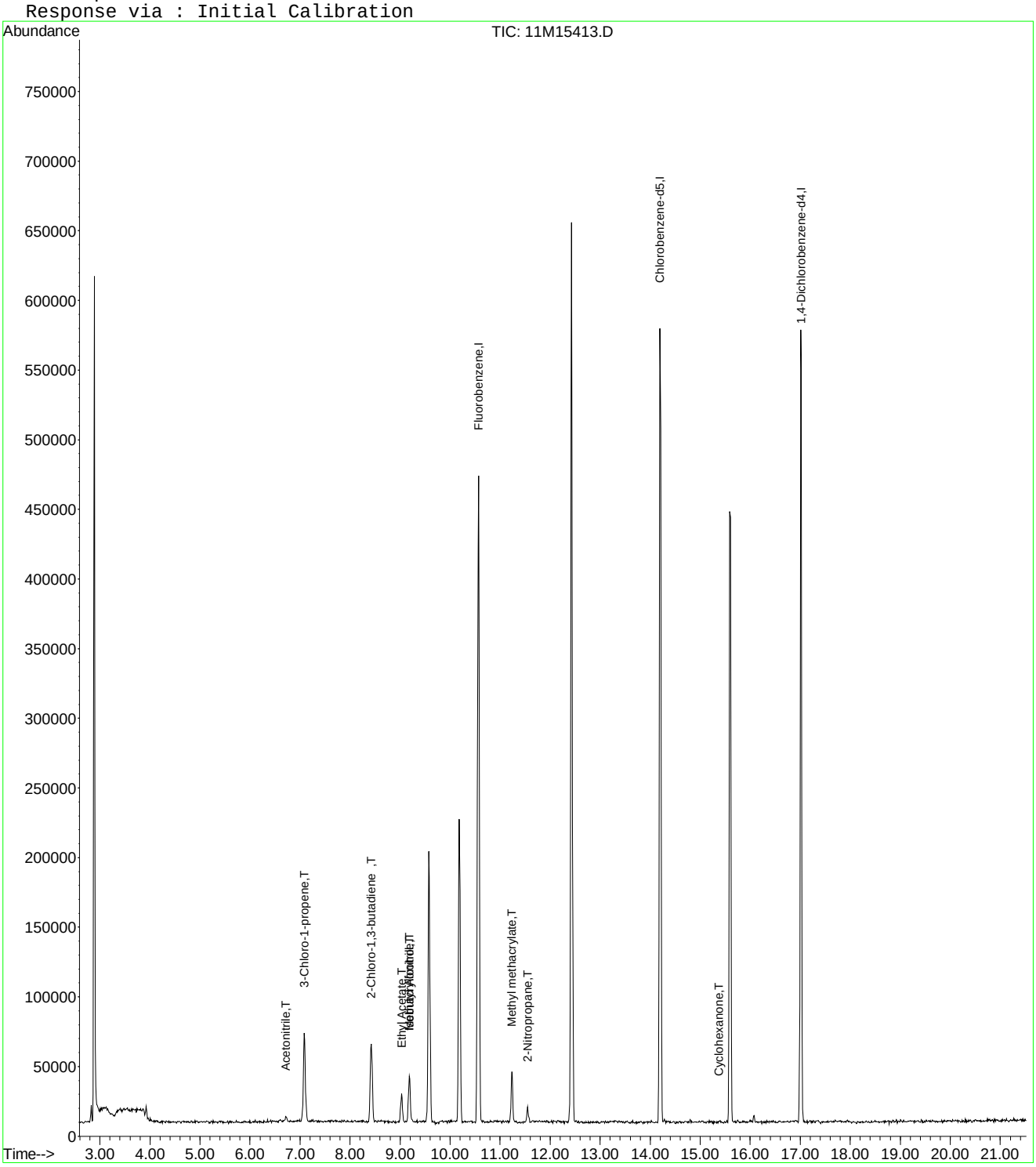
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.57	96	508264	25.00	ug/L		0.00
12) Chlorobenzene-d5	14.20	117	375479	25.00	ug/L		0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	182783	25.00	ug/L		0.01
Target Compounds							Qvalue
2) Acetonitrile	6.71	41	5058	4.5315	ug/L		99
3) 3-Chloro-1-propene	7.08	41	75408	4.6204	ug/L		98
4) 2-Chloro-1,3-butadiene	8.43	53	57073	4.2715	ug/L		98
5) Methacrylonitrile	9.18	41	27821	4.4973	ug/L		99
6) Isobutyl Alcohol	9.18	43	1938	6.5106	ug/L		82
8) Cyclohexanone	15.38	55	667	26.9016	ug/L	#	19
9) 2-Nitropropane	11.55	43	7814	3.2922	ug/L		86
10) Ethyl Acetate	9.03	43	34683	4.2287	ug/L		99
11) Methyl methacrylate	11.23	41	31845	4.0606	ug/L		99

(#) = qualifier out of range (m) = manual integration
11M15413.D A9FOOW.M Wed Nov 30 09:34:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15413.D Vial: 3
Acq On : 29 Nov 2016 17:04 Operator: JDS
Sample : WG593075-02 5ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



11M15413.D A9FOOW.M Wed Nov 30 09:34:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15414.D Vial: 4
Acq On : 29 Nov 2016 17:33 Operator: JDS
Sample : WG593075-03 20ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:34 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

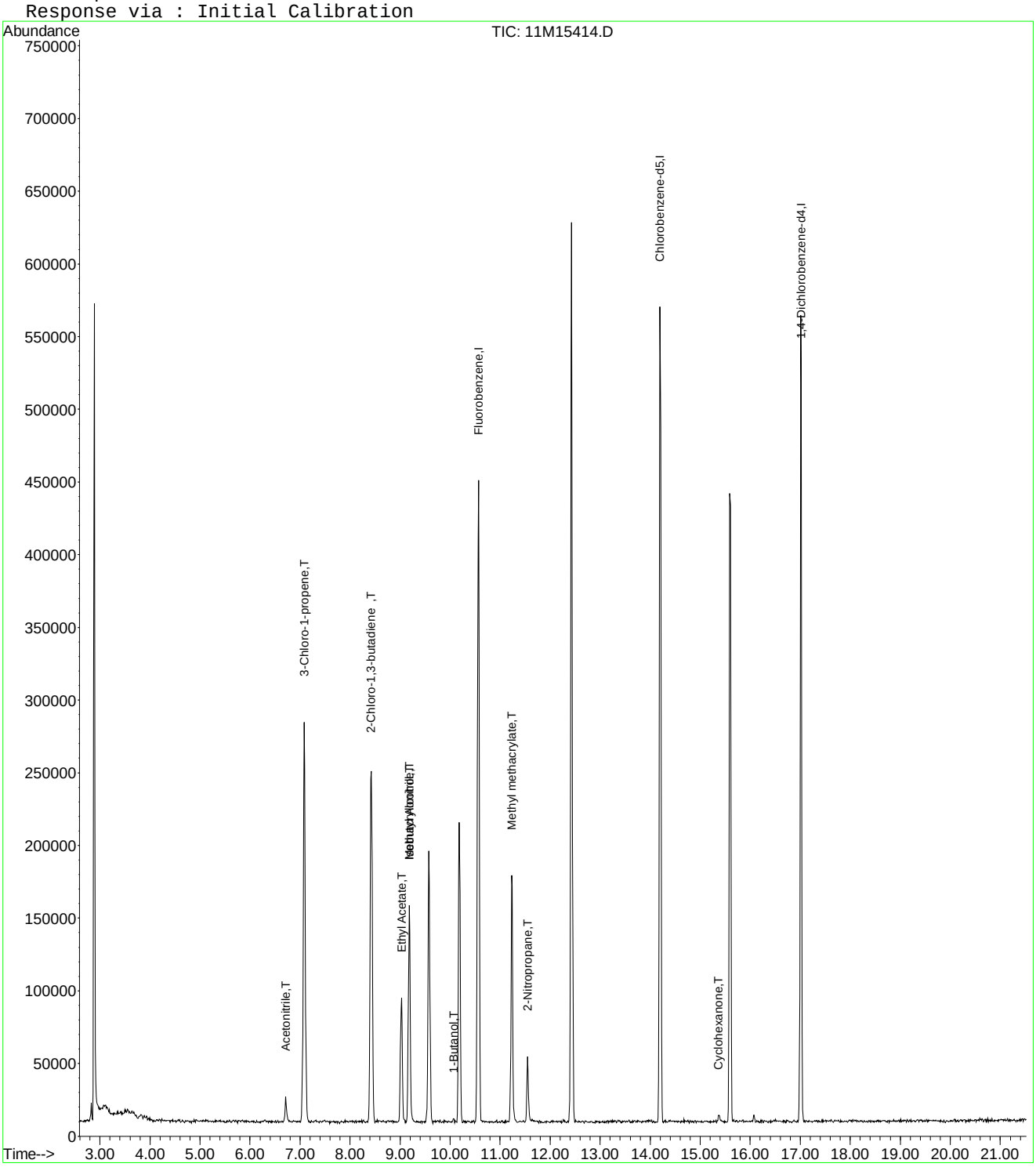
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.57	96	484954	25.00	ug/L		0.00
12) Chlorobenzene-d5	14.20	117	370089	25.00	ug/L		0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	180722	25.00	ug/L		0.01
Target Compounds							Qvalue
2) Acetonitrile	6.71	41	20833	19.5616	ug/L		97
3) 3-Chloro-1-propene	7.08	41	314465	20.1940	ug/L		99
4) 2-Chloro-1,3-butadiene	8.42	53	251294	19.7114	ug/L		99
5) Methacrylonitrile	9.18	41	115470	19.5632	ug/L		100
6) Isobutyl Alcohol	9.18	43	10262	36.1315	ug/L		98
7) 1-Butanol	10.07	56	966	8.6690	ug/L	#	56
8) Cyclohexanone	15.36	55	3155	36.3382	ug/L	#	84
9) 2-Nitropropane	11.55	43	37782	16.6833	ug/L		100
10) Ethyl Acetate	9.03	43	148946	19.0332	ug/L		100
11) Methyl methacrylate	11.23	41	137715	18.4041	ug/L		98

(#) = qualifier out of range (m) = manual integration
11M15414.D A9FOOW.M Wed Nov 30 09:34:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15414.D Vial: 4
Acq On : 29 Nov 2016 17:33 Operator: JDS
Sample : WG593075-03 20ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



11M15414.D A9FOOW.M Wed Nov 30 09:34:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15415.D Vial: 5
Acq On : 29 Nov 2016 18:02 Operator: JDS
Sample : WG593075-04 50ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:35 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

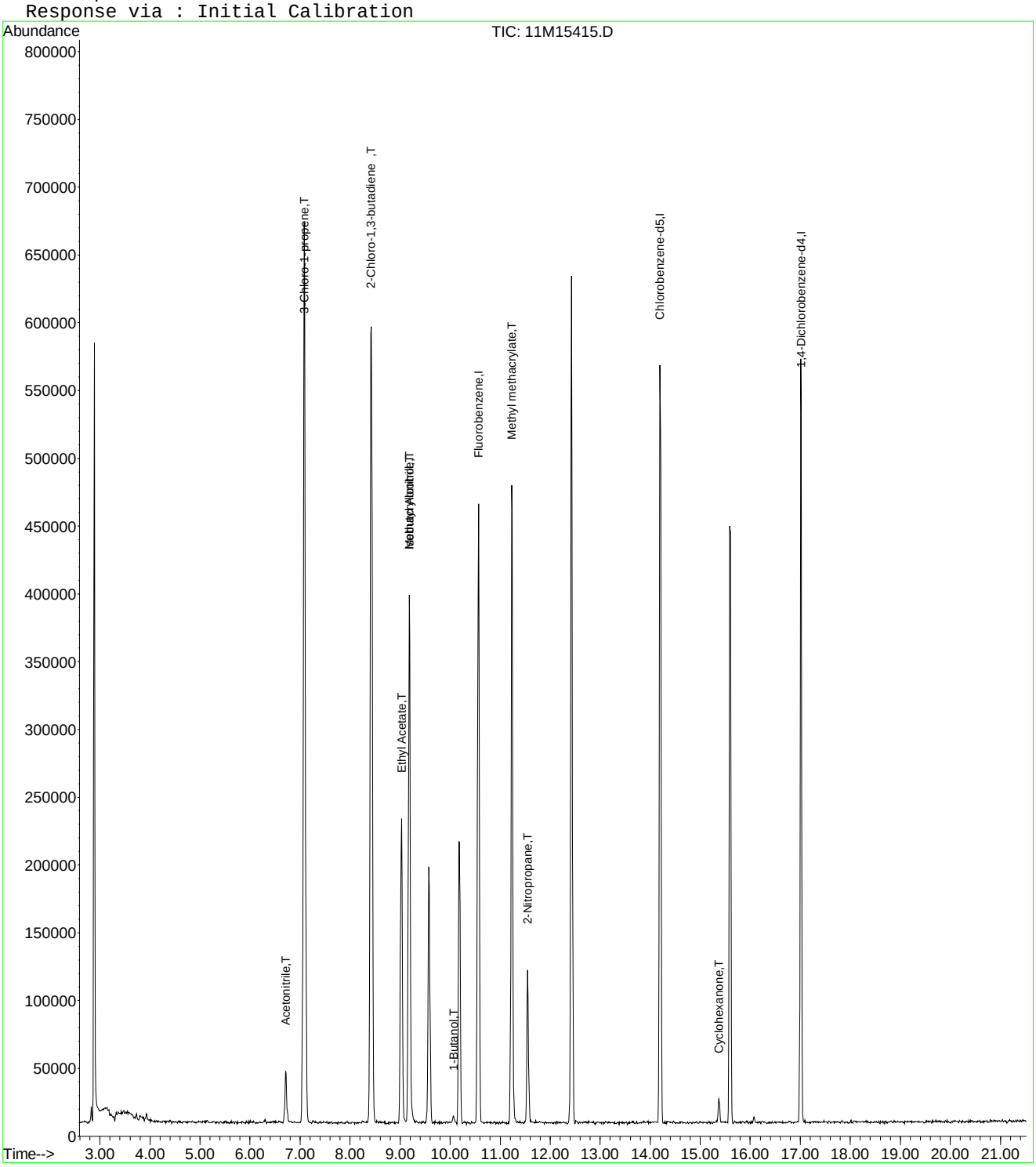
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.57	96	495571	25.00	ug/L		0.00
12) Chlorobenzene-d5	14.20	117	373248	25.00	ug/L		0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	179682	25.00	ug/L		0.01
Target Compounds							Qvalue
2) Acetonitrile	6.71	41	53691	49.3342	ug/L		100
3) 3-Chloro-1-propene	7.08	41	766200	48.1489	ug/L		98
4) 2-Chloro-1,3-butadiene	8.42	53	613583	47.0981	ug/L		100
5) Methacrylonitrile	9.18	41	299019	49.5751	ug/L		100
6) Isobutyl Alcohol	9.18	43	26759	92.1974	ug/L		97
7) 1-Butanol	10.07	56	4000	35.1273	ug/L	#	83
8) Cyclohexanone	15.38	55	9001	57.5193	ug/L	#	93
9) 2-Nitropropane	11.55	43	101680	43.9367	ug/L		99
10) Ethyl Acetate	9.03	43	392821	49.1216	ug/L		100
11) Methyl methacrylate	11.23	41	370524	48.4557	ug/L		99

(#) = qualifier out of range (m) = manual integration
11M15415.D A9FOOW.M Wed Nov 30 09:34:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15415.D Vial: 5
Acq On : 29 Nov 2016 18:02 Operator: JDS
Sample : WG593075-04 50ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15416.D Vial: 6
Acq On : 29 Nov 2016 18:30 Operator: JDS
Sample : WG593075-05 100ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:36 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

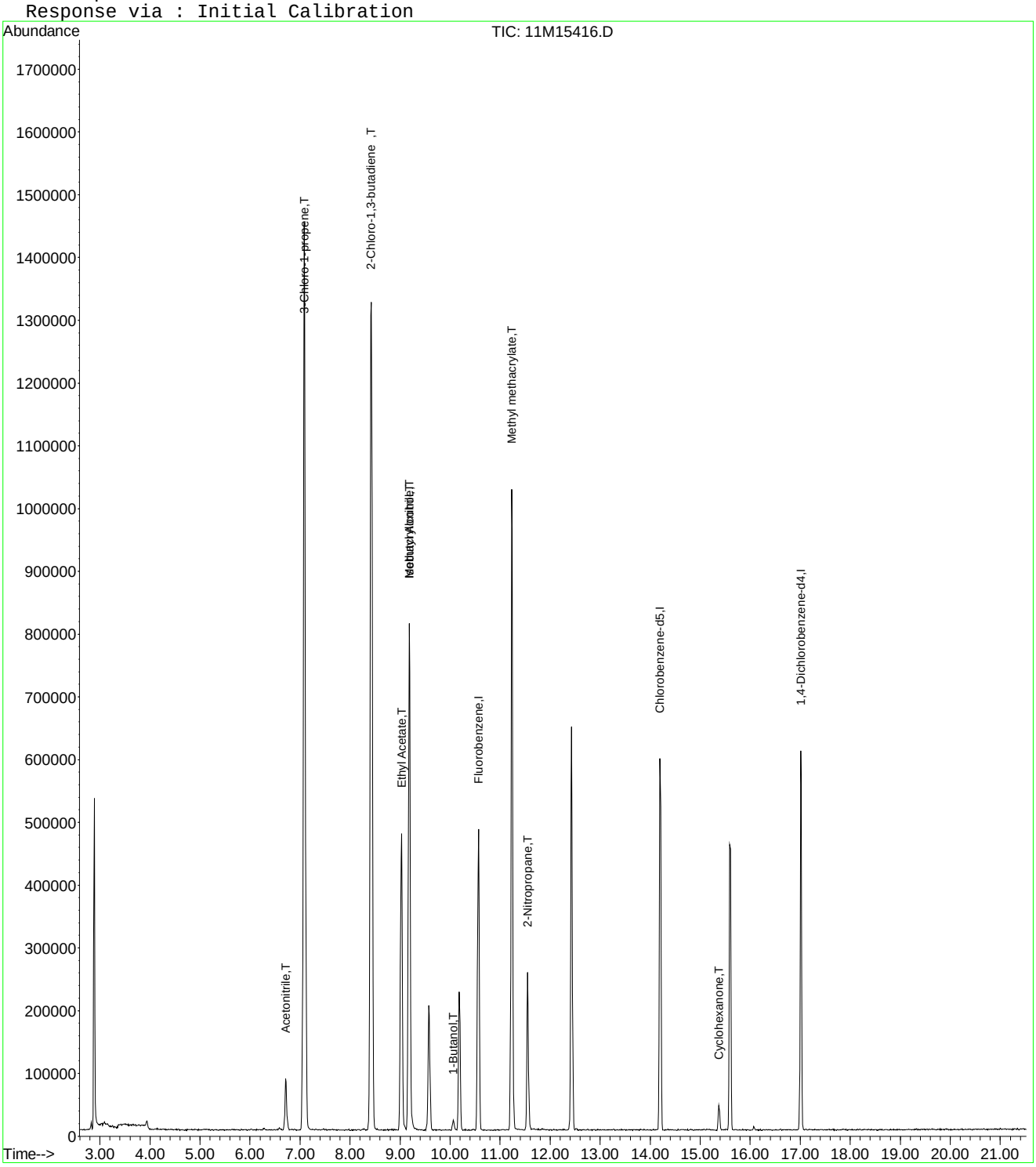
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	517102	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	388960	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	191793	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	111196	97.9186	ug/L	100
3) 3-Chloro-1-propene	7.08	41	1665534	100.3062	ug/L	100
4) 2-Chloro-1,3-butadiene	8.42	53	1369964	100.7788	ug/L	100
5) Methacrylonitrile	9.18	41	619159	98.3777	ug/L	100
6) Isobutyl Alcohol	9.18	43	57155	188.7264	ug/L	100
7) 1-Butanol	10.06	56	10146	85.3904	ug/L	100
8) Cyclohexanone	15.38	55	21531	100.1735	ug/L	100
9) 2-Nitropropane	11.55	43	215849	89.3864	ug/L	100
10) Ethyl Acetate	9.03	43	822119	98.5241	ug/L	100
11) Methyl methacrylate	11.23	41	794951	99.6320	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15416.D A9FOOW.M Wed Nov 30 09:34:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15416.D Vial: 6
Acq On : 29 Nov 2016 18:30 Operator: JDS
Sample : WG593075-05 100ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15417.D Vial: 7
Acq On : 29 Nov 2016 19:00 Operator: JDS
Sample : WG593075-06 200ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:37 2016 Quant Results File: A9FOOW.RES

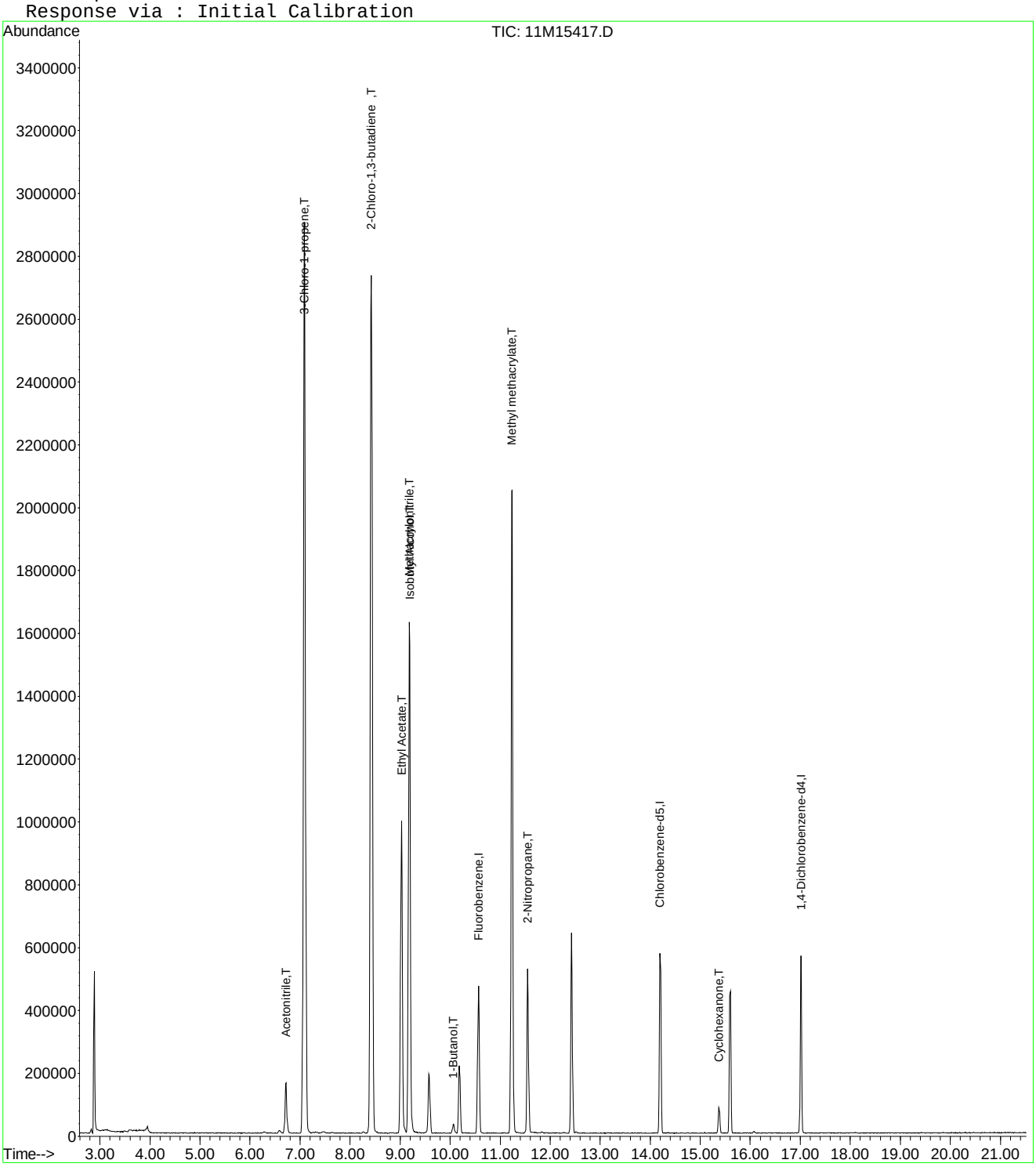
Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	501296	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	384160	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	189858	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.72	41	221594	201.2872	ug/L	98
3) 3-Chloro-1-propene	7.08	41	3362523	208.8918	ug/L	99
4) 2-Chloro-1,3-butadiene	8.43	53	2817559	213.8036	ug/L	99
5) Methacrylonitrile	9.18	41	1250204	204.9073	ug/L	100
6) Isobutyl Alcohol	9.19	43	113672	387.1809	ug/L	97
7) 1-Butanol	10.06	56	21030	182.5726	ug/L	90
8) Cyclohexanone	15.37	55	42513	178.6109	ug/L	97
9) 2-Nitropropane	11.55	43	478193	204.2710	ug/L	94
10) Ethyl Acetate	9.03	43	1687290	208.5833	ug/L	100
11) Methyl methacrylate	11.23	41	1640102	212.0368	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15417.D A9FOOW.M Wed Nov 30 09:34:38 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\112916\11M15417.D Vial: 7
Acq On : 29 Nov 2016 19:00 Operator: JDS
Sample : WG593075-06 200ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15418.D Vial: 8
Acq On : 29 Nov 2016 19:29 Operator: JDS
Sample : WG593075-07 300ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:39 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

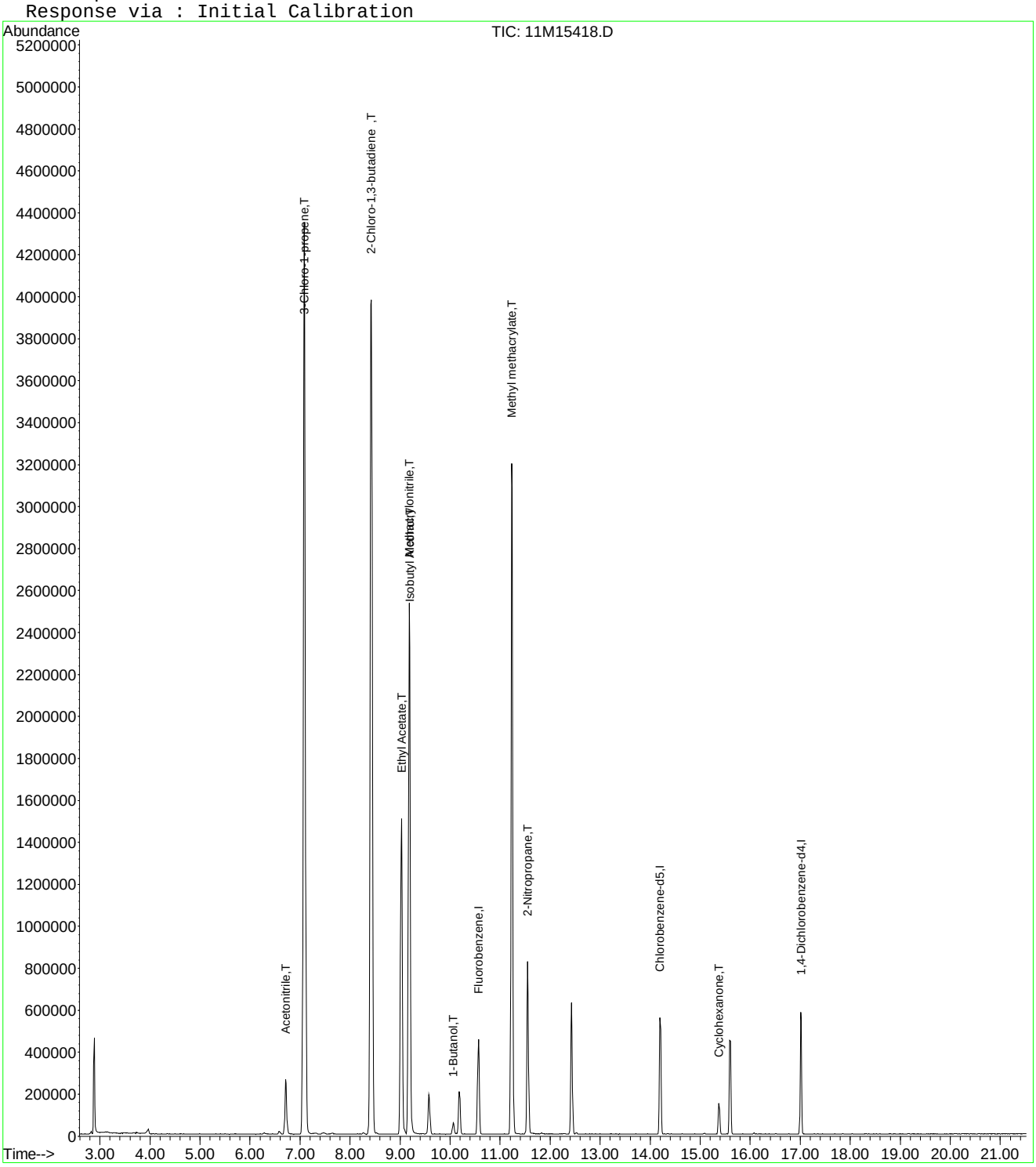
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	493186	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	372251	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	188608	25.00	ug/L	0.01
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	348913	322.1504	ug/L	100
3) 3-Chloro-1-propene	7.08	41	4977010	314.2738	ug/L	100
4) 2-Chloro-1,3-butadiene	8.43	53	4171645	321.7606	ug/L	100
5) Methacrylonitrile	9.18	41	1918968	319.6891	ug/L	100
6) Isobutyl Alcohol	9.19	43	190181	658.4322	ug/L	96
7) 1-Butanol	10.06	56	36803	324.7603	ug/L	89
8) Cyclohexanone	15.38	55	79093	315.9140	ug/L	96
9) 2-Nitropropane	11.55	43	740970	321.7271	ug/L	95
10) Ethyl Acetate	9.03	43	2595577	326.1424	ug/L	100
11) Methyl methacrylate	11.23	41	2517881	330.8713	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15418.D A9FOOW.M Wed Nov 30 09:34:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15418.D Vial: 8
Acq On : 29 Nov 2016 19:29 Operator: JDS
Sample : WG593075-07 300ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15419.D Vial: 9
Acq On : 29 Nov 2016 19:58 Operator: JDS
Sample : WG593075-08 400ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:40 2016 Quant Results File: A9FOOW.RES

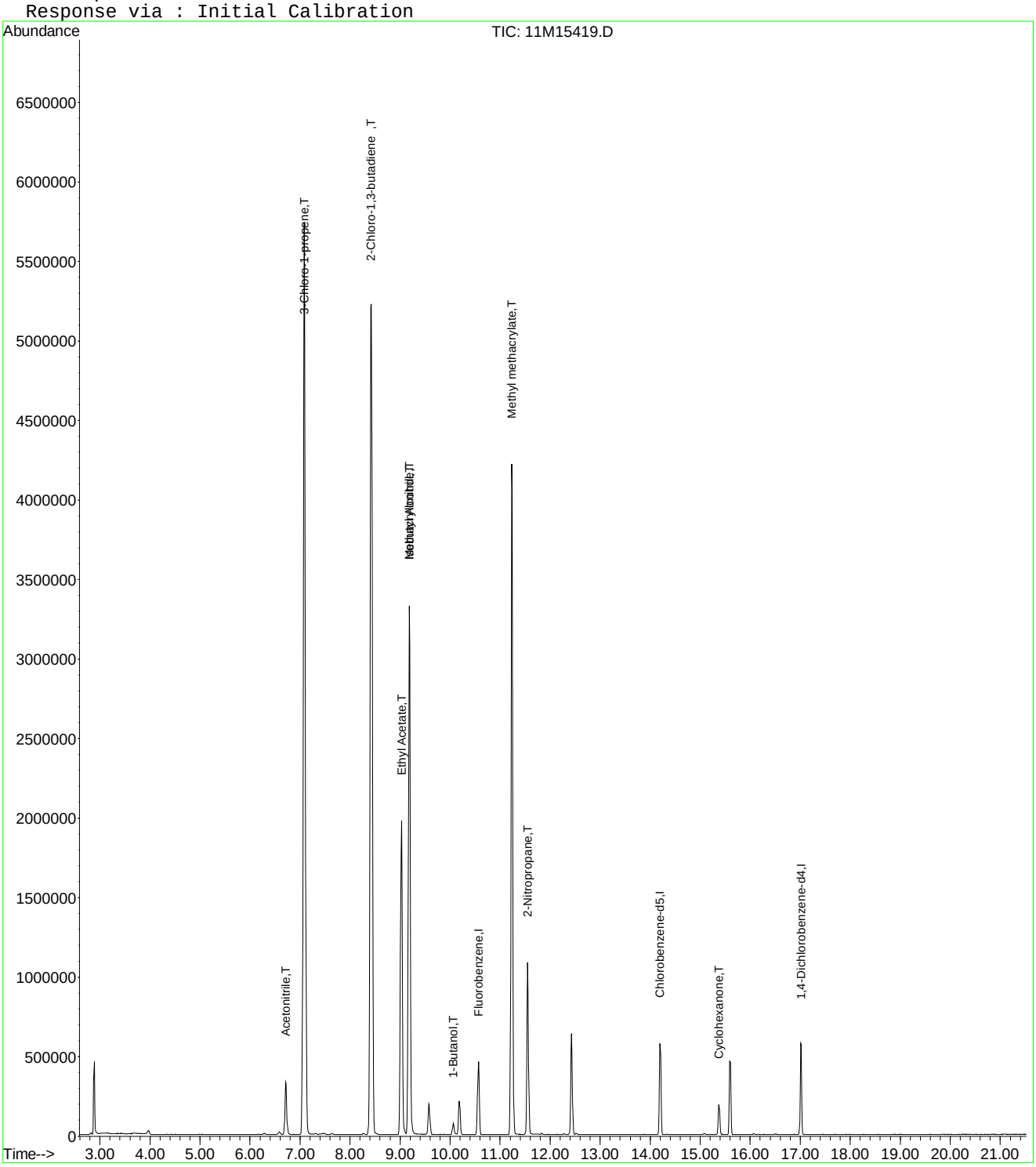
Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	498573	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	381044	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	190663	25.00	ug/L	0.01
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	452407	413.1929	ug/L	100
3) 3-Chloro-1-propene	7.08	41	6526548	407.6667	ug/L	99
4) 2-Chloro-1,3-butadiene	8.42	53	5466390	417.0692	ug/L	99
5) Methacrylonitrile	9.18	41	2516632	414.7264	ug/L	99
6) Isobutyl Alcohol	9.18	43	249778	855.4214	ug/L	94
7) 1-Butanol	10.06	56	47996	418.9544	ug/L	86
8) Cyclohexanone	15.38	55	102428	397.8081	ug/L	95
9) 2-Nitropropane	11.55	43	988069	424.3814	ug/L	95
10) Ethyl Acetate	9.03	43	3405037	423.2307	ug/L	100
11) Methyl methacrylate	11.23	41	3309181	430.1564	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15419.D A9FOOW.M Wed Nov 30 09:34:40 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\112916\11M15419.D Vial: 9
Acq On : 29 Nov 2016 19:58 Operator: JDS
Sample : WG593075-08 400ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15420.D Vial: 10
Acq On : 29 Nov 2016 20:28 Operator: JDS
Sample : WG593075-09 500ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:41 2016 Quant Results File: A9FOOW.RES

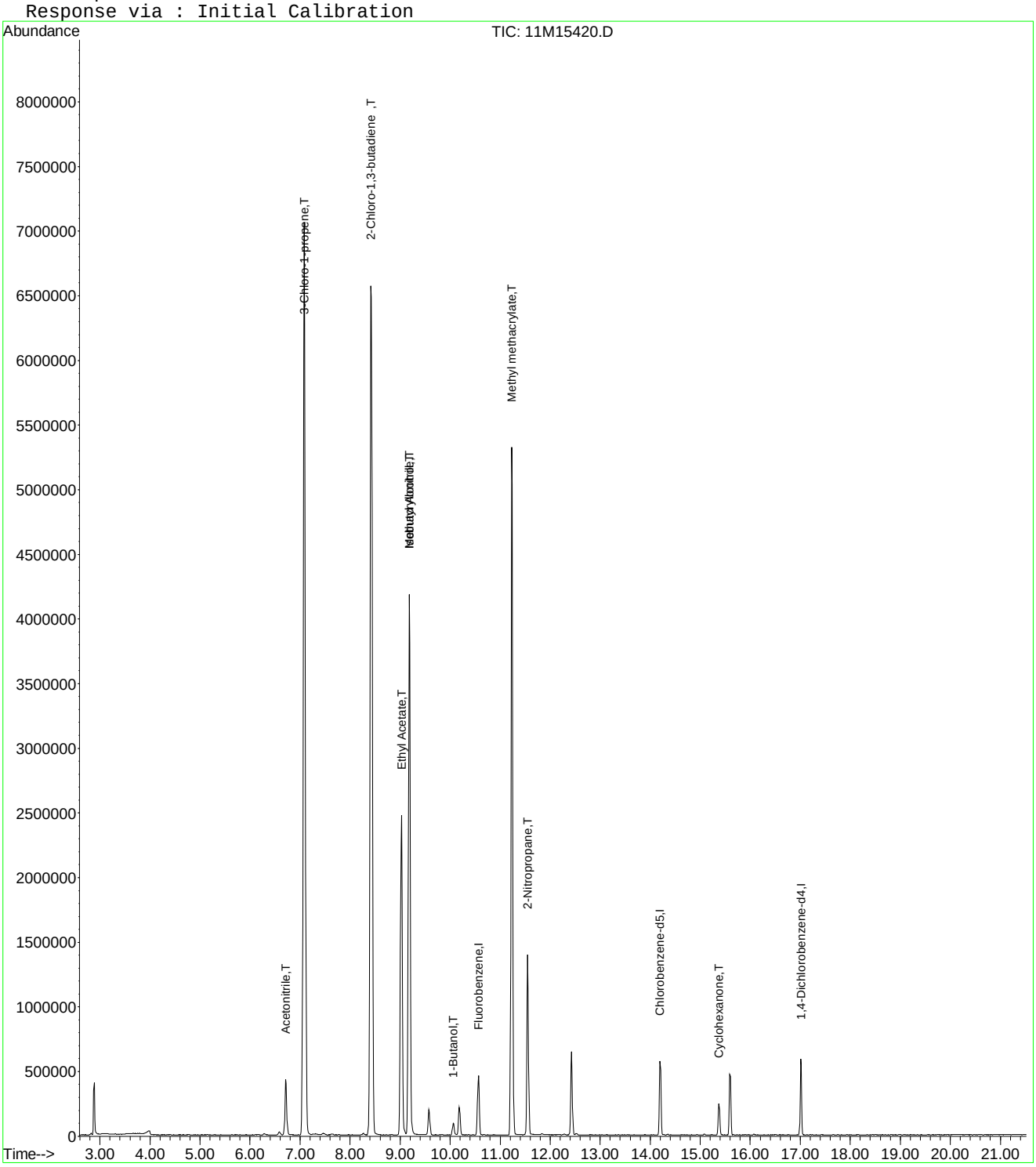
Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

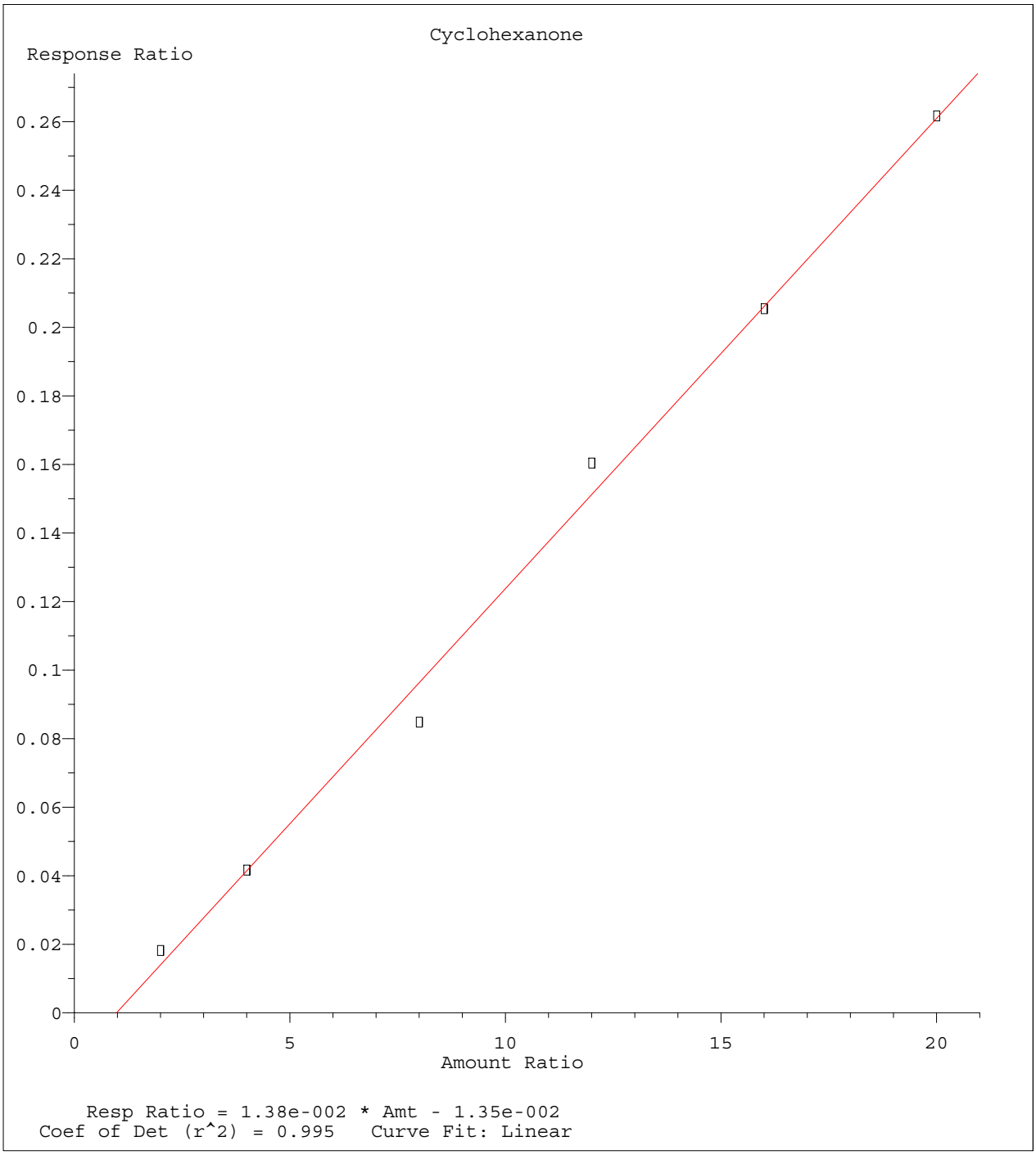
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.57	96	505022	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.20	117	379365	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	188903	25.00	ug/L	0.01
Target Compounds						Qvalue
2) Acetonitrile	6.71	41	574774	518.2498	ug/L	99
3) 3-Chloro-1-propene	7.08	41	8018921	494.4884	ug/L	98
4) 2-Chloro-1,3-butadiene	8.42	53	6811736	513.0785	ug/L	100
5) Methacrylonitrile	9.18	41	3135150	510.0571	ug/L	100
6) Isobutyl Alcohol	9.18	43	324248	1096.2805	ug/L	95
7) 1-Butanol	10.06	56	64016	551.6564	ug/L	89
8) Cyclohexanone	15.38	55	132149	499.9741	ug/L	95
9) 2-Nitropropane	11.55	43	1264877	536.3346	ug/L	95
10) Ethyl Acetate	9.03	43	4265326	523.3907	ug/L	100
11) Methyl methacrylate	11.23	41	4144690	531.8833	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M15420.D A9FOOW.M Wed Nov 30 09:34:41 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\112916\11M15420.D Vial: 10
Acq On : 29 Nov 2016 20:28 Operator: JDS
Sample : WG593075-09 500ug/L ICAL A9 Inst : hpms11
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration





Method Name: C:\MSDCHEM\1\METHODS\A9FOOW.M
Calibration Table Last Updated: Wed Nov 30 09:30:53 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 09:34:43 2016 Quant Results File: A9FOOW.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

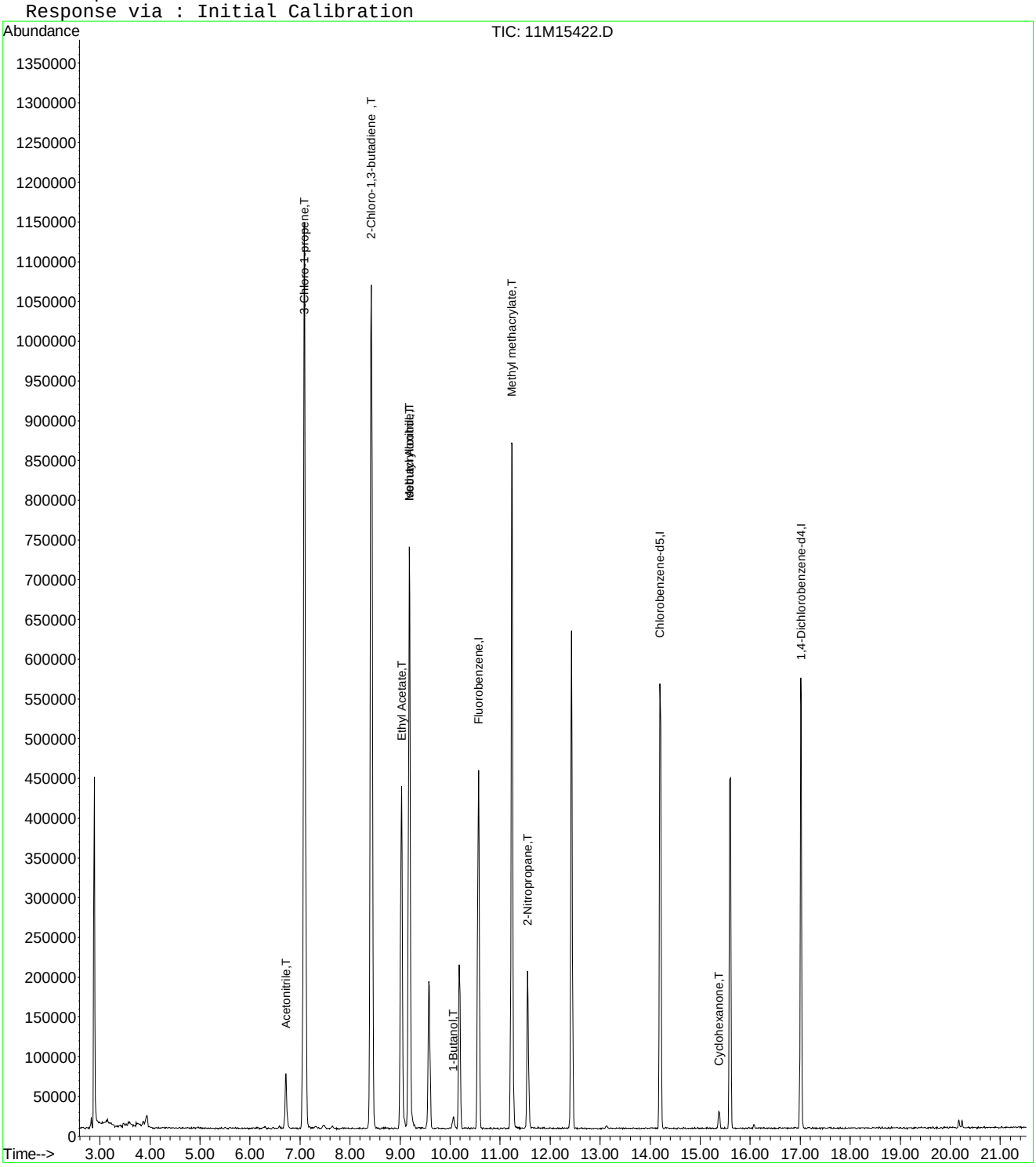
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.57	96	489102	25.00	ug/L		0.00
12) Chlorobenzene-d5	14.20	117	376399	25.00	ug/L		0.00
13) 1,4-Dichlorobenzene-d4	17.02	152	181823	25.00	ug/L		0.01
Target Compounds							Qvalue
2) Acetonitrile	6.72	41	94821	88.2790	ug/L		100
3) 3-Chloro-1-propene	7.08	41	1314710	83.7107	ug/L		99
4) 2-Chloro-1,3-butadiene	8.43	53	1083476	84.2667	ug/L		100
5) Methacrylonitrile	9.18	41	554662	93.1751	ug/L		100
6) Isobutyl Alcohol	9.18	43	51332	179.2022	ug/L		98
7) 1-Butanol	10.06	56	9333	83.0448	ug/L	#	89
8) Cyclohexanone	15.38	55	13104	73.1984	ug/L		98
9) 2-Nitropropane	11.55	43	178328	78.0761	ug/L		95
10) Ethyl Acetate	9.03	43	742706	94.1026	ug/L		99
11) Methyl methacrylate	11.23	41	685111	90.7812	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 30 9:34 2016 Quant Results File: A9FOOW.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	95	0.00
2	T	Acetonitrile	0.0549	0.0485	11.7	85	0.01
3	T	3-Chloro-1-propene	0.8028	0.6720	16.3	79	0.00
4	T	2-Chloro-1,3-butadiene	0.6572	0.5538	15.7	79	0.01
5	T	Methacrylonitrile	0.3043	0.2835	6.8	90	0.00
6	T	Isobutyl Alcohol	0.0146	0.0131	10.4	90	0.00
7	T	1-Butanol	0.0057	0.0048	16.9	92	0.00
8	T	Cyclohexanone	0.0116	0.0067	42.0	61	0.00
9	T	2-Nitropropane	0.1168	0.0911	21.9	83	0.00
10	T	Ethyl Acetate	0.4034	0.3796	5.9	90	0.00
11	T	Methyl methacrylate	0.3857	0.3502	9.2	86	0.00
12	I	Chlorobenzene-d5	1.0000	1.0000	0.0	97	0.00
13	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	95	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M15422.D A9FOOW.M Wed Nov 30 09:56:23 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\112916\11M15422.D Vial: 12
Acq On : 29 Nov 2016 21:26 Operator: JDS
Sample : WG593075-10 100ug/L ALT SRC A9 Inst : hpms11
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11
Last Update : Wed Nov 30 09:30:53 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	88.2790	11.7	85	0.01
3	T	3-Chloro-1-propene	100.0000	83.7107	16.3	79	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	84.2667	15.7	79	0.01
5	T	Methacrylonitrile	100.0000	93.1751	6.8	90	0.00
6	T	Isobutyl Alcohol	200.0000	179.2022	10.4	90	0.00
7	T	1-Butanol	100.0000	83.0448	17.0	92	0.00
8	T	Cyclohexanone	100.0000	73.1984	26.8	61	0.00
9	T	2-Nitropropane	100.0000	78.0761	21.9	83	0.00
10	T	Ethyl Acetate	100.0000	94.1026	5.9	90	0.00
11	T	Methyl methacrylate	100.0000	90.7812	9.2	86	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	95	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M15422.D A9FOOW.M Wed Nov 30 09:56:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16437.D Vial: 2
Acq On : 25 Feb 2017 17:04 Operator: ADC
Sample : WG601938-02 0.3ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:52:05 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	576766	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.19	117	388895	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	185134	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	10.17	65	187	0.0258	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.12%#		
57) Toluene-d8	12.41	98	1204	0.0550	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.24%#		
78) p-Bromofluorobenzene	15.58	95	484	0.0624	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.24%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.24	85	2598	0.2880	ug/L #	83
3) Chloromethane	3.69	50	5068	0.4214	ug/L	96
4) Vinyl Chloride	3.92	62	3076	0.3215	ug/L	92
5) 1,3-Butadiene	3.97	54	2454	Below Cal	#	1
6) Bromomethane	4.81	94	2014	0.3326	ug/L	84
7) Chloroethane	4.97	64	1790	0.2962	ug/L #	43
8) Trichlorofluoromethane	5.44	101	3125	0.2855	ug/L	91
10) Isoprene	5.99	67	3462	0.3130	ug/L	87
13) Acetone	6.30	43	966	0.5660	ug/L #	46
14) 1,1-Dichloroethene	6.51	61	3425	0.2826	ug/L	77
16) Dimethyl Sulfide	6.75	62	2381	0.2550	ug/L	95
18) Methyl acetate	7.04	43	1481	0.2774	ug/L #	65
19) Methylene Chloride	7.26	84	2546	0.3472	ug/L	97
20) Carbon Disulfide	7.31	76	6533	0.3213	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	5573	0.3008	ug/L	91
23) trans-1,2-Dichloroethene	7.70	96	1787	0.2654	ug/L	75
24) n-Hexane	7.78	57	3278	0.2982	ug/L #	71
26) Vinyl Acetate	8.26	43	3929	0.2997	ug/L #	77
27) 1,1-Dichloroethane	8.29	63	4487	0.3065	ug/L #	89
29) 2-Butanone	8.82	43	994	0.3457	ug/L #	55
31) 2,2-Dichloropropane	9.04	77	3220	0.3060	ug/L #	58
32) cis-1,2-Dichloroethene	9.09	96	2080	0.2651	ug/L	85
33) Chloroform	9.30	83	4173	0.3274	ug/L	93
35) Bromochloromethane	9.51	130	717	0.1672	ug/L	65
36) Tetrahydrofuran	9.55	42	1335	0.6368	ug/L #	41
38) 1,1,1-Trichloroethane	9.79	97	2940	0.2605	ug/L #	71
39) Cyclohexane	9.83	56	4662	0.3097	ug/L	87
40) 1,1-Dichloropropene	9.98	75	2617	0.2740	ug/L	87
41) Carbon Tetrachloride	10.12	117	2318	0.2418	ug/L #	82
44) 1,2-Dichloroethane	10.29	62	2533	0.2504	ug/L #	71
45) Benzene	10.33	78	8302	0.3022	ug/L	97
46) Trichloroethene	11.03	130	1914	0.2747	ug/L	97
47) Methylcyclohexane	11.12	83	3521	0.2971	ug/L	89
48) 1,2-Dichloropropane	11.23	63	2084	0.2527	ug/L #	73
50) Bromodichloromethane	11.52	83	2110	0.2251	ug/L #	69
51) Dibromomethane	11.60	93	1057	0.2613	ug/L #	66
52) 2-Chloroethyl Vinyl Ether	11.79	63	1073	0.2247	ug/L #	53
54) cis-1,3-Dichloropropene	12.12	75	2991	0.2650	ug/L	98
55) Dimethyl Disulfide	12.36	79	1491	0.2147	ug/L	82
58) Toluene	12.50	91	8897	0.3054	ug/L	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\022517\11M16437.D Vial: 2
Acq On : 25 Feb 2017 17:04 Operator: ADC
Sample : WG601938-02 0.3ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:52:05 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

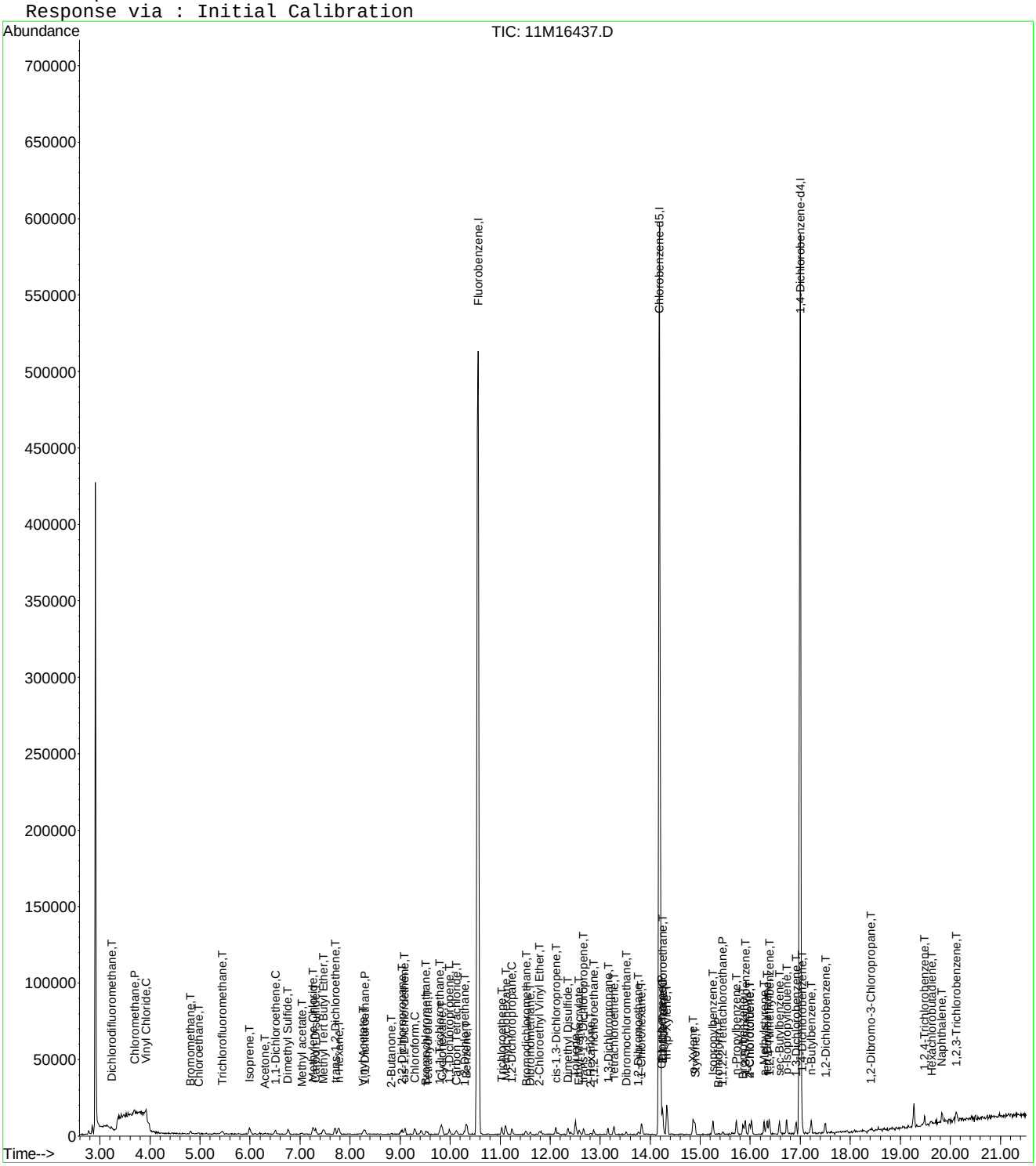
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Ethyl Methacrylate	12.57	69	2135	0.2760 ug/L		94
60)	trans-1,3-Dichloropropene	12.67	75	2684	0.2856 ug/L		86
61)	1,1,2-Trichloroethane	12.87	97	1368	0.2438 ug/L		93
62)	2-Hexanone	12.81	43	1007	0.2369 ug/L	#	11
63)	1,3-Dichloropropane	13.16	76	2644	0.2760 ug/L		99
64)	Tetrachloroethene	13.28	164	1434	0.2663 ug/L		89
65)	Dibromochloromethane	13.52	129	1553	0.2414 ug/L		87
66)	1,2-Dibromoethane	13.76	107	1369	0.2649 ug/L		88
67)	1-Chlorohexane	13.82	91	2920	0.3264 ug/L		95
68)	Chlorobenzene	14.23	112	4936	0.2836 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.25	131	1644	0.2522 ug/L		83
70)	Ethylbenzene	14.25	106	2831	0.2923 ug/L		74
71)	m-,p-Xylene	14.33	106	7176	0.6295 ug/L		69
72)	o-Xylene	14.86	106	3239	0.2805 ug/L		77
73)	Styrene	14.90	104	5304	0.2842 ug/L		97
74)	Bromoform	15.36	173	617	0.1488 ug/L	#	28
75)	Isopropylbenzene	15.25	105	8642	0.2865 ug/L		91
77)	1,1,2,2-Tetrachloroethane	15.45	83	1416	0.2224 ug/L		85
81)	n-Propylbenzene	15.73	91	10861	0.3177 ug/L		92
82)	Bromobenzene	15.85	156	2066	0.2883 ug/L		81
83)	1,3,5-Trimethylbenzene	15.90	105	7550	0.3151 ug/L		96
84)	2-Chlorotoluene	15.99	91	7578	0.3223 ug/L		98
85)	4-Chlorotoluene	15.99	91	7577	0.3836 ug/L		95
86)	a-Methylstyrene	16.27	118	3384	0.2851 ug/L		95
87)	tert-Butylbenzene	16.34	134	1204	0.2332 ug/L	#	22
88)	1,2,4-Trimethylbenzene	16.39	105	8000	0.3232 ug/L		81
89)	sec-Butylbenzene	16.58	105	9391	0.3217 ug/L		89
90)	p-Isopropyltoluene	16.73	119	8673	0.3552 ug/L		88
91)	1,3-Dichlorobenzene	16.92	146	4501	0.3372 ug/L		89
92)	1,4-Dichlorobenzene	17.04	146	4750	0.3512 ug/L	#	20
93)	n-Butylbenzene	17.22	91	7653	0.3321 ug/L		90
94)	1,2-Dichlorobenzene	17.51	146	4112	0.3288 ug/L		82
95)	1,2-Dibromo-3-Chloropropan	18.41	75	204	0.1708 ug/L	#	1
96)	1,2,4-Trichlorobenzene	19.48	180	3019	0.3346 ug/L		94
97)	Hexachlorobutadiene	19.62	225	1338	0.2942 ug/L	#	58
98)	Naphthalene	19.83	128	6932	0.3611 ug/L		99
99)	1,2,3-Trichlorobenzene	20.12	180	2813	0.3257 ug/L		95

(#) = qualifier out of range (m) = manual integration
11M16437.D 8260WTR.M Tue Feb 28 14:52:57 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16437.D Vial: 2
Acq On : 25 Feb 2017 17:04 Operator: ADC
Sample : WG601938-02 0.3ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:52 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\022517\11M16437.D Vial: 2
Acq On : 25 Feb 2017 17:04 Operator: ADC
Sample : WG601938-02 0.3ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.01
2	T	Dichlorodifluoromethane	-1.0000	0.2880	0.0	0	0.02
3	P	Chloromethane	-1.0000	0.4214	0.0	0	0.02
4	C	Vinyl Chloride	-1.0000	0.3215	0.0	0	0.02
5	T	1,3-Butadiene	-1.0000	-0.8969	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3326	0.0	100	0.01
7	T	Chloroethane	-1.0000	0.2962	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.2855	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.3130	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.17#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1161	0.0	100	0.01
13	T	Acetone	-1.0000	0.5660	0.0	100	0.02
14	C	1,1-Dichloroethene	-1.0000	0.2826	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.60#
16	T	Dimethyl Sulfide	-1.0000	0.2550	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.00#
18	T	Methyl acetate	-1.0000	0.2774	0.0	100	0.03
19	T	Methylene Chloride	-1.0000	0.3472	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3213	0.0	0	0.01
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.42#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3008	0.0	0	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.2654	0.0	100	0.01
24	T	n-Hexane	-1.0000	0.2982	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.09#
26	T	Vinyl Acetate	-1.0000	0.2997	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.3065	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.63#
29	T	2-Butanone	-1.0000	0.3457	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.91#
31	T	2,2-Dichloropropane	-1.0000	0.3060	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2651	0.0	100	0.00
33	C	Chloroform	0.3000	0.3274	-9.1	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.42#
35	T	Bromochloromethane	-1.0000	0.1672	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6368	0.0	100	0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.56#
38	T	1,1,1-Trichloroethane	-1.0000	0.2605	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3097	0.0	0	0.01
40	T	1,1-Dichloropropene	-1.0000	0.2740	0.0	100	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2418	0.0	100	0.00
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.07#
43	S	1,2-Dichloroethane-d4	-1.0000	0.0258	0.0	100	0.00
44	T	1,2-Dichloroethane	-1.0000	0.2504	0.0	100	0.00
45	T	Benzene	-1.0000	0.3022	0.0	0	0.01
46	T	Trichloroethene	-1.0000	0.2747	0.0	100	0.00
47	T	Methylcyclohexane	-1.0000	0.2971	0.0	0	0.01
48	C	1,2-Dichloropropane	-1.0000	0.2527	0.0	100	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.50#
50	T	Bromodichloromethane	-1.0000	0.2251	0.0	100	0.00
51	T	Dibromomethane	-1.0000	0.2613	0.0	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2247	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.0818	0.0	100	0.01
54	T	cis-1,3-Dichloropropene	-1.0000	0.2650	0.0	0	0.01

(#) = Out of Range
11M16437.D 8260WTR.M Tue Feb 28 14:52:54 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16437.D Vial: 2
Acq On : 25 Feb 2017 17:04 Operator: ADC
Sample : WG601938-02 0.3ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2147	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0550	0.0	100	0.00
58	C	Toluene	-1.0000	0.3054	0.0	0	0.00
59	T	Ethyl Methacrylate	-1.0000	0.2760	0.0	100	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2856	0.0	100	0.00
61	T	1,1,2-Trichloroethane	-1.0000	0.2438	0.0	100	0.00
62	T	2-Hexanone	-1.0000	0.2369	0.0	100	0.01
63	T	1,3-Dichloropropane	-1.0000	0.2760	0.0	100	0.01
64	T	Tetrachloroethene	-1.0000	0.2663	0.0	100	0.00
65	T	Dibromochloromethane	-1.0000	0.2414	0.0	100	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2649	0.0	100	0.00
67	T	1-Chlorohexane	-1.0000	0.3264	0.0	100	-0.01
68	P	Chlorobenzene	-1.0000	0.2836	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2522	0.0	100	-0.01
70	C	Ethylbenzene	-1.0000	0.2923	0.0	100	0.00
71	T	m-,p-Xylene	-1.0000	0.6295	0.0	0	0.00
72	T	o-Xylene	-1.0000	0.2805	0.0	100	0.00
73	T	Styrene	-1.0000	0.2842	0.0	0	0.00
74	P	Bromoform	-1.0000	0.1488	0.0	100	0.00
75	T	Isopropylbenzene	-1.0000	0.2865	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2224	0.0	100	-0.01
78	S	p-Bromofluorobenzene	-1.0000	0.0624	0.0	100	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.63#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0979	0.0	100	0.01
81	T	n-Propylbenzene	-1.0000	0.3177	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2883	3.9	100	-0.01
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3151	0.0	0	0.00
84	T	2-Chlorotoluene	-1.0000	0.3223	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3836	0.0	0	-0.04
86	T	a-Methylstyrene	-1.0000	0.2851	0.0	100	0.00
87	T	tert-Butylbenzene	-1.0000	0.2332	0.0	100	0.00
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3232	0.0	0	0.01
89	T	sec-Butylbenzene	-1.0000	0.3217	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.3552	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3372	0.0	0	0.00
92	T	1,4-Dichlorobenzene	-1.0000	0.3512	0.0	0	0.00
93	T	n-Butylbenzene	-1.0000	0.3321	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.3288	-9.6	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1708	0.0	100	-0.01
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3346	0.0	100	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2942	0.0	100	0.00
98	T	Naphthalene	-1.0000	0.3611	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.3257	-8.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M16437.D 8260WTR.M Tue Feb 28 14:52:54 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16438.D Vial: 3
Acq On : 25 Feb 2017 17:32 Operator: ADC
Sample : WG601938-03 0.4ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:52:05 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	558347	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.19	117	379540	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	183151	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#		
57) Toluene-d8	12.41	98	1090	0.0511	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#		
78) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	3672	0.4205	ug/L #	65
3) Chloromethane	3.67	50	6039	0.5187	ug/L #	23
4) Vinyl Chloride	3.91	62	4629	0.4997	ug/L	89
5) 1,3-Butadiene	3.96	54	3378	Below Cal	#	61
6) Bromomethane	4.80	94	2589	0.4417	ug/L	79
7) Chloroethane	4.96	64	2765	0.4726	ug/L #	55
8) Trichlorofluoromethane	5.44	101	4733	0.4467	ug/L	84
10) Isoprene	5.99	67	4392	0.4102	ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	1953	0.3369	ug/L	92
13) Acetone	6.28	43	1139	0.6893	ug/L #	46
14) 1,1-Dichloroethene	6.50	61	5360	0.4569	ug/L	95
16) Dimethyl Sulfide	6.76	62	3770	0.4171	ug/L	89
18) Methyl acetate	7.01	43	2083	0.4031	ug/L #	65
19) Methylene Chloride	7.25	84	3243	0.4568	ug/L	90
20) Carbon Disulfide	7.30	76	9861	0.5009	ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	7416	0.4135	ug/L #	71
23) trans-1,2-Dichloroethene	7.69	96	2692	0.4130	ug/L	89
24) n-Hexane	7.78	57	4313	0.4053	ug/L #	71
26) Vinyl Acetate	8.26	43	4825	0.3802	ug/L #	77
27) 1,1-Dichloroethane	8.28	63	6611	0.4665	ug/L	97
29) 2-Butanone	8.81	43	514	0.1847	ug/L #	55
31) 2,2-Dichloropropane	9.04	77	4551	0.4467	ug/L	79
32) cis-1,2-Dichloroethene	9.10	96	3424	0.4508	ug/L	84
33) Chloroform	9.30	83	6147	0.4982	ug/L	94
34) 1-Bromopropane	9.41	122	189	0.1323	ug/L #	2
35) Bromochloromethane	9.51	130	1656	0.3988	ug/L	96
36) Tetrahydrofuran	9.54	42	1329	0.6549	ug/L #	41
38) 1,1,1-Trichloroethane	9.79	97	4790	0.4385	ug/L #	83
39) Cyclohexane	9.82	56	6609	0.4535	ug/L	92
40) 1,1-Dichloropropene	9.99	75	3875	0.4191	ug/L	87
41) Carbon Tetrachloride	10.11	117	3721	0.4009	ug/L #	87
44) 1,2-Dichloroethane	10.29	62	4285	0.4375	ug/L	86
45) Benzene	10.32	78	12146	0.4567	ug/L	99
46) Trichloroethene	11.03	130	2839	0.4210	ug/L	99
47) Methylcyclohexane	11.10	83	4986	0.4347	ug/L	89
48) 1,2-Dichloropropane	11.24	63	2833	0.3548	ug/L	95
50) Bromodichloromethane	11.52	83	3966	0.4371	ug/L #	82
51) Dibromomethane	11.60	93	1518	0.3876	ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.79	63	1748	0.3782	ug/L #	53
53) 4-Methyl-2-Pentanone	11.81	58	663	0.2745	ug/L #	40

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\022517\11M16438.D Vial: 3
Acq On : 25 Feb 2017 17:32 Operator: ADC
Sample : WG601938-03 0.4ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:52:05 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

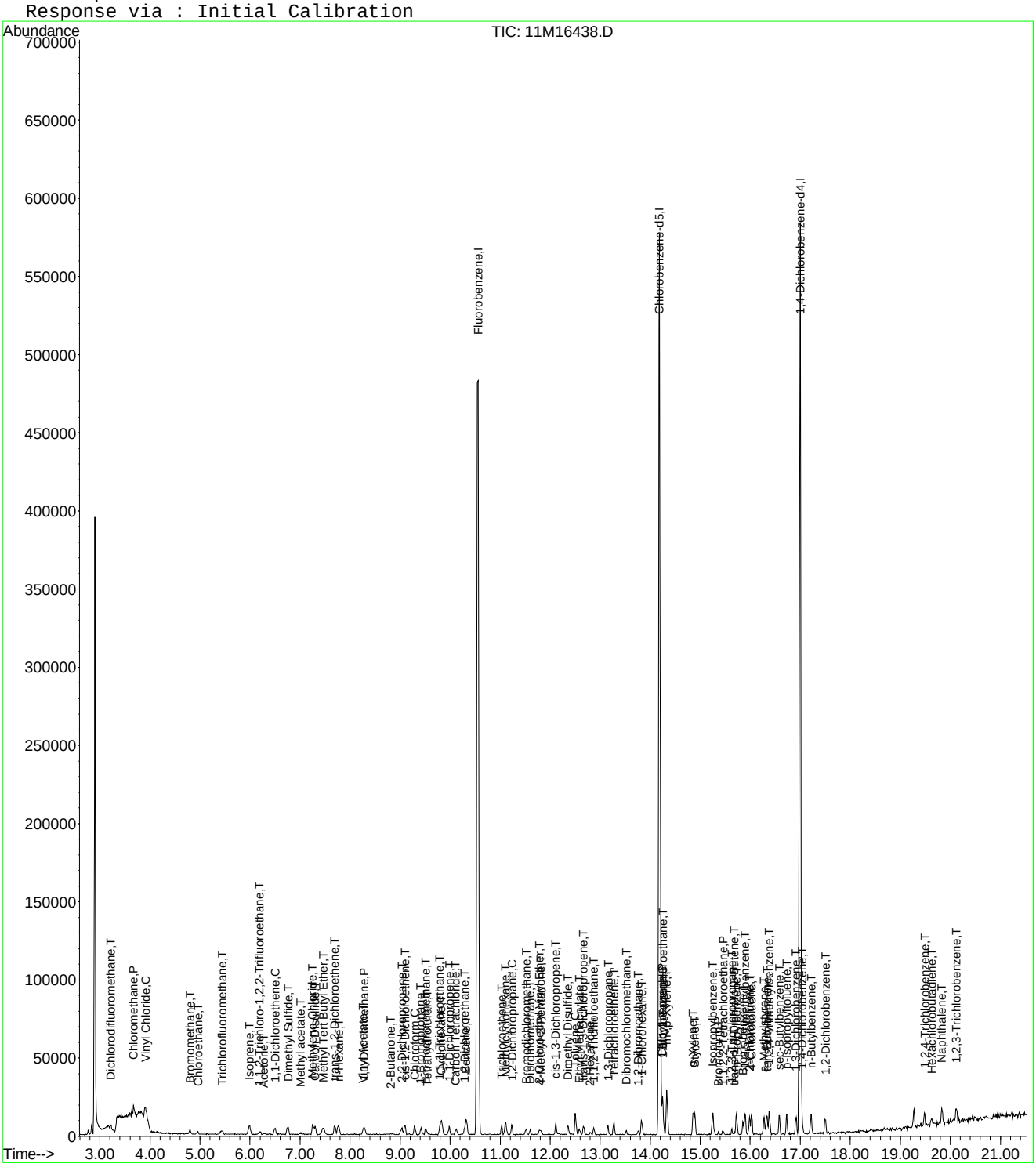
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	cis-1,3-Dichloropropene	12.11	75	5175	0.4736 ug/L		90
55)	Dimethyl Disulfide	12.36	79	2988	0.4445 ug/L		74
58)	Toluene	12.50	91	12988	0.4568 ug/L		98
59)	Ethyl Methacrylate	12.58	69	2969	0.3933 ug/L		90
60)	trans-1,3-Dichloropropene	12.67	75	3905	0.4258 ug/L		86
61)	1,1,2-Trichloroethane	12.87	97	2249	0.4108 ug/L		88
62)	2-Hexanone	12.80	43	1531	0.3690 ug/L	#	44
63)	1,3-Dichloropropane	13.16	76	4157	0.4446 ug/L		86
64)	Tetrachloroethene	13.28	164	2133	0.4058 ug/L		88
65)	Dibromochloromethane	13.52	129	2387	0.3802 ug/L		95
66)	1,2-Dibromoethane	13.76	107	1992	0.3949 ug/L		98
67)	1-Chlorohexane	13.83	91	3914	0.4483 ug/L		99
68)	Chlorobenzene	14.24	112	7611	0.4480 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.26	131	2442	0.3838 ug/L		92
70)	Ethylbenzene	14.25	106	3833	0.4056 ug/L		57
71)	m-,p-Xylene	14.33	106	10094	0.9072 ug/L		74
72)	o-Xylene	14.86	106	4987	0.4425 ug/L		83
73)	Styrene	14.89	104	7767	0.4264 ug/L		90
74)	Bromoform	15.36	173	1122	0.2773 ug/L	#	28
75)	Isopropylbenzene	15.25	105	13242	0.4499 ug/L		88
77)	1,1,2,2-Tetrachloroethane	15.46	83	2663	0.4228 ug/L		92
79)	1,2,3-Trichloropropane	15.63	110	574	0.3176 ug/L	#	49
80)	trans-1,4-Dichloro-2-Buten	15.67	53	542	0.2460 ug/L	#	1
81)	n-Propylbenzene	15.73	91	16044	0.4744 ug/L		87
82)	Bromobenzene	15.85	156	2887	0.4072 ug/L		77
83)	1,3,5-Trimethylbenzene	15.89	105	10799	0.4555 ug/L		91
84)	2-Chlorotoluene	15.98	91	10783	0.4635 ug/L		98
85)	4-Chlorotoluene	16.03	91	9198	0.4707 ug/L		95
86)	a-Methylstyrene	16.27	118	5291	0.4506 ug/L		91
87)	tert-Butylbenzene	16.34	134	1984	0.3884 ug/L		61
88)	1,2,4-Trimethylbenzene	16.38	105	10950	0.4472 ug/L		100
89)	sec-Butylbenzene	16.58	105	12437	0.4307 ug/L		96
90)	p-Isopropyltoluene	16.73	119	10553	0.4369 ug/L		97
91)	1,3-Dichlorobenzene	16.92	146	6030	0.4566 ug/L		85
92)	1,4-Dichlorobenzene	17.04	146	6659	0.4977 ug/L		99
93)	n-Butylbenzene	17.22	91	10481	0.4597 ug/L		92
94)	1,2-Dichlorobenzene	17.50	146	5771	0.4665 ug/L		85
96)	1,2,4-Trichlorobenzene	19.49	180	4228	0.4737 ug/L		90
97)	Hexachlorobutadiene	19.62	225	1774	0.3943 ug/L	#	61
98)	Naphthalene	19.83	128	8496	0.4474 ug/L		98
99)	1,2,3-Trichlorobenzene	20.12	180	3723	0.4358 ug/L		85

(#) = qualifier out of range (m) = manual integration
11M16438.D 8260WTR.M Tue Feb 28 14:53:27 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16438.D Vial: 3
Acq On : 25 Feb 2017 17:32 Operator: ADC
Sample : WG601938-03 0.4ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:52 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\022517\11M16438.D Vial: 3
Acq On : 25 Feb 2017 17:32 Operator: ADC
Sample : WG601938-03 0.4ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.01
2	T	Dichlorodifluoromethane	-1.0000	0.4205	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.5187	0.0	0	0.00
4	C	Vinyl Chloride	0.4000	0.4997	-24.9#	100	0.01
5	T	1,3-Butadiene	-1.0000	-0.6405	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.4417	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.4726	0.0	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.4467	-11.7	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	0.4000	0.4102	-2.5	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.17#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3369	0.0	100	-0.01
13	T	Acetone	-1.0000	0.6893	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4569	-14.2	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.60#
16	T	Dimethyl Sulfide	0.4000	0.4171	-4.3	100	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.00#
18	T	Methyl acetate	-1.0000	0.4031	0.0	100	0.00
19	T	Methylene Chloride	0.4000	0.4568	-14.2	100	-0.01
20	T	Carbon Disulfide	-1.0000	0.5009	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.42#
22	T	Methyl Tert Butyl Ether	0.4000	0.4135	-3.4	100	0.01
23	T	trans-1,2-Dichloroethene	0.4000	0.4130	-3.2	100	0.00
24	T	n-Hexane	-1.0000	0.4053	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0084	0.0	0	0.00
26	T	Vinyl Acetate	-1.0000	0.3802	0.0	100	0.01
27	P	1,1-Dichloroethane	0.4000	0.4665	-16.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.63#
29	T	2-Butanone	-1.0000	0.1847	0.0	100	-0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.91#
31	T	2,2-Dichloropropane	0.4000	0.4467	-11.7	100	0.01
32	T	cis-1,2-Dichloroethene	0.4000	0.4508	-12.7	100	0.01
33	C	Chloroform	0.4000	0.4981	-24.5#	100	0.00
34	T	1-Bromopropane	-1.0000	0.1323	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3988	0.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6549	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.56#
38	T	1,1,1-Trichloroethane	0.4000	0.4385	-9.6	100	0.00
39	T	Cyclohexane	0.4000	0.4535	-13.4	100	0.00
40	T	1,1-Dichloropropene	0.4000	0.4191	-4.8	100	0.01
41	T	Carbon Tetrachloride	0.4000	0.4009	-0.2	100	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0138	0.0	0	-0.08
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.17#
44	T	1,2-Dichloroethane	0.4000	0.4375	-9.4	100	0.00
45	T	Benzene	0.4000	0.4567	-14.2	100	0.00
46	T	Trichloroethene	0.4000	0.4210	-5.2	100	0.00
47	T	Methylcyclohexane	0.4000	0.4346	-8.7	100	0.00
48	C	1,2-Dichloropropane	0.4000	0.3548	11.3	100	0.01
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.50#
50	T	Bromodichloromethane	0.4000	0.4371	-9.3	100	0.00
51	T	Dibromomethane	0.4000	0.3876	3.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	0.4000	0.3782	5.5	100	0.00
53	T	4-Methyl-2-Pentanone	0.4000	0.2745	31.4#	100	0.00
54	T	cis-1,3-Dichloropropene	0.4000	0.4736	-18.4	100	0.00

(#) = Out of Range
11M16438.D 8260WTR.M Tue Feb 28 14:53:07 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16438.D Vial: 3
Acq On : 25 Feb 2017 17:32 Operator: ADC
Sample : WG601938-03 0.4ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Mon Feb 27 17:01:15 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.4000	0.4445	-11.1	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0511	0.0	100	0.00
58	C	Toluene	0.4000	0.4568	-14.2	100	0.00
59	T	Ethyl Methacrylate	-1.0000	0.3933	0.0	100	0.00
60	T	trans-1,3-Dichloropropene	-1.0000	0.4258	0.0	100	0.00
61	T	1,1,2-Trichloroethane	0.4000	0.4108	-2.7	100	0.00
62	T	2-Hexanone	-1.0000	0.3690	0.0	100	0.00
63	T	1,3-Dichloropropane	0.4000	0.4446	-11.1	100	0.01
64	T	Tetrachloroethene	0.4000	0.4058	-1.5	100	0.00
65	T	Dibromochloromethane	0.4000	0.3802	5.0	100	0.00
66	T	1,2-Dibromoethane	0.4000	0.3949	1.3	100	0.00
67	T	1-Chlorohexane	0.4000	0.4483	-12.1	100	0.00
68	P	Chlorobenzene	0.4000	0.4480	-12.0	100	0.01
69	T	1,1,1,2-Tetrachloroethane	0.4000	0.3838	4.0	100	0.00
70	C	Ethylbenzene	-1.0000	0.4056	0.0	100	0.00
71	T	m-,p-Xylene	0.8000	0.9072	-13.4	100	0.00
72	T	o-Xylene	0.4000	0.4425	-10.6	100	0.00
73	T	Styrene	0.4000	0.4265	-6.6	100	-0.01
74	P	Bromoform	-1.0000	0.2773	0.0	100	0.00
75	T	Isopropylbenzene	0.4000	0.4499	-12.5	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	0.4000	0.4228	-5.7	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.58#
79	T	1,2,3-Trichloropropane	-1.0000	0.3176	0.0	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2460	0.0	100	0.00
81	T	n-Propylbenzene	0.4000	0.4744	-18.6	100	0.00
82	T	Bromobenzene	0.4000	0.4072	-1.8	100	-0.01
83	T	1,3,5-Trimethylbenzene	0.4000	0.4555	-13.9	100	-0.01
84	T	2-Chlorotoluene	0.4000	0.4635	-15.9	100	0.00
85	T	4-Chlorotoluene	0.4000	0.4707	-17.7	100	0.00
86	T	a-Methylstyrene	0.4000	0.4506	-12.6	100	0.00
87	T	tert-Butylbenzene	0.4000	0.3884	2.9	100	0.00
88	T	1,2,4-Trimethylbenzene	0.4000	0.4472	-11.8	100	0.00
89	T	sec-Butylbenzene	-1.0000	0.4307	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.4369	0.0	0	0.00
91	T	1,3-Dichlorobenzene	0.4000	0.4566	-14.2	100	0.00
92	T	1,4-Dichlorobenzene	0.4000	0.4978	-24.4	100	0.00
93	T	n-Butylbenzene	0.4000	0.4597	-14.9	100	0.00
94	T	1,2-Dichlorobenzene	0.4000	0.4664	-16.6	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.43#
96	T	1,2,4-Trichlorobenzene	0.4000	0.4737	-18.4	100	0.01
97	T	Hexachlorobutadiene	0.4000	0.3943	1.4	100	0.00
98	T	Naphthalene	0.4000	0.4474	-11.8	100	0.00
99	T	1,2,3-Trichlorobenzene	0.4000	0.4358	-8.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2
11M16438.D 8260WTR.M Tue Feb 28 14:53:07 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16439.D Vial: 4
Acq On : 25 Feb 2017 18:01 Operator: ADC
Sample : WG601938-04 1.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:57:04 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.56	96	560268	25.00	ug/L		0.01
56) Chlorobenzene-d5	14.19	117	388239	25.00	ug/L		0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	194363	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#			
43) 1,2-Dichloroethane-d4	10.17	65	203	0.0288	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.12%#			
57) Toluene-d8	12.42	98	1025	0.0469	ug/L		0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#			
78) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.22	85	8292	0.9464	ug/L		98
3) Chloromethane	3.67	50	12720	1.0887	ug/L		78
4) Vinyl Chloride	3.91	62	9139	0.9832	ug/L		99
5) 1,3-Butadiene	3.96	54	7721	0.4638	ug/L	#	74
6) Bromomethane	4.80	94	7040	1.1969	ug/L		96
7) Chloroethane	4.95	64	5559	0.9470	ug/L		98
8) Trichlorofluoromethane	5.44	101	10427	0.9806	ug/L		97
9) Diethyl ether	5.96	59	31902	4.9312	ug/L		98
10) Isoprene	5.98	67	10192	0.9486	ug/L		96
11) Acrolein	6.18	56	1223	2.0271	ug/L		94
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	5493	0.9443	ug/L		98
13) Acetone	6.28	43	2118	1.2774	ug/L	#	46
14) 1,1-Dichloroethene	6.49	61	11445	0.9722	ug/L		99
15) Tert-Butyl Alcohol	6.62	59	3210	9.1683	ug/L	#	71
16) Dimethyl Sulfide	6.76	62	8428	0.9292	ug/L		98
17) Iodomethane	7.00	142	218	2.0301	ug/L	#	32
18) Methyl acetate	7.01	43	4541	0.8757	ug/L	#	80
19) Methylene Chloride	7.26	84	7342	1.0307	ug/L		97
20) Carbon Disulfide	7.30	76	20773	1.0516	ug/L		99
21) Acrylonitrile	7.44	53	6048	2.4314	ug/L		93
22) Methyl Tert Butyl Ether	7.47	73	18102	1.0060	ug/L		96
23) trans-1,2-Dichloroethene	7.69	96	5913	0.9040	ug/L		93
24) n-Hexane	7.77	57	9894	0.9265	ug/L	#	90
25) Diisopropyl ether	8.10	45	144402	5.3036	ug/L		93
26) Vinyl Acetate	8.26	43	13226	1.0386	ug/L		96
27) 1,1-Dichloroethane	8.29	63	13914	0.9785	ug/L		96
28) Ethyl-Tert-Butyl ether	8.64	59	128866	5.4395	ug/L		95
29) 2-Butanone	8.83	43	2660	0.9523	ug/L	#	55
30) Propionitrile	8.92	54	3888	4.8951	ug/L	#	71
31) 2,2-Dichloropropane	9.04	77	10182	0.9959	ug/L		99
32) cis-1,2-Dichloroethene	9.10	96	7281	0.9554	ug/L		88
33) Chloroform	9.29	83	13000	1.0499	ug/L		99
34) 1-Bromopropane	9.43	122	1130	0.7881	ug/L		86
35) Bromochloromethane	9.51	130	3870	0.9289	ug/L		99
36) Tetrahydrofuran	9.54	42	10984	5.3939	ug/L		97
38) 1,1,1-Trichloroethane	9.80	97	10705	0.9766	ug/L	#	94
39) Cyclohexane	9.83	56	14126	0.9660	ug/L		98
40) 1,1-Dichloropropene	9.98	75	8899	0.9591	ug/L		100
41) Carbon Tetrachloride	10.11	117	8439	0.9061	ug/L		97
42) Tert-Amyl-Methyl ether	10.08	73	102978	5.3980	ug/L		97

(#) = qualifier out of range (m) = manual integration
11M16439.D 8260WTR.M Tue Feb 28 14:57:27 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16439.D Vial: 4
Acq On : 25 Feb 2017 18:01 Operator: ADC
Sample : WG601938-04 1.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:57:04 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

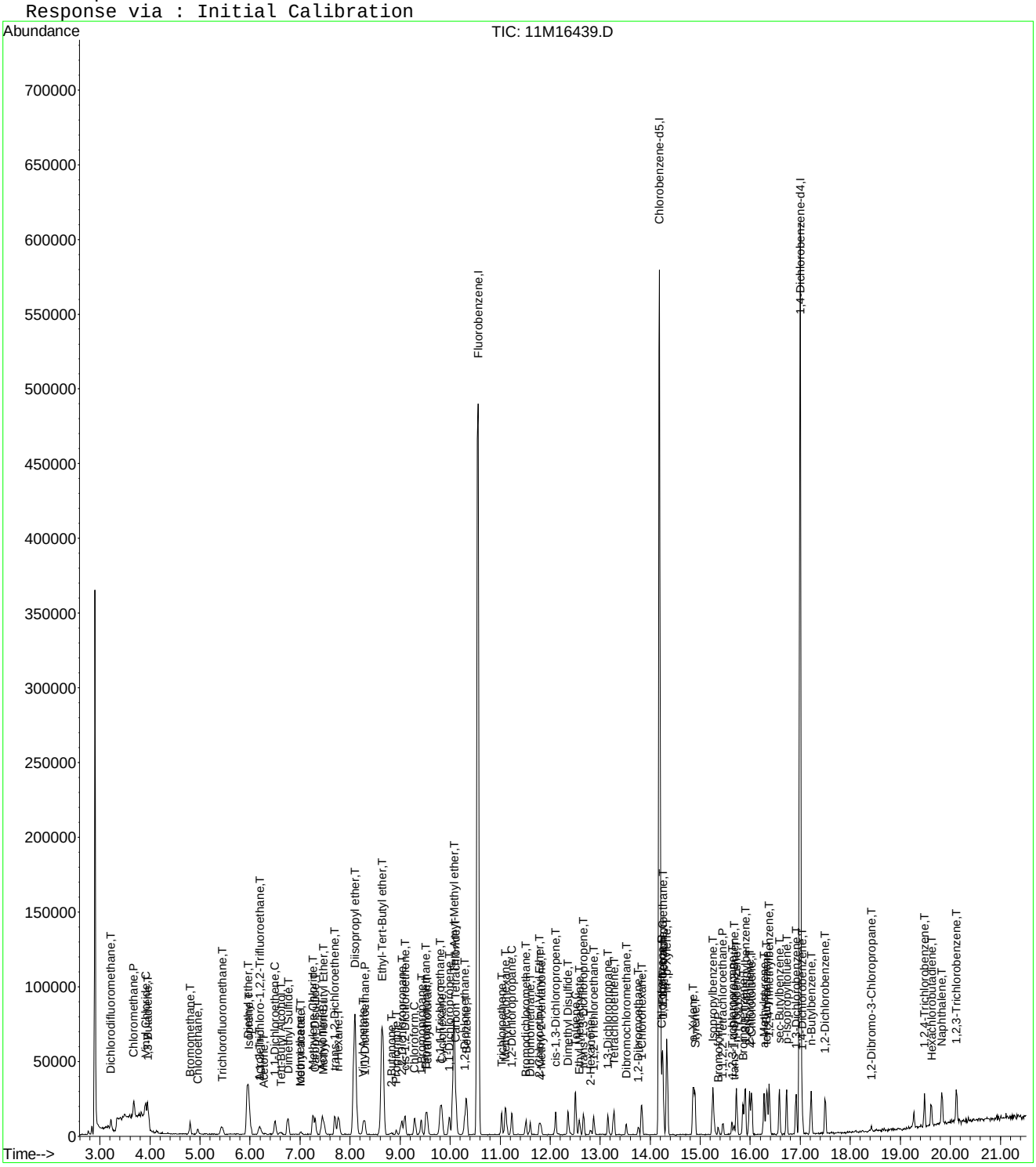
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	1,2-Dichloroethane	10.29	62	9498	0.9665	ug/L		98
45)	Benzene	10.33	78	28312	1.0608	ug/L		97
46)	Trichloroethene	11.03	130	6036	0.8919	ug/L		99
47)	Methylcyclohexane	11.10	83	11043	0.9594	ug/L		95
48)	1,2-Dichloropropane	11.23	63	7544	0.9416	ug/L		94
50)	Bromodichloromethane	11.51	83	8508	0.9345	ug/L	#	96
51)	Dibromomethane	11.60	93	3635	0.9250	ug/L		92
52)	2-Chloroethyl Vinyl Ether	11.79	63	3937	0.8431	ug/L		98
53)	4-Methyl-2-Pentanone	11.82	58	2377	0.9439	ug/L	#	66
54)	cis-1,3-Dichloropropene	12.11	75	11124	1.0145	ug/L		91
55)	Dimethyl Disulfide	12.36	79	5936	0.8801	ug/L		96
58)	Toluene	12.51	91	29601	1.0178	ug/L		88
59)	Ethyl Methacrylate	12.58	69	7007	0.9075	ug/L		91
60)	trans-1,3-Dichloropropene	12.67	75	9473	1.0098	ug/L		93
61)	1,1,2-Trichloroethane	12.87	97	5310	0.9481	ug/L		90
62)	2-Hexanone	12.81	43	3742	0.8817	ug/L	#	67
63)	1,3-Dichloropropane	13.15	76	8984	0.9393	ug/L		89
64)	Tetrachloroethene	13.28	164	5045	0.9384	ug/L		96
65)	Dibromochloromethane	13.52	129	5731	0.8924	ug/L		95
66)	1,2-Dibromoethane	13.76	107	4865	0.9429	ug/L		97
67)	1-Chlorohexane	13.83	91	8208	0.9190	ug/L		93
68)	Chlorobenzene	14.23	112	17328	0.9972	ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.26	131	6240	0.9588	ug/L		99
70)	Ethylbenzene	14.25	106	8925	0.9232	ug/L		61
71)	m-,p-Xylene	14.33	106	22830	2.0060	ug/L		77
72)	o-Xylene	14.86	106	11051	0.9586	ug/L		89
73)	Styrene	14.90	104	17466	0.9375	ug/L		98
74)	Bromoform	15.36	173	3399	0.8212	ug/L		79
75)	Isopropylbenzene	15.25	105	29436	0.9776	ug/L		93
77)	1,1,2,2-Tetrachloroethane	15.45	83	6412	0.9593	ug/L		96
79)	1,2,3-Trichloropropane	15.64	110	1658	0.8644	ug/L		92
80)	trans-1,4-Dichloro-2-Buten	15.67	53	1873	0.8010	ug/L		71
81)	n-Propylbenzene	15.73	91	34174	0.9522	ug/L		94
82)	Bromobenzene	15.86	156	7494	0.9960	ug/L		98
83)	1,3,5-Trimethylbenzene	15.90	105	23447	0.9320	ug/L		97
84)	2-Chlorotoluene	15.99	91	23769	0.9628	ug/L		92
85)	4-Chlorotoluene	16.03	91	19583	0.9443	ug/L		91
86)	a-Methylstyrene	16.27	118	10791	0.8659	ug/L		98
87)	tert-Butylbenzene	16.33	134	5344	0.9859	ug/L		93
88)	1,2,4-Trimethylbenzene	16.38	105	24688	0.9501	ug/L		91
89)	sec-Butylbenzene	16.58	105	29679	0.9685	ug/L		92
90)	p-Isopropyltoluene	16.73	119	24018	0.9370	ug/L		93
91)	1,3-Dichlorobenzene	16.92	146	13104	0.9351	ug/L		92
92)	1,4-Dichlorobenzene	17.04	146	13094	0.9223	ug/L	#	65
93)	n-Butylbenzene	17.22	91	22139	0.9150	ug/L		93
94)	1,2-Dichlorobenzene	17.49	146	12559	0.9566	ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.43	75	929	0.7411	ug/L		87
96)	1,2,4-Trichlorobenzene	19.48	180	8699	0.9184	ug/L		91
97)	Hexachlorobutadiene	19.62	225	4463	0.9347	ug/L		91
98)	Naphthalene	19.83	128	20129	0.9988	ug/L		99
99)	1,2,3-Trichlorobenzene	20.12	180	8682	0.9576	ug/L		93

(#) = qualifier out of range (m) = manual integration
11M16439.D 8260WTR.M Tue Feb 28 14:57:27 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16439.D Vial: 4
Acq On : 25 Feb 2017 18:01 Operator: ADC
Sample : WG601938-04 1.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 14:57 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\022517\11M16439.D Vial: 4
Acq On : 25 Feb 2017 18:01 Operator: ADC
Sample : WG601938-04 1.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.01
2	T	Dichlorodifluoromethane	1.0000	0.9464	5.4	100	0.00
3	P	Chloromethane	1.0000	1.0887	-8.9	100	0.00
4	C	Vinyl Chloride	1.0000	0.9832	1.7	100	0.01
5	T	1,3-Butadiene	1.0000	0.4638	53.6#	100	0.02
6	T	Bromomethane	1.0000	1.1969	-19.7	100	0.00
7	T	Chloroethane	1.0000	0.9470	5.3	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9806	1.9	100	0.01
9	T	Diethyl ether	5.0000	4.9312	1.4	100	0.01
10	T	Isoprene	1.0000	0.9486	5.1	100	-0.01
11	T	Acrolein	2.5000	2.0271	18.9	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9443	5.6	100	0.00
13	T	Acetone	-1.0000	1.2774	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9722	2.8	100	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.1683	8.3	100	0.02
16	T	Dimethyl Sulfide	1.0000	0.9292	7.1	100	0.01
17	T	Iodomethane	-1.0000	2.0301	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.8757	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0307	-3.1	100	0.00
20	T	Carbon Disulfide	1.0000	1.0516	-5.2	100	0.00
21	T	Acrylonitrile	2.5000	2.4314	2.7	100	0.02
22	T	Methyl Tert Butyl Ether	1.0000	1.0060	-0.6	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
24	T	n-Hexane	-1.0000	0.9265	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.3036	-6.1	100	0.01
26	T	Vinyl Acetate	-1.0000	1.0386	0.0	100	0.01
27	P	1,1-Dichloroethane	1.0000	0.9785	2.1	100	0.01
28	T	Ethyl-Tert-Butyl ether	5.0000	5.4395	-8.8	100	0.01
29	T	2-Butanone	-1.0000	0.9523	0.0	100	0.01
30	T	Propionitrile	5.0000	4.8951	2.1	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9960	0.4	100	0.01
32	T	cis-1,2-Dichloroethene	1.0000	0.9554	4.5	100	0.01
33	C	Chloroform	1.0000	1.0499	-5.0	100	-0.01
34	T	1-Bromopropane	1.0000	0.7881	21.2	100	0.01
35	T	Bromochloromethane	1.0000	0.9289	7.1	100	0.00
36	T	Tetrahydrofuran	5.0000	5.3939	-7.9	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.56#
38	T	1,1,1-Trichloroethane	1.0000	0.9766	2.3	100	0.01
39	T	Cyclohexane	1.0000	0.9660	3.4	100	0.01
40	T	1,1-Dichloropropene	1.0000	0.9591	4.1	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9061	9.4	100	-0.01
42	T	Tert-Amyl-Methyl ether	5.0000	5.3980	-8.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0288	0.0	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9665	3.3	100	0.00
45	T	Benzene	1.0000	1.0608	-6.1	100	0.01
46	T	Trichloroethene	1.0000	0.8919	10.8	100	0.00
47	T	Methylcyclohexane	1.0000	0.9594	4.1	100	0.00
48	C	1,2-Dichloropropane	1.0000	0.9416	5.8	100	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.50#
50	T	Bromodichloromethane	1.0000	0.9345	6.5	100	-0.01
51	T	Dibromomethane	1.0000	0.9250	7.5	100	0.00
52	T	2-Chloroethyl Vinyl Ether	1.0000	0.8431	15.7	100	0.00
53	T	4-Methyl-2-Pentanone	1.0000	0.9439	5.6	100	0.01
54	T	cis-1,3-Dichloropropene	1.0000	1.0145	-1.5	100	0.00

(#) = Out of Range
11M16439.D 8260WTR.M Tue Feb 28 14:57:24 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16439.D Vial: 4
Acq On : 25 Feb 2017 18:01 Operator: ADC
Sample : WG601938-04 1.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	1.0000	0.8801	12.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0469	0.0	100	0.01
58	C	Toluene	1.0000	1.0178	-1.8	100	0.01
59	T	Ethyl Methacrylate	1.0000	0.9075	9.3	100	0.00
60	T	trans-1,3-Dichloropropene	1.0000	1.0098	-1.0	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.9481	5.2	100	0.00
62	T	2-Hexanone	-1.0000	0.8817	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9393	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9384	6.2	100	0.00
65	T	Dibromochloromethane	1.0000	0.8924	10.8	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.9429	5.7	100	0.00
67	T	1-Chlorohexane	1.0000	0.9190	8.1	100	0.00
68	P	Chlorobenzene	1.0000	0.9971	0.3	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9588	4.1	100	0.00
70	C	Ethylbenzene	1.0000	0.9232	7.7	100	0.00
71	T	m-,p-Xylene	2.0000	2.0060	-0.3	100	0.00
72	T	o-Xylene	1.0000	0.9586	4.1	100	0.00
73	T	Styrene	1.0000	0.9375	6.3	100	0.00
74	P	Bromoform	1.0000	0.8212	17.9	100	0.00
75	T	Isopropylbenzene	1.0000	0.9776	2.2	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9593	4.1	100	-0.01
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.58#
79	T	1,2,3-Trichloropropane	1.0000	0.8644	13.6	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	0.8010	19.9	100	0.00
81	T	n-Propylbenzene	1.0000	0.9522	4.8	100	0.00
82	T	Bromobenzene	1.0000	0.9960	0.4	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9320	6.8	100	0.00
84	T	2-Chlorotoluene	1.0000	0.9628	3.7	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9443	5.6	100	0.00
86	T	a-Methylstyrene	1.0000	0.8659	13.4	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9859	1.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	1.0000	0.9501	5.0	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9685	3.1	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9370	6.3	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	0.9351	6.5	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	0.9223	7.8	100	0.00
93	T	n-Butylbenzene	1.0000	0.9150	8.5	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9566	4.3	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	1.0000	0.7410	25.9#	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9184	8.2	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.9347	6.5	100	0.00
98	T	Naphthalene	1.0000	0.9988	0.1	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9576	4.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M16439.D 8260WTR.M Tue Feb 28 14:57:24 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16440.D Vial: 5
Acq On : 25 Feb 2017 18:30 Operator: ADC
Sample : WG601938-05 2.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:10:33 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.56	96	556844	25.00	ug/L		0.01
56) Chlorobenzene-d5	14.19	117	379576	25.00	ug/L		0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	186775	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#			
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L		
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#			
57) Toluene-d8	12.42	98	819	0.0384	ug/L		0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.16%#			
78) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.24	85	16841	1.9339	ug/L		99
3) Chloromethane	3.68	50	26901	2.3166	ug/L		92
4) Vinyl Chloride	3.92	62	18356	1.9869	ug/L		97
5) 1,3-Butadiene	3.97	54	14301	2.1637	ug/L	#	76
6) Bromomethane	4.81	94	13743	2.3508	ug/L		98
7) Chloroethane	4.96	64	11530	1.9763	ug/L		97
8) Trichlorofluoromethane	5.45	101	20436	1.9338	ug/L		99
9) Diethyl ether	5.96	59	161311	25.0879	ug/L		98
10) Isoprene	6.00	67	20897	1.9568	ug/L		99
11) Acrolein	6.18	56	6437	10.7349	ug/L		90
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	11618	2.0095	ug/L		99
13) Acetone	6.29	43	3595	2.1816	ug/L	#	56
14) 1,1-Dichloroethene	6.50	61	23760	2.0306	ug/L		99
15) Tert-Butyl Alcohol	6.61	59	15709	45.1436	ug/L	#	85
16) Dimethyl Sulfide	6.76	62	17975	1.9940	ug/L		99
17) Iodomethane	7.00	142	2171	2.2805	ug/L		86
18) Methyl acetate	7.02	43	10626	2.0617	ug/L	#	78
19) Methylene Chloride	7.27	84	13856	1.9570	ug/L		93
20) Carbon Disulfide	7.31	76	41588	2.1182	ug/L		99
21) Acrylonitrile	7.43	53	23797	9.6255	ug/L		94
22) Methyl Tert Butyl Ether	7.47	73	36338	2.0318	ug/L		100
23) trans-1,2-Dichloroethene	7.69	96	13127	2.0192	ug/L		99
24) n-Hexane	7.77	57	19776	1.8632	ug/L	#	93
25) Diisopropyl ether	8.10	45	718449	26.5493	ug/L		95
26) Vinyl Acetate	8.26	43	27089	2.1402	ug/L		96
27) 1,1-Dichloroethane	8.29	63	28840	2.0407	ug/L		98
28) Ethyl-Tert-Butyl ether	8.64	59	649383	27.5794	ug/L		95
29) 2-Butanone	8.82	43	5794	2.0871	ug/L	#	80
30) Propionitrile	8.92	54	17536	22.2141	ug/L		98
31) 2,2-Dichloropropane	9.04	77	21864	2.1518	ug/L		98
32) cis-1,2-Dichloroethene	9.10	96	15300	2.0200	ug/L		100
33) Chloroform	9.30	83	24640	2.0022	ug/L		99
34) 1-Bromopropane	9.43	122	2631	1.8461	ug/L		99
35) Bromochloromethane	9.52	130	7526	1.8175	ug/L		91
36) Tetrahydrofuran	9.54	42	48306	23.8675	ug/L		99
38) 1,1,1-Trichloroethane	9.80	97	21538	1.9770	ug/L		98
39) Cyclohexane	9.83	56	29724	2.0452	ug/L		98
40) 1,1-Dichloropropene	9.99	75	19062	2.0670	ug/L		97
41) Carbon Tetrachloride	10.12	117	18246	1.9710	ug/L		98
42) Tert-Amyl-Methyl ether	10.08	73	511122	26.9572	ug/L		97

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\022517\11M16440.D Vial: 5
Acq On : 25 Feb 2017 18:30 Operator: ADC
Sample : WG601938-05 2.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:10:33 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

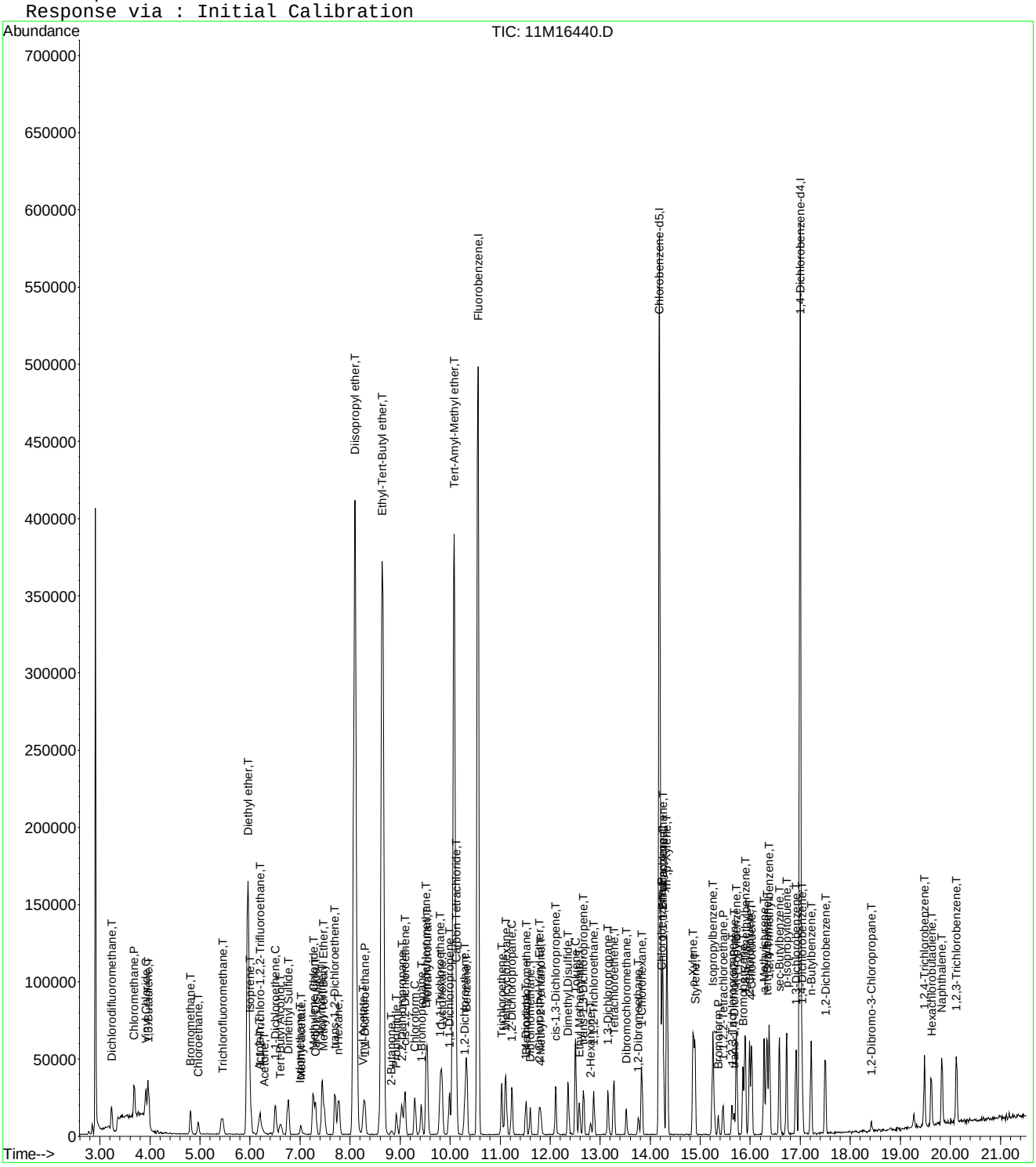
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	1,2-Dichloroethane	10.29	62	19899	2.0374	ug/L		95
45)	Benzene	10.33	78	55569	2.0949	ug/L		96
46)	Trichloroethene	11.03	130	13425	1.9960	ug/L		99
47)	Methylcyclohexane	11.12	83	22799	1.9928	ug/L		99
48)	1,2-Dichloropropane	11.23	63	16379	2.0570	ug/L		95
49)	1,4-Dioxane	11.51	88	316	12.0759	ug/L	#	20
50)	Bromodichloromethane	11.52	83	17781	1.9651	ug/L		98
51)	Dibromomethane	11.60	93	7930	2.0304	ug/L		92
52)	2-Chloroethyl Vinyl Ether	11.79	63	9116	1.9641	ug/L		96
53)	4-Methyl-2-Pentanone	11.81	58	4124	1.6477	ug/L		91
54)	cis-1,3-Dichloropropene	12.11	75	21041	1.9308	ug/L		98
55)	Dimethyl Disulfide	12.36	79	12149	1.8123	ug/L		99
58)	Toluene	12.51	91	58213	2.0473	ug/L		94
59)	Ethyl Methacrylate	12.58	69	13960	1.8492	ug/L		99
60)	trans-1,3-Dichloropropene	12.67	75	17959	1.9582	ug/L		98
61)	1,1,2-Trichloroethane	12.87	97	10986	2.0063	ug/L		99
62)	2-Hexanone	12.81	43	6997	1.6862	ug/L	#	71
63)	1,3-Dichloropropane	13.15	76	19658	2.1022	ug/L		96
64)	Tetrachloroethene	13.28	164	10336	1.9663	ug/L		94
65)	Dibromochloromethane	13.52	129	12123	1.9307	ug/L		94
66)	1,2-Dibromoethane	13.76	107	9588	1.9007	ug/L		93
67)	1-Chlorohexane	13.83	91	17231	1.9732	ug/L		99
68)	Chlorobenzene	14.23	112	35455	2.0869	ug/L		97
69)	1,1,1,2-Tetrachloroethane	14.26	131	12276	1.9293	ug/L		99
70)	Ethylbenzene	14.25	106	20008	2.1168	ug/L		86
71)	m-,p-Xylene	14.33	106	45681	4.1054	ug/L		75
72)	o-Xylene	14.86	106	22607	2.0059	ug/L		88
73)	Styrene	14.90	104	36886	2.0250	ug/L		94
74)	Bromoform	15.36	173	6942	1.7154	ug/L		94
75)	Isopropylbenzene	15.25	105	60231	2.0460	ug/L		93
77)	1,1,2,2-Tetrachloroethane	15.46	83	12792	1.9916	ug/L		97
79)	1,2,3-Trichloropropane	15.64	110	3710	2.0127	ug/L		97
80)	trans-1,4-Dichloro-2-Buten	15.67	53	3790	1.6866	ug/L		77
81)	n-Propylbenzene	15.73	91	71888	2.0844	ug/L		91
82)	Bromobenzene	15.86	156	14957	2.0687	ug/L		100
83)	1,3,5-Trimethylbenzene	15.90	105	48750	2.0165	ug/L		93
84)	2-Chlorotoluene	15.99	91	48665	2.0513	ug/L		92
85)	4-Chlorotoluene	16.03	91	40991	2.0569	ug/L		91
86)	a-Methylstyrene	16.27	118	23916	1.9970	ug/L		98
87)	tert-Butylbenzene	16.34	134	9904	1.9013	ug/L		76
88)	1,2,4-Trimethylbenzene	16.38	105	50864	2.0370	ug/L		94
89)	sec-Butylbenzene	16.58	105	61676	2.0945	ug/L		95
90)	p-Isopropyltoluene	16.73	119	51345	2.0845	ug/L		95
91)	1,3-Dichlorobenzene	16.92	146	26528	1.9699	ug/L		96
92)	1,4-Dichlorobenzene	17.04	146	27551	2.0194	ug/L		92
93)	n-Butylbenzene	17.22	91	44632	1.9196	ug/L		94
94)	1,2-Dichlorobenzene	17.51	146	25621	2.0307	ug/L		98
95)	1,2-Dibromo-3-Chloropropan	18.43	75	2214	1.8378	ug/L		90
96)	1,2,4-Trichlorobenzene	19.48	180	17879	1.9642	ug/L		94
97)	Hexachlorobutadiene	19.62	225	8124	1.7706	ug/L		98
98)	Naphthalene	19.83	128	40083	2.0697	ug/L		100
99)	1,2,3-Trichlorobenzene	20.12	180	17327	1.9888	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16440.D Vial: 5
Acq On : 25 Feb 2017 18:30 Operator: ADC
Sample : WG601938-05 2.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:10 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\022517\11M16440.D Vial: 5
Acq On : 25 Feb 2017 18:30 Operator: ADC
Sample : WG601938-05 2.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.01
2	T	Dichlorodifluoromethane	2.0000	1.9339	3.3	100	0.02
3	P	Chloromethane	2.0000	2.3166	-15.8	100	0.01
4	C	Vinyl Chloride	2.0000	1.9869	0.7	100	0.02
5	T	1,3-Butadiene	2.0000	2.1637	-8.2	100	0.03
6	T	Bromomethane	2.0000	2.3508	-17.5	100	0.01
7	T	Chloroethane	2.0000	1.9763	1.2	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9338	3.3	100	0.02
9	T	Diethyl ether	25.0000	25.0879	-0.4	100	0.01
10	T	Isoprene	2.0000	1.9568	2.2	100	0.01
11	T	Acrolein	12.5000	10.7349	14.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0095	-0.5	100	0.01
13	T	Acetone	2.0000	2.1816	-9.1	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0307	-1.5	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	45.1436	9.7	100	0.01
16	T	Dimethyl Sulfide	2.0000	1.9940	0.3	100	0.01
17	T	Iodomethane	2.0000	2.2805	-14.0	100	0.00
18	T	Methyl acetate	2.0000	2.0617	-3.1	100	0.01
19	T	Methylene Chloride	2.0000	1.9570	2.1	100	0.01
20	T	Carbon Disulfide	2.0000	2.1182	-5.9	100	0.01
21	T	Acrylonitrile	12.5000	9.6255	23.0	100	0.01
22	T	Methyl Tert Butyl Ether	2.0000	2.0318	-1.6	100	0.01
23	T	trans-1,2-Dichloroethene	2.0000	2.0192	-1.0	100	0.00
24	T	n-Hexane	2.0000	1.8632	6.8	100	0.00
25	T	Diisopropyl ether	25.0000	26.5493	-6.2	100	0.01
26	T	Vinyl Acetate	2.0000	2.1402	-7.0	100	0.01
27	P	1,1-Dichloroethane	2.0000	2.0407	-2.0	100	0.01
28	T	Ethyl-Tert-Butyl ether	25.0000	27.5794	-10.3	100	0.01
29	T	2-Butanone	2.0000	2.0871	-4.4	100	0.00
30	T	Propionitrile	25.0000	22.2141	11.1	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1518	-7.6	100	0.01
32	T	cis-1,2-Dichloroethene	2.0000	2.0200	-1.0	100	0.01
33	C	Chloroform	2.0000	2.0022	-0.1	100	0.00
34	T	1-Bromopropane	2.0000	1.8461	7.7	100	0.01
35	T	Bromochloromethane	2.0000	1.8175	9.1	100	0.01
36	T	Tetrahydrofuran	25.0000	23.8675	4.5	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.56#
38	T	1,1,1-Trichloroethane	2.0000	1.9770	1.1	100	0.01
39	T	Cyclohexane	2.0000	2.0452	-2.3	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.0670	-3.4	100	0.01
41	T	Carbon Tetrachloride	2.0000	1.9711	1.4	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	26.9572	-7.8	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.17#
44	T	1,2-Dichloroethane	2.0000	2.0374	-1.9	100	0.00
45	T	Benzene	2.0000	2.0949	-4.7	100	0.01
46	T	Trichloroethene	2.0000	1.9960	0.2	100	0.00
47	T	Methylcyclohexane	2.0000	1.9929	0.4	100	0.01
48	C	1,2-Dichloropropane	2.0000	2.0570	-2.9	100	0.00
49	T	1,4-Dioxane	-1.0000	12.0759	0.0	0	0.01
50	T	Bromodichloromethane	2.0000	1.9651	1.7	100	0.00
51	T	Dibromomethane	2.0000	2.0304	-1.5	100	0.00
52	T	2-Chloroethyl Vinyl Ether	2.0000	1.9641	1.8	100	0.00
53	T	4-Methyl-2-Pentanone	2.0000	1.6477	17.6	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9308	3.5	100	0.00

(#) = Out of Range
11M16440.D 8260WTR.M Tue Feb 28 15:10:46 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16440.D Vial: 5
Acq On : 25 Feb 2017 18:30 Operator: ADC
Sample : WG601938-05 2.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	2.0000	1.8123	9.4	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0384	0.0	100	0.01
58	C	Toluene	2.0000	2.0473	-2.4	100	0.01
59	T	Ethyl Methacrylate	2.0000	1.8492	7.5	100	0.00
60	T	trans-1,3-Dichloropropene	2.0000	1.9582	2.1	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.0063	-0.3	100	0.00
62	T	2-Hexanone	-1.0000	1.6862	0.0	100	0.01
63	T	1,3-Dichloropropane	2.0000	2.1022	-5.1	100	0.00
64	T	Tetrachloroethene	2.0000	1.9663	1.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9307	3.5	100	0.00
66	T	1,2-Dibromoethane	2.0000	1.9007	5.0	100	0.00
67	T	1-Chlorohexane	2.0000	1.9732	1.3	100	0.00
68	P	Chlorobenzene	2.0000	2.0869	-4.3	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	1.9293	3.5	100	0.00
70	C	Ethylbenzene	2.0000	2.1168	-5.8	100	0.00
71	T	m-,p-Xylene	4.0000	4.1054	-2.6	100	0.00
72	T	o-Xylene	2.0000	2.0059	-0.3	100	0.00
73	T	Styrene	2.0000	2.0250	-1.3	100	0.00
74	P	Bromoform	2.0000	1.7154	14.2	100	0.00
75	T	Isopropylbenzene	2.0000	2.0460	-2.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.9916	0.4	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.58#
79	T	1,2,3-Trichloropropane	2.0000	2.0127	-0.6	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.6866	15.7	100	0.00
81	T	n-Propylbenzene	2.0000	2.0844	-4.2	100	0.00
82	T	Bromobenzene	2.0000	2.0687	-3.4	100	0.00
83	T	1,3,5-Trimethylbenzene	2.0000	2.0165	-0.8	100	0.00
84	T	2-Chlorotoluene	2.0000	2.0513	-2.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.0569	-2.8	100	0.00
86	T	a-Methylstyrene	2.0000	1.9970	0.1	100	0.00
87	T	tert-Butylbenzene	2.0000	1.9013	4.9	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0370	-1.9	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0945	-4.7	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.0845	-4.2	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	1.9699	1.5	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.0194	-1.0	100	0.00
93	T	n-Butylbenzene	2.0000	1.9196	4.0	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.0307	-1.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.8378	8.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9642	1.8	100	0.00
97	T	Hexachlorobutadiene	2.0000	1.7706	11.5	100	0.00
98	T	Naphthalene	2.0000	2.0697	-3.5	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	1.9888	0.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M16440.D 8260WTR.M Tue Feb 28 15:10:46 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16441.D Vial: 6
Acq On : 25 Feb 2017 18:59 Operator: ADC
Sample : WG601938-06 5.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:28 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	578309	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.19	117	391607	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	192798	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.56	111	32285	5.3913	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 21.56%#			
43) 1,2-Dichloroethane-d4	10.17	65	38779	5.3289	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.32%#			
57) Toluene-d8	12.41	98	123763	5.6191	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 22.48%#			
78) p-Bromofluorobenzene	15.58	95	42235	5.2294	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.92%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	44115	4.8777	ug/L	99
3) Chloromethane	3.68	50	58510	4.8517	ug/L	99
4) Vinyl Chloride	3.91	62	48312	5.0353	ug/L	99
5) 1,3-Butadiene	3.96	54	31574	6.2937	ug/L	92
6) Bromomethane	4.81	94	31493	5.1871	ug/L	99
7) Chloroethane	4.95	64	29958	4.9443	ug/L	97
8) Trichlorofluoromethane	5.44	101	55452	5.0524	ug/L	96
9) Diethyl ether	5.96	59	338178	50.6431	ug/L	100
10) Isoprene	5.99	67	53265	4.8027	ug/L	98
11) Acrolein	6.18	56	16752	26.9002	ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	29291	4.8783	ug/L	98
13) Acetone	6.29	43	8513	4.9742	ug/L	94
14) 1,1-Dichloroethene	6.50	61	60159	4.9507	ug/L	99
15) Tert-Butyl Alcohol	6.60	59	39419	109.0755	ug/L	98
16) Dimethyl Sulfide	6.75	62	46714	4.9897	ug/L	99
17) Iodomethane	7.00	142	14601	3.8037	ug/L	95
18) Methyl acetate	7.01	43	26664	4.9814	ug/L	95
19) Methylene Chloride	7.26	84	35590	4.8402	ug/L	96
20) Carbon Disulfide	7.30	76	104018	5.1013	ug/L	99
21) Acrylonitrile	7.43	53	61252	23.8559	ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	94733	5.1003	ug/L	98
23) trans-1,2-Dichloroethene	7.69	96	33622	4.9799	ug/L	98
24) n-Hexane	7.77	57	52231	4.7383	ug/L	97
25) Diisopropyl ether	8.10	45	1459050	51.9159	ug/L	96
26) Vinyl Acetate	8.26	43	69928	5.3197	ug/L	99
27) 1,1-Dichloroethane	8.29	63	74558	5.0799	ug/L	99
28) Ethyl-Tert-Butyl ether	8.64	59	1310563	53.5939	ug/L	97
29) 2-Butanone	8.82	43	13951	4.8388	ug/L	99
30) Propionitrile	8.92	54	42888	52.3128	ug/L	96
31) 2,2-Dichloropropane	9.03	77	53038	5.0261	ug/L	99
32) cis-1,2-Dichloroethene	9.10	96	37974	4.8274	ug/L	92
33) Chloroform	9.30	83	62404	4.8826	ug/L	99
34) 1-Bromopropane	9.43	122	7037	4.7544	ug/L	98
35) Bromochloromethane	9.51	130	21721	5.0508	ug/L	98
36) Tetrahydrofuran	9.53	42	104082	49.5172	ug/L	100
38) 1,1,1-Trichloroethane	9.80	97	56644	5.0065	ug/L	100
39) Cyclohexane	9.82	56	75472	5.0002	ug/L	100
40) 1,1-Dichloropropene	9.98	75	48475	5.0614	ug/L	96
41) Carbon Tetrachloride	10.12	117	48396	5.0340	ug/L	98
42) Tert-Amyl-Methyl ether	10.08	73	1042766	52.9554	ug/L	97

(#) = qualifier out of range (m) = manual integration
11M16441.D 8260WTR.M Tue Feb 28 15:11:29 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16441.D Vial: 6
Acq On : 25 Feb 2017 18:59 Operator: ADC
Sample : WG601938-06 5.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:28 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

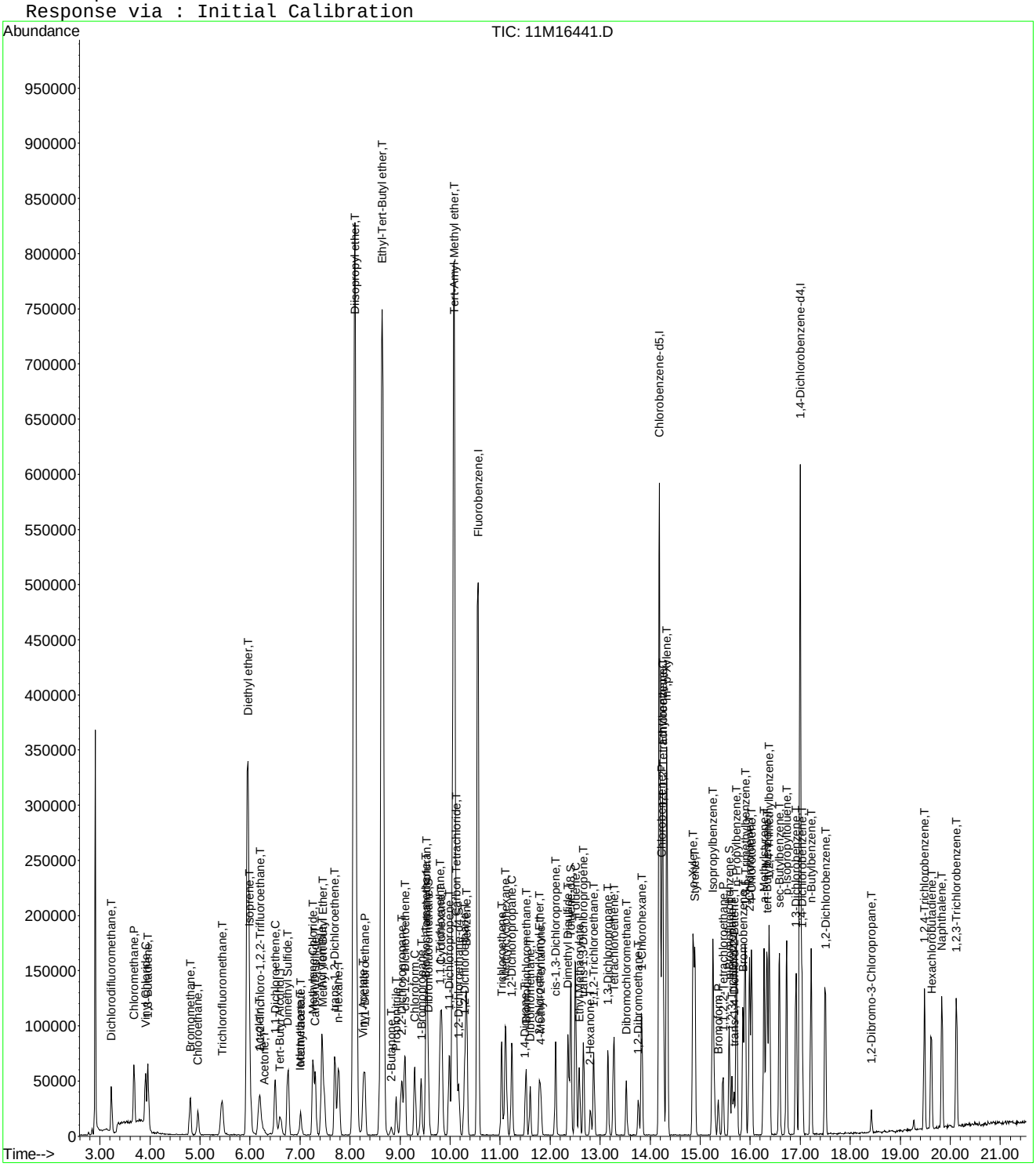
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.29	62	52501	5.1758	ug/L	99
45)	Benzene	10.33	78	149389	5.4227	ug/L	94
46)	Trichloroethene	11.03	130	34569	4.9489	ug/L	99
47)	Methylcyclohexane	11.11	83	58664	4.9375	ug/L	99
48)	1,2-Dichloropropane	11.23	63	43039	5.2046	ug/L	95
49)	1,4-Dioxane	11.50	88	2576	94.7876	ug/L	85
50)	Bromodichloromethane	11.52	83	46529	4.9513	ug/L	99
51)	Dibromomethane	11.60	93	19721	4.8620	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.79	63	22589	4.6863	ug/L	96
53)	4-Methyl-2-Pentanone	11.81	58	12263	4.7177	ug/L	92
54)	cis-1,3-Dichloropropene	12.11	75	57350	5.0673	ug/L	97
55)	Dimethyl Disulfide	12.36	79	32978	4.7368	ug/L	94
58)	Toluene	12.51	91	150695	5.1369	ug/L	95
59)	Ethyl Methacrylate	12.58	69	39448	5.0649	ug/L	99
60)	trans-1,3-Dichloropropene	12.67	75	49684	5.2509	ug/L	97
61)	1,1,2-Trichloroethane	12.87	97	28600	5.0626	ug/L	99
62)	2-Hexanone	12.80	43	20501	4.7888	ug/L	96
63)	1,3-Dichloropropane	13.15	76	51148	5.3016	ug/L	99
64)	Tetrachloroethene	13.28	164	27130	5.0027	ug/L	96
65)	Dibromochloromethane	13.52	129	32318	4.9889	ug/L	99
66)	1,2-Dibromoethane	13.76	107	25925	4.9815	ug/L	98
67)	1-Chlorohexane	13.83	91	44205	4.9067	ug/L	97
68)	Chlorobenzene	14.23	112	92988	5.3050	ug/L	97
69)	1,1,1,2-Tetrachloroethane	14.26	131	33549	5.1105	ug/L	99
70)	Ethylbenzene	14.25	106	50723	5.2014	ug/L	80
71)	m-,p-Xylene	14.33	106	123822	10.7861	ug/L	77
72)	o-Xylene	14.86	106	61007	5.2467	ug/L	88
73)	Styrene	14.89	104	97644	5.1960	ug/L	95
74)	Bromoform	15.36	173	19140	4.5843	ug/L	98
75)	Isopropylbenzene	15.25	105	156790	5.1624	ug/L	94
77)	1,1,2,2-Tetrachloroethane	15.46	83	34317	5.1761	ug/L	99
79)	1,2,3-Trichloropropane	15.63	110	9065	4.7642	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.68	53	11581	4.9927	ug/L	96
81)	n-Propylbenzene	15.73	91	191345	5.3748	ug/L	92
82)	Bromobenzene	15.86	156	38985	5.2236	ug/L	96
83)	1,3,5-Trimethylbenzene	15.90	105	130729	5.2386	ug/L	97
84)	2-Chlorotoluene	15.99	91	126591	5.1694	ug/L	96
85)	4-Chlorotoluene	16.03	91	106368	5.1708	ug/L	95
86)	a-Methylstyrene	16.27	118	64397	5.2093	ug/L	99
87)	tert-Butylbenzene	16.34	134	26949	5.0120	ug/L	84
88)	1,2,4-Trimethylbenzene	16.38	105	137485	5.3341	ug/L	95
89)	sec-Butylbenzene	16.58	105	162458	5.3446	ug/L	94
90)	p-Isopropyltoluene	16.73	119	134637	5.2952	ug/L	95
91)	1,3-Dichlorobenzene	16.92	146	74016	5.3245	ug/L	97
92)	1,4-Dichlorobenzene	17.04	146	73058	5.1877	ug/L	98
93)	n-Butylbenzene	17.22	91	121259	5.0523	ug/L	95
94)	1,2-Dichlorobenzene	17.51	146	70936	5.4467	ug/L	97
95)	1,2-Dibromo-3-Chloropropan	18.43	75	6693	5.3823	ug/L	91
96)	1,2,4-Trichlorobenzene	19.48	180	47702	5.0769	ug/L	98
97)	Hexachlorobutadiene	19.62	225	23128	4.8831	ug/L	99
98)	Naphthalene	19.83	128	109786	5.4917	ug/L	97
99)	1,2,3-Trichlorobenzene	20.12	180	46215	5.1389	ug/L	97

(#) = qualifier out of range (m) = manual integration
11M16441.D 8260WTR.M Tue Feb 28 15:11:29 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16441.D Vial: 6
Acq On : 25 Feb 2017 18:59 Operator: ADC
Sample : WG601938-06 5.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\022517\11M16441.D Vial: 6
Acq On : 25 Feb 2017 18:59 Operator: ADC
Sample : WG601938-06 5.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.01
2	T	Dichlorodifluoromethane	5.0000	4.8777	2.4	100	0.01
3	P	Chloromethane	5.0000	4.8517	3.0	100	0.01
4	C	Vinyl Chloride	5.0000	5.0353	-0.7	100	0.01
5	T	1,3-Butadiene	5.0000	6.2938	-25.9#	100	0.02
6	T	Bromomethane	5.0000	5.1871	-3.7	100	0.01
7	T	Chloroethane	5.0000	4.9443	1.1	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.0524	-1.0	100	0.01
9	T	Diethyl ether	50.0000	50.6431	-1.3	100	0.01
10	T	Isoprene	5.0000	4.8027	3.9	100	0.00
11	T	Acrolein	25.0000	26.9002	-7.6	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.8783	2.4	100	0.01
13	T	Acetone	5.0000	4.9742	0.5	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.9507	1.0	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	109.0755	-9.1	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.9897	0.2	100	0.00
17	T	Iodomethane	5.0000	3.8037	23.9	100	0.00
18	T	Methyl acetate	5.0000	4.9814	0.4	100	0.00
19	T	Methylene Chloride	5.0000	4.8402	3.2	100	0.00
20	T	Carbon Disulfide	5.0000	5.1013	-2.0	100	0.00
21	T	Acrylonitrile	25.0000	23.8559	4.6	100	0.01
22	T	Methyl Tert Butyl Ether	5.0000	5.1003	-2.0	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9799	0.4	100	0.00
24	T	n-Hexane	5.0000	4.7383	5.2	100	0.00
25	T	Diisopropyl ether	50.0000	51.9159	-3.8	100	0.01
26	T	Vinyl Acetate	5.0000	5.3197	-6.4	100	0.01
27	P	1,1-Dichloroethane	5.0000	5.0799	-1.6	100	0.01
28	T	Ethyl-Tert-Butyl ether	50.0000	53.5939	-7.2	100	0.01
29	T	2-Butanone	5.0000	4.8388	3.2	100	0.00
30	T	Propionitrile	50.0000	52.3128	-4.6	100	0.01
31	T	2,2-Dichloropropane	5.0000	5.0261	-0.5	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8274	3.5	100	0.01
33	C	Chloroform	5.0000	4.8826	2.3	100	0.00
34	T	1-Bromopropane	5.0000	4.7545	4.9	100	0.01
35	T	Bromochloromethane	5.0000	5.0507	-1.0	100	0.00
36	T	Tetrahydrofuran	50.0000	49.5172	1.0	100	0.00
37	S	Dibromofluoromethane	5.0000	5.3913	-7.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	5.0065	-0.1	100	0.01
39	T	Cyclohexane	5.0000	5.0002	-0.0	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.0614	-1.2	100	0.00
41	T	Carbon Tetrachloride	5.0000	5.0340	-0.7	100	0.00
42	T	Tert-Amyl-Methyl ether	50.0000	52.9554	-5.9	100	0.01
43	S	1,2-Dichloroethane-d4	5.0000	5.3289	-6.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	5.1758	-3.5	100	0.00
45	T	Benzene	5.0000	5.4227	-8.5	100	0.01
46	T	Trichloroethene	5.0000	4.9489	1.0	100	0.00
47	T	Methylcyclohexane	5.0000	4.9375	1.3	100	0.00
48	C	1,2-Dichloropropane	5.0000	5.2046	-4.1	100	0.00
49	T	1,4-Dioxane	100.0000	94.7876	5.2	100	0.00
50	T	Bromodichloromethane	5.0000	4.9513	1.0	100	0.00
51	T	Dibromomethane	5.0000	4.8620	2.8	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.6863	6.3	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.7176	5.6	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	5.0673	-1.3	100	0.00

(#) = Out of Range
11M16441.D 8260WTR.M Tue Feb 28 15:11:12 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16441.D Vial: 6
Acq On : 25 Feb 2017 18:59 Operator: ADC
Sample : WG601938-06 5.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.7368	5.3	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	5.0000	5.6191	-12.4	100	0.00
58	C	Toluene	5.0000	5.1369	-2.7	100	0.01
59	T	Ethyl Methacrylate	5.0000	5.0649	-1.3	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	5.2509	-5.0	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	5.0626	-1.3	100	0.00
62	T	2-Hexanone	5.0000	4.7889	4.2	100	0.00
63	T	1,3-Dichloropropane	5.0000	5.3016	-6.0	100	0.00
64	T	Tetrachloroethene	5.0000	5.0027	-0.1	100	0.00
65	T	Dibromochloromethane	5.0000	4.9889	0.2	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.9815	0.4	100	0.00
67	T	1-Chlorohexane	5.0000	4.9067	1.9	100	0.00
68	P	Chlorobenzene	5.0000	5.3050	-6.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	5.1105	-2.2	100	0.00
70	C	Ethylbenzene	5.0000	5.2015	-4.0	100	0.00
71	T	m-,p-Xylene	10.0000	10.7861	-7.9	100	0.00
72	T	o-Xylene	5.0000	5.2467	-4.9	100	0.00
73	T	Styrene	5.0000	5.1960	-3.9	100	0.00
74	P	Bromoform	5.0000	4.5843	8.3	100	0.00
75	T	Isopropylbenzene	5.0000	5.1624	-3.2	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	5.1761	-3.5	100	0.00
78	S	p-Bromofluorobenzene	5.0000	5.2294	-4.6	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	4.7642	4.7	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.9927	0.1	100	0.00
81	T	n-Propylbenzene	5.0000	5.3748	-7.5	100	0.00
82	T	Bromobenzene	5.0000	5.2236	-4.5	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	5.2386	-4.8	100	0.00
84	T	2-Chlorotoluene	5.0000	5.1694	-3.4	100	0.00
85	T	4-Chlorotoluene	5.0000	5.1708	-3.4	100	0.00
86	T	a-Methylstyrene	5.0000	5.2093	-4.2	100	0.00
87	T	tert-Butylbenzene	5.0000	5.0120	-0.2	100	0.00
88	T	1,2,4-Trimethylbenzene	5.0000	5.3341	-6.7	100	0.00
89	T	sec-Butylbenzene	5.0000	5.3446	-6.9	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.2953	-5.9	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	5.3246	-6.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	5.1877	-3.8	100	0.00
93	T	n-Butylbenzene	5.0000	5.0523	-1.0	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	5.4467	-8.9	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.3823	-7.6	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	5.0769	-1.5	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8831	2.3	100	0.00
98	T	Naphthalene	5.0000	5.4916	-9.8	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	5.1388	-2.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M16441.D 8260WTR.M Tue Feb 28 15:11:12 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\022517\11M16442.D Vial: 7
Acq On : 25 Feb 2017 19:28 Operator: ADC
Sample : WG601938-07 20.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:30 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	561841	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.19	117	393692	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	194210	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.56	111	55436	9.5286	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.12%#			
43) 1,2-Dichloroethane-d4	10.17	65	68160	9.6409	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.56%#			
57) Toluene-d8	12.41	98	218532	9.8693	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.48%#			
78) p-Bromofluorobenzene	15.58	95	78777	9.6830	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.72%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	192089	21.8615	ug/L	99
3) Chloromethane	3.68	50	229275	19.5688	ug/L	98
4) Vinyl Chloride	3.91	62	182737	19.6038	ug/L	99
5) 1,3-Butadiene	3.96	54	102160	24.4671	ug/L	98
6) Bromomethane	4.81	94	107242	18.1811	ug/L	99
7) Chloroethane	4.96	64	117076	19.8885	ug/L	99
8) Trichlorofluoromethane	5.44	101	209555	19.6529	ug/L	99
9) Diethyl ether	5.96	59	548034	84.4751	ug/L	99
10) Isoprene	5.99	67	227285	21.0941	ug/L	98
11) Acrolein	6.18	56	25928	42.8554	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	112047	19.2078	ug/L	100
13) Acetone	6.29	43	36047	21.6799	ug/L	99
14) 1,1-Dichloroethene	6.50	61	233488	19.7776	ug/L	99
15) Tert-Butyl Alcohol	6.61	59	73002	207.9231	ug/L	98
16) Dimethyl Sulfide	6.76	62	192215	21.1331	ug/L	100
17) Iodomethane	7.00	142	129704	18.4737	ug/L	100
18) Methyl acetate	7.01	43	108865	20.9344	ug/L	100
19) Methylene Chloride	7.26	84	139039	19.4634	ug/L	98
20) Carbon Disulfide	7.31	76	421954	21.3004	ug/L	98
21) Acrylonitrile	7.43	53	105864	42.4395	ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	377499	20.9196	ug/L	99
23) trans-1,2-Dichloroethene	7.69	96	130203	19.8502	ug/L	100
24) n-Hexane	7.77	57	224741	20.9859	ug/L	99
25) Diisopropyl ether	8.10	45	2252065	82.4818	ug/L	98
26) Vinyl Acetate	8.26	43	288543	22.5941	ug/L	99
27) 1,1-Dichloroethane	8.29	63	295702	20.7377	ug/L	99
28) Ethyl-Tert-Butyl ether	8.64	59	2057827	86.6190	ug/L	98
29) 2-Butanone	8.82	43	58724	20.9651	ug/L	100
30) Propionitrile	8.92	54	71112	89.2815	ug/L	97
31) 2,2-Dichloropropane	9.04	77	204694	19.9660	ug/L	98
32) cis-1,2-Dichloroethene	9.10	96	150088	19.6389	ug/L	99
33) Chloroform	9.30	83	243844	19.6382	ug/L	99
34) 1-Bromopropane	9.42	122	29728	20.6740	ug/L	97
35) Bromochloromethane	9.51	130	82930	19.8488	ug/L	99
36) Tetrahydrofuran	9.53	42	175753	86.0656	ug/L	100
38) 1,1,1-Trichloroethane	9.80	97	219355	19.9562	ug/L	100
39) Cyclohexane	9.83	56	304857	20.7894	ug/L	100
40) 1,1-Dichloropropene	9.99	75	186476	20.0410	ug/L	98
41) Carbon Tetrachloride	10.12	117	190475	20.3933	ug/L	99
42) Tert-Amyl-Methyl ether	10.08	73	1677511	87.6871	ug/L	98

(#) = qualifier out of range (m) = manual integration
11M16442.D 8260WTR.M Tue Feb 28 15:11:31 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16442.D Vial: 7
Acq On : 25 Feb 2017 19:28 Operator: ADC
Sample : WG601938-07 20.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:30 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

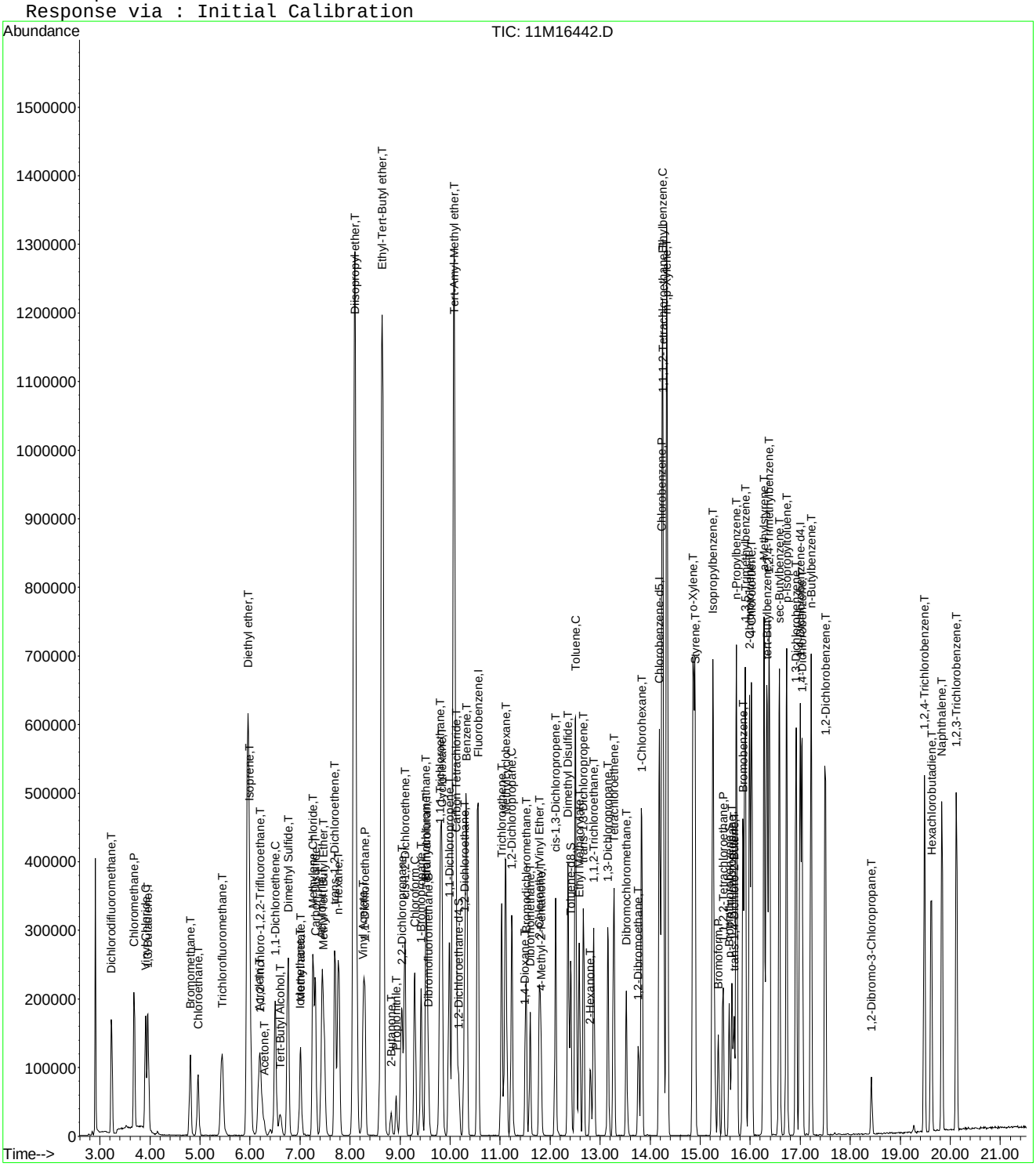
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.29	62	204926	20.7947	ug/L	99
45)	Benzene	10.33	78	549353	20.5257	ug/L	97
46)	Trichloroethene	11.03	130	138006	20.3361	ug/L	99
47)	Methylcyclohexane	11.12	83	241133	20.8899	ug/L	98
48)	1,2-Dichloropropane	11.23	63	167454	20.8432	ug/L	98
49)	1,4-Dioxane	11.50	88	4341	164.4152	ug/L	88
50)	Bromodichloromethane	11.52	83	184907	20.2532	ug/L	100
51)	Dibromomethane	11.60	93	77800	19.7428	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.79	63	98171	20.9632	ug/L	100
53)	4-Methyl-2-Pentanone	11.82	58	52650	20.8485	ug/L	98
54)	cis-1,3-Dichloropropene	12.11	75	224108	20.3821	ug/L	99
55)	Dimethyl Disulfide	12.36	79	138874	20.5317	ug/L	94
58)	Toluene	12.51	91	575547	19.5154	ug/L	96
59)	Ethyl Methacrylate	12.58	69	170966	21.8346	ug/L	99
60)	trans-1,3-Dichloropropene	12.67	75	199292	20.9507	ug/L	99
61)	1,1,2-Trichloroethane	12.87	97	114145	20.0984	ug/L	99
62)	2-Hexanone	12.80	43	89052	20.6916	ug/L	97
63)	1,3-Dichloropropane	13.15	76	201833	20.8097	ug/L	99
64)	Tetrachloroethene	13.28	164	108112	19.8300	ug/L	98
65)	Dibromochloromethane	13.52	129	132589	20.3593	ug/L	99
66)	1,2-Dibromoethane	13.76	107	106674	20.3889	ug/L	98
67)	1-Chlorohexane	13.83	91	191715	21.1673	ug/L	98
68)	Chlorobenzene	14.23	112	360960	20.4840	ug/L	97
69)	1,1,1,2-Tetrachloroethane	14.26	131	134445	20.3715	ug/L	99
70)	Ethylbenzene	14.25	106	201660	20.5699	ug/L	87
71)	m-,p-Xylene	14.33	106	485397	42.0588	ug/L	86
72)	o-Xylene	14.86	106	243218	20.8062	ug/L	92
73)	Styrene	14.90	104	396632	20.9943	ug/L	97
74)	Bromoform	15.36	173	86129	20.5200	ug/L	98
75)	Isopropylbenzene	15.25	105	611073	20.0135	ug/L	96
77)	1,1,2,2-Tetrachloroethane	15.46	83	140917	21.1001	ug/L	99
79)	1,2,3-Trichloropropane	15.63	110	40629	21.1978	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.68	53	50171	21.4722	ug/L	95
81)	n-Propylbenzene	15.73	91	740081	20.6374	ug/L	94
82)	Bromobenzene	15.86	156	154708	20.5784	ug/L	98
83)	1,3,5-Trimethylbenzene	15.90	105	517622	20.5916	ug/L	96
84)	2-Chlorotoluene	15.99	91	496800	20.1394	ug/L	97
85)	4-Chlorotoluene	16.03	91	421722	20.3518	ug/L	95
86)	a-Methylstyrene	16.27	118	282756	22.7068	ug/L	99
87)	tert-Butylbenzene	16.34	134	112690	20.8057	ug/L	96
88)	1,2,4-Trimethylbenzene	16.38	105	532874	20.5240	ug/L	96
89)	sec-Butylbenzene	16.58	105	654763	21.3842	ug/L	96
90)	p-Isopropyltoluene	16.73	119	544112	21.2442	ug/L	96
91)	1,3-Dichlorobenzene	16.92	146	294527	21.0336	ug/L	98
92)	1,4-Dichlorobenzene	17.04	146	294236	20.7411	ug/L	98
93)	n-Butylbenzene	17.22	91	505782	20.9204	ug/L	96
94)	1,2-Dichlorobenzene	17.51	146	282679	21.5471	ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.43	75	26510	21.1634	ug/L	99
96)	1,2,4-Trichlorobenzene	19.48	180	198609	20.9840	ug/L	98
97)	Hexachlorobutadiene	19.62	225	95902	20.1010	ug/L	99
98)	Naphthalene	19.83	128	448153	22.2543	ug/L	98
99)	1,2,3-Trichlorobenzene	20.12	180	187660	20.7151	ug/L	98

(#) = qualifier out of range (m) = manual integration
11M16442.D 8260WTR.M Tue Feb 28 15:11:31 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16442.D Vial: 7
Acq On : 25 Feb 2017 19:28 Operator: ADC
Sample : WG601938-07 20.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\022517\11M16443.D Vial: 8
Acq On : 25 Feb 2017 19:58 Operator: ADC
Sample : WG601938-08 50.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:34 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.55	96	585816	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	403537	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	208770	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.56	111	152229	25.0951 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.40%		
43) 1,2-Dichloroethane-d4	10.17	65	188220	25.5331 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.12%		
57) Toluene-d8	12.41	98	598763	26.3815 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.52%		
78) p-Bromofluorobenzene	15.58	95	228669	26.1470 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.60%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.22	85	526541	57.4727 ug/L	100
3) Chloromethane	3.67	50	596642	48.8398 ug/L	100
4) Vinyl Chloride	3.90	62	495171	50.9474 ug/L	100
5) 1,3-Butadiene	3.94	54	206164	48.7627 ug/L	100
6) Bromomethane	4.80	94	283305	46.0639 ug/L	100
7) Chloroethane	4.95	64	329163	53.6287 ug/L	100
8) Trichlorofluoromethane	5.43	101	586704	52.7715 ug/L	100
9) Diethyl ether	5.95	59	693508	102.5238 ug/L	100
10) Isoprene	5.99	67	600639	53.4634 ug/L	100
11) Acrolein	6.17	56	34146	54.1288 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	321234	52.8143 ug/L	100
13) Acetone	6.28	43	84549	48.7697 ug/L	100
14) 1,1-Dichloroethene	6.49	61	661544	53.7427 ug/L	100
15) Tert-Butyl Alcohol	6.60	59	71355	194.9147 ug/L	100
16) Dimethyl Sulfide	6.75	62	506028	53.3583 ug/L	100
17) Iodomethane	7.00	142	444580	56.1500 ug/L	100
18) Methyl acetate	7.01	43	274000	50.5329 ug/L	100
19) Methylene Chloride	7.26	84	385118	51.7044 ug/L	100
20) Carbon Disulfide	7.30	76	1084937	52.5265 ug/L	100
21) Acrylonitrile	7.42	53	139112	53.4858 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	1012504	53.8129 ug/L	100
23) trans-1,2-Dichloroethene	7.69	96	365122	53.3868 ug/L	100
24) n-Hexane	7.77	57	602191	53.9301 ug/L	100
25) Diisopropyl ether	8.09	45	2807117	98.6029 ug/L	100
26) Vinyl Acetate	8.25	43	699142	52.5051 ug/L	100
27) 1,1-Dichloroethane	8.28	63	802631	53.9853 ug/L	100
28) Ethyl-Tert-Butyl ether	8.63	59	2565097	103.5524 ug/L	100
29) 2-Butanone	8.82	43	147295	50.4339 ug/L	100
30) Propionitrile	8.91	54	84716	102.0085 ug/L	100
31) 2,2-Dichloropropane	9.03	77	553841	51.8112 ug/L	100
32) cis-1,2-Dichloroethene	9.09	96	420323	52.7480 ug/L	100
33) Chloroform	9.30	83	664172	51.3005 ug/L	100
34) 1-Bromopropane	9.42	122	81025	54.0418 ug/L	100
35) Bromochloromethane	9.51	130	233178	53.5257 ug/L	100
36) Tetrahydrofuran	9.53	42	213292	100.1736 ug/L	100
38) 1,1,1-Trichloroethane	9.79	97	615422	53.6976 ug/L	100
39) Cyclohexane	9.82	56	815874	53.3607 ug/L	100
40) 1,1-Dichloropropene	9.98	75	522046	53.8094 ug/L	100
41) Carbon Tetrachloride	10.12	117	540316	55.4817 ug/L	100
42) Tert-Amyl-Methyl ether	10.07	73	2060118	103.2796 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M16443.D 8260WTR.M Tue Feb 28 15:11:35 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16443.D Vial: 8
Acq On : 25 Feb 2017 19:58 Operator: ADC
Sample : WG601938-08 50.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:34 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

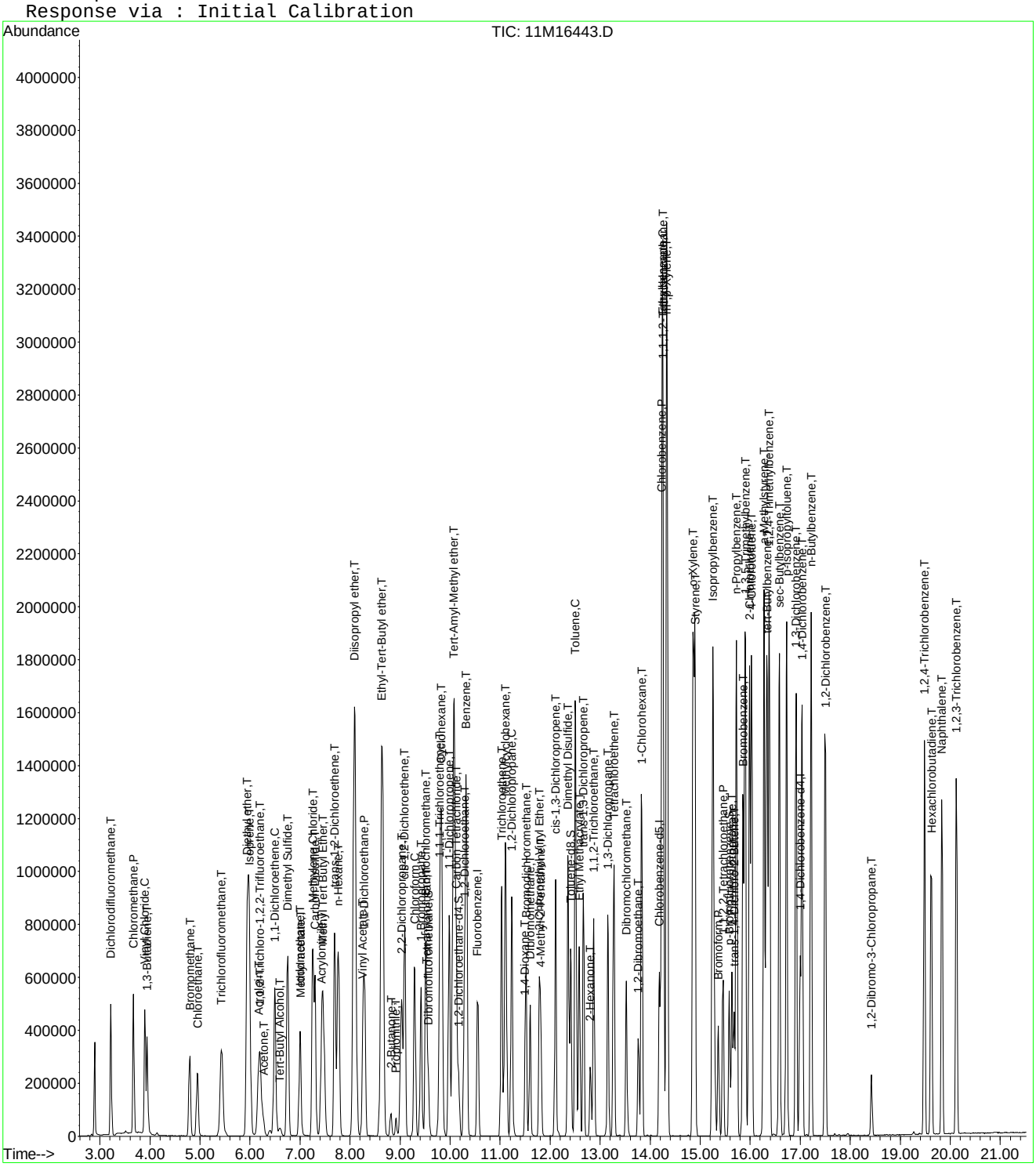
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.29	62	555105	54.0236	ug/L	100
45)	Benzene	10.32	78	1447426	51.8675	ug/L	100
46)	Trichloroethene	11.03	130	386068	54.5613	ug/L	100
47)	Methylcyclohexane	11.11	83	645712	53.6500	ug/L	100
48)	1,2-Dichloropropane	11.23	63	458749	54.7641	ug/L	100
49)	1,4-Dioxane	11.50	88	5288	192.0861	ug/L	100
50)	Bromodichloromethane	11.52	83	519089	54.5300	ug/L	100
51)	Dibromomethane	11.60	93	221346	53.8707	ug/L	100
52)	2-Chloroethyl Vinyl Ether	11.79	63	264428	54.1545	ug/L	100
53)	4-Methyl-2-Pentanone	11.81	58	138319	52.5303	ug/L	100
54)	cis-1,3-Dichloropropene	12.11	75	625047	54.5202	ug/L	100
55)	Dimethyl Disulfide	12.36	79	383359	54.3577	ug/L	100
58)	Toluene	12.50	91	1499740	49.6119	ug/L	100
59)	Ethyl Methacrylate	12.58	69	444424	55.3742	ug/L	100
60)	trans-1,3-Dichloropropene	12.67	75	551686	56.5814	ug/L	100
61)	1,1,2-Trichloroethane	12.87	97	314496	54.0249	ug/L	100
62)	2-Hexanone	12.80	43	231181	52.4053	ug/L	100
63)	1,3-Dichloropropane	13.15	76	546360	54.9573	ug/L	100
64)	Tetrachloroethene	13.28	164	307102	54.9546	ug/L	100
65)	Dibromochloromethane	13.52	129	377524	56.5552	ug/L	100
66)	1,2-Dibromoethane	13.76	107	294491	54.9138	ug/L	100
67)	1-Chlorohexane	13.83	91	508547	54.7790	ug/L	100
68)	Chlorobenzene	14.23	112	965076	53.4307	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.26	131	376361	55.6360	ug/L	100
70)	Ethylbenzene	14.25	106	565900	56.3152	ug/L	100
71)	m-,p-Xylene	14.33	106	1288133	108.8915	ug/L	100
72)	o-Xylene	14.86	106	675747	56.3969	ug/L	100
73)	Styrene	14.90	104	1082558	55.9034	ug/L	100
74)	Bromoform	15.36	173	243470	56.5910	ug/L	100
75)	Isopropylbenzene	15.25	105	1585272	50.6532	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.46	83	384805	53.6000	ug/L	100
79)	1,2,3-Trichloropropane	15.63	110	109633	53.2108	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.68	53	133162	53.0160	ug/L	100
81)	n-Propylbenzene	15.73	91	1875240	48.6447	ug/L	100
82)	Bromobenzene	15.86	156	440518	54.5088	ug/L	100
83)	1,3,5-Trimethylbenzene	15.90	105	1372777	50.8021	ug/L	100
84)	2-Chlorotoluene	15.99	91	1321526	49.8362	ug/L	100
85)	4-Chlorotoluene	16.03	91	1110928	49.8731	ug/L	100
86)	a-Methylstyrene	16.27	118	774842	57.8842	ug/L	100
87)	tert-Butylbenzene	16.34	134	317622	54.5520	ug/L	100
88)	1,2,4-Trimethylbenzene	16.38	105	1407011	50.4124	ug/L	100
89)	sec-Butylbenzene	16.58	105	1703029	51.7409	ug/L	100
90)	p-Isopropyltoluene	16.73	119	1450387	52.6793	ug/L	100
91)	1,3-Dichlorobenzene	16.92	146	815468	54.1749	ug/L	100
92)	1,4-Dichlorobenzene	17.04	146	805339	52.8102	ug/L	100
93)	n-Butylbenzene	17.22	91	1377162	52.9900	ug/L	100
94)	1,2-Dichlorobenzene	17.51	146	781061	55.3840	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.43	75	73028	54.2335	ug/L	100
96)	1,2,4-Trichlorobenzene	19.48	180	561357	55.1738	ug/L	100
97)	Hexachlorobutadiene	19.62	225	276700	53.9514	ug/L	100
98)	Naphthalene	19.83	128	1157681	53.4785	ug/L	100
99)	1,2,3-Trichlorobenzene	20.12	180	518829	53.2773	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M16443.D 8260WTR.M Tue Feb 28 15:11:35 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16443.D Vial: 8
Acq On : 25 Feb 2017 19:58 Operator: ADC
Sample : WG601938-08 50.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16444.D Vial: 9
Acq On : 25 Feb 2017 20:26 Operator: ADC
Sample : WG601938-09 100.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:36 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	598047	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.19	117	417526	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	223666	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.56	111	312593	50.4774	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 201.92%#			
43) 1,2-Dichloroethane-d4	10.17	65	380194	50.5207	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 202.08%#			
57) Toluene-d8	12.41	98	1175739	50.0674	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 200.28%#			
78) p-Bromofluorobenzene	15.58	95	468864	50.0414	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 200.16%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	993220	106.1942	ug/L	99
3) Chloromethane	3.68	50	1031891	82.7408	ug/L	97
4) Vinyl Chloride	3.91	62	938756	94.6118	ug/L	98
5) 1,3-Butadiene	3.95	54	439886	103.5558	ug/L	100
6) Bromomethane	4.80	94	575944	91.7302	ug/L	99
7) Chloroethane	4.95	64	640945	102.2900	ug/L	100
8) Trichlorofluoromethane	5.44	101	1139477	100.3950	ug/L	100
9) Diethyl ether	5.96	59	1371496	198.6066	ug/L	99
10) Isoprene	5.99	67	1200749	104.6939	ug/L	100
11) Acrolein	6.18	56	66965	103.9829	ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	633708	102.0575	ug/L	100
13) Acetone	6.28	43	168498	95.2055	ug/L	98
14) 1,1-Dichloroethene	6.50	61	1266709	100.8007	ug/L	97
15) Tert-Butyl Alcohol	6.61	59	131437	351.6931	ug/L	97
16) Dimethyl Sulfide	6.76	62	998220	103.1050	ug/L	100
17) Iodomethane	7.00	142	893348	108.5825	ug/L	98
18) Methyl acetate	7.01	43	557692	100.7498	ug/L	99
19) Methylene Chloride	7.26	84	753027	99.0308	ug/L	97
20) Carbon Disulfide	7.30	76	2019300	95.7636	ug/L	98
21) Acrylonitrile	7.43	53	281117	105.8734	ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	1944751	101.2463	ug/L	99
23) trans-1,2-Dichloroethene	7.69	96	719434	103.0416	ug/L	96
24) n-Hexane	7.77	57	1217812	106.8325	ug/L	99
25) Diisopropyl ether	8.10	45	4777694	164.3893	ug/L	92
26) Vinyl Acetate	8.26	43	1288460	94.7836	ug/L	99
27) 1,1-Dichloroethane	8.29	63	1525302	100.4942	ug/L	98
28) Ethyl-Tert-Butyl ether	8.64	59	4462248	176.4558	ug/L	92
29) 2-Butanone	8.82	43	290625	97.4750	ug/L	99
30) Propionitrile	8.92	54	164620	194.1688	ug/L	99
31) 2,2-Dichloropropane	9.03	77	1067000	97.7753	ug/L	99
32) cis-1,2-Dichloroethene	9.10	96	832223	102.3031	ug/L	96
33) Chloroform	9.30	83	1272633	96.2876	ug/L	98
34) 1-Bromopropane	9.42	122	165924	108.4042	ug/L	99
35) Bromochloromethane	9.51	130	465654	104.7043	ug/L	97
36) Tetrahydrofuran	9.53	42	421672	193.9901	ug/L	99
38) 1,1,1-Trichloroethane	9.80	97	1193457	102.0033	ug/L	99
39) Cyclohexane	9.83	56	1587530	101.7060	ug/L	97
40) 1,1-Dichloropropene	9.98	75	1017541	102.7371	ug/L	98
41) Carbon Tetrachloride	10.12	117	1043334	104.9424	ug/L	99
42) Tert-Amyl-Methyl ether	10.07	73	3643211	178.9092	ug/L	94

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\022517\11M16444.D Vial: 9
Acq On : 25 Feb 2017 20:26 Operator: ADC
Sample : WG601938-09 100.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:36 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

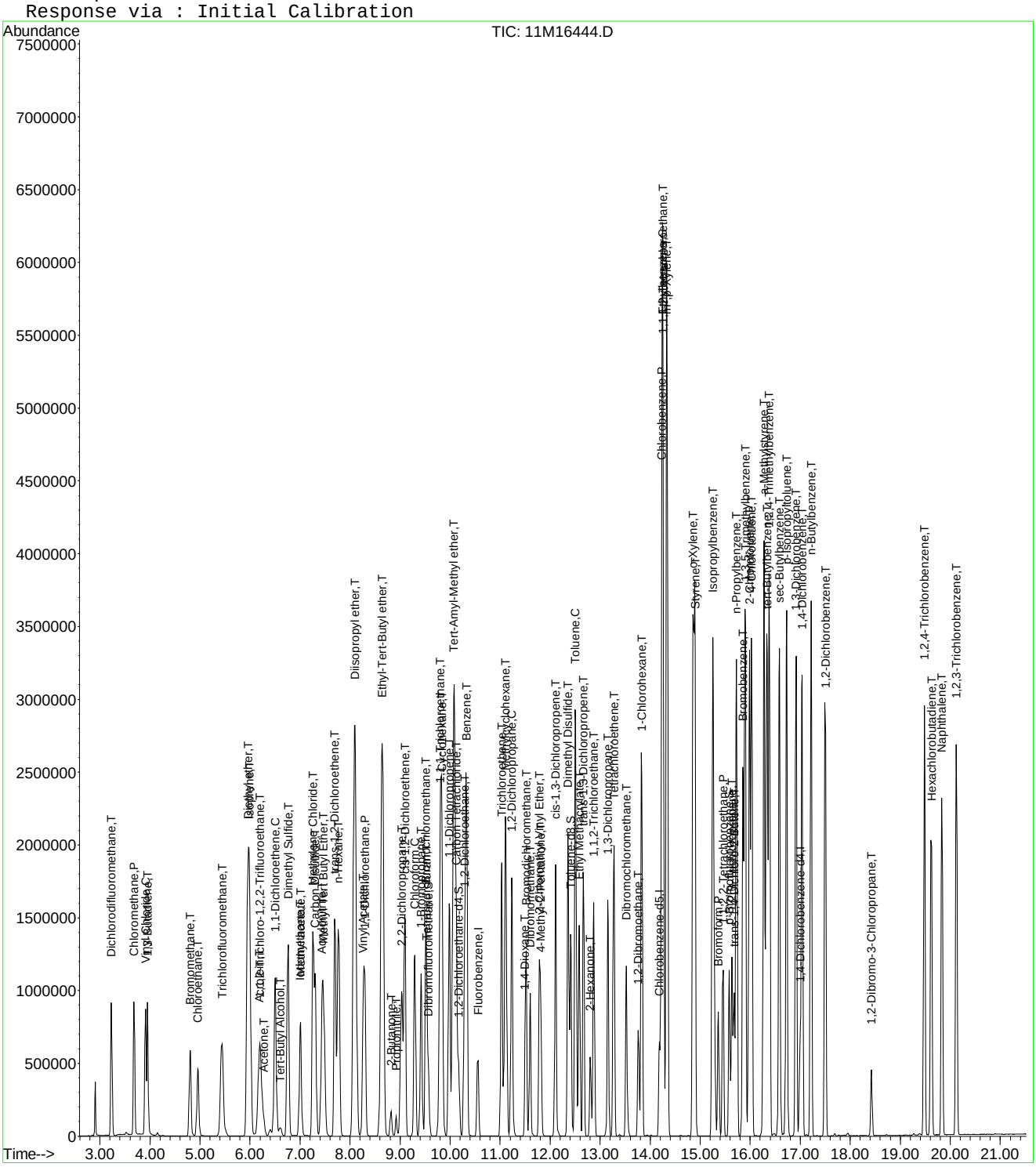
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	1,2-Dichloroethane	10.29	62	1056909	100.7562	ug/L		98
45)	Benzene	10.33	78	2552818	89.6076	ug/L		94
46)	Trichloroethene	11.03	130	761260	105.3853	ug/L		100
47)	Methylcyclohexane	11.10	83	1273203	103.6226	ug/L		99
48)	1,2-Dichloropropane	11.23	63	896853	104.8741	ug/L		99
49)	1,4-Dioxane	11.50	88	10363	368.7363	ug/L		98
50)	Bromodichloromethane	11.52	83	1014793	104.4231	ug/L		99
51)	Dibromomethane	11.60	93	432782	103.1754	ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.79	63	531400	106.6043	ug/L		99
53)	4-Methyl-2-Pentanone	11.81	58	281496	104.7191	ug/L		100
54)	cis-1,3-Dichloropropene	12.11	75	1185792	101.3162	ug/L		97
55)	Dimethyl Disulfide	12.36	79	766190	106.4187	ug/L		96
58)	Toluene	12.50	91	2568354	82.1154	ug/L		95
59)	Ethyl Methacrylate	12.58	69	894322	107.6969	ug/L		100
60)	trans-1,3-Dichloropropene	12.67	75	1065461	105.6134	ug/L		99
61)	1,1,2-Trichloroethane	12.87	97	619751	102.8953	ug/L		100
62)	2-Hexanone	12.80	43	466865	102.2855	ug/L		100
63)	1,3-Dichloropropane	13.15	76	1042408	101.3408	ug/L		100
64)	Tetrachloroethene	13.28	164	606249	104.8509	ug/L		100
65)	Dibromochloromethane	13.52	129	749319	108.4912	ug/L		100
66)	1,2-Dibromoethane	13.76	107	584884	105.4093	ug/L		100
67)	1-Chlorohexane	13.83	91	1011594	105.3148	ug/L		99
68)	Chlorobenzene	14.23	112	1750695	93.6784	ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.26	131	735749	105.1189	ug/L		100
70)	Ethylbenzene	14.25	106	1096529	105.4645	ug/L		80
71)	m-,p-Xylene	14.33	106	2249873	183.8193	ug/L		85
72)	o-Xylene	14.86	106	1283740	103.5495	ug/L		88
73)	Styrene	14.90	104	1982035	98.9233	ug/L		95
74)	Bromoform	15.36	173	493492	110.8618	ug/L		98
75)	Isopropylbenzene	15.25	105	2682776	82.8491	ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.46	83	749648	97.4653	ug/L		98
79)	1,2,3-Trichloropropane	15.63	110	219397	99.3933	ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.68	53	283283	105.2725	ug/L		93
81)	n-Propylbenzene	15.73	91	3055619	73.9854	ug/L		89
82)	Bromobenzene	15.85	156	869820	100.4618	ug/L		96
83)	1,3,5-Trimethylbenzene	15.90	105	2395676	82.7519	ug/L		93
84)	2-Chlorotoluene	15.99	91	2315870	81.5176	ug/L		93
85)	4-Chlorotoluene	16.03	91	1912269	80.1304	ug/L		92
86)	a-Methylstyrene	16.27	118	1491193	103.9797	ug/L		96
87)	tert-Butylbenzene	16.34	134	640180	102.6290	ug/L		87
88)	1,2,4-Trimethylbenzene	16.38	105	2428164	81.2057	ug/L		90
89)	sec-Butylbenzene	16.58	105	2860760	81.1263	ug/L		92
90)	p-Isopropyltoluene	16.73	119	2495079	84.5880	ug/L		91
91)	1,3-Dichlorobenzene	16.92	146	1528552	94.7850	ug/L		96
92)	1,4-Dichlorobenzene	17.04	146	1510816	92.4739	ug/L		96
93)	n-Butylbenzene	17.22	91	2393683	85.9694	ug/L		93
94)	1,2-Dichlorobenzene	17.51	146	1464754	96.9465	ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.43	75	146075	101.2564	ug/L		99
96)	1,2,4-Trichlorobenzene	19.48	180	1081586	99.2254	ug/L		98
97)	Hexachlorobutadiene	19.62	225	578718	105.3243	ug/L		100
98)	Naphthalene	19.83	128	2023999	87.2708	ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.12	180	1010863	96.8898	ug/L		99

(#) = qualifier out of range (m) = manual integration
11M16444.D 8260WTR.M Tue Feb 28 15:11:36 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16444.D Vial: 9
Acq On : 25 Feb 2017 20:26 Operator: ADC
Sample : WG601938-09 100.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16445.D Vial: 10
Acq On : 25 Feb 2017 20:55 Operator: ADC
Sample : WG601938-10 200.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:37 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	603913	25.00 ug/L	0.01
56) Chlorobenzene-d5	14.19	117	432074	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	226104	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.56	111	597534	95.5523 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 382.20%#		
43) 1,2-Dichloroethane-d4	10.17	65	713118	93.8397 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 375.36%#		
57) Toluene-d8	12.41	98	2023424	83.2639 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 333.04%#		
78) p-Bromofluorobenzene	15.58	95	889493	93.9111 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 375.64%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	1818194	192.5114 ug/L	94
3) Chloromethane	3.68	50	1813022	143.9626 ug/L	88
4) Vinyl Chloride	3.91	62	1646840	164.3633 ug/L	91
5) 1,3-Butadiene	3.95	54	819387	192.2932 ug/L	99
6) Bromomethane	4.80	94	1201555	189.5121 ug/L	99
7) Chloroethane	4.95	64	1294062	204.5166 ug/L	97
8) Trichlorofluoromethane	5.43	101	2243593	195.7543 ug/L	97
9) Diethyl ether	5.95	59	986	0.1414 ug/L #	1
10) Isoprene	5.99	67	2325844	200.8216 ug/L	99
11) Acrolein	6.17	56	210	0.3229 ug/L #	13
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	1298666	207.1162 ug/L	99
13) Acetone	6.28	43	345639	193.3975 ug/L	97
14) 1,1-Dichloroethene	6.50	61	2413506	190.1936 ug/L	93
15) Tert-Butyl Alcohol	6.60	59	19762	52.3646 ug/L	93
16) Dimethyl Sulfide	6.75	62	1922150	196.6081 ug/L	100
17) Iodomethane	7.00	142	1713760	204.4751 ug/L	96
18) Methyl acetate	7.01	43	1085328	194.1653 ug/L	97
19) Methylene Chloride	7.26	84	1496806	194.9333 ug/L	89
20) Carbon Disulfide	7.30	76	3389319	159.1744 ug/L	91
21) Acrylonitrile	7.45	53	44632	16.6459 ug/L #	31
22) Methyl Tert Butyl Ether	7.45	73	3678810	189.6634 ug/L	93
23) trans-1,2-Dichloroethene	7.69	96	1438394	204.0141 ug/L	88
24) n-Hexane	7.77	57	2343503	203.5868 ug/L	97
26) Vinyl Acetate	8.25	43	2535891	184.7370 ug/L	95
27) 1,1-Dichloroethane	8.29	63	2769398	180.6890 ug/L	91
29) 2-Butanone	8.82	43	590954	196.2795 ug/L	98
30) Propionitrile	8.92	54	2026	2.3664 ug/L #	58
31) 2,2-Dichloropropane	9.03	77	2057384	186.6986 ug/L	95
32) cis-1,2-Dichloroethene	9.09	96	1600306	194.8108 ug/L	92
33) Chloroform	9.30	83	2354326	176.3984 ug/L	94
34) 1-Bromopropane	9.42	122	336476	217.6968 ug/L	98
35) Bromochloromethane	9.51	130	940897	209.5097 ug/L	93
36) Tetrahydrofuran	9.54	42	4816	2.1941 ug/L	89
38) 1,1,1-Trichloroethane	9.80	97	2285254	193.4207 ug/L	95
39) Cyclohexane	9.82	56	2947190	186.9794 ug/L	93
40) 1,1-Dichloropropene	9.98	75	1934720	193.4436 ug/L	93
41) Carbon Tetrachloride	10.12	117	2020577	201.2631 ug/L	99
44) 1,2-Dichloroethane	10.29	62	1975527	186.4997 ug/L	92
45) Benzene	10.33	78	4061261	141.1714 ug/L	81
46) Trichloroethene	11.03	130	1454622	199.4151 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M16445.D 8260WTR.M Tue Feb 28 15:11:38 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16445.D Vial: 10
Acq On : 25 Feb 2017 20:55 Operator: ADC
Sample : WG601938-10 200.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:37 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

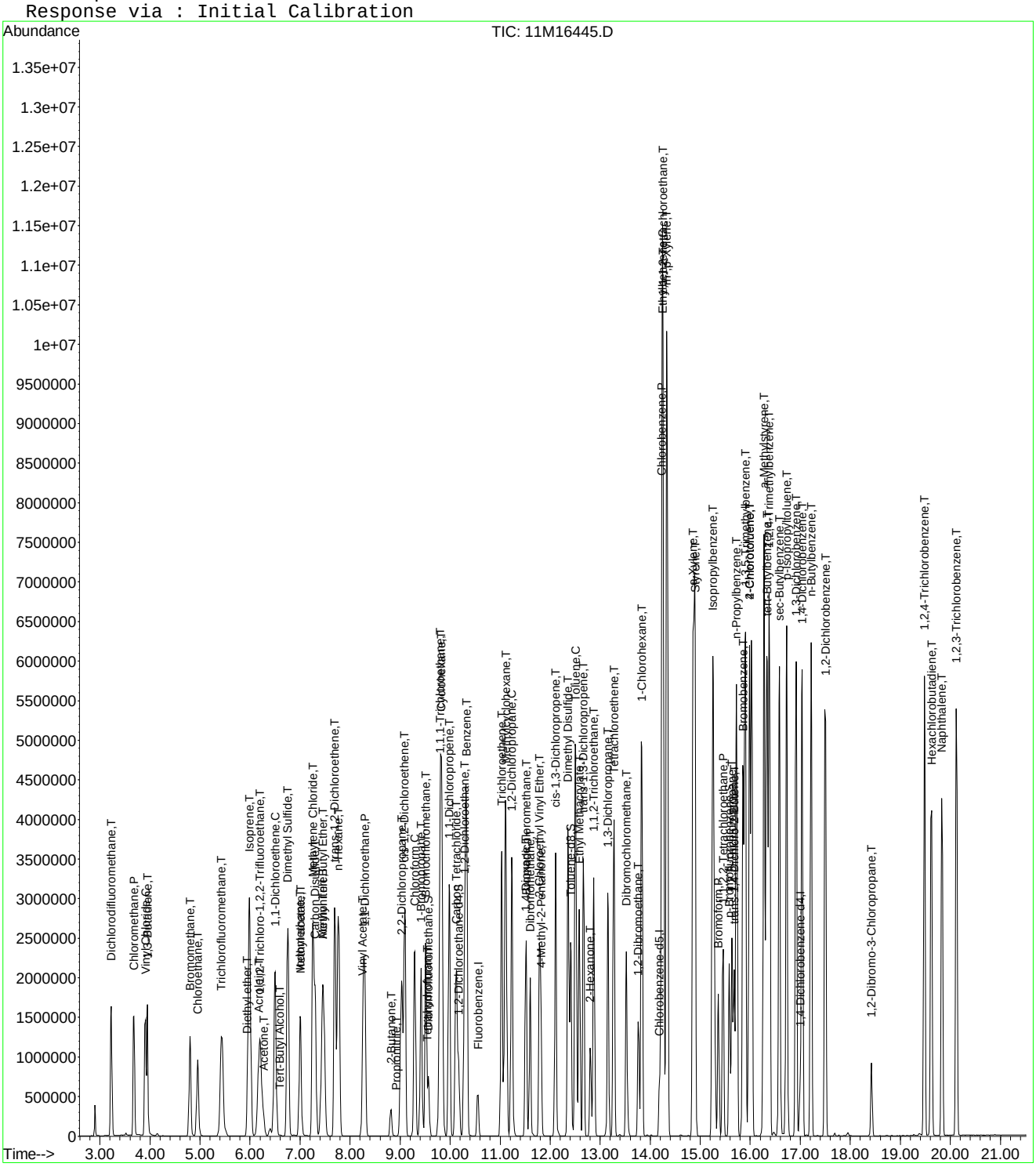
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Methylcyclohexane	11.12	83	2397233	193.2093	ug/L		98
48)	1,2-Dichloropropane	11.23	63	1724769	199.7279	ug/L		96
49)	1,4-Dioxane	11.51	88	4960	174.7725	ug/L		73
50)	Bromodichloromethane	11.52	83	1910407	194.6732	ug/L		95
51)	Dibromomethane	11.60	93	877808	207.2371	ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.79	63	1059530	210.4880	ug/L		96
53)	4-Methyl-2-Pentanone	11.82	58	589884	217.3108	ug/L		100
54)	cis-1,3-Dichloropropene	12.11	75	2145572	181.5409	ug/L		88
55)	Dimethyl Disulfide	12.36	79	1503050	206.7359	ug/L		85
58)	Toluene	12.51	91	3924208	121.2403	ug/L		85
59)	Ethyl Methacrylate	12.58	69	1727898	201.0726	ug/L		100
60)	trans-1,3-Dichloropropene	12.67	75	1941666	185.9865	ug/L		91
61)	1,1,2-Trichloroethane	12.87	97	1237616	198.5591	ug/L		99
62)	2-Hexanone	12.80	43	950929	201.3244	ug/L		97
63)	1,3-Dichloropropane	13.15	76	1932170	181.5171	ug/L		97
64)	Tetrachloroethene	13.28	164	1206524	201.6427	ug/L		99
65)	Dibromochloromethane	13.52	129	1473987	206.2277	ug/L		98
66)	1,2-Dibromoethane	13.76	107	1169925	203.7477	ug/L		100
67)	1-Chlorohexane	13.83	91	1904259	191.5731	ug/L		97
68)	Chlorobenzene	14.23	112	2896158	149.7534	ug/L		83
69)	1,1,1,2-Tetrachloroethane	14.26	131	1450262	200.2271	ug/L		100
70)	Ethylbenzene	14.25	106	2044857	190.0529	ug/L		53
71)	m-,p-Xylene	14.33	106	3539050	279.4121	ug/L		71
72)	o-Xylene	14.86	106	2325205	181.2414	ug/L		72
73)	Styrene	14.90	104	3266317	157.5328	ug/L		81
74)	Bromoform	15.36	173	1019684	221.3567	ug/L		97
75)	Isopropylbenzene	15.25	105	4074212	121.5828	ug/L	#	75
77)	1,1,2,2-Tetrachloroethane	15.46	83	1484320	190.9026	ug/L		95
79)	1,2,3-Trichloropropane	15.63	110	461332	206.7435	ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.67	53	599822	220.5001	ug/L		86
81)	n-Propylbenzene	15.73	91	4446679	106.5061	ug/L	#	72
82)	Bromobenzene	15.86	156	1655980	189.1987	ug/L		91
83)	1,3,5-Trimethylbenzene	15.90	105	3679672	125.7334	ug/L		82
84)	2-Chlorotoluene	15.99	91	3462411	120.5611	ug/L		77
85)	4-Chlorotoluene	15.99	91	3389578	140.5030	ug/L		80
86)	a-Methylstyrene	16.27	118	2550317	175.9142	ug/L		87
87)	tert-Butylbenzene	16.34	134	1236592	196.1039	ug/L		69
88)	1,2,4-Trimethylbenzene	16.38	105	3698351	122.3512	ug/L		75
89)	sec-Butylbenzene	16.58	105	4212312	118.1660	ug/L	#	75
90)	p-Isopropyltoluene	16.73	119	3734369	125.2372	ug/L	#	75
91)	1,3-Dichlorobenzene	16.92	146	2577217	158.0892	ug/L		86
92)	1,4-Dichlorobenzene	17.04	146	2537183	153.6212	ug/L		86
93)	n-Butylbenzene	17.22	91	3597747	127.8202	ug/L	#	79
94)	1,2-Dichlorobenzene	17.50	146	2486576	162.8025	ug/L		87
95)	1,2-Dibromo-3-Chloropropan	18.43	75	298941	204.9857	ug/L		99
96)	1,2,4-Trichlorobenzene	19.48	180	2005230	181.9775	ug/L		90
97)	Hexachlorobutadiene	19.62	225	1135176	204.3698	ug/L		98
98)	Naphthalene	19.83	128	3257233	138.9310	ug/L	#	83
99)	1,2,3-Trichlorobenzene	20.12	180	1948066	184.7061	ug/L		91

(#) = qualifier out of range (m) = manual integration
11M16445.D 8260WTR.M Tue Feb 28 15:11:38 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16445.D Vial: 10
Acq On : 25 Feb 2017 20:55 Operator: ADC
Sample : WG601938-10 200.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022517\11M16446.D Vial: 11
Acq On : 25 Feb 2017 21:24 Operator: ADC
Sample : WG601938-11 300.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:39 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597604	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.19	117	438653	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	220397	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	187	0.0302	ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.12%#		
43) 1,2-Dichloroethane-d4	10.17	65	1230	0.1636	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.64%#		
57) Toluene-d8	12.36	98	12449	0.5046	ug/L	-0.05
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#		
78) p-Bromofluorobenzene	15.58	95	4995	0.5410	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.16%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	2366798	253.2435	ug/L	90
3) Chloromethane	3.68	50	2449768	196.5769	ug/L	81
4) Vinyl Chloride	3.91	62	2019531	203.6878	ug/L	85
5) 1,3-Butadiene	3.95	54	944983	224.3582	ug/L	99
6) Bromomethane	4.80	94	1684821	268.5393	ug/L	100
7) Chloroethane	4.95	64	1809910	289.0622	ug/L	95
8) Trichlorofluoromethane	5.43	101	3077750	271.3698	ug/L	96
9) Diethyl ether	5.95	59	1911079	276.9489	ug/L	98
10) Isoprene	5.99	67	3135737	273.6090	ug/L	97
11) Acrolein	6.18	56	102374	159.0837	ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	1866025	300.7426	ug/L	99
13) Acetone	6.28	43	496570	280.7822	ug/L	93
14) 1,1-Dichloroethene	6.49	61	3230405	257.2559	ug/L	89
15) Tert-Butyl Alcohol	6.61	59	209777	561.7277	ug/L	98
16) Dimethyl Sulfide	6.75	62	2598215	268.5655	ug/L	99
17) Iodomethane	7.00	142	2355524	283.2345	ug/L	94
18) Methyl acetate	7.01	43	1555152	281.1541	ug/L	96
19) Methylene Chloride	7.26	84	2070982	272.5573	ug/L	84
20) Carbon Disulfide	7.30	76	4171672	197.9848	ug/L #	85
21) Acrylonitrile	7.43	53	443254	167.0607	ug/L	96
22) Methyl Tert Butyl Ether	7.46	73	4843956	252.3697	ug/L	88
23) trans-1,2-Dichloroethene	7.69	96	1982575	284.1665	ug/L	83
24) n-Hexane	7.77	57	3097958	271.9697	ug/L	94
25) Diisopropyl ether	8.10	45	5917767	203.7674	ug/L	85
26) Vinyl Acetate	8.25	43	3319649	244.3860	ug/L	91
27) 1,1-Dichloroethane	8.29	63	3611863	238.1433	ug/L	85
28) Ethyl-Tert-Butyl ether	8.64	59	5583310	220.9509	ug/L	85
29) 2-Butanone	8.82	43	871995	292.6821	ug/L	97
30) Propionitrile	8.92	54	248873	293.7626	ug/L	98
31) 2,2-Dichloropropane	9.03	77	2814930	258.1394	ug/L	92
32) cis-1,2-Dichloroethene	9.09	96	2214524	272.4277	ug/L	88
33) Chloroform	9.30	83	3102491	234.9089	ug/L	90
34) 1-Bromopropane	9.42	122	482213	315.2809	ug/L	98
35) Bromochloromethane	9.51	130	1330036	299.2859	ug/L	90
36) Tetrahydrofuran	9.53	42	605137	278.5994	ug/L	99
38) 1,1,1-Trichloroethane	9.80	97	3080883	263.5145	ug/L #	92
39) Cyclohexane	9.82	56	3831930	245.6768	ug/L	90
40) 1,1-Dichloropropene	9.98	75	2596917	262.3947	ug/L	89
41) Carbon Tetrachloride	10.12	117	2725161	274.3101	ug/L	97
42) Tert-Amyl-Methyl ether	10.08	73	4636827	227.8721	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M16446.D 8260WTR.M Tue Feb 28 15:11:40 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16446.D Vial: 11
Acq On : 25 Feb 2017 21:24 Operator: ADC
Sample : WG601938-11 300.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11:39 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

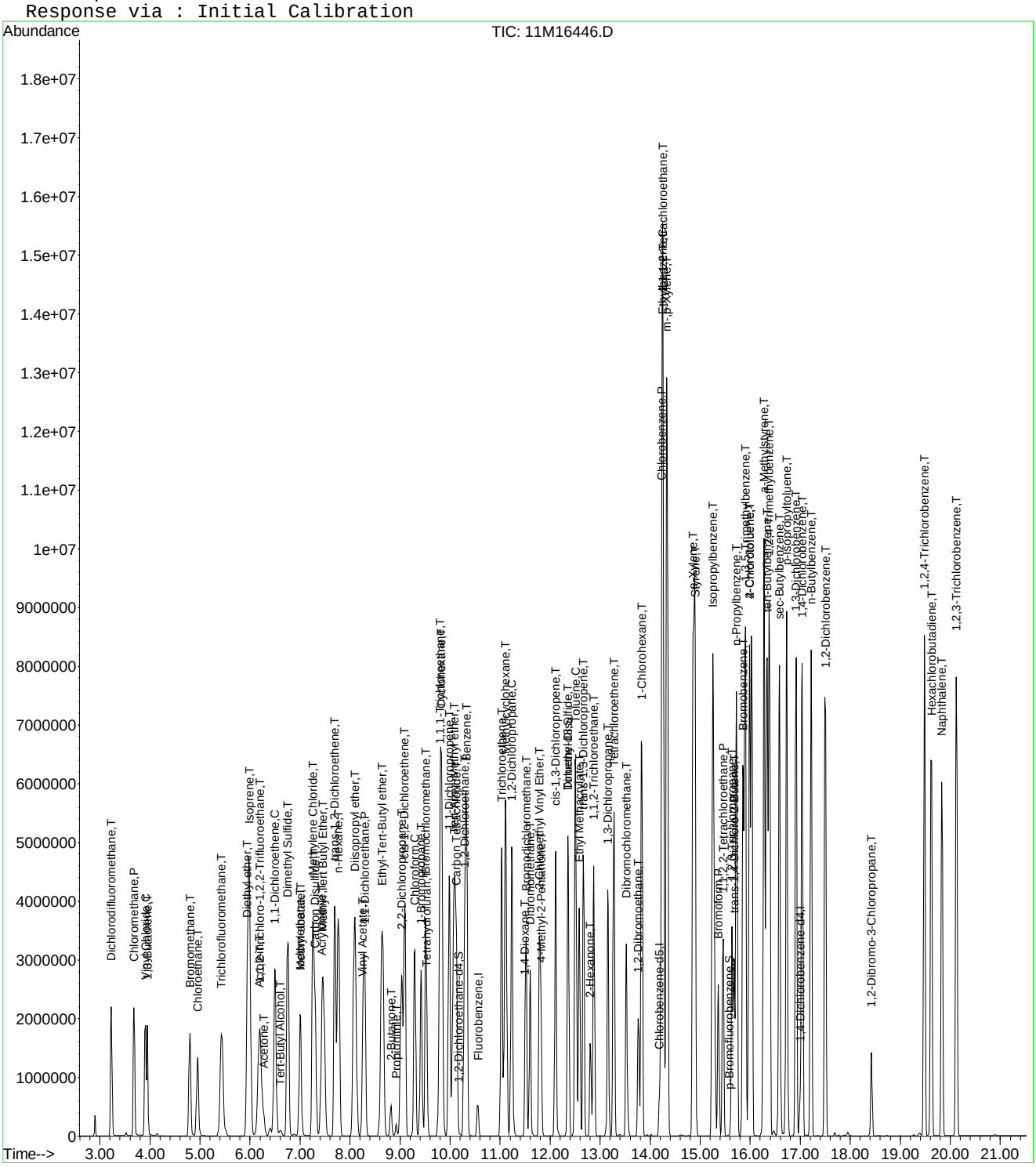
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	1,2-Dichloroethane	10.29	62	2595986	247.6614	ug/L		86
45)	Benzene	10.33	78	4905352	172.3125	ug/L	#	70
46)	Trichloroethene	11.03	130	1968217	272.6728	ug/L		99
47)	Methylcyclohexane	11.10	83	3132050	255.0982	ug/L		97
48)	1,2-Dichloropropane	11.23	63	2350912	275.1092	ug/L		91
49)	1,4-Dioxane	11.50	88	19247	685.3545	ug/L		97
50)	Bromodichloromethane	11.52	83	2560848	263.7089	ug/L		92
51)	Dibromomethane	11.60	93	1239644	295.7507	ug/L		98
52)	2-Chloroethyl Vinyl Ether	11.79	63	1476271	296.3747	ug/L		94
53)	4-Methyl-2-Pentanone	11.82	58	855764	318.5882	ug/L		99
54)	cis-1,3-Dichloropropene	12.11	75	2779517	237.6630	ug/L	#	82
55)	Dimethyl Disulfide	12.36	79	2036458	283.0603	ug/L		75
58)	Toluene	12.51	91	4649436	141.4921	ug/L		80
59)	Ethyl Methacrylate	12.58	69	2286013	262.0297	ug/L		98
60)	trans-1,3-Dichloropropene	12.67	75	2529962	238.7030	ug/L		84
61)	1,1,2-Trichloroethane	12.87	97	1712547	270.6347	ug/L		98
62)	2-Hexanone	12.80	43	1337985	279.0208	ug/L		95
63)	1,3-Dichloropropane	13.15	76	2519707	233.1627	ug/L		94
64)	Tetrachloroethene	13.28	164	1669410	274.8189	ug/L		99
65)	Dibromochloromethane	13.52	129	2022040	278.6635	ug/L		96
66)	1,2-Dibromoethane	13.76	107	1630819	279.7547	ug/L		99
67)	1-Chlorohexane	13.83	91	2505090	248.2383	ug/L		97
68)	Chlorobenzene	14.23	112	3581251	182.4006	ug/L	#	74
69)	1,1,1,2-Tetrachloroethane	14.26	131	2010398	273.3981	ug/L		99
70)	Ethylbenzene	14.25	106	2682034	245.5347	ug/L		42
71)	m-,p-Xylene	14.33	106	4223645	328.4604	ug/L		66
72)	o-Xylene	14.86	106	3019792	231.8517	ug/L		64
73)	Styrene	14.90	104	4002220	190.1299	ug/L		72
74)	Bromoform	15.36	173	1446521	309.3063	ug/L		94
75)	Isopropylbenzene	15.25	105	4791831	140.8533	ug/L	#	63
77)	1,1,2,2-Tetrachloroethane	15.46	83	2038169	268.9224	ug/L		92
79)	1,2,3-Trichloropropane	15.63	110	668633	307.4034	ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.68	53	849595	320.4061	ug/L		85
81)	n-Propylbenzene	15.73	91	5172732	127.1046	ug/L	#	59
82)	Bromobenzene	15.86	156	2242800	262.8792	ug/L		88
83)	1,3,5-Trimethylbenzene	15.90	105	4411548	154.6447	ug/L		75
84)	2-Chlorotoluene	15.99	91	4029346	143.9348	ug/L	#	64
85)	4-Chlorotoluene	15.99	91	3936625	167.4043	ug/L	#	68
86)	a-Methylstyrene	16.27	118	3200684	226.4915	ug/L		81
87)	tert-Butylbenzene	16.34	134	1755265	285.5650	ug/L		56
88)	1,2,4-Trimethylbenzene	16.38	105	4377060	148.5543	ug/L	#	63
89)	sec-Butylbenzene	16.58	105	4928155	141.8270	ug/L	#	62
90)	p-Isopropyltoluene	16.73	119	4424052	152.2085	ug/L	#	64
91)	1,3-Dichlorobenzene	16.92	146	3251423	204.6102	ug/L		78
92)	1,4-Dichlorobenzene	17.04	146	3193001	198.3357	ug/L		77
93)	n-Butylbenzene	17.22	91	4309841	157.0843	ug/L	#	67
94)	1,2-Dichlorobenzene	17.51	146	3162697	212.4318	ug/L		79
95)	1,2-Dibromo-3-Chloropropan	18.43	75	461966	324.9755	ug/L		100
96)	1,2,4-Trichlorobenzene	19.48	180	2723254	253.5387	ug/L		82
97)	Hexachlorobutadiene	19.62	225	1719338	317.5538	ug/L		95
98)	Naphthalene	19.83	128	3959154	173.2428	ug/L	#	70
99)	1,2,3-Trichlorobenzene	20.12	180	2625366	255.3701	ug/L		84

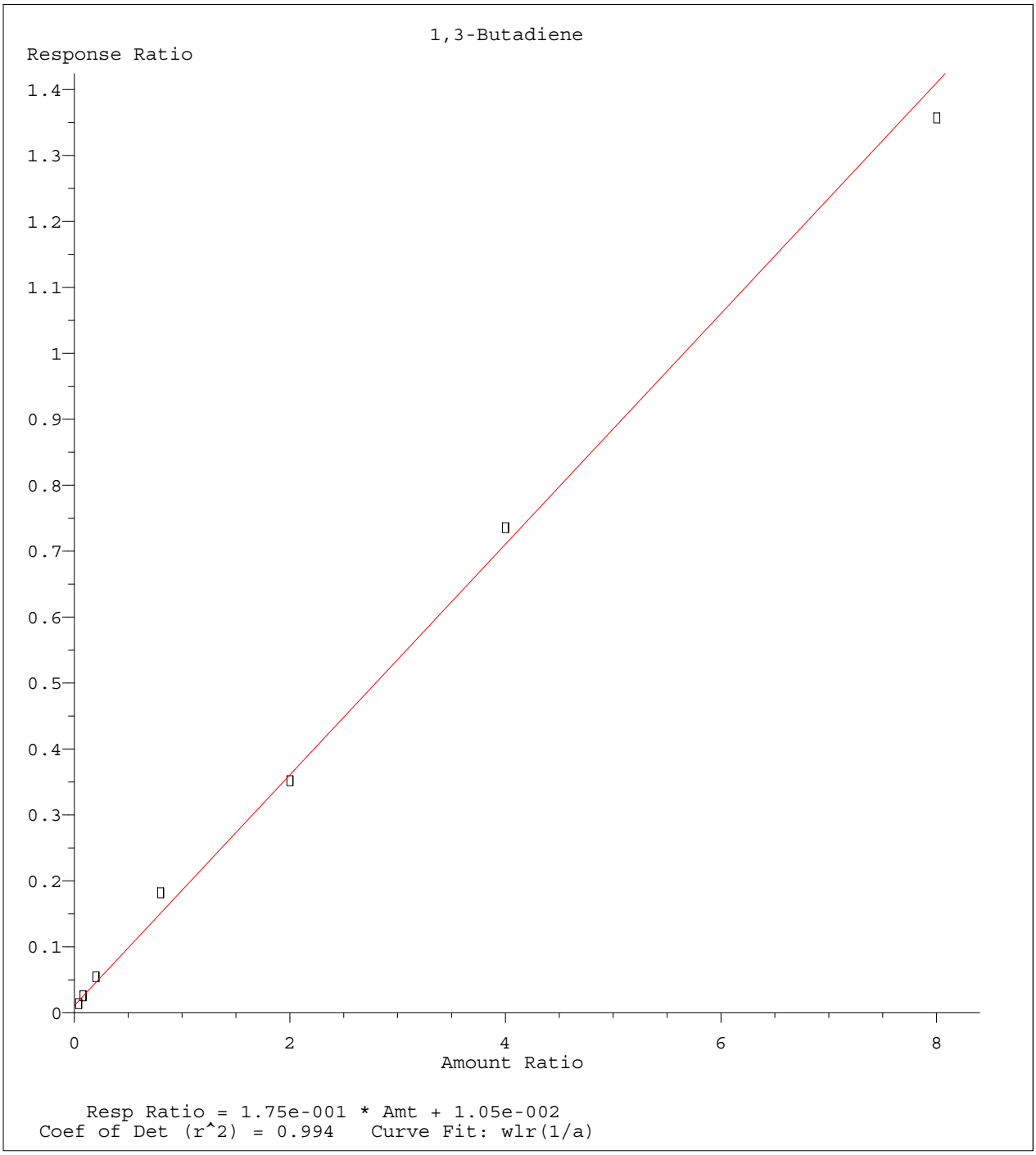
(#) = qualifier out of range (m) = manual integration
11M16446.D 8260WTR.M Tue Feb 28 15:11:40 2017 Page 2

Quantitation Report (Not Reviewed)

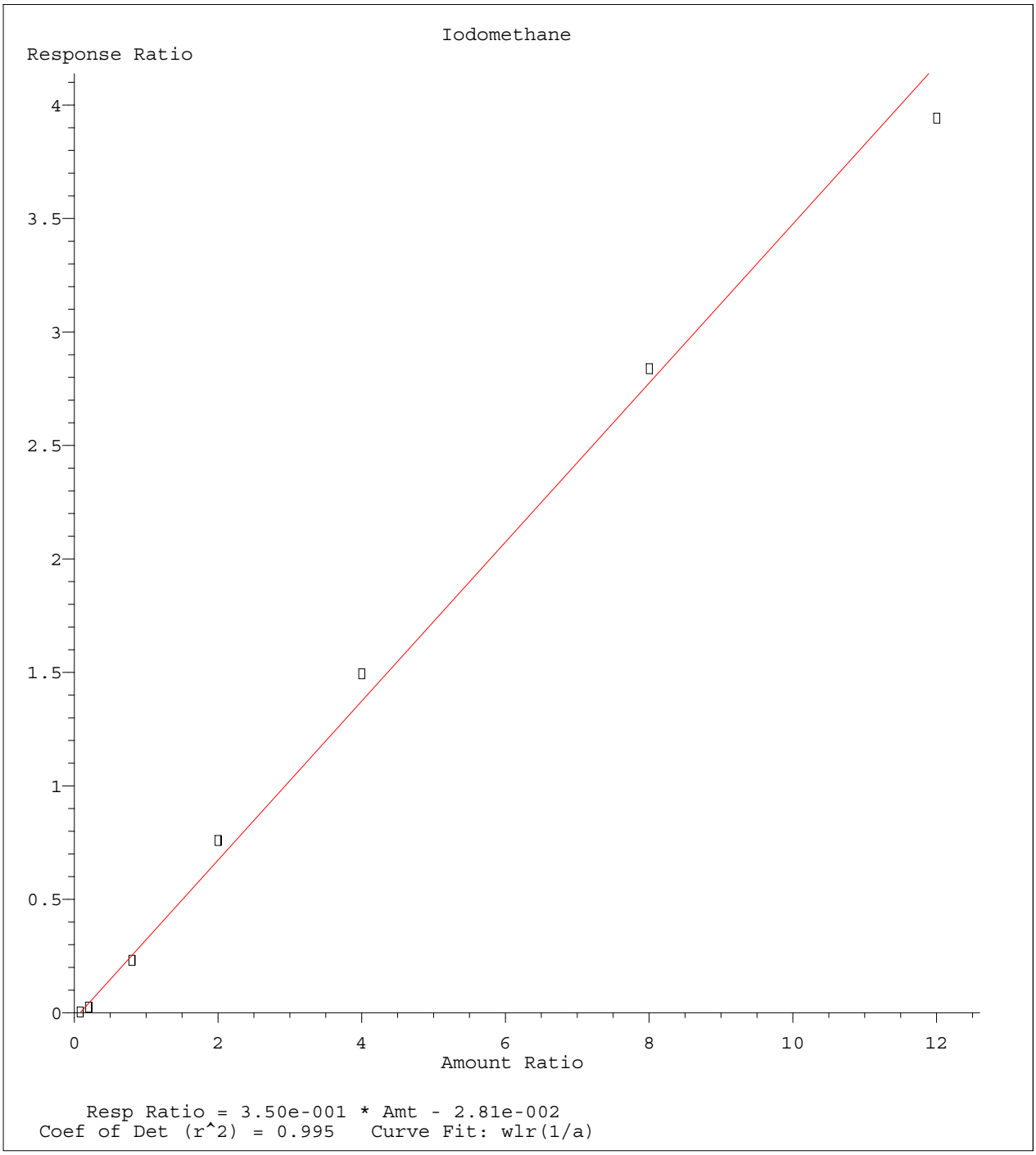
Data File : C:\MSDCHEM\1\DATA\022517\11M16446.D Vial: 11
Acq On : 25 Feb 2017 21:24 Operator: ADC
Sample : WG601938-11 300.0ug/L STD Inst : hpms11
Misc : 1,1 STD80492 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 15:11 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration





Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Tue Feb 28 14:56:34 2017



Method Name: C:\MSDCHEM\1\METHODS\8260WTR.M
Calibration Table Last Updated: Tue Feb 28 14:56:34 2017

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022817\11M16448.D Vial: 1
Acq On : 28 Feb 2017 16:15 Operator: ADC
Sample : WG604519-02 50.0ug/L CCV Inst : hpms11
Misc : 1,1 STD80410 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 17:00:03 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	705948	25.00	ug/L	0.01
56) Chlorobenzene-d5	14.19	117	495795	25.00	ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	261509	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.57	111	188782	25.8250	ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.32%			
43) 1,2-Dichloroethane-d4	10.17	65	232268	26.1467	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.60%			
57) Toluene-d8	12.42	98	730820	26.2081	ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.84%			
78) p-Bromofluorobenzene	15.58	95	274902	25.0942	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.36%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.23	85	583319	52.8353	ug/L	99
3) Chloromethane	3.68	50	611220	41.5189	ug/L	99
4) Vinyl Chloride	3.91	62	520371	44.4292	ug/L	100
5) 1,3-Butadiene	3.95	54	237445	46.5378	ug/L	100
6) Bromomethane	4.80	94	325388	43.9032	ug/L	99
7) Chloroethane	4.95	64	369224	49.9189	ug/L	99
8) Trichlorofluoromethane	5.44	101	637935	47.6152	ug/L	99
9) Diethyl ether	5.96	59	824578	101.1564	ug/L	98
10) Isoprene	5.99	67	671743	49.6175	ug/L	100
11) Acrolein	6.18	56	59412	78.1540	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	360075	49.1260	ug/L	98
13) Acetone	6.29	43	113382	54.2718	ug/L	93
14) 1,1-Dichloroethene	6.50	61	720802	48.5920	ug/L	98
15) Tert-Butyl Alcohol	6.61	59	182996	414.8111	ug/L	99
16) Dimethyl Sulfide	6.75	62	561590	49.1400	ug/L	98
17) Iodomethane	7.01	142	421651	44.6182	ug/L	100
18) Methyl acetate	7.01	43	336424	51.4872	ug/L	99
19) Methylene Chloride	7.26	84	413340	46.0500	ug/L	96
20) Carbon Disulfide	7.31	76	1184219	47.5767	ug/L	99
21) Acrylonitrile	7.43	53	174889	55.7988	ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	1101417	48.5769	ug/L	99
23) trans-1,2-Dichloroethene	7.69	96	393690	47.7681	ug/L	99
24) n-Hexane	7.77	57	753361	55.9872	ug/L	100
25) Diisopropyl ether	8.10	45	3096168	90.2490	ug/L	99
26) Vinyl Acetate	8.26	43	921052	57.3996	ug/L	100
27) 1,1-Dichloroethane	8.29	63	866062	48.3389	ug/L	100
28) Ethyl-Tert-Butyl ether	8.64	59	2807051	94.0362	ug/L	99
29) 2-Butanone	8.82	43	197848	56.2153	ug/L	98
30) Propionitrile	8.92	54	124002	123.9048	ug/L	99
31) 2,2-Dichloropropane	9.04	77	669589	51.9799	ug/L	100
32) cis-1,2-Dichloroethene	9.10	96	447855	46.6390	ug/L	97
33) Chloroform	9.30	83	702921	45.0543	ug/L	100
34) 1-Bromopropane	9.43	122	85476	47.3090	ug/L	99
35) Bromochloromethane	9.51	130	246432	46.9419	ug/L	96
36) Tetrahydrofuran	9.53	42	270932	105.5912	ug/L	99
38) 1,1,1-Trichloroethane	9.80	97	647065	46.8509	ug/L	99
39) Cyclohexane	9.83	56	902704	48.9928	ug/L	100
40) 1,1-Dichloropropene	9.99	75	570221	48.7732	ug/L	99
41) Carbon Tetrachloride	10.12	117	574709	48.9709	ug/L	100
42) Tert-Amyl-Methyl ether	10.08	73	2234659	92.9656	ug/L	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\022817\11M16448.D Vial: 1
Acq On : 28 Feb 2017 16:15 Operator: ADC
Sample : WG604519-02 50.0ug/L CCV Inst : hpms11
Misc : 1,1 STD80410 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 17:00:03 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

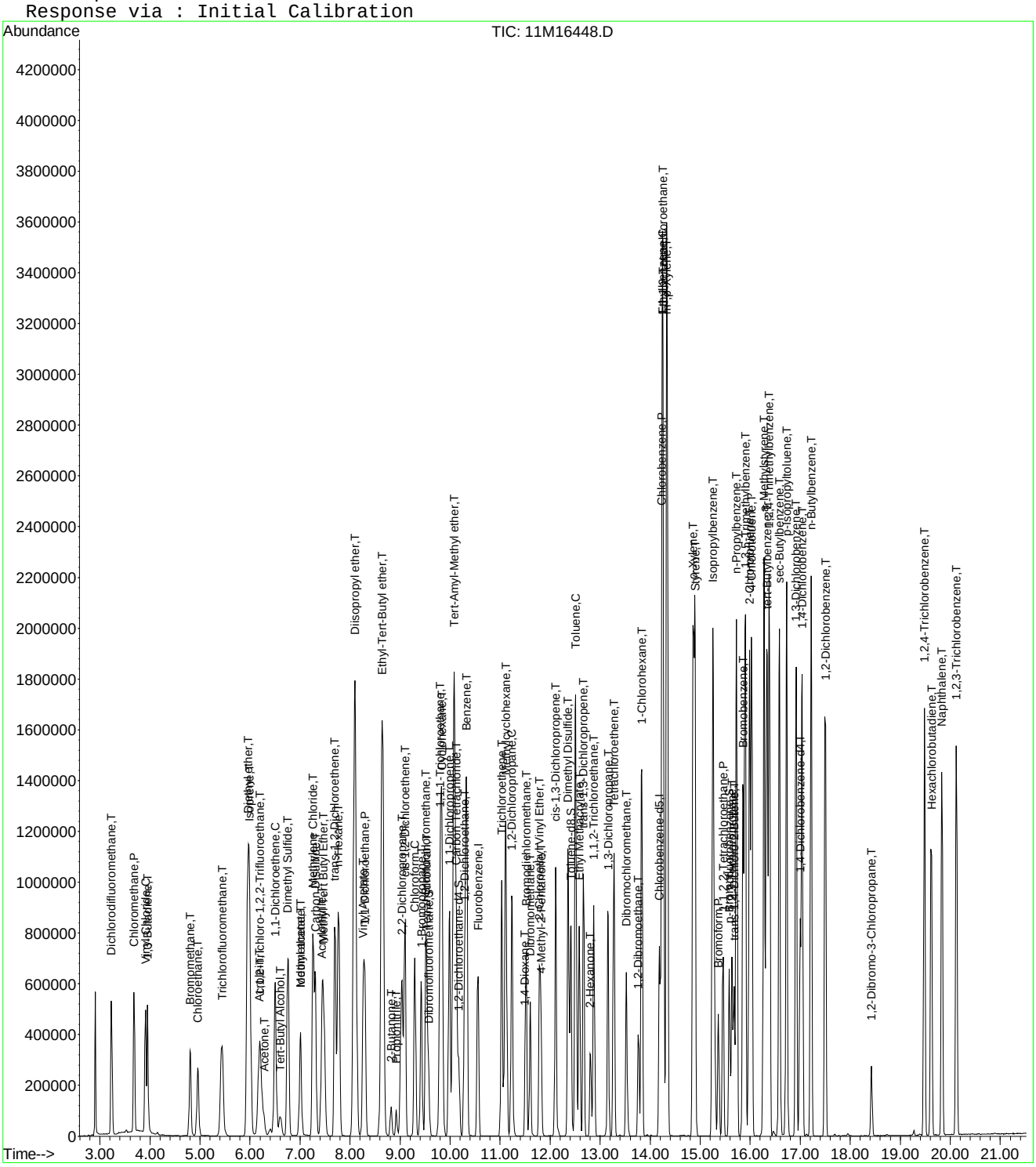
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.29	62	593702	47.9474	ug/L	99
45)	Benzene	10.33	78	1530200	45.5025	ug/L	100
46)	Trichloroethene	11.03	130	397585	46.6272	ug/L	99
47)	Methylcyclohexane	11.12	83	729912	50.3257	ug/L	99
48)	1,2-Dichloropropane	11.23	63	500513	49.5821	ug/L	98
49)	1,4-Dioxane	11.50	88	17187	518.0755	ug/L	92
50)	Bromodichloromethane	11.52	83	557153	48.5687	ug/L	100
51)	Dibromomethane	11.60	93	235657	47.5938	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.79	63	297097	50.4910	ug/L	98
53)	4-Methyl-2-Pentanone	11.82	58	165951	52.2993	ug/L	99
54)	cis-1,3-Dichloropropene	12.11	75	689611	49.9157	ug/L	99
55)	Dimethyl Disulfide	12.36	79	413635	48.6700	ug/L	99
58)	Toluene	12.51	91	1572743	42.3456	ug/L	100
59)	Ethyl Methacrylate	12.58	69	506255	51.3405	ug/L	99
60)	trans-1,3-Dichloropropene	12.67	75	619672	51.7279	ug/L	99
61)	1,1,2-Trichloroethane	12.87	97	347239	48.5499	ug/L	99
62)	2-Hexanone	12.80	43	292516	53.9702	ug/L	99
63)	1,3-Dichloropropane	13.16	76	598257	48.9797	ug/L	99
64)	Tetrachloroethene	13.28	164	331687	48.3093	ug/L	99
65)	Dibromochloromethane	13.52	129	416691	50.8070	ug/L	100
66)	1,2-Dibromoethane	13.76	107	324583	49.2625	ug/L	100
67)	1-Chlorohexane	13.83	91	569869	49.9620	ug/L	100
68)	Chlorobenzene	14.23	112	1029520	46.3922	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.26	131	403875	48.5936	ug/L	100
70)	Ethylbenzene	14.25	106	602594	48.8081	ug/L	99
71)	m-,p-Xylene	14.33	106	1368878	94.1845	ug/L	99
72)	o-Xylene	14.86	106	715992	48.6363	ug/L	99
73)	Styrene	14.90	104	1171404	49.2351	ug/L	100
74)	Bromoform	15.36	173	278126	52.6168	ug/L	100
75)	Isopropylbenzene	15.25	105	1683290	43.7768	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.46	83	456088	50.7171	ug/L	99
79)	1,2,3-Trichloropropane	15.63	110	126647	49.0721	ug/L	98
80)	trans-1,4-Dichloro-2-Buten	15.68	53	165460	52.5897	ug/L	94
81)	n-Propylbenzene	15.73	91	2010417	41.6338	ug/L	99
82)	Bromobenzene	15.86	156	477572	47.1763	ug/L	100
83)	1,3,5-Trimethylbenzene	15.90	105	1483114	43.8165	ug/L	99
84)	2-Chlorotoluene	15.99	91	1399422	42.1307	ug/L	99
85)	4-Chlorotoluene	16.03	91	1222013	43.7963	ug/L	100
86)	a-Methylstyrene	16.27	118	849111	50.6399	ug/L	99
87)	tert-Butylbenzene	16.34	134	338857	46.4620	ug/L	99
88)	1,2,4-Trimethylbenzene	16.38	105	1514505	43.3204	ug/L	99
89)	sec-Butylbenzene	16.58	105	1832786	44.4534	ug/L	99
90)	p-Isopropyltoluene	16.73	119	1574276	45.6477	ug/L	99
91)	1,3-Dichlorobenzene	16.92	146	902888	47.8858	ug/L	100
92)	1,4-Dichlorobenzene	17.04	146	890379	46.6118	ug/L	99
93)	n-Butylbenzene	17.22	91	1530362	47.0094	ug/L	99
94)	1,2-Dichlorobenzene	17.51	146	855144	48.4083	ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.43	75	87976	52.1584	ug/L	99
96)	1,2,4-Trichlorobenzene	19.48	180	635018	49.8266	ug/L	100
97)	Hexachlorobutadiene	19.62	225	318066	49.5099	ug/L	100
98)	Naphthalene	19.83	128	1297170	47.8375	ug/L	99
99)	1,2,3-Trichlorobenzene	20.12	180	581642	47.6821	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M16448.D 8260WTR.M Tue Feb 28 17:00:04 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022817\11M16448.D Vial: 1
Acq On : 28 Feb 2017 16:15 Operator: ADC
Sample : WG604519-02 50.0ug/L CCV Inst : hpms11
Misc : 1,1 STD80410 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 28 17:00 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



11M16448.D 8260WTR.M Tue Feb 28 17:00:05 2017 Page 3

Data File : C:\MSDCHEM\1\DATA\022517\11M16448.D Vial: 13
Acq On : 25 Feb 2017 22:22 Operator: ADC
Sample : WG601938-12 50.0ug/L ALT Inst : hpms11
Misc : 1,1 STD80410 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.01
2	T	Dichlorodifluoromethane	50.0000	47.8272	4.3	81	0.01
3	P	Chloromethane	50.0000	43.7333	12.5	88	0.01
4	C	Vinyl Chloride	50.0000	47.1806	5.6	91	0.01
5	T	1,3-Butadiene	50.0000	66.4586	-32.9#	132	0.01
6	T	Bromomethane	50.0000	46.6865	6.6	99	0.01
7	T	Chloroethane	50.0000	51.3345	-2.7	94	0.00
8	T	Trichlorofluoromethane	50.0000	48.0003	4.0	89	0.01
9	T	Diethyl ether	100.0000	96.8148	3.2	92	0.01
10	T	Isoprene	50.0000	50.5121	-1.0	92	0.00
11	T	Acrolein	50.0000	95.2213	-90.4#	172	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.4425	-2.9	95	0.01
13	T	Acetone	50.0000	42.3265	15.3	85	0.01
14	C	1,1-Dichloroethene	50.0000	49.6862	0.6	90	0.01
15	T	Tert-Butyl Alcohol	200.0000	179.8717	10.1	90	0.01
16	T	Dimethyl Sulfide	50.0000	49.2426	1.5	90	0.01
17	T	Iodomethane	50.0000	45.6392	8.7	79	0.00
18	T	Methyl acetate	50.0000	49.8686	0.3	96	0.00
19	T	Methylene Chloride	50.0000	49.9492	0.1	94	0.00
20	T	Carbon Disulfide	50.0000	41.1940	17.6	77	0.00
21	T	Acrylonitrile	50.0000	47.7823	4.4	87	0.01
22	T	Methyl Tert Butyl Ether	50.0000	48.7960	2.4	89	0.01
23	T	trans-1,2-Dichloroethene	50.0000	52.4064	-4.8	96	0.00
24	T	n-Hexane	50.0000	47.8698	4.3	87	0.00
25	T	Diisopropyl ether	100.0000	94.4095	5.6	94	0.01
26	T	Vinyl Acetate	50.0000	39.1088	21.8	73	0.01
27	P	1,1-Dichloroethane	50.0000	51.3642	-2.7	93	0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	95.3720	4.6	90	0.01
29	T	2-Butanone	50.0000	42.9208	14.2	83	0.00
30	T	Propionitrile	100.0000	91.4465	8.6	88	0.01
31	T	2,2-Dichloropropane	50.0000	47.2375	5.5	89	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0214	-2.0	95	0.01
33	C	Chloroform	50.0000	50.7127	-1.4	97	0.00
34	T	1-Bromopropane	50.0000	65.3864	-30.8#	118	0.00
35	T	Bromochloromethane	50.0000	52.6814	-5.4	96	0.00
36	T	Tetrahydrofuran	100.0000	88.8927	11.1	87	0.00
37	S	Dibromofluoromethane	25.0000	25.4298	-1.7	99	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.1039	-6.2	97	0.00
39	T	Cyclohexane	50.0000	43.9164	12.2	80	0.01
40	T	1,1-Dichloropropene	50.0000	51.9209	-3.8	94	0.00
41	T	Carbon Tetrachloride	50.0000	53.3782	-6.8	94	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	97.7081	2.3	92	0.01
43	S	1,2-Dichloroethane-d4	25.0000	25.1801	-0.7	96	0.00
44	T	1,2-Dichloroethane	50.0000	50.8489	-1.7	92	0.00
45	T	Benzene	50.0000	50.3914	-0.8	95	0.01
46	T	Trichloroethene	50.0000	53.3940	-6.8	96	0.00
47	T	Methylcyclohexane	50.0000	47.3037	5.4	86	0.00
48	C	1,2-Dichloropropane	50.0000	51.9806	-4.0	93	0.00
49	T	1,4-Dioxane	200.0000	186.7208	6.6	95	0.01
50	T	Bromodichloromethane	50.0000	51.2006	-2.4	92	0.00
51	T	Dibromomethane	50.0000	51.0126	-2.0	93	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	49.9085	0.2	90	0.00
53	T	4-Methyl-2-Pentanone	50.0000	47.8702	4.3	89	0.00
54	T	cis-1,3-Dichloropropene	50.0000	53.6648	-7.3	96	0.00

(#) = Out of Range
11M16448.D 8260WTR.M Tue Feb 28 15:11:56 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\022517\11M16448.D Vial: 13
Acq On : 25 Feb 2017 22:22 Operator: ADC
Sample : WG601938-12 50.0ug/L ALT Inst : hpms11
Misc : 1,1 STD80410 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	50.6621	-1.3	91	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	98	0.00
57	S	Toluene-d8	25.0000	26.8140	-7.3	100	0.00
58	C	Toluene	50.0000	47.2266	5.5	94	0.01
59	T	Ethyl Methacrylate	50.0000	53.0155	-6.0	94	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.4376	-4.9	91	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.8257	-1.7	93	0.00
62	T	2-Hexanone	50.0000	47.4795	5.0	89	0.00
63	T	1,3-Dichloropropane	50.0000	52.7324	-5.5	94	0.00
64	T	Tetrachloroethene	50.0000	54.0043	-8.0	97	0.00
65	T	Dibromochloromethane	50.0000	52.2507	-4.5	91	0.00
66	T	1,2-Dibromoethane	50.0000	51.6279	-3.3	92	0.00
67	T	1-Chlorohexane	50.0000	51.6322	-3.3	93	0.00
68	P	Chlorobenzene	50.0000	51.0438	-2.1	94	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.1303	-4.3	92	0.00
70	C	Ethylbenzene	50.0000	54.1927	-8.4	95	0.00
71	T	m-,p-Xylene	100.0000	104.7912	-4.8	95	0.00
72	T	o-Xylene	50.0000	53.9391	-7.9	94	0.00
73	T	Styrene	50.0000	54.3747	-8.7	96	0.00
74	P	Bromoform	50.0000	52.1340	-4.3	91	0.00
75	T	Isopropylbenzene	50.0000	47.9963	4.0	93	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	46.7494	6.5	90	0.00
78	S	p-Bromofluorobenzene	25.0000	25.1390	-0.6	99	0.00
79	T	1,2,3-Trichloropropane	50.0000	48.5692	2.9	94	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	38.1035	23.8	74	0.00
81	T	n-Propylbenzene	50.0000	43.6474	12.7	92	0.00
82	T	Bromobenzene	50.0000	50.2607	-0.5	95	-0.01
83	T	1,3,5-Trimethylbenzene	50.0000	46.8976	6.2	95	0.00
84	T	2-Chlorotoluene	50.0000	45.0420	9.9	93	0.00
85	T	4-Chlorotoluene	50.0000	46.1976	7.6	95	0.00
86	T	a-Methylstyrene	50.0000	53.9700	-7.9	96	0.00
87	T	tert-Butylbenzene	50.0000	50.7195	-1.4	95	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	46.3792	7.2	94	0.00
89	T	sec-Butylbenzene	50.0000	47.1205	5.8	93	0.00
90	T	p-Isopropyltoluene	50.0000	48.8404	2.3	95	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.0941	1.8	93	0.00
92	T	1,4-Dichlorobenzene	50.0000	49.5331	0.9	96	0.00
93	T	n-Butylbenzene	50.0000	48.9656	2.1	95	0.00
94	T	1,2-Dichlorobenzene	50.0000	51.1519	-2.3	95	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	47.6034	4.8	90	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	52.0732	-4.1	97	0.00
97	T	Hexachlorobutadiene	50.0000	50.5477	-1.1	96	0.00
98	T	Naphthalene	50.0000	49.1131	1.8	94	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	49.8606	0.3	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M16448.D 8260WTR.M Tue Feb 28 15:11:56 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416519.D Vial: 2
Acq On : 8 Dec 2016 9:19 Operator: TMB
Sample : WG594051-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:51 2016 Quant Results File: A9FOOWTR.RES

Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

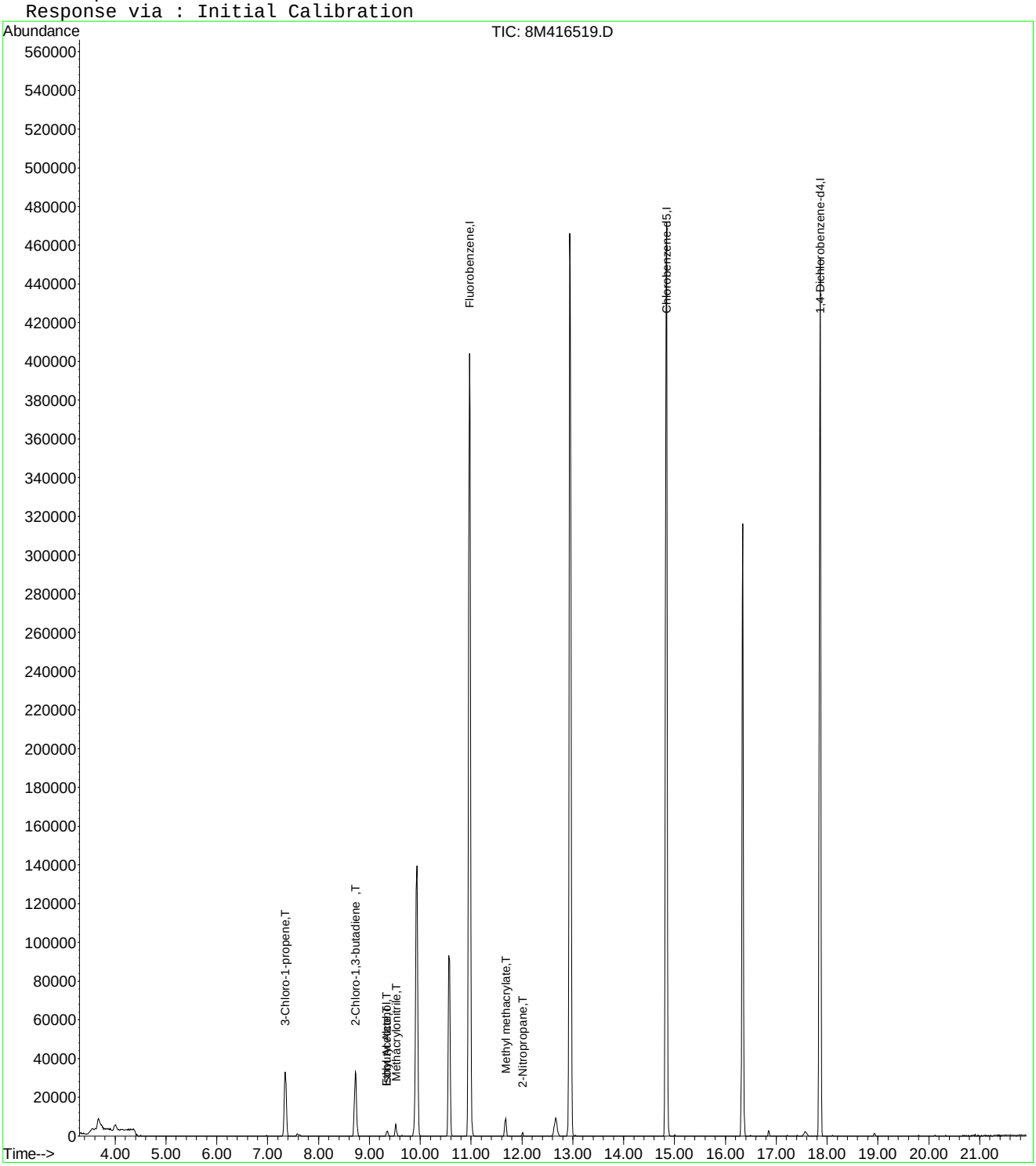
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.97	96	524008	25.00	ug/L		0.00
11) Chlorobenzene-d5	14.84	117	364349	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	144698	25.00	ug/L		0.00
Target Compounds							Qvalue
3) 3-Chloro-1-propene	7.35	41	29881	4.9041	ug/L		96
4) 2-Chloro-1,3-butadiene	8.72	53	29557	4.4384	ug/L		94
5) Ethyl Acetate	9.34	43	5291	3.8864	ug/L	#	59
6) Methacrylonitrile	9.53	67	3339	3.7723	ug/L		88
7) Isobutyl Alcohol	9.34	43	5291	117.7955	ug/L	#	10
9) Methyl methacrylate	11.68	41	5754	4.0085	ug/L		90
10) 2-Nitropropane	12.01	43	1384	2.9662	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M416519.D A9FOOWTR.M Thu Dec 08 14:33:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416519.D Vial: 2
Acq On : 8 Dec 2016 9:19 Operator: TMB
Sample : WG594051-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416519.D Vial: 2
Acq On : 8 Dec 2016 9:19 Operator: TMB
Sample : WG594051-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	0.0000	0.0	0	-6.97#
3	T	3-Chloro-1-propene	5.0000	4.9041	1.9	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.4384	11.2	100	0.00
5	T	Ethyl Acetate	-1.0000	3.8864	0.0	0	0.00
6	T	Methacrylonitrile	5.0000	3.7723	24.6	100	0.00
7	T	Isobutyl Alcohol	-1.0000	117.7955	0.0	0	-0.18
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.45#
9	T	Methyl methacrylate	5.0000	4.0085	19.8	100	0.00
10	T	2-Nitropropane	-1.0000	2.9662	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-16.11#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416519.D A9FOOWTR.M Thu Dec 08 14:40:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416520.D Vial: 3
Acq On : 8 Dec 2016 9:48 Operator: TMB
Sample : WG594051-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:53 2016 Quant Results File: A9FOOWTR.RES

Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

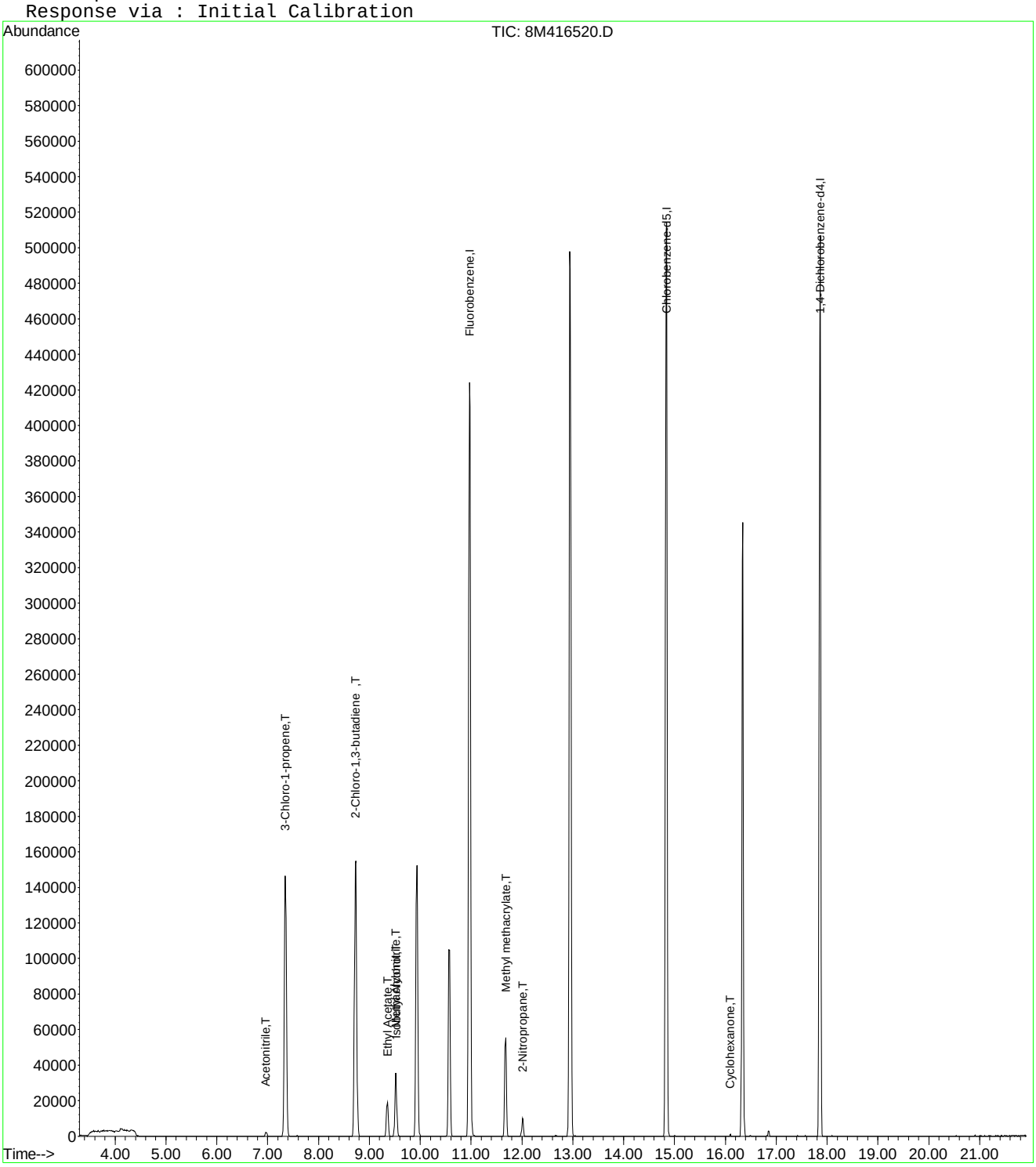
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.97	96	562112	25.00	ug/L		0.00
11) Chlorobenzene-d5	14.84	117	401339	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	163574	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.96	41	3251	20.0530	ug/L		86
3) 3-Chloro-1-propene	7.35	41	126513	19.3558	ug/L		94
4) 2-Chloro-1,3-butadiene	8.72	53	133862	18.7385	ug/L		93
5) Ethyl Acetate	9.35	43	29216	20.0054	ug/L		96
6) Methacrylonitrile	9.52	67	18458	19.4399	ug/L		89
7) Isobutyl Alcohol	9.53	43	1383	28.7031	ug/L	#	86
9) Methyl methacrylate	11.68	41	30029	19.5014	ug/L		97
10) 2-Nitropropane	12.01	43	9171	18.3231	ug/L		92
13) Cyclohexanone	16.09	55	573	11.3348	ug/L	#	22

(#) = qualifier out of range (m) = manual integration
8M416520.D A9FOOWTR.M Thu Dec 08 14:33:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416520.D Vial: 3
Acq On : 8 Dec 2016 9:48 Operator: TMB
Sample : WG594051-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416520.D Vial: 3
Acq On : 8 Dec 2016 9:48 Operator: TMB
Sample : WG594051-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.0530	-0.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.3558	3.2	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.7385	6.3	100	0.00
5	T	Ethyl Acetate	20.0000	20.0054	-0.0	100	0.00
6	T	Methacrylonitrile	20.0000	19.4399	2.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	28.7031	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.45#
9	T	Methyl methacrylate	20.0000	19.5014	2.5	100	0.00
10	T	2-Nitropropane	20.0000	18.3231	8.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	11.3348	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416520.D A9FOOWTR.M Thu Dec 08 14:40:47 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416521.D Vial: 4
Acq On : 8 Dec 2016 10:17 Operator: TMB
Sample : WG594051-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:56 2016 Quant Results File: A9FOOWTR.RES

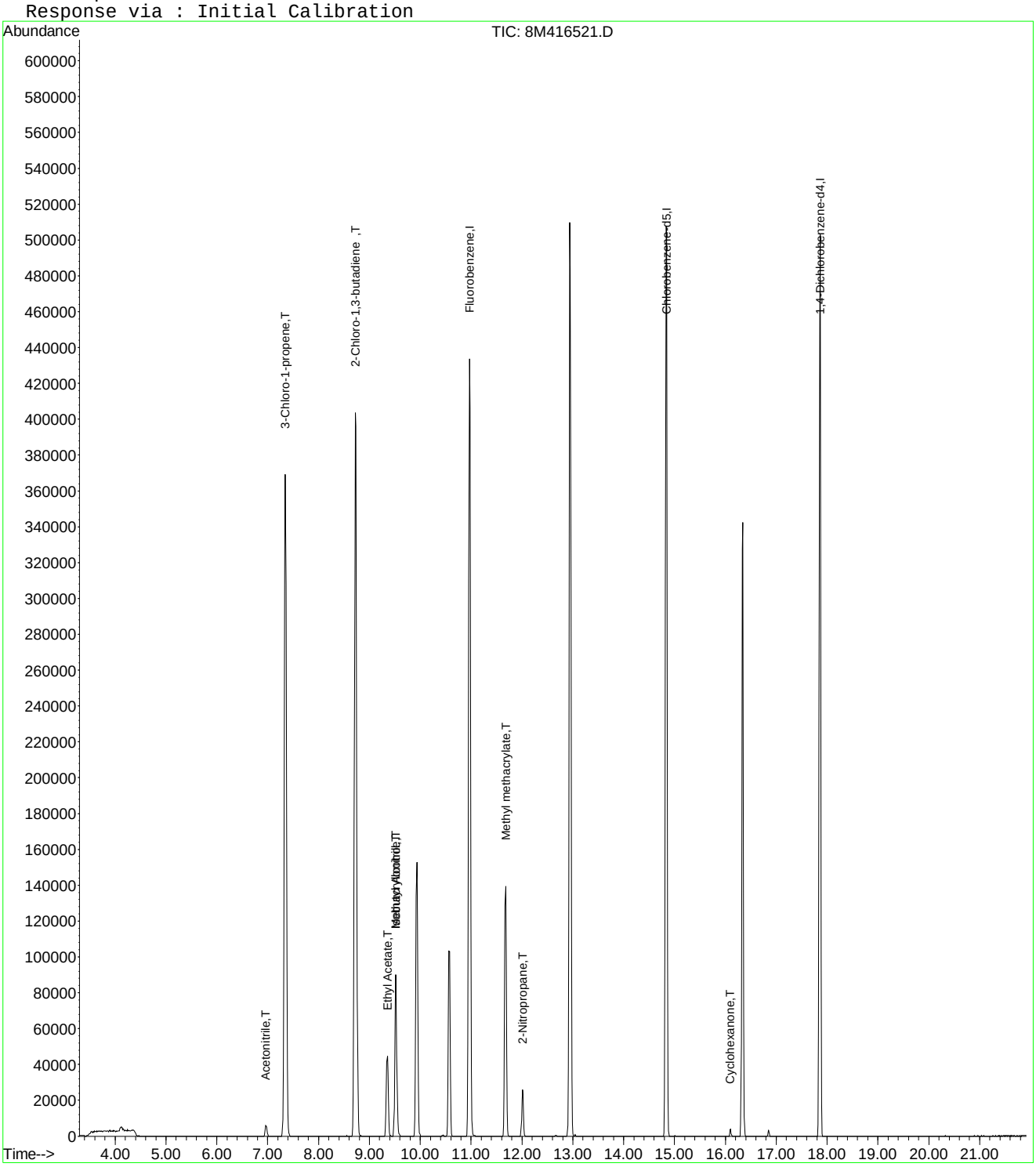
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	564001	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	394560	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	164538	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.96	41	7864	48.3447	ug/L	100
3) 3-Chloro-1-propene	7.35	41	318087	48.5026	ug/L	96
4) 2-Chloro-1,3-butadiene	8.72	53	344272	48.0312	ug/L	93
5) Ethyl Acetate	9.35	43	70890	48.3788	ug/L	100
6) Methacrylonitrile	9.52	67	48404	50.8082	ug/L	93
7) Isobutyl Alcohol	9.52	43	4449	92.0262	ug/L #	94
9) Methyl methacrylate	11.68	41	76637	49.6027	ug/L	97
10) 2-Nitropropane	12.01	43	23103	46.0039	ug/L	95
13) Cyclohexanone	16.09	55	2163	42.5368	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M416521.D A9FOOWTR.M Thu Dec 08 14:33:58 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416521.D Vial: 4
Acq On : 8 Dec 2016 10:17 Operator: TMB
Sample : WG594051-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416521.D Vial: 4
Acq On : 8 Dec 2016 10:17 Operator: TMB
Sample : WG594051-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	48.3447	3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	48.5026	3.0	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	48.0312	3.9	100	0.00
5	T	Ethyl Acetate	50.0000	48.3788	3.2	100	0.00
6	T	Methacrylonitrile	50.0000	50.8082	-1.6	100	0.00
7	T	Isobutyl Alcohol	100.0000	92.0262	8.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-0.01
9	T	Methyl methacrylate	50.0000	49.6027	0.8	100	0.00
10	T	2-Nitropropane	50.0000	46.0039	8.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	42.5368	14.9	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416521.D A9FOOWTR.M Thu Dec 08 14:41:01 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416522.D Vial: 5
Acq On : 8 Dec 2016 10:47 Operator: TMB
Sample : WG594051-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:59 2016 Quant Results File: A9FOOWTR.RES

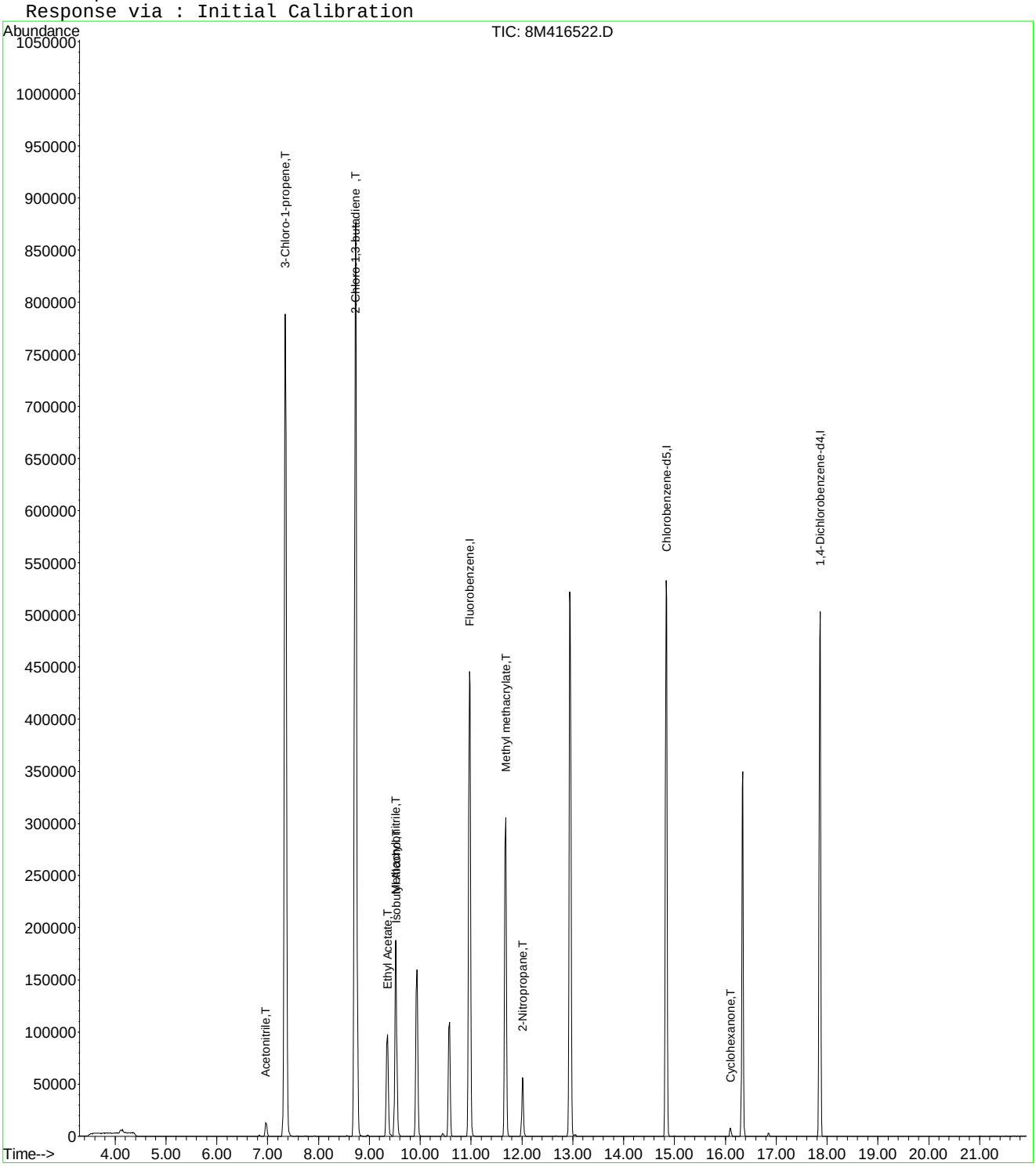
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	591526	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	415270	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	167978	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	17844	104.5933	ug/L	96
3) 3-Chloro-1-propene	7.35	41	676105	98.2967	ug/L	97
4) 2-Chloro-1,3-butadiene	8.72	53	745903	99.2224	ug/L	94
5) Ethyl Acetate	9.35	43	151658	98.6828	ug/L	100
6) Methacrylonitrile	9.52	67	101361	101.4448	ug/L	99
7) Isobutyl Alcohol	9.53	43	10092	199.0363	ug/L	96
9) Methyl methacrylate	11.68	41	163688	101.0159	ug/L	97
10) 2-Nitropropane	12.01	43	50322	95.5410	ug/L	95
13) Cyclohexanone	16.11	55	5170	99.5894	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M416522.D A9FOOWTR.M Thu Dec 08 14:34:01 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416522.D Vial: 5
Acq On : 8 Dec 2016 10:47 Operator: TMB
Sample : WG594051-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416522.D Vial: 5
Acq On : 8 Dec 2016 10:47 Operator: TMB
Sample : WG594051-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	104.5933	-4.6	100	0.00
3	T	3-Chloro-1-propene	100.0000	98.2967	1.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	99.2224	0.8	100	0.00
5	T	Ethyl Acetate	100.0000	98.6828	1.3	100	0.00
6	T	Methacrylonitrile	100.0000	101.4448	-1.4	100	0.00
7	T	Isobutyl Alcohol	200.0000	199.0363	0.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	101.0159	-1.0	100	0.00
10	T	2-Nitropropane	100.0000	95.5410	4.5	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	99.5894	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416522.D A9FOOWTR.M Thu Dec 08 14:41:12 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416523.D Vial: 6
Acq On : 8 Dec 2016 11:16 Operator: TMB
Sample : WG594051-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:02 2016 Quant Results File: A9FOOWTR.RES

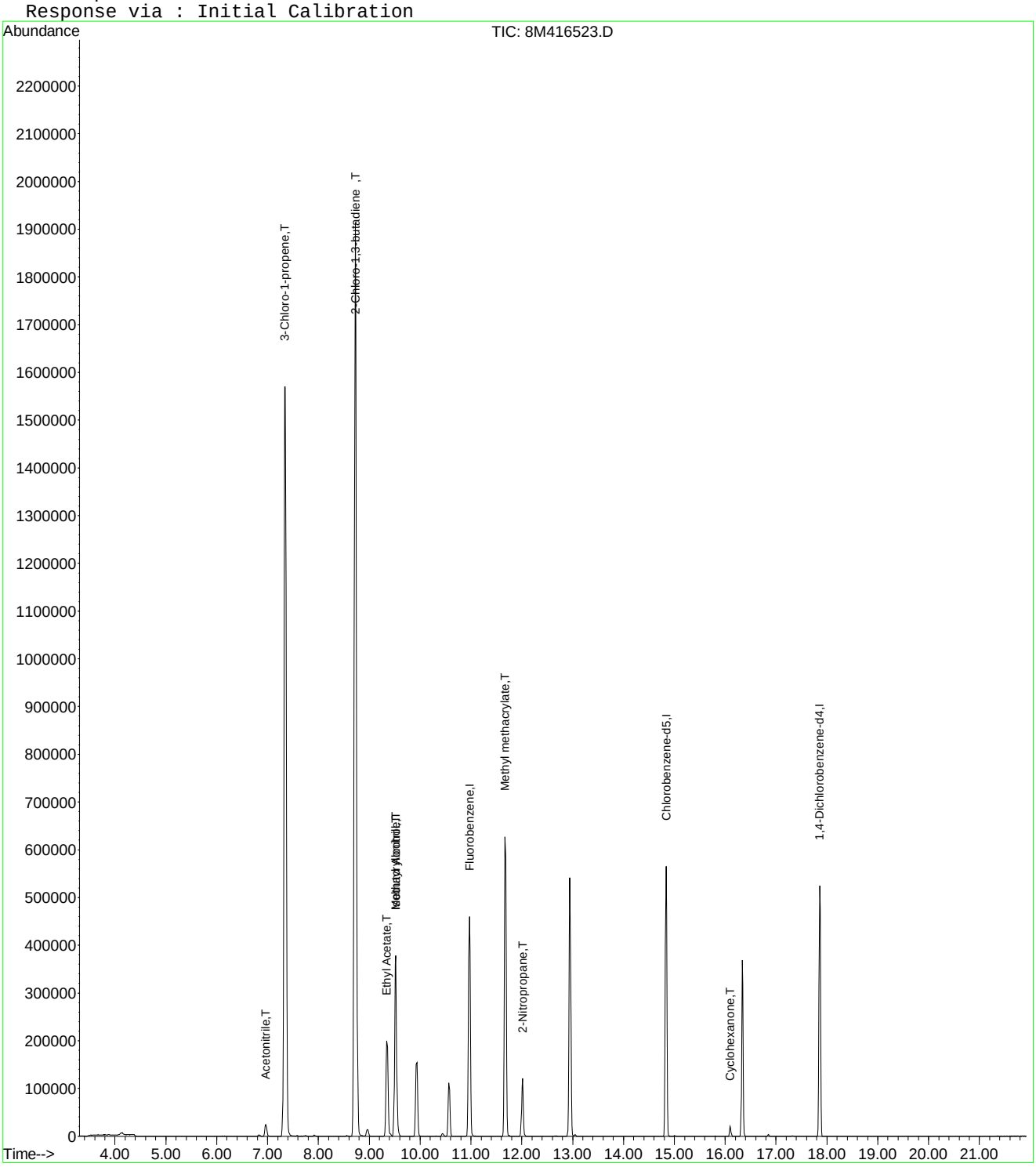
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	594977	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	420464	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.85	152	172604	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	34536	201.2600	ug/L	98
3) 3-Chloro-1-propene	7.34	41	1382110	199.7750	ug/L	97
4) 2-Chloro-1,3-butadiene	8.73	53	1548323	204.7683	ug/L	96
5) Ethyl Acetate	9.35	43	311769	201.6892	ug/L	100
6) Methacrylonitrile	9.52	67	209671	208.6271	ug/L	99
7) Isobutyl Alcohol	9.52	43	19754	387.3323	ug/L	94
9) Methyl methacrylate	11.67	41	335849	206.0586	ug/L	99
10) 2-Nitropropane	12.01	43	108018	203.8928	ug/L	98
13) Cyclohexanone	16.10	55	10760	201.7141	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M416523.D A9FOOWTR.M Thu Dec 08 14:34:03 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416523.D Vial: 6
Acq On : 8 Dec 2016 11:16 Operator: TMB
Sample : WG594051-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416524.D Vial: 7
Acq On : 8 Dec 2016 11:46 Operator: TMB
Sample : WG594051-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:05 2016 Quant Results File: A9FOOWTR.RES

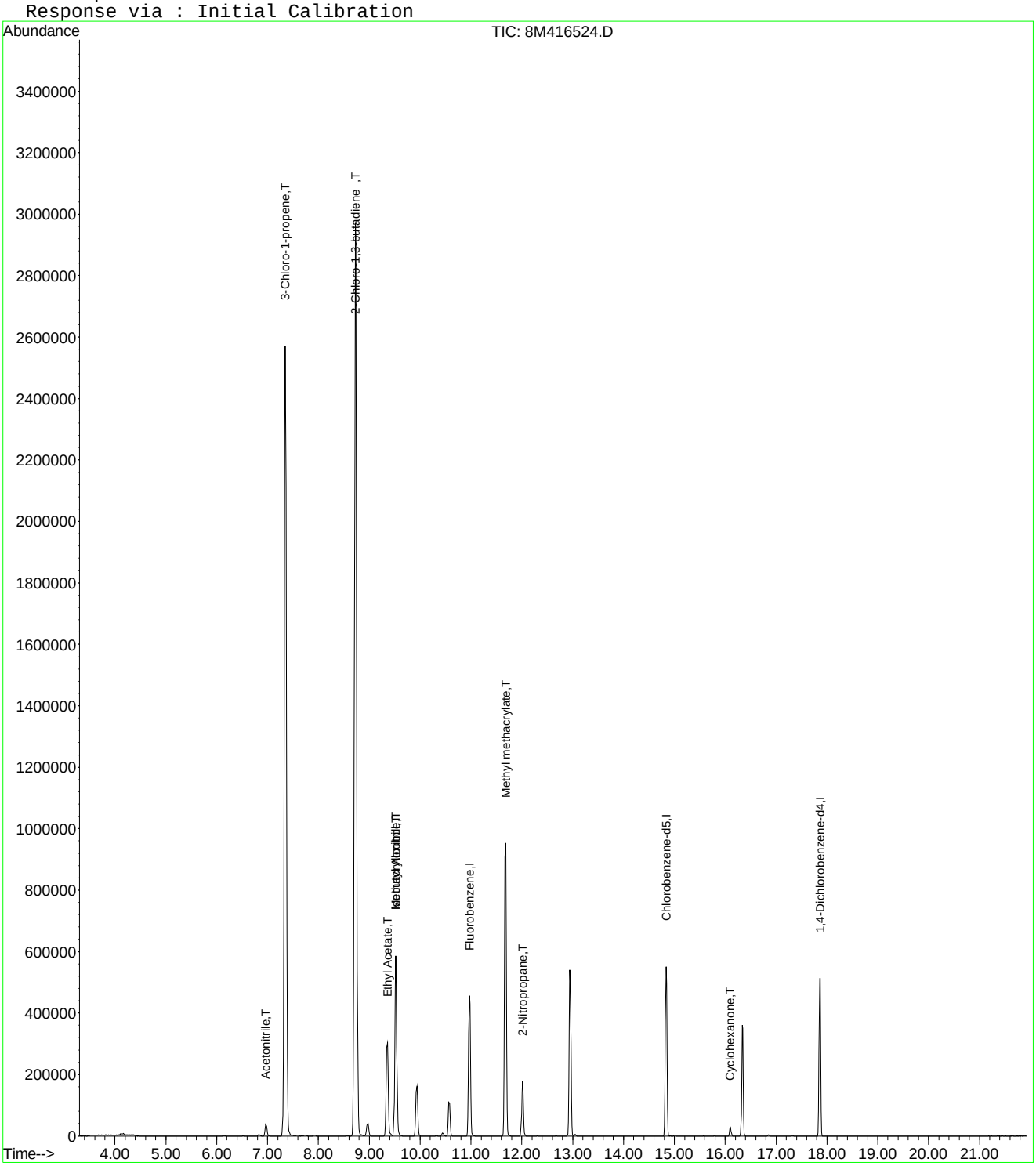
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	603930	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	427693	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	174680	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	50936	292.4312	ug/L	98
3) 3-Chloro-1-propene	7.35	41	2157997	307.3002	ug/L	98
4) 2-Chloro-1,3-butadiene	8.72	53	2431028	316.7413	ug/L	97
5) Ethyl Acetate	9.36	43	465757	296.8402	ug/L	100
6) Methacrylonitrile	9.52	67	317606	311.3398	ug/L	99
7) Isobutyl Alcohol	9.52	43	31446	607.4460	ug/L	97
9) Methyl methacrylate	11.68	41	510372	308.4942	ug/L	99
10) 2-Nitropropane	12.01	43	166198	309.0616	ug/L	100
13) Cyclohexanone	16.10	55	16564	306.8294	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M416524.D A9FOOWTR.M Thu Dec 08 14:34:06 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416524.D Vial: 7
Acq On : 8 Dec 2016 11:46 Operator: TMB
Sample : WG594051-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416525.D Vial: 8
Acq On : 8 Dec 2016 12:16 Operator: TMB
Sample : WG594051-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:08 2016 Quant Results File: A9FOOWTR.RES

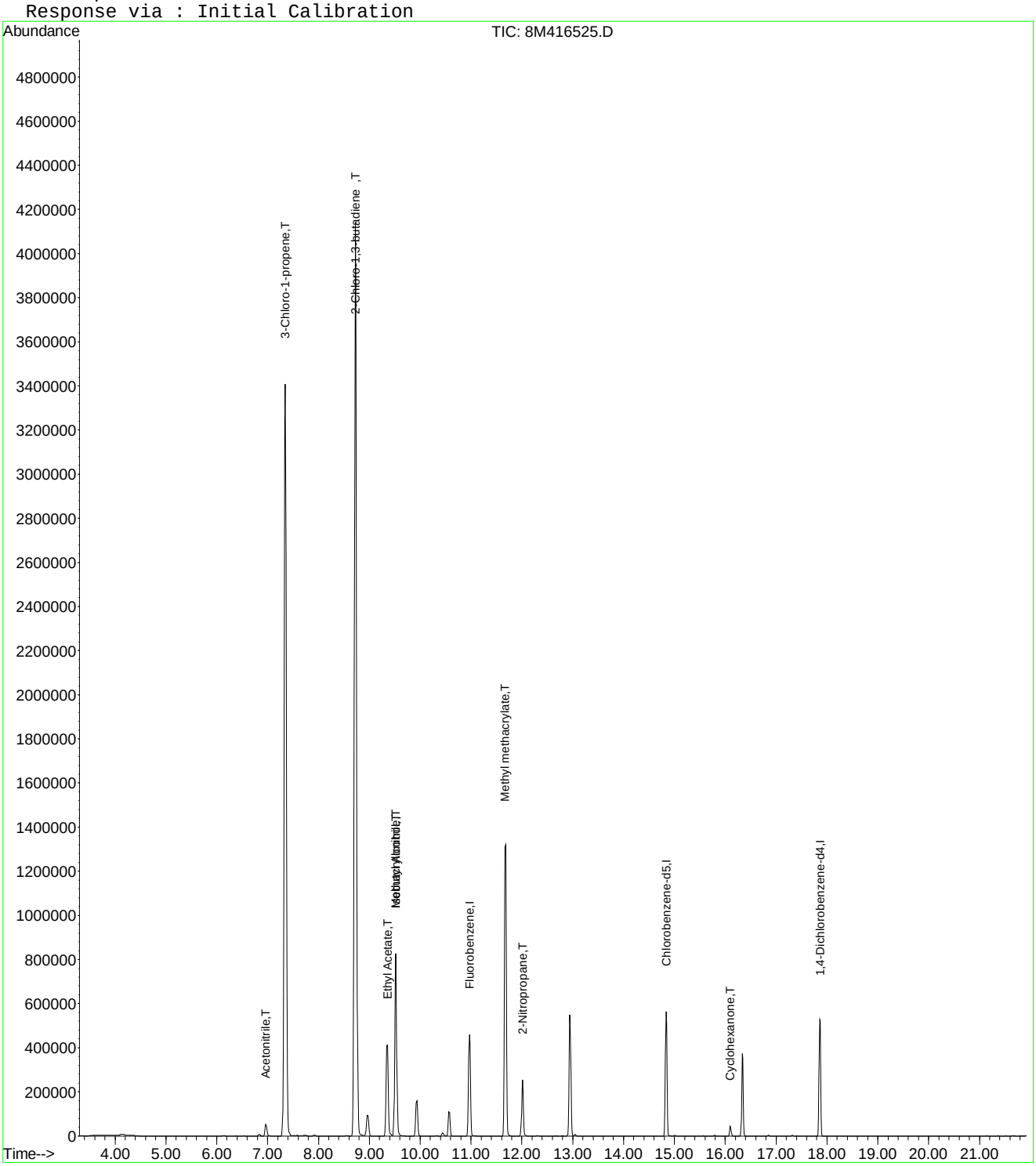
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	605694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.83	117	430760	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	180284	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	71198	407.5680	ug/L	99
3) 3-Chloro-1-propene	7.35	41	2884846	409.6076	ug/L	99
4) 2-Chloro-1,3-butadiene	8.72	53	3270965	424.9364	ug/L	98
5) Ethyl Acetate	9.35	43	647926	411.7391	ug/L	100
6) Methacrylonitrile	9.52	67	444486	434.4476	ug/L	100
7) Isobutyl Alcohol	9.52	43	45941	884.8630	ug/L	99
9) Methyl methacrylate	11.67	41	717453	432.4013	ug/L	100
10) 2-Nitropropane	12.01	43	236171	437.9042	ug/L	98
13) Cyclohexanone	16.10	55	23842	427.9179	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M416525.D A9FOOWTR.M Thu Dec 08 14:34:09 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416525.D Vial: 8
Acq On : 8 Dec 2016 12:16 Operator: TMB
Sample : WG594051-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416526.D Vial: 9
Acq On : 8 Dec 2016 12:45 Operator: TMB
Sample : WG594051-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:10 2016 Quant Results File: A9FOOWTR.RES

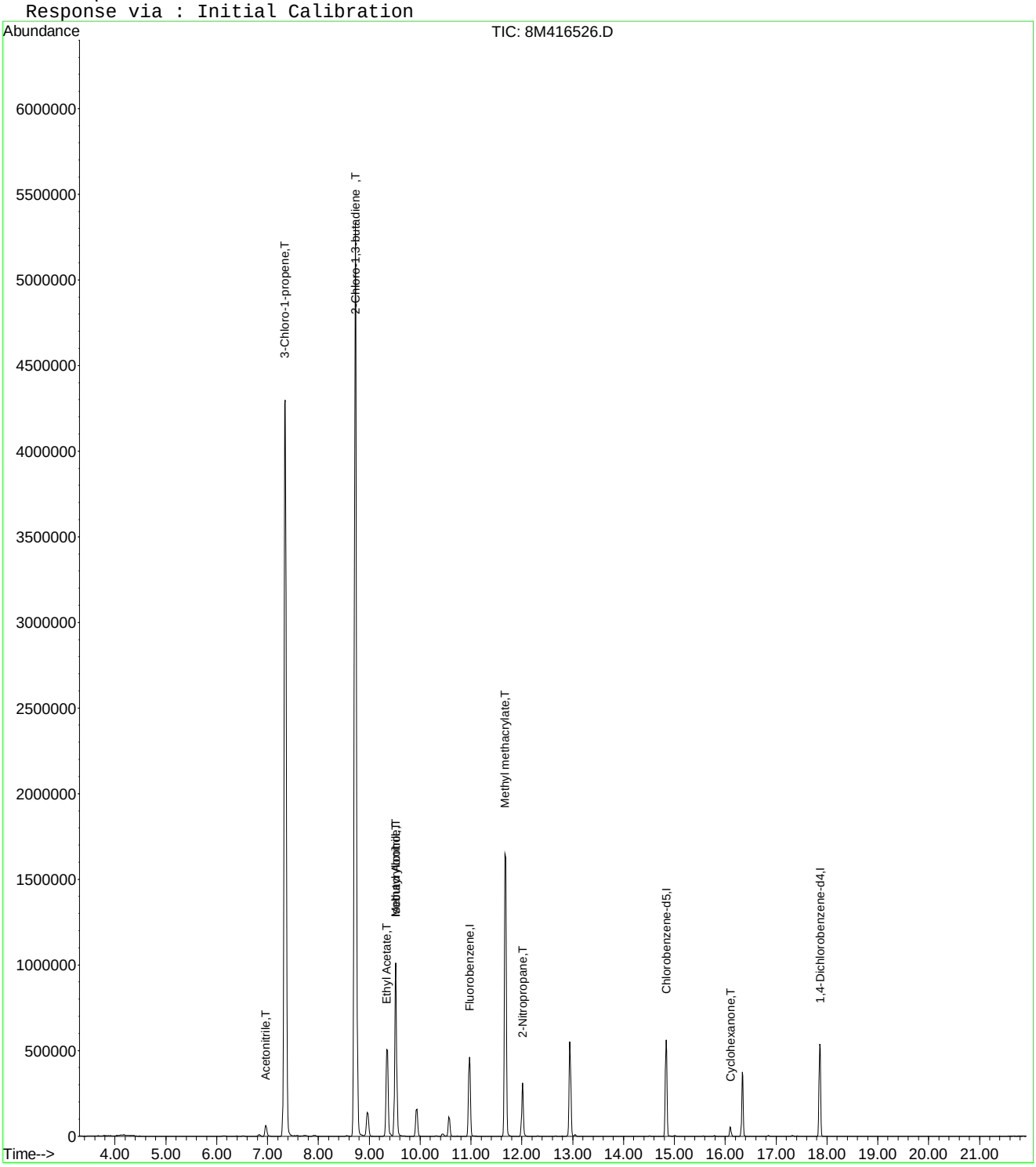
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	602709	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	431889	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	183338	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	85570	492.2655	ug/L	100
3) 3-Chloro-1-propene	7.34	41	3683366	525.5763	ug/L	100
4) 2-Chloro-1,3-butadiene	8.72	53	4138456	540.2962	ug/L	100
5) Ethyl Acetate	9.35	43	797081	509.0316	ug/L	100
6) Methacrylonitrile	9.52	67	547652	537.9348	ug/L	100
7) Isobutyl Alcohol	9.52	43	51546	997.7372	ug/L	100
9) Methyl methacrylate	11.67	41	892736	540.7072	ug/L	100
10) 2-Nitropropane	12.01	43	285485	531.9631	ug/L	100
13) Cyclohexanone	16.11	55	29810	526.1195	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M416526.D A9FOOWTR.M Thu Dec 08 14:34:12 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416526.D Vial: 9
Acq On : 8 Dec 2016 12:45 Operator: TMB
Sample : WG594051-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416529.D Vial: 12
Acq On : 8 Dec 2016 14:12 Operator: TMB
Sample : WG594051-09 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 15:03:45 2016 Quant Results File: A9FOOWTR.RES

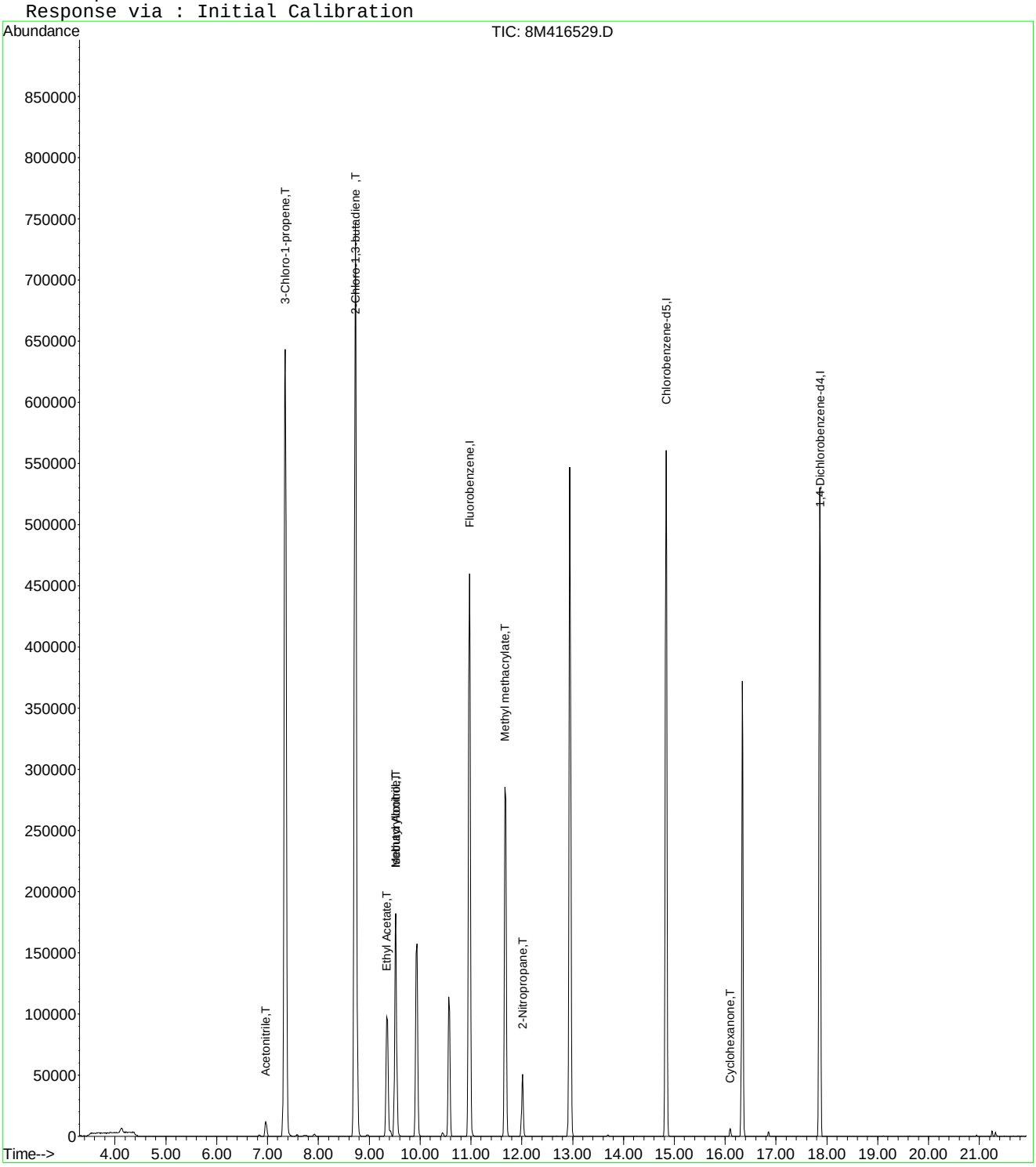
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	587664	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	419667	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.87	152	172171	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	16063	94.7727	ug/L	97
3) 3-Chloro-1-propene	7.35	41	567885	83.1055	ug/L	96
4) 2-Chloro-1,3-butadiene	8.73	53	618003	82.7490	ug/L	94
5) Ethyl Acetate	9.35	43	154055	100.9013	ug/L	99
6) Methacrylonitrile	9.52	67	99886	100.6255	ug/L	98
7) Isobutyl Alcohol	9.52	43	9727	193.0984	ug/L	95
9) Methyl methacrylate	11.67	41	157038	97.5489	ug/L	98
10) 2-Nitropropane	12.01	43	46163	88.2208	ug/L	98
13) Cyclohexanone	16.10	55	3773	70.9091	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M416529.D A9FOOWTR.M Thu Dec 08 15:03:47 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416529.D Vial: 12
Acq On : 8 Dec 2016 14:12 Operator: TMB
Sample : WG594051-09 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 15:03 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416529.D Vial: 12
Acq On : 8 Dec 2016 14:12 Operator: TMB
Sample : WG594051-09 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	99	0.00
2	T	Acetonitrile	100.0000	94.7727	5.2	90	0.00
3	T	3-Chloro-1-propene	100.0000	83.1055	16.9	84	0.01
4	T	2-Chloro-1,3-butadiene	100.0000	82.7490	17.3	83	0.00
5	T	Ethyl Acetate	100.0000	100.9013	-0.9	102	0.00
6	T	Methacrylonitrile	100.0000	100.6255	-0.6	99	0.00
7	T	Isobutyl Alcohol	200.0000	193.0984	3.5	96	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	97.5489	2.5	96	0.00
10	T	2-Nitropropane	100.0000	88.2208	11.8	92	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	102	0.00
13	T	Cyclohexanone	100.0000	70.9091	29.1	73	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416529.D A9FOOWTR.M Thu Dec 08 15:03:52 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:05 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	839335	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	637381	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	339393	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#		
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#		
58) Toluene-d8	12.92	98	210	0.0065	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#		
80) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.35	85	3754	0.2855	ug/L	89
3) Chloromethane	3.83	50	6806	0.4271	ug/L #	26
4) Vinyl Chloride	4.06	62	5557	0.3730	ug/L	99
5) 1,3-Butadiene	4.13	54	2886	Below Cal	#	48
6) Bromomethane	4.97	94	2181	0.2890	ug/L	94
7) Chloroethane	5.14	64	1796	0.2972	ug/L #	45
8) Trichlorofluoromethane	5.63	101	5090	0.3157	ug/L #	87
10) Isoprene	6.19	67	4072	0.3269	ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	2781	0.3207	ug/L	85
13) Acetone	6.48	43	491	0.4892	ug/L #	42
14) 1,1-Dichloroethene	6.72	61	3959	0.3272	ug/L	89
16) Dimethyl Sulfide	6.97	62	2517	0.2926	ug/L	91
17) Iodomethane	7.23	142	2421	0.7424	ug/L	74
18) Methyl acetate	7.23	43	850	0.2961	ug/L #	53
19) Methylene Chloride	7.50	84	2705	0.2936	ug/L	77
20) Carbon Disulfide	7.54	76	12389	0.4495	ug/L	96
22) Methyl Tert Butyl Ether	7.71	73	5150	0.2904	ug/L #	58
23) trans-1,2-Dichloroethene	7.94	61	3684	0.3140	ug/L	100
24) n-Hexane	8.01	57	4586	0.4614	ug/L	89
26) Vinyl Acetate	8.52	43	3265	0.3702	ug/L #	69
27) 1,1-Dichloroethane	8.56	63	4491	0.2935	ug/L #	82
31) 2,2-Dichloropropane	9.35	77	4238	0.3105	ug/L	90
32) cis-1,2-Dichloroethene	9.40	96	3073	0.3086	ug/L	83
33) Chloroform	9.61	83	6746	0.3804	ug/L	99
35) Bromochloromethane	9.84	130	1638	0.3062	ug/L	92
36) Tetrahydrofuran	9.86	42	645	0.6267	ug/L #	24
38) 1,1,1-Trichloroethane	10.14	97	4212	0.2887	ug/L	86
39) Cyclohexane	10.18	56	4399	0.3489	ug/L	89
40) 1,1-Dichloropropene	10.34	75	4137	0.3302	ug/L #	73
42) Carbon Tetrachloride	10.49	117	3640	0.2789	ug/L #	94
45) 1,2-Dichloroethane	10.65	62	2524	0.2521	ug/L #	70
46) Benzene	10.69	78	11345	0.3140	ug/L	93
47) Trichloroethene	11.45	130	3222	0.3335	ug/L	86
48) Methylcyclohexane	11.53	83	5548	0.3822	ug/L	94
49) 1,2-Dichloropropane	11.65	63	2682	0.3229	ug/L	84
50) Bromodichloromethane	11.95	83	3450	0.2938	ug/L #	80
52) Dibromomethane	12.04	93	1279	0.2873	ug/L	95
53) 2-Chloroethyl Vinyl Ether	12.24	63	836	0.2213	ug/L #	45
55) cis-1,3-Dichloropropene	12.58	75	4094	0.3004	ug/L	92
56) Dimethyl Disulfide	12.85	79	1292	2.9561	ug/L	93

(#) = qualifier out of range (m) = manual integration
8M418408.D 8260WTR.M Thu Mar 23 10:19:08 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:05 2017 Quant Results File: 8260WTR.RES

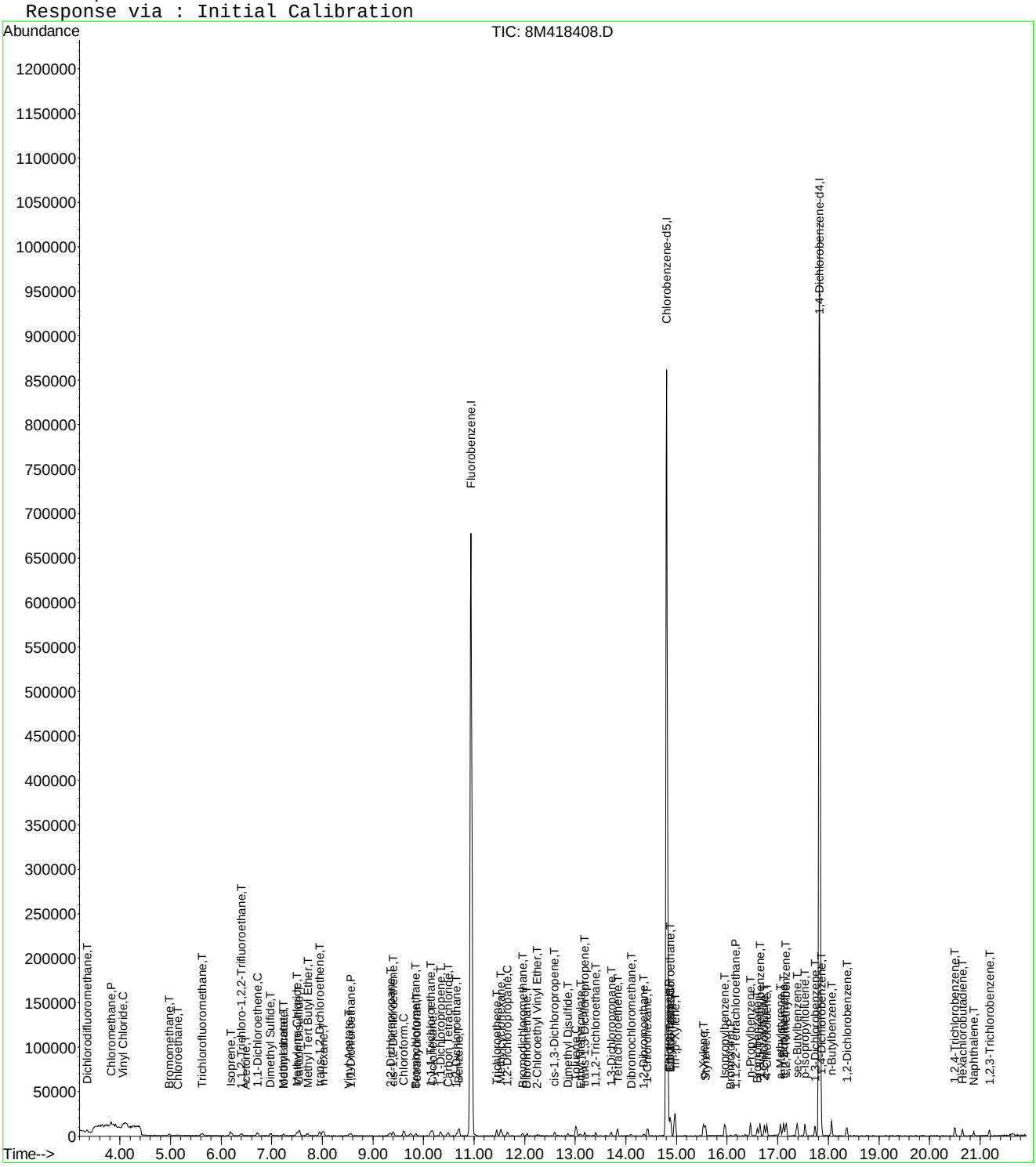
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
59)	Toluene	13.01	91	12509	0.3300	ug/L		95
60)	Ethyl Methacrylate	13.10	69	1898	0.2589	ug/L		95
62)	trans-1,3-Dichloropropene	13.18	75	3150	0.2817	ug/L		86
63)	1,1,2-Trichloroethane	13.40	97	1490	0.2495	ug/L		95
65)	1,3-Dichloropropane	13.71	76	3289	0.3076	ug/L		94
66)	Tetrachloroethene	13.84	164	2607	0.3174	ug/L		94
67)	Dibromochloromethane	14.10	129	1621	0.4036	ug/L		99
68)	1,2-Dibromoethane	14.35	107	1533	0.2502	ug/L		95
69)	1-Chlorohexane	14.42	91	4321	0.3345	ug/L		95
70)	Chlorobenzene	14.85	112	7738	0.2900	ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.88	131	1976	0.3884	ug/L		89
72)	Ethylbenzene	14.88	106	4159	0.2809	ug/L		76
73)	m-,p-Xylene	14.97	106	10522	0.5925	ug/L		83
74)	o-Xylene	15.53	106	4933	0.2801	ug/L		87
75)	Styrene	15.57	104	8095	0.2847	ug/L		91
76)	Bromoform	16.07	173	707	0.5972	ug/L	#	48
77)	Isopropylbenzene	15.95	105	13374	0.3139	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.16	83	1865	0.2819	ug/L	#	94
83)	n-Propylbenzene	16.46	91	17462	0.3493	ug/L		93
84)	Bromobenzene	16.60	156	3464	0.3131	ug/L		92
85)	1,3,5-Trimethylbenzene	16.65	105	12093	0.3349	ug/L		94
86)	2-Chlorotoluene	16.73	91	11551	0.3438	ug/L		98
87)	4-Chlorotoluene	16.78	91	9912	0.3377	ug/L		94
88)	a-Methylstyrene	17.05	118	5215	0.2584	ug/L		93
89)	tert-Butylbenzene	17.11	134	2174	0.2726	ug/L		80
90)	1,2,4-Trimethylbenzene	17.16	105	12145	0.3236	ug/L		90
91)	sec-Butylbenzene	17.38	105	15378	0.3431	ug/L		93
92)	p-Isopropyltoluene	17.54	119	12332	0.3359	ug/L		99
93)	1,3-Dichlorobenzene	17.74	146	7017	0.3182	ug/L		97
94)	1,4-Dichlorobenzene	17.87	146	7200	0.3241	ug/L	#	54
95)	n-Butylbenzene	18.06	91	13446	0.3775	ug/L		95
96)	1,2-Dichlorobenzene	18.36	146	5770	0.3003	ug/L		92
98)	1,2,4-Trichlorobenzene	20.50	180	4813	0.3349	ug/L		91
99)	Hexachlorobutadiene	20.65	225	2723	0.3875	ug/L		98
100)	Naphthalene	20.88	128	5734	0.3021	ug/L		89
101)	1,2,3-Trichlorobenzene	21.19	180	3474	0.2923	ug/L		96

(#) = qualifier out of range (m) = manual integration
8M418408.D 8260WTR.M Thu Mar 23 10:19:08 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2855	0.0	0	0.01
3	P	Chloromethane	-1.0000	0.4271	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3730	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.2890	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.2972	0.0	0	0.01
8	T	Trichlorofluoromethane	-1.0000	0.3157	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.14#
10	T	Isoprene	-1.0000	0.3269	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.39#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3207	0.0	0	0.00
13	T	Acetone	-1.0000	0.4892	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3272	0.0	0	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.81#
16	T	Dimethyl Sulfide	-1.0000	0.2926	0.0	100	-0.01
17	T	Iodomethane	-1.0000	0.7424	0.0	100	0.00
18	T	Methyl acetate	-1.0000	0.2961	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.2936	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.4495	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.67#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2904	0.0	0	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3140	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.4614	0.0	100	-0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.36#
26	T	Vinyl Acetate	-1.0000	0.3702	0.0	100	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.2935	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.93#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-9.11#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.22#
31	T	2,2-Dichloropropane	-1.0000	0.3105	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3086	0.0	0	0.00
33	C	Chloroform	0.3000	0.3804	-26.8#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.75#
35	T	Bromochloromethane	-1.0000	0.3062	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	0.6267	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.90#
38	T	1,1,1-Trichloroethane	-1.0000	0.2887	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3489	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3302	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.43#
42	T	Carbon Tetrachloride	-1.0000	0.2789	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.54#
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	-1.0000	0.2521	0.0	0	-0.01
46	T	Benzene	-1.0000	0.3140	0.0	0	0.00
47	T	Trichloroethene	-1.0000	0.3335	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.3822	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3229	0.0	0	0.00
50	T	Bromodichloromethane	-1.0000	0.2938	0.0	0	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
52	T	Dibromomethane	-1.0000	0.2873	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2213	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.27#

(#) = Out of Range
8M418408.D 8260WTR.M Thu Mar 23 10:21:13 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3004	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	2.9561	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0065	0.0	100	0.00
59	C	Toluene	-1.0000	0.3300	0.0	0	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2589	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2817	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2495	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.34#
65	T	1,3-Dichloropropane	-1.0000	0.3076	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.3174	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.4036	0.0	0	0.01
68	T	1,2-Dibromoethane	-1.0000	0.2502	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.3345	0.0	100	-0.01
70	P	Chlorobenzene	-1.0000	0.2900	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3884	0.0	0	0.00
72	C	Ethylbenzene	-1.0000	0.2809	0.0	0	0.00
73	T	m-,p-Xylene	-1.0000	0.5925	0.0	0	0.00
74	T	o-Xylene	-1.0000	0.2801	0.0	0	0.00
75	T	Styrene	-1.0000	0.2847	0.0	0	0.00
76	P	Bromoform	-1.0000	0.5972	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.3139	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2819	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.31#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.37#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.41#
83	T	n-Propylbenzene	-1.0000	0.3493	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3131	-4.4	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3349	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.3438	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.3377	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.2584	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2726	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3236	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.3431	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3359	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3182	0.0	0	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3241	-8.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3775	0.0	0	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3003	-0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.36#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3349	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3875	0.0	0	0.00
100	T	Naphthalene	-1.0000	0.3021	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2923	2.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M418408.D 8260WTR.M Thu Mar 23 10:21:14 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:09 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.94	96	820770	25.00	ug/L		0.00
57) Chlorobenzene-d5	14.81	117	630289	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	333801	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#			
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L		
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#			
58) Toluene-d8	12.92	98	206	0.0065	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#			
80) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.34	85	5012	0.3898	ug/L		88
3) Chloromethane	3.83	50	7999	0.5134	ug/L	#	51
4) Vinyl Chloride	4.07	62	6861	0.4709	ug/L		94
5) 1,3-Butadiene	4.12	54	4284	Below Cal			86
6) Bromomethane	4.98	94	2762	0.3743	ug/L		95
7) Chloroethane	5.13	64	2158	0.3652	ug/L	#	45
8) Trichlorofluoromethane	5.62	101	6443	0.4087	ug/L	#	87
10) Isoprene	6.19	67	4531	0.3720	ug/L		95
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	3337	0.3935	ug/L		92
13) Acetone	6.50	43	400	0.4075	ug/L	#	42
14) 1,1-Dichloroethene	6.71	61	4956	0.4188	ug/L		92
16) Dimethyl Sulfide	6.98	62	3060	0.3638	ug/L		96
17) Iodomethane	7.24	142	2705	0.7764	ug/L		87
18) Methyl acetate	7.25	43	669	0.2383	ug/L	#	53
19) Methylene Chloride	7.49	84	4174	0.4632	ug/L		89
20) Carbon Disulfide	7.54	76	13082	0.4854	ug/L		93
22) Methyl Tert Butyl Ether	7.71	73	7110	0.4099	ug/L	#	72
23) trans-1,2-Dichloroethene	7.94	61	4851	0.4228	ug/L		98
24) n-Hexane	8.03	57	4861	0.5002	ug/L		94
26) Vinyl Acetate	8.53	43	4150	0.4812	ug/L	#	69
27) 1,1-Dichloroethane	8.56	63	6002	0.4011	ug/L	#	83
29) 2-Butanone	9.11	43	634	0.4009	ug/L	#	44
31) 2,2-Dichloropropane	9.33	77	5842	0.4376	ug/L		96
32) cis-1,2-Dichloroethene	9.41	96	3859	0.3963	ug/L		87
33) Chloroform	9.62	83	7984	0.4603	ug/L		95
35) Bromochloromethane	9.85	130	1987	0.3798	ug/L		88
38) 1,1,1-Trichloroethane	10.15	97	5320	0.3729	ug/L		90
39) Cyclohexane	10.19	56	5291	0.4292	ug/L		92
40) 1,1-Dichloropropene	10.34	75	4961	0.4049	ug/L		86
42) Carbon Tetrachloride	10.48	117	4928	0.3861	ug/L		93
45) 1,2-Dichloroethane	10.65	62	3926	0.4010	ug/L	#	87
46) Benzene	10.69	78	15023	0.4252	ug/L		97
47) Trichloroethene	11.45	130	3700	0.3917	ug/L		97
48) Methylcyclohexane	11.53	83	5981	0.4214	ug/L		96
49) 1,2-Dichloropropane	11.65	63	2986	0.3676	ug/L		99
50) Bromodichloromethane	11.95	83	4361	0.3798	ug/L	#	91
52) Dibromomethane	12.04	93	1225	0.2814	ug/L		81
53) 2-Chloroethyl Vinyl Ether	12.24	63	1105	0.2992	ug/L		81
55) cis-1,3-Dichloropropene	12.59	75	5159	0.3871	ug/L		94
56) Dimethyl Disulfide	12.85	79	1713	3.0100	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418409.D 8260WTR.M Thu Mar 23 10:19:12 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:09 2017 Quant Results File: 8260WTR.RES

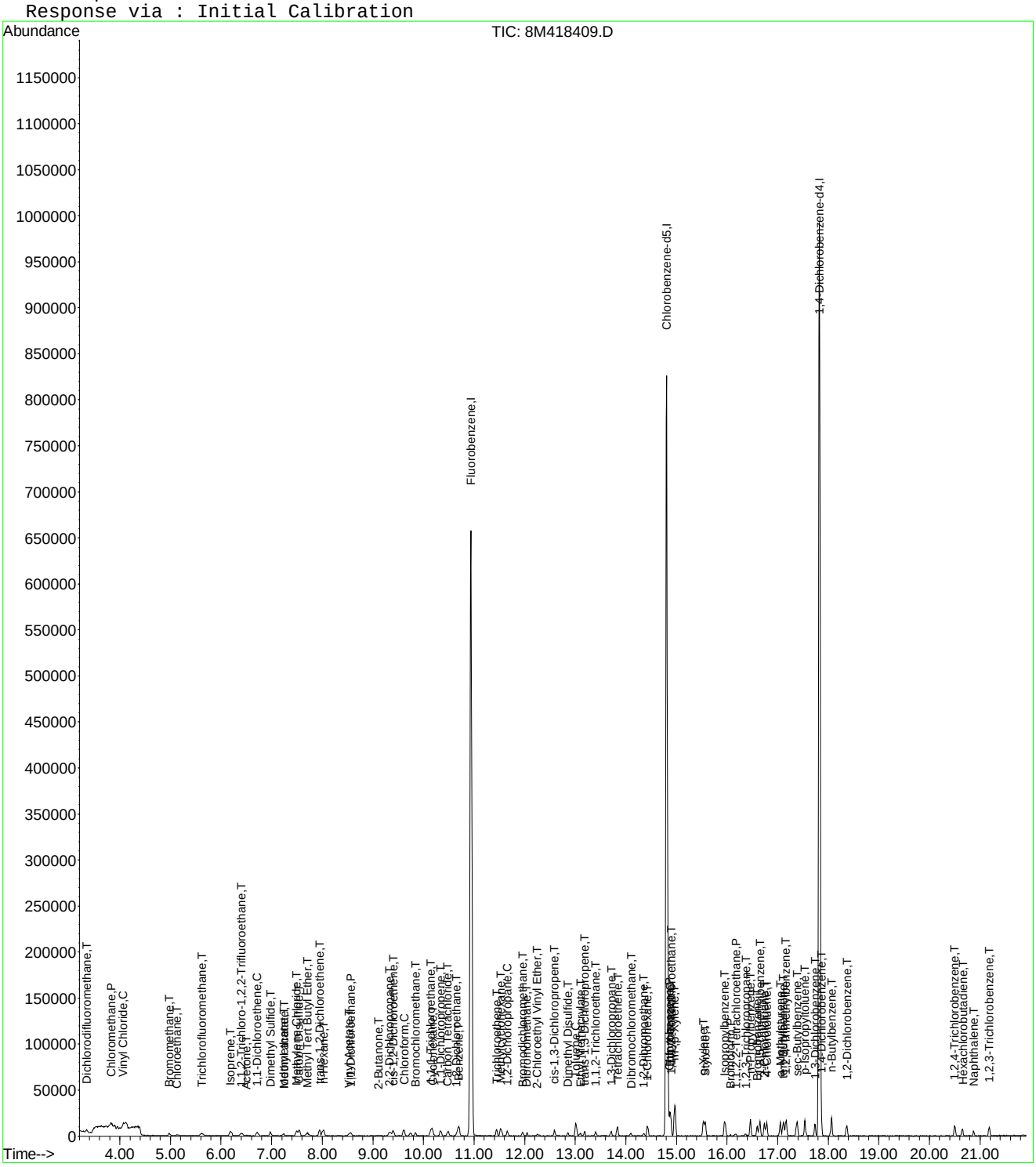
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
59)	Toluene	13.01	91	15569	0.4153	ug/L		94
60)	Ethyl Methacrylate	13.10	69	2480	0.3421	ug/L		88
62)	trans-1,3-Dichloropropene	13.19	75	4268	0.3860	ug/L		85
63)	1,1,2-Trichloroethane	13.40	97	2245	0.3802	ug/L		92
65)	1,3-Dichloropropane	13.71	76	4246	0.4016	ug/L		91
66)	Tetrachloroethene	13.84	164	3076	0.3787	ug/L		96
67)	Dibromochloromethane	14.11	129	2045	0.4616	ug/L		84
68)	1,2-Dibromoethane	14.35	107	2295	0.3788	ug/L		98
69)	1-Chlorohexane	14.43	91	5474	0.4285	ug/L		98
70)	Chlorobenzene	14.86	112	10272	0.3893	ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.89	131	3131	0.5117	ug/L		100
72)	Ethylbenzene	14.88	106	5452	0.3723	ug/L		94
73)	m-,p-Xylene	14.96	106	13646	0.7770	ug/L		85
74)	o-Xylene	15.53	106	6537	0.3754	ug/L		97
75)	Styrene	15.56	104	10271	0.3653	ug/L		92
76)	Bromoform	16.07	173	1215	0.7117	ug/L	#	41
77)	Isopropylbenzene	15.96	105	17113	0.4062	ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.17	83	2398	0.3686	ug/L	#	93
81)	1,2,3-Trichloropropane	16.37	110	554	0.2991	ug/L	#	84
83)	n-Propylbenzene	16.46	91	21418	0.4356	ug/L		95
84)	Bromobenzene	16.60	156	4101	0.3769	ug/L		89
85)	1,3,5-Trimethylbenzene	16.65	105	14553	0.4098	ug/L		97
86)	2-Chlorotoluene	16.74	91	14102	0.4267	ug/L		96
87)	4-Chlorotoluene	16.78	91	11659	0.4038	ug/L		96
88)	a-Methylstyrene	17.05	118	6251	0.3149	ug/L		98
89)	tert-Butylbenzene	17.10	134	2749	0.3505	ug/L		85
90)	1,2,4-Trimethylbenzene	17.17	105	14872	0.4028	ug/L		96
91)	sec-Butylbenzene	17.38	105	18440	0.4184	ug/L		95
92)	p-Isopropyltoluene	17.54	119	14467	0.4007	ug/L		99
93)	1,3-Dichlorobenzene	17.74	146	8606	0.3968	ug/L		95
94)	1,4-Dichlorobenzene	17.87	146	8728	0.3995	ug/L		79
95)	n-Butylbenzene	18.07	91	16096	0.4595	ug/L		95
96)	1,2-Dichlorobenzene	18.37	146	7275	0.3849	ug/L		99
98)	1,2,4-Trichlorobenzene	20.50	180	5853	0.4140	ug/L		97
99)	Hexachlorobutadiene	20.66	225	2881	0.4168	ug/L		91
100)	Naphthalene	20.88	128	7399	0.3963	ug/L		87
101)	1,2,3-Trichlorobenzene	21.18	180	4960	0.4243	ug/L		93

(#) = qualifier out of range (m) = manual integration
8M418409.D 8260WTR.M Thu Mar 23 10:19:12 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3898	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.5134	0.0	0	0.00
4	C	Vinyl Chloride	0.4000	0.4709	-17.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.3743	0.0	0	0.00
7	T	Chloroethane	0.4000	0.3652	8.7	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4087	-2.2	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.14#
10	T	Isoprene	-1.0000	0.3720	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.39#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3935	0.0	0	0.00
13	T	Acetone	-1.0000	0.4075	0.0	100	0.01
14	C	1,1-Dichloroethene	0.4000	0.4188	-4.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.81#
16	T	Dimethyl Sulfide	-1.0000	0.3638	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.7764	0.0	100	0.00
18	T	Methyl acetate	-1.0000	0.2383	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.4632	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.4854	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.67#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4099	0.0	0	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4228	-5.7	100	0.00
24	T	n-Hexane	-1.0000	0.5002	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.36#
26	T	Vinyl Acetate	-1.0000	0.4812	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4011	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.93#
29	T	2-Butanone	-1.0000	0.4009	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.22#
31	T	2,2-Dichloropropane	0.4000	0.4376	-9.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3963	0.9	100	0.01
33	C	Chloroform	0.4000	0.4603	-15.1	100	0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.75#
35	T	Bromochloromethane	0.4000	0.3798	5.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.86#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.90#
38	T	1,1,1-Trichloroethane	0.4000	0.3729	6.8	100	0.00
39	T	Cyclohexane	-1.0000	0.4292	0.0	100	0.01
40	T	1,1-Dichloropropene	-1.0000	0.4049	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.43#
42	T	Carbon Tetrachloride	0.4000	0.3861	3.5	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.54#
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	0.4000	0.4009	-0.2	100	0.00
46	T	Benzene	0.4000	0.4253	-6.3	100	0.00
47	T	Trichloroethene	0.4000	0.3917	2.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4214	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3676	8.1	100	0.00
50	T	Bromodichloromethane	0.4000	0.3798	5.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
52	T	Dibromomethane	0.4000	0.2814	29.6#	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2992	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.27#

(#) = Out of Range
8M418409.D 8260WTR.M Thu Mar 23 10:21:26 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3871	3.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.0100	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0065	0.0	100	0.00
59	C	Toluene	0.4000	0.4153	-3.8	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3421	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3860	0.0	0	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3802	5.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.34#
65	T	1,3-Dichloropropane	0.4000	0.4016	-0.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3787	5.3	100	0.00
67	T	Dibromochloromethane	0.4000	0.4616	-15.4	100	0.01
68	T	1,2-Dibromoethane	0.4000	0.3788	5.3	100	0.00
69	T	1-Chlorohexane	0.4000	0.4285	-7.1	100	0.00
70	P	Chlorobenzene	0.4000	0.3893	2.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.5117	-27.9#	100	0.01
72	C	Ethylbenzene	0.4000	0.3723	6.9	100	0.00
73	T	m-,p-Xylene	0.8000	0.7770	2.9	100	0.00
74	T	o-Xylene	-1.0000	0.3754	0.0	0	0.00
75	T	Styrene	0.4000	0.3654	8.7	100	0.00
76	P	Bromoform	-1.0000	0.7117	0.0	0	0.00
77	T	Isopropylbenzene	0.4000	0.4062	-1.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3686	7.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.31#
81	T	1,2,3-Trichloropropane	-1.0000	0.2991	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.41#
83	T	n-Propylbenzene	0.4000	0.4356	-8.9	100	0.00
84	T	Bromobenzene	0.4000	0.3769	5.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4098	-2.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4267	-6.7	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4038	-1.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3149	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3505	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4028	-0.7	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4184	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4007	0.0	0	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3968	0.8	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3995	0.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4595	0.0	0	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3849	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.36#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4140	-3.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4169	-4.2	100	0.01
100	T	Naphthalene	0.4000	0.3963	0.9	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4243	-6.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418409.D 8260WTR.M Thu Mar 23 10:21:26 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:13 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	807132	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	611741	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	324322	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	4045	0.4419	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.76%#		
43) 1,2-Dichloroethane-d4	10.54	65	3910	0.4929	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.96%#		
58) Toluene-d8	12.91	98	15493	0.5035	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#		
80) p-Bromofluorobenzene	16.30	95	6131	0.4996	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	11775	0.9313	ug/L	95
3) Chloromethane	3.83	50	18119	1.1825	ug/L	89
4) Vinyl Chloride	4.06	62	15890	1.1091	ug/L	99
5) 1,3-Butadiene	4.11	54	9126	Below Cal		81
6) Bromomethane	4.97	94	7100	0.9784	ug/L	96
7) Chloroethane	5.14	64	5724	0.9850	ug/L	96
8) Trichlorofluoromethane	5.62	101	15570	1.0043	ug/L	96
9) Diethyl ether	6.15	59	25161	5.0179	ug/L	99
10) Isoprene	6.18	67	11515	0.9613	ug/L	99
11) Acrolein	6.39	56	1211	1.8888	ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	8196	0.9828	ug/L	97
13) Acetone	6.48	43	961	0.9956	ug/L #	42
14) 1,1-Dichloroethene	6.71	61	11722	1.0073	ug/L	92
15) Tert-Butyl Alcohol	6.81	59	2565	8.3492	ug/L #	59
16) Dimethyl Sulfide	6.97	62	7853	0.9494	ug/L	99
17) Iodomethane	7.23	142	7328	1.2539	ug/L	93
18) Methyl acetate	7.24	43	2638	0.9557	ug/L #	66
19) Methylene Chloride	7.50	84	9378	1.0584	ug/L	95
20) Carbon Disulfide	7.54	76	28271	1.0667	ug/L	98
21) Acrylonitrile	7.67	53	3247	2.4051	ug/L	94
22) Methyl Tert Butyl Ether	7.70	73	16755	0.9824	ug/L	95
23) trans-1,2-Dichloroethene	7.94	61	11380	1.0086	ug/L	99
24) n-Hexane	8.02	57	10394	1.0875	ug/L	98
25) Diisopropyl ether	8.35	45	110210	5.1139	ug/L	98
26) Vinyl Acetate	8.53	43	10059	1.1860	ug/L #	87
27) 1,1-Dichloroethane	8.56	63	14397	0.9784	ug/L	94
28) Ethyl-Tert-Butyl ether	8.93	59	102308	4.9580	ug/L	99
29) 2-Butanone	9.12	43	1387	0.8919	ug/L #	44
30) Propionitrile	9.22	54	1959	4.2552	ug/L #	56
31) 2,2-Dichloropropane	9.34	77	13363	1.0179	ug/L	95
32) cis-1,2-Dichloroethene	9.41	96	9337	0.9750	ug/L	98
33) Chloroform	9.62	83	16620	0.9745	ug/L	98
34) 1-Bromopropane	9.75	122	1620	0.8855	ug/L	100
35) Bromochloromethane	9.84	130	5172	1.0054	ug/L	96
36) Tetrahydrofuran	9.87	42	5802	5.8622	ug/L	90
38) 1,1,1-Trichloroethane	10.14	97	13761	0.9810	ug/L	97
39) Cyclohexane	10.18	56	12156	1.0027	ug/L	99
40) 1,1-Dichloropropene	10.34	75	12179	1.0109	ug/L	94
41) Tert-Amyl-Methyl ether	10.44	73	93699	4.8658	ug/L	97
42) Carbon Tetrachloride	10.48	117	11739	0.9353	ug/L	95

(#) = qualifier out of range (m) = manual integration
8M418410.D 8260WTR.M Thu Mar 23 10:19:16 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:13 2017 Quant Results File: 8260WTR.RES

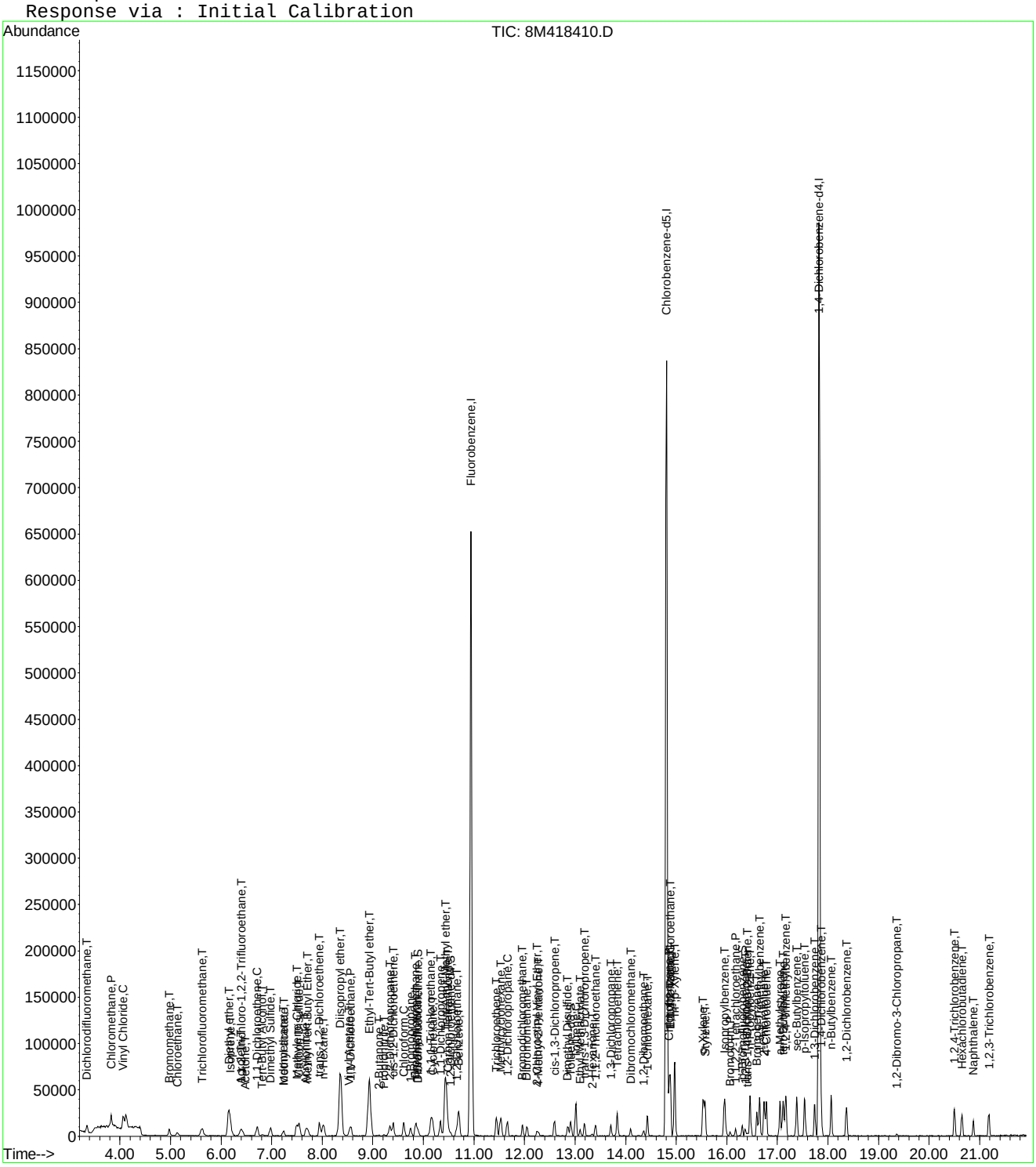
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.66	62	9506	0.9872 ug/L		95
46)	Benzene	10.70	78	34927	1.0054 ug/L		99
47)	Trichloroethene	11.45	130	8619	0.9278 ug/L		95
48)	Methylcyclohexane	11.53	83	14165	1.0148 ug/L		97
49)	1,2-Dichloropropane	11.66	63	7854	0.9833 ug/L		99
50)	Bromodichloromethane	11.95	83	10647	0.9428 ug/L		94
52)	Dibromomethane	12.05	93	4249	0.9926 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.25	63	3225	0.8879 ug/L		90
54)	4-Methyl-2-Pentanone	12.27	58	910	0.5854 ug/L	#	33
55)	cis-1,3-Dichloropropene	12.59	75	12482	0.9523 ug/L		96
56)	Dimethyl Disulfide	12.85	79	4366	3.3371 ug/L		98
59)	Toluene	13.02	91	37749	1.0375 ug/L		98
60)	Ethyl Methacrylate	13.10	69	6089	0.8655 ug/L		94
62)	trans-1,3-Dichloropropene	13.19	75	10170	0.9476 ug/L		98
63)	1,1,2-Trichloroethane	13.40	97	5520	0.9631 ug/L		99
64)	2-Hexanone	13.34	58	781	0.5684 ug/L	#	1
65)	1,3-Dichloropropane	13.71	76	10201	0.9940 ug/L		96
66)	Tetrachloroethene	13.83	164	7996	1.0142 ug/L		98
67)	Dibromochloromethane	14.10	129	6149	1.0240 ug/L		100
68)	1,2-Dibromoethane	14.35	107	5764	0.9802 ug/L		97
69)	1-Chlorohexane	14.43	91	12348	0.9958 ug/L		99
70)	Chlorobenzene	14.86	112	24749	0.9665 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.88	131	7452	0.9876 ug/L		100
72)	Ethylbenzene	14.88	106	13352	0.9395 ug/L		92
73)	m-,p-Xylene	14.97	106	32582	1.9116 ug/L		90
74)	o-Xylene	15.53	106	15550	0.9200 ug/L		94
75)	Styrene	15.57	104	25281	0.9265 ug/L		98
76)	Bromoform	16.07	173	3165	1.1654 ug/L		87
77)	Isopropylbenzene	15.95	105	41185	1.0072 ug/L		95
79)	1,1,2,2-Tetrachloroethane	16.17	83	6618	1.0470 ug/L	#	87
81)	1,2,3-Trichloropropane	16.37	110	1699	0.9441 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.41	53	1275	0.8599 ug/L		78
83)	n-Propylbenzene	16.46	91	50394	1.0550 ug/L		96
84)	Bromobenzene	16.59	156	9822	0.9290 ug/L		89
85)	1,3,5-Trimethylbenzene	16.65	105	34036	0.9865 ug/L		98
86)	2-Chlorotoluene	16.74	91	32556	1.0139 ug/L		97
87)	4-Chlorotoluene	16.78	91	28745	1.0247 ug/L		97
88)	a-Methylstyrene	17.05	118	16432	0.8520 ug/L		100
89)	tert-Butylbenzene	17.11	134	6891	0.9044 ug/L		91
90)	1,2,4-Trimethylbenzene	17.16	105	36289	1.0117 ug/L		96
91)	sec-Butylbenzene	17.38	105	44768	1.0454 ug/L		96
92)	p-Isopropyltoluene	17.54	119	34608	0.9866 ug/L		98
93)	1,3-Dichlorobenzene	17.74	146	20930	0.9932 ug/L		96
94)	1,4-Dichlorobenzene	17.87	146	21416	1.0089 ug/L	#	73
95)	n-Butylbenzene	18.06	91	35423	1.0408 ug/L		95
96)	1,2-Dichlorobenzene	18.36	146	18350	0.9993 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.37	75	633	0.6381 ug/L		78
98)	1,2,4-Trichlorobenzene	20.50	180	13698	0.9973 ug/L		95
99)	Hexachlorobutadiene	20.65	225	6917	1.0301 ug/L		96
100)	Naphthalene	20.87	128	18000	0.9923 ug/L		97
101)	1,2,3-Trichlorobenzene	21.19	180	11397	1.0034 ug/L		95

(#) = qualifier out of range (m) = manual integration
8M418410.D 8260WTR.M Thu Mar 23 10:19:16 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9313	6.9	100	0.00
3	P	Chloromethane	1.0000	1.1825	-18.3	100	0.00
4	C	Vinyl Chloride	1.0000	1.1091	-10.9	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.00
6	T	Bromomethane	1.0000	0.9784	2.2	100	0.00
7	T	Chloroethane	1.0000	0.9850	1.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0043	-0.4	100	0.00
9	T	Diethyl ether	5.0000	5.0179	-0.4	100	0.00
10	T	Isoprene	-1.0000	0.9613	0.0	100	0.00
11	T	Acrolein	-1.0000	1.8888	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9828	1.7	100	0.00
13	T	Acetone	-1.0000	0.9956	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0073	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	8.3492	0.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.9494	0.0	100	-0.01
17	T	Iodomethane	1.0000	1.2539	-25.4#	100	-0.01
18	T	Methyl acetate	-1.0000	0.9557	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0583	-5.8	100	0.00
20	T	Carbon Disulfide	1.0000	1.0667	-6.7	100	0.00
21	T	Acrylonitrile	2.5000	2.4051	3.8	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9823	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0086	-0.9	100	0.00
24	T	n-Hexane	-1.0000	1.0875	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1139	-2.3	100	0.00
26	T	Vinyl Acetate	-1.0000	1.1860	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9784	2.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9580	0.8	100	0.00
29	T	2-Butanone	-1.0000	0.8919	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2552	14.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0179	-1.8	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9750	2.5	100	0.00
33	C	Chloroform	1.0000	0.9745	2.6	100	0.00
34		1-Bromopropane	1.0000	0.8855	11.5	100	0.00
35	T	Bromochloromethane	1.0000	1.0054	-0.5	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8622	-17.2	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.4419	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9809	1.9	100	0.00
39	T	Cyclohexane	1.0000	1.0027	-0.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0109	-1.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8658	2.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9353	6.5	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4929	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	1.0000	0.9872	1.3	100	0.00
46	T	Benzene	1.0000	1.0054	-0.5	100	0.00
47	T	Trichloroethene	1.0000	0.9278	7.2	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0148	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9833	1.7	100	0.00
50	T	Bromodichloromethane	1.0000	0.9428	5.7	100	-0.01
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
52	T	Dibromomethane	1.0000	0.9926	0.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8879	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.5854	0.0	100	0.00

(#) = Out of Range
8M418410.D 8260WTR.M Thu Mar 23 10:21:37 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9523	4.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.3371	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5035	0.0	100	0.00
59	C	Toluene	1.0000	1.0375	-3.7	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8655	13.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	1.0000	0.9476	5.2	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9631	3.7	100	0.00
64	T	2-Hexanone	-1.0000	0.5684	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9940	0.6	100	0.00
66	T	Tetrachloroethene	1.0000	1.0142	-1.4	100	0.00
67	T	Dibromochloromethane	1.0000	1.0240	-2.4	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9802	2.0	100	0.00
69	T	1-Chlorohexane	1.0000	0.9958	0.4	100	0.00
70	P	Chlorobenzene	1.0000	0.9665	3.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9876	1.2	100	0.00
72	C	Ethylbenzene	1.0000	0.9395	6.0	100	0.00
73	T	m-,p-Xylene	2.0000	1.9116	4.4	100	0.00
74	T	o-Xylene	1.0000	0.9200	8.0	100	0.00
75	T	Styrene	1.0000	0.9265	7.3	100	0.00
76	P	Bromoform	1.0000	1.1654	-16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0072	-0.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0470	-4.7	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.4996	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9441	5.6	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.8599	14.0	100	0.00
83	T	n-Propylbenzene	1.0000	1.0550	-5.5	100	0.00
84	T	Bromobenzene	1.0000	0.9290	7.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9865	1.3	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0139	-1.4	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0247	-2.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8520	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9044	9.6	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0117	-1.2	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0454	-4.5	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9866	1.3	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	0.9931	0.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0090	-0.9	100	0.00
95	T	n-Butylbenzene	1.0000	1.0408	-4.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	0.9993	0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.6381	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9973	0.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0301	-3.0	100	0.00
100	T	Naphthalene	1.0000	0.9923	0.8	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0034	-0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418410.D 8260WTR.M Thu Mar 23 10:21:37 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:17 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.94	96	806453	25.00	ug/L		0.00
57) Chlorobenzene-d5	14.81	117	613590	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	323797	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	9.90	111	8948	0.9783	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.92%#			
43) 1,2-Dichloroethane-d4	10.54	65	8112	1.0234	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.08%#			
58) Toluene-d8	12.91	98	29338	0.9505	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.80%#			
80) p-Bromofluorobenzene	16.31	95	12269	1.0013	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.34	85	21878	1.7318	ug/L		99
3) Chloromethane	3.83	50	31055	2.0285	ug/L		96
4) Vinyl Chloride	4.06	62	29775	2.0800	ug/L		97
5) 1,3-Butadiene	4.11	54	16496	0.7791	ug/L		96
6) Bromomethane	4.97	94	13569	1.8713	ug/L		99
7) Chloroethane	5.14	64	10934	1.8832	ug/L		94
8) Trichlorofluoromethane	5.62	101	29078	1.8771	ug/L		98
9) Diethyl ether	6.15	59	117459	23.4449	ug/L		99
10) Isoprene	6.19	67	22062	1.8433	ug/L		96
11) Acrolein	6.39	56	8387	13.0924	ug/L		97
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	15360	1.8434	ug/L		97
13) Acetone	6.50	43	2257	2.3403	ug/L	#	42
14) 1,1-Dichloroethene	6.71	61	20970	1.8036	ug/L		98
15) Tert-Butyl Alcohol	6.80	59	14767	48.1076	ug/L		95
16) Dimethyl Sulfide	6.98	62	14593	1.7657	ug/L		98
17) Iodomethane	7.24	142	13138	1.8493	ug/L		98
18) Methyl acetate	7.23	43	5277	1.9134	ug/L	#	82
19) Methylene Chloride	7.50	84	16184	1.8280	ug/L		96
20) Carbon Disulfide	7.55	76	50438	1.9046	ug/L		100
21) Acrylonitrile	7.67	53	15987	11.8516	ug/L		97
22) Methyl Tert Butyl Ether	7.70	73	31235	1.8329	ug/L		99
23) trans-1,2-Dichloroethene	7.94	61	21040	1.8663	ug/L		98
24) n-Hexane	8.01	57	19614	2.0540	ug/L		97
25) Diisopropyl ether	8.35	45	516674	23.9944	ug/L		99
26) Vinyl Acetate	8.53	43	18265	2.1553	ug/L		95
27) 1,1-Dichloroethane	8.56	63	27702	1.8841	ug/L		97
28) Ethyl-Tert-Butyl ether	8.93	59	484054	23.4779	ug/L		100
29) 2-Butanone	9.12	43	3328	2.1418	ug/L	#	67
30) Propionitrile	9.22	54	11779	25.6068	ug/L		98
31) 2,2-Dichloropropane	9.34	77	25398	1.9364	ug/L		97
32) cis-1,2-Dichloroethene	9.41	96	17398	1.8183	ug/L		96
33) Chloroform	9.62	83	30803	1.8076	ug/L		98
34) 1-Bromopropane	9.75	122	3199	1.7500	ug/L		88
35) Bromochloromethane	9.84	130	9699	1.8870	ug/L		99
36) Tetrahydrofuran	9.86	42	23391	23.6536	ug/L		96
38) 1,1,1-Trichloroethane	10.14	97	24958	1.7806	ug/L		99
39) Cyclohexane	10.17	56	22456	1.8539	ug/L		98
40) 1,1-Dichloropropene	10.34	75	22537	1.8722	ug/L		96
41) Tert-Amyl-Methyl ether	10.43	73	454781	23.6366	ug/L		99
42) Carbon Tetrachloride	10.48	117	21530	1.7168	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418411.D 8260WTR.M Thu Mar 23 10:19:20 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:17 2017 Quant Results File: 8260WTR.RES

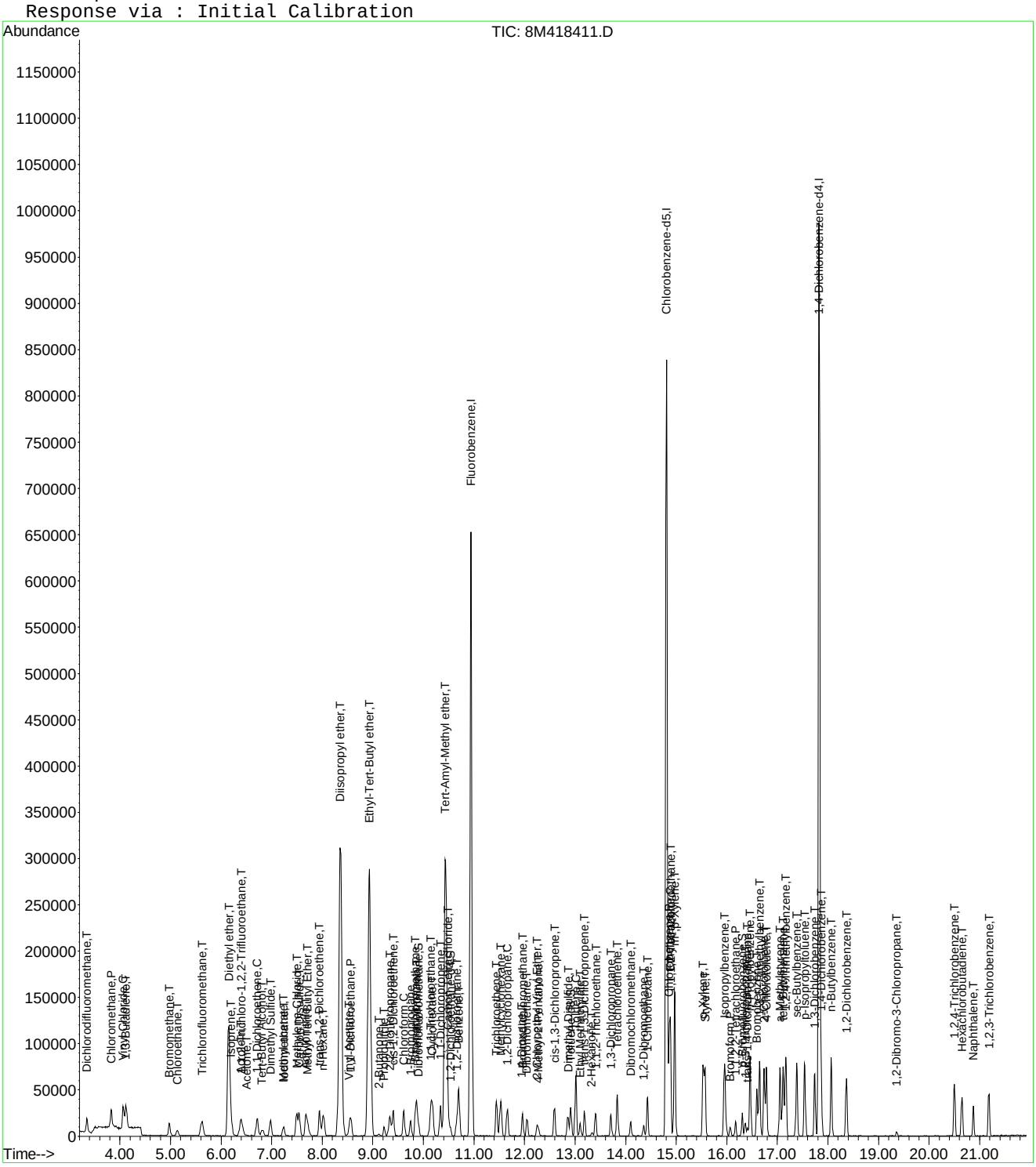
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.66	62	17821	1.8523	ug/L		99
46)	Benzene	10.70	78	65616	1.8903	ug/L		100
47)	Trichloroethene	11.45	130	16820	1.8122	ug/L		99
48)	Methylcyclohexane	11.53	83	25932	1.8594	ug/L		99
49)	1,2-Dichloropropane	11.65	63	14941	1.8721	ug/L		99
50)	Bromodichloromethane	11.96	83	20252	1.7949	ug/L		99
51)	1,4-Dioxane	11.94	88	1517	39.5549	ug/L		100
52)	Dibromomethane	12.05	93	8117	1.8978	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.25	63	6517	1.7957	ug/L		97
54)	4-Methyl-2-Pentanone	12.27	58	2133	1.3733	ug/L		93
55)	cis-1,3-Dichloropropene	12.59	75	23959	1.8295	ug/L		97
56)	Dimethyl Disulfide	12.86	79	9095	3.9150	ug/L		99
59)	Toluene	13.02	91	69007	1.8909	ug/L		97
60)	Ethyl Methacrylate	13.10	69	11717	1.6604	ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	18538	1.7221	ug/L		96
63)	1,1,2-Trichloroethane	13.41	97	10232	1.7799	ug/L		96
64)	2-Hexanone	13.33	58	2014	1.4614	ug/L	#	20
65)	1,3-Dichloropropane	13.71	76	19307	1.8757	ug/L		99
66)	Tetrachloroethene	13.83	164	14088	1.7816	ug/L		99
67)	Dibromochloromethane	14.10	129	11941	1.8003	ug/L		98
68)	1,2-Dibromoethane	14.35	107	10646	1.8049	ug/L		96
69)	1-Chlorohexane	14.43	91	22602	1.8173	ug/L		97
70)	Chlorobenzene	14.86	112	46971	1.8287	ug/L		87
71)	1,1,1,2-Tetrachloroethane	14.89	131	14902	1.7838	ug/L		94
72)	Ethylbenzene	14.88	106	25266	1.7725	ug/L		89
73)	m-,p-Xylene	14.97	106	61972	3.6249	ug/L		91
74)	o-Xylene	15.53	106	30925	1.8242	ug/L		99
75)	Styrene	15.57	104	49014	1.7909	ug/L		99
76)	Bromoform	16.07	173	6654	1.9563	ug/L		91
77)	Isopropylbenzene	15.95	105	77538	1.8905	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.17	83	11686	1.8517	ug/L		96
81)	1,2,3-Trichloropropane	16.37	110	3387	1.8852	ug/L		90
82)	trans-1,4-Dichloro-2-Buten	16.41	53	2517	1.7004	ug/L		86
83)	n-Propylbenzene	16.46	91	94833	1.9885	ug/L		97
84)	Bromobenzene	16.59	156	19552	1.8524	ug/L		91
85)	1,3,5-Trimethylbenzene	16.65	105	65580	1.9039	ug/L		100
86)	2-Chlorotoluene	16.74	91	60631	1.8914	ug/L		98
87)	4-Chlorotoluene	16.78	91	55993	1.9993	ug/L		96
88)	a-Methylstyrene	17.05	118	31365	1.6288	ug/L		98
89)	tert-Butylbenzene	17.11	134	13978	1.8375	ug/L		99
90)	1,2,4-Trimethylbenzene	17.16	105	67699	1.8905	ug/L		99
91)	sec-Butylbenzene	17.38	105	84222	1.9698	ug/L		98
92)	p-Isopropyltoluene	17.55	119	66367	1.8950	ug/L		98
93)	1,3-Dichlorobenzene	17.74	146	39368	1.8711	ug/L		98
94)	1,4-Dichlorobenzene	17.87	146	39901	1.8829	ug/L		82
95)	n-Butylbenzene	18.06	91	67203	1.9777	ug/L		98
96)	1,2-Dichlorobenzene	18.36	146	34521	1.8830	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.36	75	1770	1.7871	ug/L		90
98)	1,2,4-Trichlorobenzene	20.50	180	24058	1.7544	ug/L		97
99)	Hexachlorobutadiene	20.65	225	12372	1.8454	ug/L		98
100)	Naphthalene	20.88	128	33545	1.8522	ug/L		99
101)	1,2,3-Trichlorobenzene	21.19	180	20663	1.8222	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418411.D 8260WTR.M Thu Mar 23 10:19:20 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7318	13.4	100	0.00
3	P	Chloromethane	2.0000	2.0285	-1.4	100	0.00
4	C	Vinyl Chloride	2.0000	2.0800	-4.0	100	0.00
5	T	1,3-Butadiene	2.0000	0.7791	61.0#	100	0.00
6	T	Bromomethane	2.0000	1.8714	6.4	100	0.00
7	T	Chloroethane	2.0000	1.8832	5.8	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.8771	6.1	100	0.00
9	T	Diethyl ether	25.0000	23.4449	6.2	100	0.00
10	T	Isoprene	-1.0000	1.8433	0.0	100	0.00
11	T	Acrolein	12.5000	13.0924	-4.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8434	7.8	100	0.00
13	T	Acetone	-1.0000	2.3403	0.0	100	0.02
14	C	1,1-Dichloroethene	2.0000	1.8036	9.8	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.1076	3.8	100	-0.01
16	T	Dimethyl Sulfide	-1.0000	1.7657	0.0	100	0.00
17	T	Iodomethane	2.0000	1.8493	7.5	100	0.00
18	T	Methyl acetate	-1.0000	1.9134	0.0	100	-0.01
19	T	Methylene Chloride	2.0000	1.8280	8.6	100	0.00
20	T	Carbon Disulfide	2.0000	1.9046	4.8	100	0.00
21	T	Acrylonitrile	12.5000	11.8516	5.2	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8329	8.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8663	6.7	100	0.00
24	T	n-Hexane	-1.0000	2.0540	0.0	100	-0.01
25	T	Diisopropyl ether	25.0000	23.9944	4.0	100	0.00
26	T	Vinyl Acetate	-1.0000	2.1553	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	1.8841	5.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	23.4779	6.1	100	0.00
29	T	2-Butanone	-1.0000	2.1418	0.0	100	0.00
30	T	Propionitrile	25.0000	25.6068	-2.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9364	3.2	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.8183	9.1	100	0.00
33	C	Chloroform	2.0000	1.8076	9.6	100	0.00
34		1-Bromopropane	2.0000	1.7500	12.5	100	0.00
35	T	Bromochloromethane	2.0000	1.8870	5.6	100	0.00
36	T	Tetrahydrofuran	25.0000	23.6536	5.4	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9783	2.2	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.7806	11.0	100	0.00
39	T	Cyclohexane	2.0000	1.8539	7.3	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.8723	6.4	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.6366	5.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.7168	14.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0235	-2.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	2.0000	1.8523	7.4	100	0.00
46	T	Benzene	2.0000	1.8903	5.5	100	0.00
47	T	Trichloroethene	2.0000	1.8122	9.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.8594	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.8721	6.4	100	0.00
50	T	Bromodichloromethane	2.0000	1.7949	10.3	100	0.00
51	T	1,4-Dioxane	-1.0000	39.5549	0.0	100	0.00
52	T	Dibromomethane	2.0000	1.8978	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.7957	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.3733	0.0	100	0.00

(#) = Out of Range
8M418411.D 8260WTR.M Thu Mar 23 10:21:56 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8295	8.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.9150	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9505	4.9	100	0.00
59	C	Toluene	2.0000	1.8909	5.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.6604	17.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	2.0000	1.7221	13.9	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7799	11.0	100	0.00
64	T	2-Hexanone	-1.0000	1.4614	0.0	100	-0.01
65	T	1,3-Dichloropropane	2.0000	1.8757	6.2	100	0.00
66	T	Tetrachloroethene	2.0000	1.7816	10.9	100	0.00
67	T	Dibromochloromethane	2.0000	1.8003	10.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.8049	9.8	100	0.00
69	T	1-Chlorohexane	2.0000	1.8173	9.1	100	0.00
70	P	Chlorobenzene	2.0000	1.8287	8.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.7838	10.8	100	0.00
72	C	Ethylbenzene	2.0000	1.7725	11.4	100	0.00
73	T	m-,p-Xylene	4.0000	3.6249	9.4	100	0.00
74	T	o-Xylene	2.0000	1.8242	8.8	100	0.00
75	T	Styrene	2.0000	1.7909	10.5	100	0.00
76	P	Bromoform	2.0000	1.9563	2.2	100	0.00
77	T	Isopropylbenzene	2.0000	1.8905	5.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.8517	7.4	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8852	5.7	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7004	15.0	100	0.00
83	T	n-Propylbenzene	2.0000	1.9885	0.6	100	0.00
84	T	Bromobenzene	2.0000	1.8524	7.4	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.9039	4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	1.8914	5.4	100	0.00
87	T	4-Chlorotoluene	2.0000	1.9993	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	1.6288	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.8375	8.1	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.8905	5.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.9698	1.5	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.8950	5.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8711	6.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.8829	5.9	100	0.00
95	T	n-Butylbenzene	2.0000	1.9777	1.1	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.8830	5.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.7871	10.6	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.7545	12.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.8454	7.7	100	0.00
100	T	Naphthalene	2.0000	1.8522	7.4	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.8222	8.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418411.D 8260WTR.M Thu Mar 23 10:21:57 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:21 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	815035	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	615657	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	327108	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	22395	2.4228	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.68%#		
43) 1,2-Dichloroethane-d4	10.54	65	19064	2.3799	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.52%#		
58) Toluene-d8	12.92	98	78100	2.5219	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.08%#		
80) p-Bromofluorobenzene	16.31	95	30346	2.4516	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.80%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	57648	4.5151	ug/L	100
3) Chloromethane	3.83	50	78191	5.0536	ug/L	97
4) Vinyl Chloride	4.06	62	73384	5.0724	ug/L	99
5) 1,3-Butadiene	4.12	54	41269	5.8119	ug/L	96
6) Bromomethane	4.97	94	35005	4.7768	ug/L	98
7) Chloroethane	5.13	64	28649	4.8823	ug/L	98
8) Trichlorofluoromethane	5.62	101	75703	4.8355	ug/L	99
9) Diethyl ether	6.14	59	246013	48.5872	ug/L	99
10) Isoprene	6.18	67	57716	4.7714	ug/L	99
11) Acrolein	6.38	56	15359	23.7235	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	42364	5.0307	ug/L	99
13) Acetone	6.48	43	4624	4.7441	ug/L	84
14) 1,1-Dichloroethene	6.71	61	57417	4.8863	ug/L	100
15) Tert-Butyl Alcohol	6.82	59	29560	95.2859	ug/L	97
16) Dimethyl Sulfide	6.98	62	39521	4.7315	ug/L	100
17) Iodomethane	7.24	142	38342	4.3883	ug/L	99
18) Methyl acetate	7.24	43	13546	4.8600	ug/L #	89
19) Methylene Chloride	7.50	84	42736	4.7762	ug/L	99
20) Carbon Disulfide	7.54	76	133568	4.9906	ug/L	100
21) Acrylonitrile	7.67	53	32246	23.6530	ug/L	99
22) Methyl Tert Butyl Ether	7.70	73	81973	4.7595	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	55034	4.8304	ug/L	98
24) n-Hexane	8.01	57	50816	5.2654	ug/L	99
25) Diisopropyl ether	8.36	45	1098144	50.4609	ug/L	98
26) Vinyl Acetate	8.53	43	46164	5.3902	ug/L	99
27) 1,1-Dichloroethane	8.56	63	73534	4.9487	ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	1037371	49.7855	ug/L	100
29) 2-Butanone	9.12	43	7736	4.9261	ug/L	87
30) Propionitrile	9.22	54	22643	48.7062	ug/L	99
31) 2,2-Dichloropropane	9.34	77	66646	5.0276	ug/L	98
32) cis-1,2-Dichloroethene	9.41	96	47223	4.8834	ug/L	98
33) Chloroform	9.61	83	79976	4.6438	ug/L	98
34) 1-Bromopropane	9.74	122	9164	4.9603	ug/L	99
35) Bromochloromethane	9.84	130	24923	4.7979	ug/L	97
36) Tetrahydrofuran	9.87	42	46575	46.6019	ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	69902	4.9346	ug/L	99
39) Cyclohexane	10.18	56	59815	4.8861	ug/L	99
40) 1,1-Dichloropropene	10.34	75	59701	4.9074	ug/L	97
41) Tert-Amyl-Methyl ether	10.43	73	964872	49.6198	ug/L	100
42) Carbon Tetrachloride	10.49	117	61702	4.8682	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418412.D 8260WTR.M Thu Mar 23 10:19:24 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:21 2017 Quant Results File: 8260WTR.RES

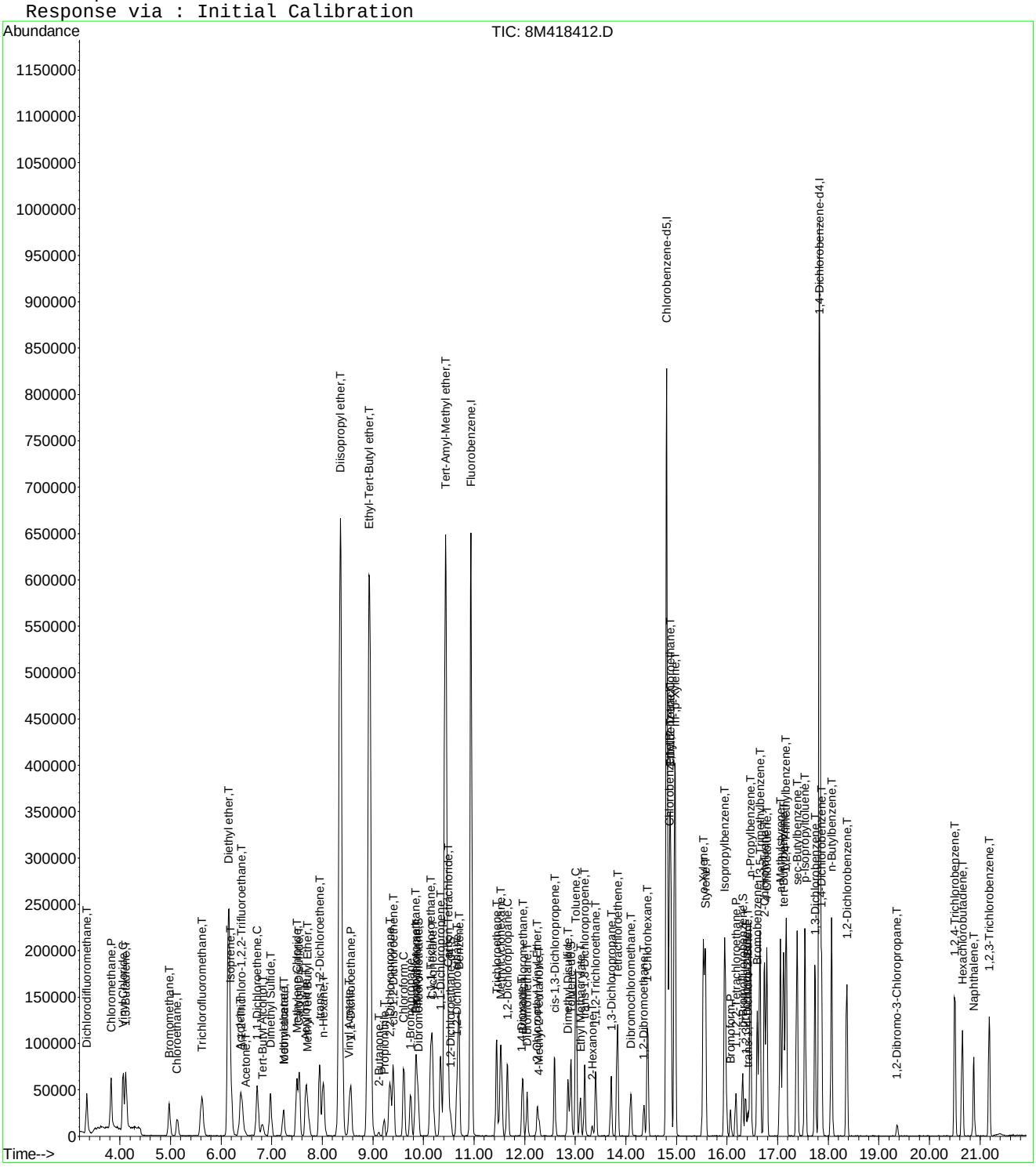
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.66	62	46572	4.7897	ug/L		98
46)	Benzene	10.70	78	177629	5.0634	ug/L		98
47)	Trichloroethene	11.45	130	45447	4.8449	ug/L		98
48)	Methylcyclohexane	11.53	83	69686	4.9440	ug/L		100
49)	1,2-Dichloropropane	11.66	63	39996	4.9586	ug/L		98
50)	Bromodichloromethane	11.96	83	53542	4.6955	ug/L		98
51)	1,4-Dioxane	11.94	88	3437	88.6741	ug/L		97
52)	Dibromomethane	12.05	93	21357	4.9409	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.24	63	17523	4.7776	ug/L		98
54)	4-Methyl-2-Pentanone	12.28	58	6871	4.3772	ug/L		97
55)	cis-1,3-Dichloropropene	12.60	75	63284	4.7814	ug/L		100
56)	Dimethyl Disulfide	12.85	79	25856	5.9282	ug/L		98
59)	Toluene	13.01	91	185488	5.0655	ug/L		99
60)	Ethyl Methacrylate	13.10	69	32628	4.6082	ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	51141	4.7349	ug/L		99
63)	1,1,2-Trichloroethane	13.40	97	28565	4.9523	ug/L		99
64)	2-Hexanone	13.34	58	5536	4.0035	ug/L	#	28
65)	1,3-Dichloropropane	13.71	76	49887	4.8302	ug/L		100
66)	Tetrachloroethene	13.84	164	38803	4.8906	ug/L		100
67)	Dibromochloromethane	14.09	129	33422	4.6625	ug/L		98
68)	1,2-Dibromoethane	14.35	107	28526	4.8200	ug/L		99
69)	1-Chlorohexane	14.43	91	61333	4.9148	ug/L		100
70)	Chlorobenzene	14.86	112	122717	4.7617	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.88	131	40183	4.4589	ug/L		99
72)	Ethylbenzene	14.88	106	68410	4.7831	ug/L		91
73)	m-,p-Xylene	14.97	106	165390	9.6416	ug/L		91
74)	o-Xylene	15.53	106	79805	4.6916	ug/L		95
75)	Styrene	15.57	104	133331	4.8554	ug/L		99
76)	Bromoform	16.07	173	17246	4.3386	ug/L		95
77)	Isopropylbenzene	15.96	105	207808	5.0495	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.17	83	32166	5.0454	ug/L		97
81)	1,2,3-Trichloropropane	16.37	110	8855	4.8787	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.41	53	7680	5.1357	ug/L		94
83)	n-Propylbenzene	16.46	91	255678	5.3068	ug/L		97
84)	Bromobenzene	16.60	156	51241	4.8055	ug/L		97
85)	1,3,5-Trimethylbenzene	16.65	105	175753	5.0506	ug/L		99
86)	2-Chlorotoluene	16.74	91	164765	5.0877	ug/L		98
87)	4-Chlorotoluene	16.78	91	140714	4.9736	ug/L		97
88)	a-Methylstyrene	17.05	118	89621	4.6071	ug/L		99
89)	tert-Butylbenzene	17.11	134	36401	4.7366	ug/L		94
90)	1,2,4-Trimethylbenzene	17.17	105	183680	5.0772	ug/L		98
91)	sec-Butylbenzene	17.38	105	226755	5.2498	ug/L		97
92)	p-Isopropyltoluene	17.54	119	179958	5.0863	ug/L		98
93)	1,3-Dichlorobenzene	17.74	146	104685	4.9251	ug/L		97
94)	1,4-Dichlorobenzene	17.87	146	102822	4.8029	ug/L		93
95)	n-Butylbenzene	18.06	91	177005	5.1563	ug/L		98
96)	1,2-Dichlorobenzene	18.36	146	90038	4.8615	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	4350	4.3476	ug/L		93
98)	1,2,4-Trichlorobenzene	20.50	180	65218	4.7079	ug/L		100
99)	Hexachlorobutadiene	20.65	225	32260	4.7632	ug/L		97
100)	Naphthalene	20.88	128	87714	4.7941	ug/L		98
101)	1,2,3-Trichlorobenzene	21.18	180	52406	4.5747	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418412.D 8260WTR.M Thu Mar 23 10:19:24 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5152	9.7	100	0.00
3	P	Chloromethane	5.0000	5.0536	-1.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.0724	-1.4	100	0.01
5	T	1,3-Butadiene	5.0000	5.8119	-16.2	100	0.01
6	T	Bromomethane	5.0000	4.7768	4.5	100	0.00
7	T	Chloroethane	5.0000	4.8823	2.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.8355	3.3	100	0.00
9	T	Diethyl ether	50.0000	48.5872	2.8	100	0.00
10	T	Isoprene	5.0000	4.7714	4.6	100	0.00
11	T	Acrolein	25.0000	23.7235	5.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0307	-0.6	100	0.00
13	T	Acetone	5.0000	4.7441	5.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.8863	2.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	95.2859	4.7	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7315	5.4	100	0.00
17	T	Iodomethane	5.0000	4.3883	12.2	100	0.00
18	T	Methyl acetate	5.0000	4.8600	2.8	100	0.00
19	T	Methylene Chloride	5.0000	4.7762	4.5	100	0.00
20	T	Carbon Disulfide	5.0000	4.9906	0.2	100	0.00
21	T	Acrylonitrile	25.0000	23.6530	5.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7595	4.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8304	3.4	100	0.00
24	T	n-Hexane	5.0000	5.2654	-5.3	100	0.00
25	T	Diisopropyl ether	50.0000	50.4609	-0.9	100	0.00
26	T	Vinyl Acetate	5.0000	5.3902	-7.8	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9487	1.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.7855	0.4	100	0.00
29	T	2-Butanone	5.0000	4.9261	1.5	100	0.01
30	T	Propionitrile	50.0000	48.7062	2.6	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0277	-0.6	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8834	2.3	100	0.01
33	C	Chloroform	5.0000	4.6437	7.1	100	0.00
34		1-Bromopropane	5.0000	4.9603	0.8	100	0.00
35	T	Bromochloromethane	5.0000	4.7979	4.0	100	0.00
36	T	Tetrahydrofuran	50.0000	46.6019	6.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4228	3.1	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9346	1.3	100	0.00
39	T	Cyclohexane	5.0000	4.8861	2.3	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9074	1.9	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.6198	0.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8682	2.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3799	4.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	5.0000	4.7897	4.2	100	0.00
46	T	Benzene	5.0000	5.0634	-1.3	100	0.00
47	T	Trichloroethene	5.0000	4.8449	3.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.9440	1.1	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9586	0.8	100	0.01
50	T	Bromodichloromethane	5.0000	4.6955	6.1	100	0.00
51	T	1,4-Dioxane	100.0000	88.6741	11.3	100	0.00
52	T	Dibromomethane	5.0000	4.9409	1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.7776	4.4	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3772	12.5	100	0.01

(#) = Out of Range
8M418412.D 8260WTR.M Thu Mar 23 10:22:11 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7814	4.4	100	0.00
56	T	Dimethyl Disulfide	5.0000	5.9282	-18.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.5219	-0.9	100	0.00
59	C	Toluene	5.0000	5.0655	-1.3	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6082	7.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	5.0000	4.7349	5.3	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9523	1.0	100	0.00
64	T	2-Hexanone	5.0000	4.0035	19.9	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8302	3.4	100	0.00
66	T	Tetrachloroethene	5.0000	4.8906	2.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.6625	6.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8200	3.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.9148	1.7	100	0.00
70	P	Chlorobenzene	5.0000	4.7617	4.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.4589	10.8	100	0.00
72	C	Ethylbenzene	5.0000	4.7831	4.3	100	0.00
73	T	m-,p-Xylene	10.0000	9.6416	3.6	100	0.00
74	T	o-Xylene	5.0000	4.6916	6.2	100	0.00
75	T	Styrene	5.0000	4.8554	2.9	100	0.00
76	P	Bromoform	5.0000	4.3386	13.2	100	0.00
77	T	Isopropylbenzene	5.0000	5.0496	-1.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0454	-0.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4516	1.9	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	4.8787	2.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	5.1357	-2.7	100	0.00
83	T	n-Propylbenzene	5.0000	5.3068	-6.1	100	0.00
84	T	Bromobenzene	5.0000	4.8055	3.9	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.0506	-1.0	100	0.00
86	T	2-Chlorotoluene	5.0000	5.0877	-1.8	100	0.00
87	T	4-Chlorotoluene	5.0000	4.9736	0.5	100	0.00
88	T	a-Methylstyrene	5.0000	4.6071	7.9	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7366	5.3	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0772	-1.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2498	-5.0	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0863	-1.7	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9251	1.5	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8029	3.9	100	0.00
95	T	n-Butylbenzene	5.0000	5.1563	-3.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8614	2.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.3476	13.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7079	5.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.7632	4.7	100	0.00
100	T	Naphthalene	5.0000	4.7941	4.1	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.5747	8.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418412.D 8260WTR.M Thu Mar 23 10:22:11 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418413.D Vial: 8
Acq On : 21 Mar 2017 18:41 Operator: TMB
Sample : WG607066-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:25 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	821672	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	625798	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	337574	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	91435	9.8118	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.24%#			
43) 1,2-Dichloroethane-d4	10.54	65	80586	9.9788	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 39.92%#			
58) Toluene-d8	12.92	98	315631	10.0266	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.12%#			
80) p-Bromofluorobenzene	16.31	95	124358	9.7351	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.96%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	267112	20.7520	ug/L	100
3) Chloromethane	3.83	50	306801	19.6689	ug/L	100
4) Vinyl Chloride	4.05	62	289525	19.8509	ug/L	99
5) 1,3-Butadiene	4.12	54	154484	29.8378	ug/L	99
6) Bromomethane	4.98	94	139620	18.8988	ug/L	100
7) Chloroethane	5.13	64	119263	20.1604	ug/L	98
8) Trichlorofluoromethane	5.63	101	307979	19.5132	ug/L	99
9) Diethyl ether	6.14	59	402822	78.9142	ug/L	100
10) Isoprene	6.18	67	230105	18.8691	ug/L	100
11) Acrolein	6.38	56	26074	39.9486	ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	165526	19.4975	ug/L	100
13) Acetone	6.48	43	20120	20.4758	ug/L	95
14) 1,1-Dichloroethene	6.71	61	229545	19.3768	ug/L	100
15) Tert-Butyl Alcohol	6.82	59	51093	163.3666	ug/L	99
16) Dimethyl Sulfide	6.98	62	161581	19.1886	ug/L	100
17) Iodomethane	7.23	142	171474	17.7339	ug/L	99
18) Methyl acetate	7.24	43	53968	19.2063	ug/L	97
19) Methylene Chloride	7.50	84	175217	19.4242	ug/L	99
20) Carbon Disulfide	7.54	76	534567	19.8121	ug/L	100
21) Acrylonitrile	7.67	53	54994	40.0133	ug/L	98
22) Methyl Tert Butyl Ether	7.70	73	350631	20.1938	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	222172	19.3426	ug/L	100
24) n-Hexane	8.02	57	183626	18.8729	ug/L	100
25) Diisopropyl ether	8.36	45	1757668	80.1144	ug/L	100
26) Vinyl Acetate	8.53	43	171984	19.9188	ug/L	99
27) 1,1-Dichloroethane	8.56	63	293490	19.5918	ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	1705294	81.1794	ug/L	100
29) 2-Butanone	9.11	43	31385	19.8239	ug/L	97
30) Propionitrile	9.22	54	38828	82.8463	ug/L	99
31) 2,2-Dichloropropane	9.34	77	253094	18.9387	ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	192736	19.7700	ug/L	99
33) Chloroform	9.61	83	317903	18.3097	ug/L	99
34) 1-Bromopropane	9.75	122	36849	19.7847	ug/L	96
35) Bromochloromethane	9.85	130	103131	19.6934	ug/L	99
36) Tetrahydrofuran	9.87	42	78080	77.4941	ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	277573	19.4366	ug/L	100
39) Cyclohexane	10.18	56	236003	19.1226	ug/L	99
40) 1,1-Dichloropropene	10.34	75	238442	19.4415	ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	1584333	80.8183	ug/L	100
42) Carbon Tetrachloride	10.49	117	250269	19.5864	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418413.D 8260WTR.M Thu Mar 23 10:19:28 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418413.D Vial: 8
Acq On : 21 Mar 2017 18:41 Operator: TMB
Sample : WG607066-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:25 2017 Quant Results File: 8260WTR.RES

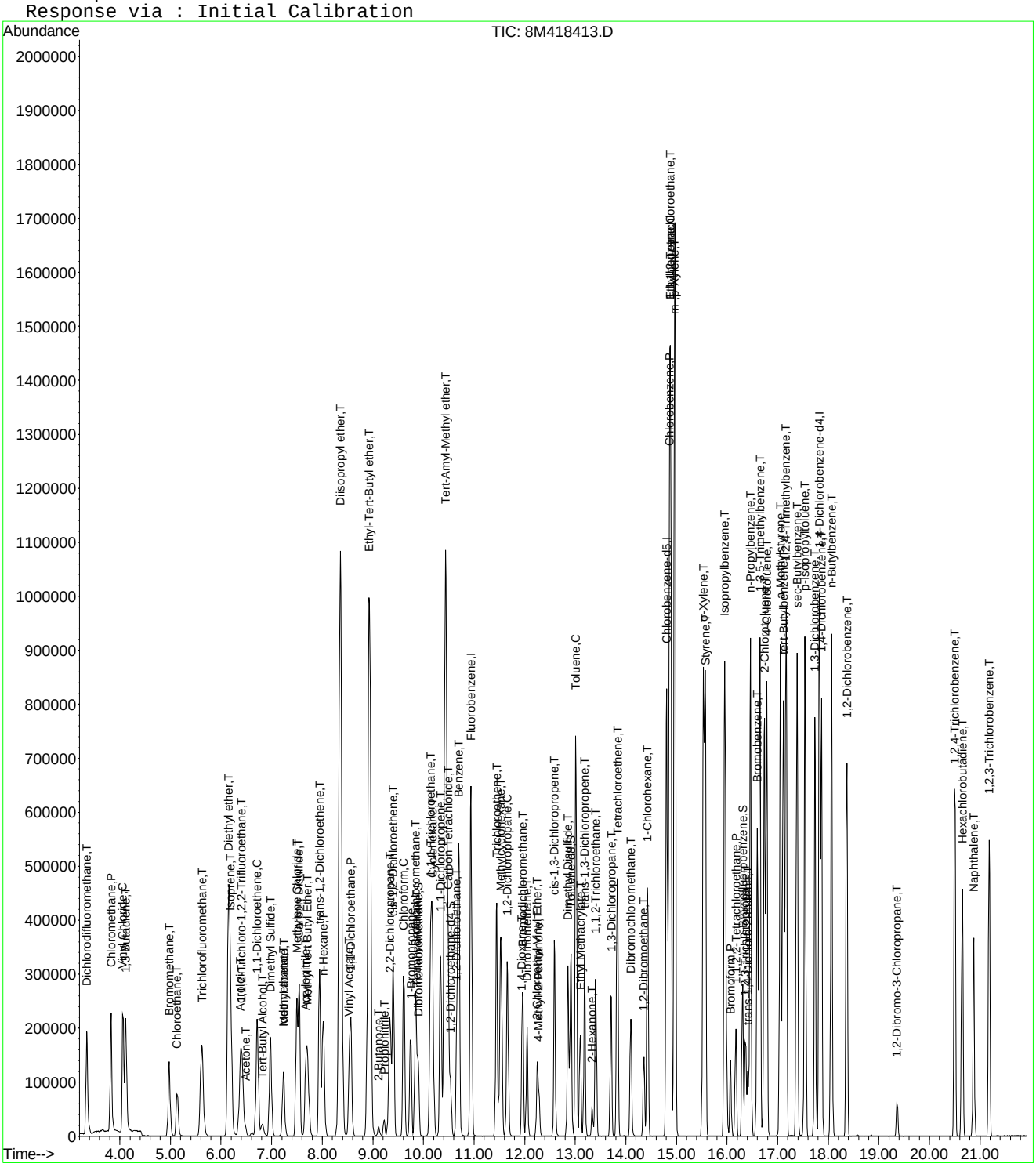
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	193166	19.7059	ug/L	99
46)	Benzene	10.69	78	700569	19.8088	ug/L	99
47)	Trichloroethene	11.45	130	185531	19.6190	ug/L	99
48)	Methylcyclohexane	11.53	83	268976	18.9287	ug/L	99
49)	1,2-Dichloropropane	11.65	63	162712	20.0097	ug/L	100
50)	Bromodichloromethane	11.95	83	228854	19.9076	ug/L	99
51)	1,4-Dioxane	11.94	88	6022	154.1117	ug/L	94
52)	Dibromomethane	12.05	93	90005	20.6543	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	71072	19.2210	ug/L	98
54)	4-Methyl-2-Pentanone	12.27	58	30339	19.1714	ug/L	98
55)	cis-1,3-Dichloropropene	12.59	75	265979	19.9337	ug/L	99
56)	Dimethyl Disulfide	12.85	79	128604	18.2156	ug/L	97
59)	Toluene	13.01	91	743388	19.9724	ug/L	98
60)	Ethyl Methacrylate	13.10	69	149186	20.7286	ug/L	98
62)	trans-1,3-Dichloropropene	13.18	75	220503	20.0843	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	118566	20.2227	ug/L	100
64)	2-Hexanone	13.33	58	27656	19.6759	ug/L	99
65)	1,3-Dichloropropane	13.71	76	210564	20.0570	ug/L	99
66)	Tetrachloroethene	13.84	164	151933	18.8389	ug/L	99
67)	Dibromochloromethane	14.09	129	148062	19.3718	ug/L	100
68)	1,2-Dibromoethane	14.35	107	122091	20.2951	ug/L	98
69)	1-Chlorohexane	14.43	91	239557	18.8853	ug/L	99
70)	Chlorobenzene	14.86	112	498962	19.0471	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	181926	18.6479	ug/L	100
72)	Ethylbenzene	14.88	106	280076	19.2650	ug/L	94
73)	m-,p-Xylene	14.96	106	683565	39.2036	ug/L	93
74)	o-Xylene	15.53	106	329733	19.0703	ug/L	99
75)	Styrene	15.57	104	559745	20.0535	ug/L	99
76)	Bromoform	16.07	173	86579	19.2358	ug/L	100
77)	Isopropylbenzene	15.96	105	836820	20.0045	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.17	83	133568	20.3011	ug/L	99
81)	1,2,3-Trichloropropane	16.36	110	37383	19.9577	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.41	53	31257	20.2539	ug/L	95
83)	n-Propylbenzene	16.46	91	1013480	20.3834	ug/L	98
84)	Bromobenzene	16.60	156	213250	19.3788	ug/L	98
85)	1,3,5-Trimethylbenzene	16.65	105	719028	20.0222	ug/L	99
86)	2-Chlorotoluene	16.74	91	676467	20.2408	ug/L	96
87)	4-Chlorotoluene	16.78	91	569123	19.4922	ug/L	98
88)	a-Methylstyrene	17.05	118	379902	18.9239	ug/L	100
89)	tert-Butylbenzene	17.11	134	148294	18.6981	ug/L	96
90)	1,2,4-Trimethylbenzene	17.17	105	757423	20.2873	ug/L	98
91)	sec-Butylbenzene	17.38	105	899287	20.1745	ug/L	98
92)	p-Isopropyltoluene	17.54	119	733704	20.0943	ug/L	99
93)	1,3-Dichlorobenzene	17.73	146	425958	19.4188	ug/L	100
94)	1,4-Dichlorobenzene	17.87	146	421228	19.0658	ug/L	100
95)	n-Butylbenzene	18.06	91	706936	19.9553	ug/L	99
96)	1,2-Dichlorobenzene	18.36	146	372725	19.5007	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	20816	20.1597	ug/L	99
98)	1,2,4-Trichlorobenzene	20.51	180	271888	19.0185	ug/L	99
99)	Hexachlorobutadiene	20.65	225	126611	18.1144	ug/L	100
100)	Naphthalene	20.88	128	379245	20.0854	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	226688	19.1747	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418413.D 8260WTR.M Thu Mar 23 10:19:28 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418413.D Vial: 8
Acq On : 21 Mar 2017 18:41 Operator: TMB
Sample : WG607066-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418414.D Vial: 9
Acq On : 21 Mar 2017 19:11 Operator: TMB
Sample : WG607066-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:30 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	821515	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	635449	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	345493	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	227256	24.3913	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.56%			
43) 1,2-Dichloroethane-d4	10.54	65	199083	24.6568	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.64%			
58) Toluene-d8	12.92	98	778520	24.3556	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%			
80) p-Bromofluorobenzene	16.31	95	310492	23.7490	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	711345	55.2750	ug/L	100
3) Chloromethane	3.83	50	763262	48.9417	ug/L	100
4) Vinyl Chloride	4.05	62	698218	47.8815	ug/L	100
5) 1,3-Butadiene	4.11	54	285922	60.6615	ug/L	100
6) Bromomethane	4.97	94	369809	50.0666	ug/L	100
7) Chloroethane	5.13	64	305358	51.6280	ug/L	100
8) Trichlorofluoromethane	5.62	101	807170	51.1512	ug/L	100
9) Diethyl ether	6.14	59	522978	102.4728	ug/L	100
10) Isoprene	6.18	67	604725	49.5983	ug/L	100
11) Acrolein	6.39	56	33661	51.5827	ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	441268	51.9873	ug/L	100
13) Acetone	6.48	43	50200	51.0974	ug/L	100
14) 1,1-Dichloroethene	6.71	61	601562	50.7899	ug/L	100
15) Tert-Butyl Alcohol	6.81	59	66306	212.0497	ug/L	100
16) Dimethyl Sulfide	6.98	62	419461	49.8226	ug/L	100
17) Iodomethane	7.24	142	489213	49.6697	ug/L	100
18) Methyl acetate	7.24	43	138467	49.2874	ug/L	100
19) Methylene Chloride	7.50	84	452948	50.2224	ug/L	100
20) Carbon Disulfide	7.54	76	1373384	50.9099	ug/L	100
21) Acrylonitrile	7.67	53	75054	54.6193	ug/L	100
22) Methyl Tert Butyl Ether	7.70	73	913126	52.5996	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	570982	49.7200	ug/L	100
24) n-Hexane	8.02	57	481335	49.4807	ug/L	100
25) Diisopropyl ether	8.36	45	2245729	102.3798	ug/L	100
26) Vinyl Acetate	8.53	43	417757	48.3930	ug/L	100
27) 1,1-Dichloroethane	8.56	63	762261	50.8941	ug/L	100
28) Ethyl-Tert-Butyl ether	8.93	59	2190954	104.3189	ug/L	100
29) 2-Butanone	9.11	43	79673	50.3339	ug/L	100
30) Propionitrile	9.22	54	48849	104.2478	ug/L	100
31) 2,2-Dichloropropane	9.34	77	653825	48.9342	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	496971	50.9868	ug/L	100
33) Chloroform	9.61	83	821445	47.3204	ug/L	100
34) 1-Bromopropane	9.75	122	93829	50.3875	ug/L	100
35) Bromochloromethane	9.84	130	273070	52.1540	ug/L	100
36) Tetrahydrofuran	9.86	42	103949	103.1887	ug/L	100
38) 1,1,1-Trichloroethane	10.14	97	739127	51.7661	ug/L	100
39) Cyclohexane	10.18	56	620901	50.3193	ug/L	100
40) 1,1-Dichloropropene	10.34	75	617108	50.3259	ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	2062326	105.2213	ug/L	100
42) Carbon Tetrachloride	10.49	117	674327	52.7838	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418414.D 8260WTR.M Thu Mar 23 10:19:32 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418414.D Vial: 9
Acq On : 21 Mar 2017 19:11 Operator: TMB
Sample : WG607066-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:30 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

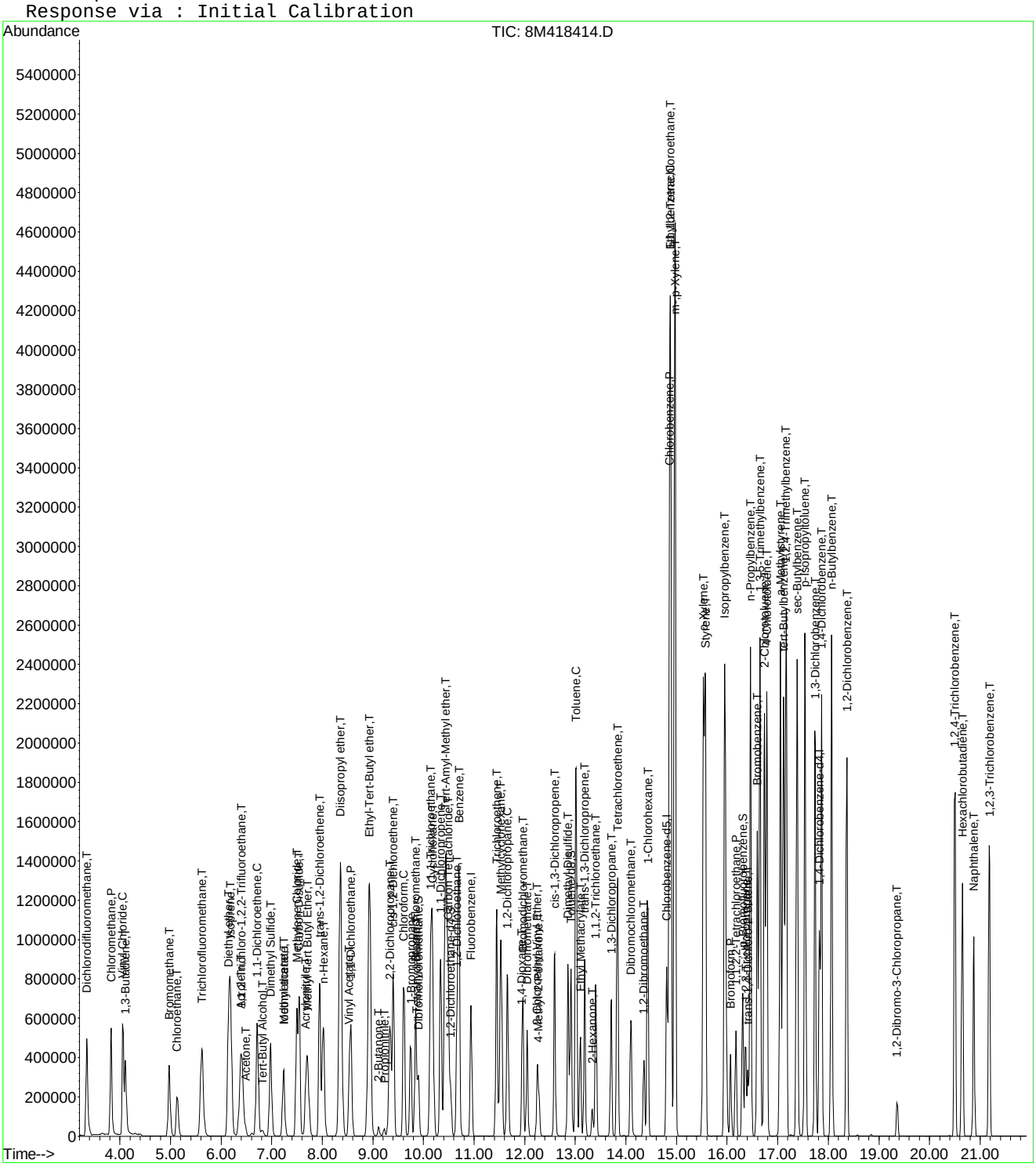
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.66	62	501055	51.1250	ug/L	100
46)	Benzene	10.70	78	1790432	50.6347	ug/L	100
47)	Trichloroethene	11.45	130	488370	51.6527	ug/L	100
48)	Methylcyclohexane	11.53	83	698948	49.1967	ug/L	100
49)	1,2-Dichloropropane	11.65	63	416176	51.1896	ug/L	100
50)	Bromodichloromethane	11.96	83	609341	53.0157	ug/L	100
51)	1,4-Dioxane	11.94	88	9021	230.9046	ug/L	100
52)	Dibromomethane	12.05	93	236195	54.2122	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.24	63	183414	49.6127	ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	80365	50.7929	ug/L	100
55)	cis-1,3-Dichloropropene	12.59	75	698063	52.3260	ug/L	100
56)	Dimethyl Disulfide	12.85	79	361297	46.1084	ug/L	100
59)	Toluene	13.02	91	1927822	51.0075	ug/L	100
60)	Ethyl Methacrylate	13.10	69	386095	52.8311	ug/L	100
62)	trans-1,3-Dichloropropene	13.18	75	588220	52.7638	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	309196	51.9358	ug/L	100
64)	2-Hexanone	13.34	58	73718	51.6504	ug/L	100
65)	1,3-Dichloropropane	13.71	76	543270	50.9625	ug/L	100
66)	Tetrachloroethene	13.84	164	407543	49.7657	ug/L	100
67)	Dibromochloromethane	14.09	129	410127	50.8448	ug/L	100
68)	1,2-Dibromoethane	14.35	107	319221	52.2580	ug/L	100
69)	1-Chlorohexane	14.43	91	621898	48.2822	ug/L	100
70)	Chlorobenzene	14.86	112	1364943	51.3131	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	525452	49.4524	ug/L	100
72)	Ethylbenzene	14.88	106	797976	54.0551	ug/L	100
73)	m-,p-Xylene	14.97	106	1881723	106.2810	ug/L	100
74)	o-Xylene	15.53	106	886598	50.4983	ug/L	100
75)	Styrene	15.57	104	1519235	53.6017	ug/L	100
76)	Bromoform	16.07	173	249977	51.3122	ug/L	100
77)	Isopropylbenzene	15.95	105	2232698	52.5628	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.17	83	348801	51.7995	ug/L	100
81)	1,2,3-Trichloropropane	16.37	110	101098	52.7363	ug/L	100
82)	trans-1,4-Dichloro-2-Buten	16.41	53	86606	54.8326	ug/L	100
83)	n-Propylbenzene	16.46	91	2625785	51.6001	ug/L	100
84)	Bromobenzene	16.60	156	578228	51.3414	ug/L	100
85)	1,3,5-Trimethylbenzene	16.65	105	1935141	52.6512	ug/L	100
86)	2-Chlorotoluene	16.74	91	1754686	51.2992	ug/L	95
87)	4-Chlorotoluene	16.78	91	1548177	51.8089	ug/L	100
88)	a-Methylstyrene	17.05	118	1031651	50.2113	ug/L	100
89)	tert-Butylbenzene	17.11	134	411067	50.6427	ug/L	100
90)	1,2,4-Trimethylbenzene	17.16	105	2017757	52.8063	ug/L	100
91)	sec-Butylbenzene	17.38	105	2394949	52.4965	ug/L	100
92)	p-Isopropyltoluene	17.54	119	1983917	53.0891	ug/L	100
93)	1,3-Dichlorobenzene	17.74	146	1154353	51.4190	ug/L	100
94)	1,4-Dichlorobenzene	17.87	146	1141058	50.4632	ug/L	100
95)	n-Butylbenzene	18.06	91	1889430	52.1122	ug/L	100
96)	1,2-Dichlorobenzene	18.36	146	1014031	51.8374	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.36	75	56970	53.9093	ug/L	100
98)	1,2,4-Trichlorobenzene	20.50	180	737197	50.3847	ug/L	100
99)	Hexachlorobutadiene	20.65	225	347382	48.5613	ug/L	100
100)	Naphthalene	20.88	128	1036443	53.6334	ug/L	100
101)	1,2,3-Trichlorobenzene	21.19	180	615291	50.8522	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418414.D 8260WTR.M Thu Mar 23 10:19:32 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418414.D Vial: 9
Acq On : 21 Mar 2017 19:11 Operator: TMB
Sample : WG607066-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418415.D Vial: 10
Acq On : 21 Mar 2017 19:42 Operator: TMB
Sample : WG607066-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:34 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	832390	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	638020	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	354988	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	481200	50.9722	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.88%#			
43) 1,2-Dichloroethane-d4	10.54	65	409278	50.0275	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 200.12%#			
58) Toluene-d8	12.92	98	1661154	51.7589	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 207.04%#			
80) p-Bromofluorobenzene	16.31	95	668613	49.7732	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.08%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	1438401	110.3106	ug/L	99
3) Chloromethane	3.82	50	1493609	94.5216	ug/L	100
4) Vinyl Chloride	4.06	62	1327339	89.8354	ug/L	100
5) 1,3-Butadiene	4.10	54	368240	80.7190	ug/L	99
6) Bromomethane	4.98	94	790524	105.6268	ug/L	100
7) Chloroethane	5.13	64	638148	106.4844	ug/L	100
8) Trichlorofluoromethane	5.62	101	1655417	103.5349	ug/L	100
9) Diethyl ether	6.14	59	1033643	199.8868	ug/L	100
10) Isoprene	6.19	67	1271534	102.9262	ug/L	100
11) Acrolein	6.38	56	65234	98.6597	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	904035	105.1160	ug/L	99
13) Acetone	6.49	43	94542	94.9748	ug/L	95
14) 1,1-Dichloroethene	6.71	61	1249890	104.1496	ug/L	100
15) Tert-Butyl Alcohol	6.82	59	119878	378.3668	ug/L	98
16) Dimethyl Sulfide	6.98	62	859884	100.8007	ug/L	100
17) Iodomethane	7.23	142	1058142	105.4571	ug/L	100
18) Methyl acetate	7.23	43	279053	98.0313	ug/L	100
19) Methylene Chloride	7.50	84	936574	102.4897	ug/L	99
20) Carbon Disulfide	7.54	76	2823847	103.3095	ug/L	99
21) Acrylonitrile	7.67	53	149222	107.1750	ug/L	96
22) Methyl Tert Butyl Ether	7.71	73	1784580	101.4557	ug/L	99
23) trans-1,2-Dichloroethene	7.94	61	1199201	103.0598	ug/L	100
24) n-Hexane	8.02	57	988698	100.3091	ug/L	100
25) Diisopropyl ether	8.36	45	4460377	200.6860	ug/L	99
26) Vinyl Acetate	8.53	43	818543	93.5812	ug/L	100
27) 1,1-Dichloroethane	8.56	63	1584158	104.3880	ug/L	99
28) Ethyl-Tert-Butyl ether	8.93	59	4294780	201.8178	ug/L	98
29) 2-Butanone	9.11	43	156066	97.3075	ug/L	98
30) Propionitrile	9.23	54	95879	201.9404	ug/L	98
31) 2,2-Dichloropropane	9.34	77	1350638	99.7652	ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	1044402	105.7506	ug/L	99
33) Chloroform	9.61	83	1686208	95.8671	ug/L	99
34) 1-Bromopropane	9.75	122	198630	105.2735	ug/L	100
35) Bromochloromethane	9.85	130	553621	104.3553	ug/L	100
36) Tetrahydrofuran	9.87	42	195050	191.0937	ug/L	99
38) 1,1,1-Trichloroethane	10.15	97	1562658	108.0137	ug/L	100
39) Cyclohexane	10.18	56	1289341	103.1261	ug/L	99
40) 1,1-Dichloropropene	10.33	75	1293628	104.1186	ug/L	100
41) Tert-Amyl-Methyl ether	10.44	73	4043547	203.6092	ug/L	99
42) Carbon Tetrachloride	10.49	117	1455182	112.4180	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418415.D 8260WTR.M Thu Mar 23 10:19:36 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418415.D Vial: 10
Acq On : 21 Mar 2017 19:42 Operator: TMB
Sample : WG607066-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:34 2017 Quant Results File: 8260WTR.RES

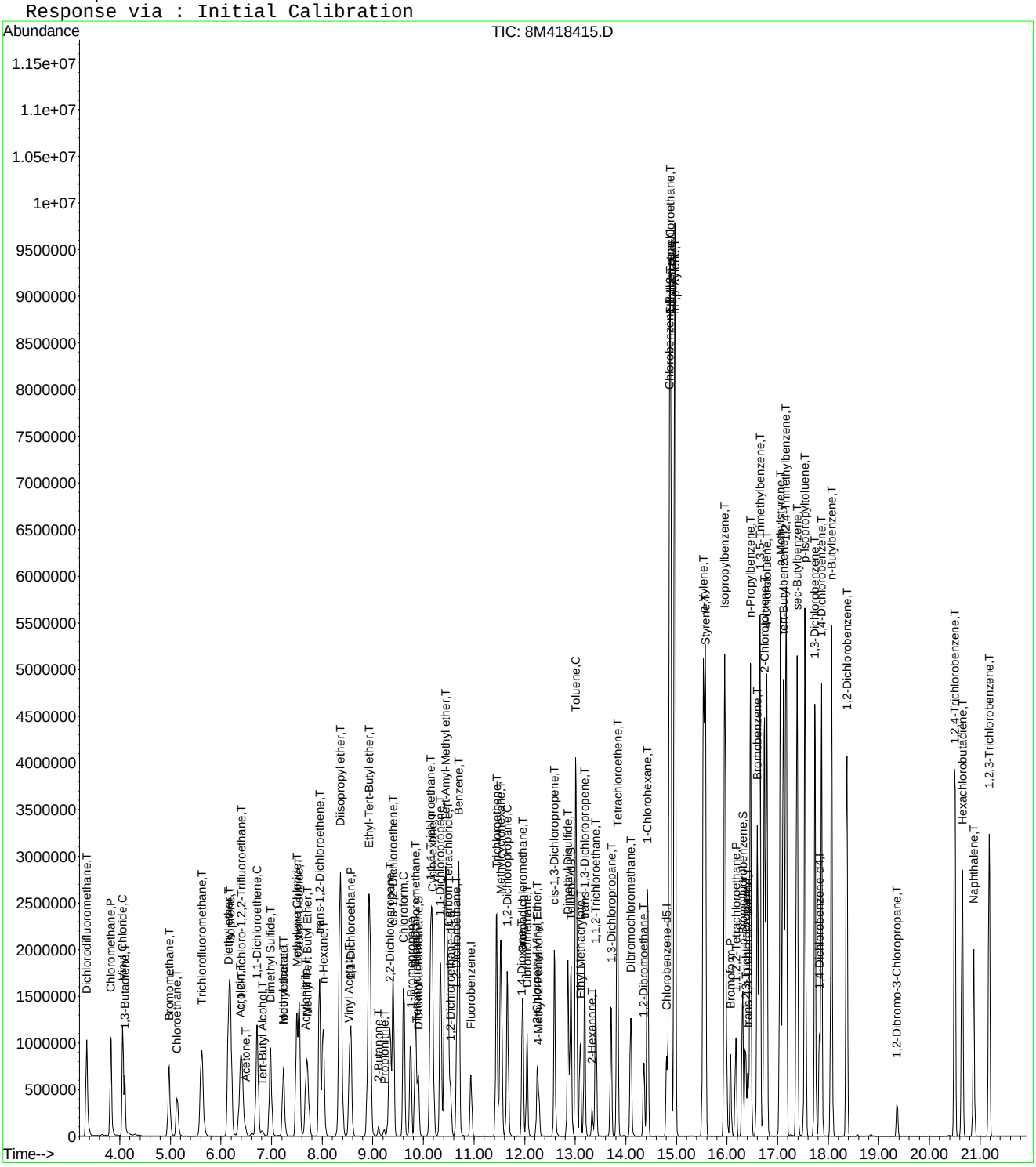
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.65	62	1024462	103.1650 ug/L		100
46)	Benzene	10.69	78	3657733	102.0919 ug/L		99
47)	Trichloroethene	11.45	130	1032071	107.7314 ug/L		99
48)	Methylcyclohexane	11.53	83	1456841	101.2027 ug/L		100
49)	1,2-Dichloropropane	11.66	63	869234	105.5188 ug/L		99
50)	Bromodichloromethane	11.96	83	1265209	108.6413 ug/L		100
51)	1,4-Dioxane	11.94	88	16295	411.6432 ug/L		97
52)	Dibromomethane	12.05	93	477573	108.1820 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.24	63	379879	101.4131 ug/L		100
54)	4-Methyl-2-Pentanone	12.28	58	157212	98.0641 ug/L		97
55)	cis-1,3-Dichloropropene	12.59	75	1437589	106.3521 ug/L		99
56)	Dimethyl Disulfide	12.85	79	767570	93.6011 ug/L		100
59)	Toluene	13.01	91	3952448	104.1549 ug/L		97
60)	Ethyl Methacrylate	13.10	69	771683	105.1673 ug/L		99
62)	trans-1,3-Dichloropropene	13.19	75	1197950	107.0240 ug/L		98
63)	1,1,2-Trichloroethane	13.40	97	622377	104.1196 ug/L		100
64)	2-Hexanone	13.33	58	143458	100.1085 ug/L		99
65)	1,3-Dichloropropane	13.71	76	1090473	101.8817 ug/L		100
66)	Tetrachloroethene	13.84	164	886718	107.8422 ug/L		100
67)	Dibromochloromethane	14.10	129	856887	100.5484 ug/L		99
68)	1,2-Dibromoethane	14.35	107	635116	103.5526 ug/L		100
69)	1-Chlorohexane	14.43	91	1326608	102.5786 ug/L		100
70)	Chlorobenzene	14.86	112	2992950	112.0624 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.88	131	1225221	103.4096 ug/L		99
72)	Ethylbenzene	14.88	106	1841497	124.2407 ug/L		86
73)	m-,p-Xylene	14.97	106	4083197	229.6924 ug/L		83
74)	o-Xylene	15.53	106	1947638	110.4853 ug/L		94
75)	Styrene	15.57	104	3248166	114.1402 ug/L		98
76)	Bromoform	16.07	173	528122	100.1789 ug/L		99
77)	Isopropylbenzene	15.96	105	4533231	106.2925 ug/L		95
79)	1,1,2,2-Tetrachloroethane	16.17	83	685787	99.1203 ug/L		99
81)	1,2,3-Trichloropropane	16.37	110	199174	101.1173 ug/L	#	27
82)	trans-1,4-Dichloro-2-Buten	16.41	53	176944	109.0316 ug/L	#	21
83)	n-Propylbenzene	16.46	91	5143376	98.3706 ug/L		94
84)	Bromobenzene	16.60	156	1242819	107.3995 ug/L		99
85)	1,3,5-Trimethylbenzene	16.65	105	4017731	106.3903 ug/L		96
86)	2-Chlorotoluene	16.74	91	3681380	104.7484 ug/L		92
87)	4-Chlorotoluene	16.78	91	3153568	102.7097 ug/L		97
88)	a-Methylstyrene	17.05	118	2249454	106.5543 ug/L		98
89)	tert-Butylbenzene	17.11	134	917437	110.0035 ug/L		95
90)	1,2,4-Trimethylbenzene	17.17	105	4159162	105.9371 ug/L		94
91)	sec-Butylbenzene	17.38	105	4827054	102.9774 ug/L		96
92)	p-Isopropyltoluene	17.54	119	4125265	107.4383 ug/L		96
93)	1,3-Dichlorobenzene	17.73	146	2461540	106.7129 ug/L		98
94)	1,4-Dichlorobenzene	17.87	146	2417995	104.0753 ug/L		98
95)	n-Butylbenzene	18.07	91	3860674	103.6328 ug/L		96
96)	1,2-Dichlorobenzene	18.37	146	2124165	105.6832 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	112849	103.9299 ug/L		97
98)	1,2,4-Trichlorobenzene	20.51	180	1602855	106.6190 ug/L		100
99)	Hexachlorobutadiene	20.65	225	772520	105.1038 ug/L		99
100)	Naphthalene	20.88	128	2026731	102.0733 ug/L		99
101)	1,2,3-Trichlorobenzene	21.18	180	1292463	103.9616 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418415.D 8260WTR.M Thu Mar 23 10:19:36 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418415.D Vial: 10
Acq On : 21 Mar 2017 19:42 Operator: TMB
Sample : WG607066-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418416.D Vial: 11
Acq On : 21 Mar 2017 20:12 Operator: TMB
Sample : WG607066-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:38 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.94	96	835227	25.00	ug/L		0.00
57) Chlorobenzene-d5	14.80	117	656093	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	375170	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	9.89	111	981585	103.6234	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 414.48%#				
43) 1,2-Dichloroethane-d4	10.53	65	842777	102.6658	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 410.68%#				
58) Toluene-d8	12.91	98	3365801	101.9841	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 407.92%#				
80) p-Bromofluorobenzene	16.30	95	1434304	101.0294	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.12%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.34	85	2757052	210.7194	ug/L		97
3) Chloromethane	3.82	50	2806488	177.0026	ug/L		98
4) Vinyl Chloride	4.05	62	2403355	162.1085	ug/L		98
5) 1,3-Butadiene	4.09	54	611042	157.2872	ug/L		98
6) Bromomethane	4.97	94	1694257	225.6112	ug/L		99
7) Chloroethane	5.13	64	1297095	215.7043	ug/L		100
8) Trichlorofluoromethane	5.61	101	3318936	206.8715	ug/L		99
10) Isoprene	6.18	67	2499442	201.6338	ug/L		100
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	1766595	204.7119	ug/L		99
13) Acetone	6.48	43	216138	216.3900	ug/L		98
14) 1,1-Dichloroethene	6.71	61	2505821	208.0933	ug/L		98
15) Tert-Butyl Alcohol	6.82	59	3327	10.4652	ug/L	#	68
16) Dimethyl Sulfide	6.98	62	1788428	208.9380	ug/L		100
17) Iodomethane	7.24	142	2121411	210.2036	ug/L		100
18) Methyl acetate	7.24	43	603988	211.4603	ug/L		99
19) Methylene Chloride	7.49	84	1965657	214.3721	ug/L		97
20) Carbon Disulfide	7.55	76	5542579	202.0846	ug/L		97
21) Acrylonitrile	7.70	53	33221	23.7791	ug/L	#	32
22) Methyl Tert Butyl Ether	7.70	73	3787888	214.6149	ug/L		99
23) trans-1,2-Dichloroethene	7.94	61	2435593	208.6049	ug/L		99
24) n-Hexane	8.02	57	1927946	194.9369	ug/L		100
26) Vinyl Acetate	8.53	43	1867991	212.8355	ug/L		98
27) 1,1-Dichloroethane	8.56	63	3184705	209.1432	ug/L		98
29) 2-Butanone	9.11	43	335050	208.1948	ug/L		98
31) 2,2-Dichloropropane	9.34	77	2692388	198.1983	ug/L		98
32) cis-1,2-Dichloroethene	9.41	96	2145970	216.5515	ug/L		98
33) Chloroform	9.61	83	3366279	190.7353	ug/L		97
34) 1-Bromopropane	9.75	122	404263	213.5309	ug/L		100
35) Bromochloromethane	9.84	130	1139795	214.1170	ug/L		98
36) Tetrahydrofuran	9.86	42	1357	1.3250	ug/L	#	24
38) 1,1,1-Trichloroethane	10.14	97	3258039	224.4366	ug/L		99
39) Cyclohexane	10.17	56	2619353	208.7937	ug/L		98
40) 1,1-Dichloropropene	10.34	75	2622304	210.3412	ug/L		98
42) Carbon Tetrachloride	10.48	117	2879058	221.6619	ug/L		100
45) 1,2-Dichloroethane	10.66	62	2165891	217.3680	ug/L		99
46) Benzene	10.70	78	6827744	189.9236	ug/L		94
47) Trichloroethene	11.44	130	2165800	225.3064	ug/L		99
48) Methylcyclohexane	11.53	83	2890589	200.1191	ug/L		99
49) 1,2-Dichloropropane	11.66	63	1802764	218.0994	ug/L		97
50) Bromodichloromethane	11.96	83	2638686	225.8098	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418416.D 8260WTR.M Thu Mar 23 10:19:40 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418416.D Vial: 11
Acq On : 21 Mar 2017 20:12 Operator: TMB
Sample : WG607066-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:38 2017 Quant Results File: 8260WTR.RES

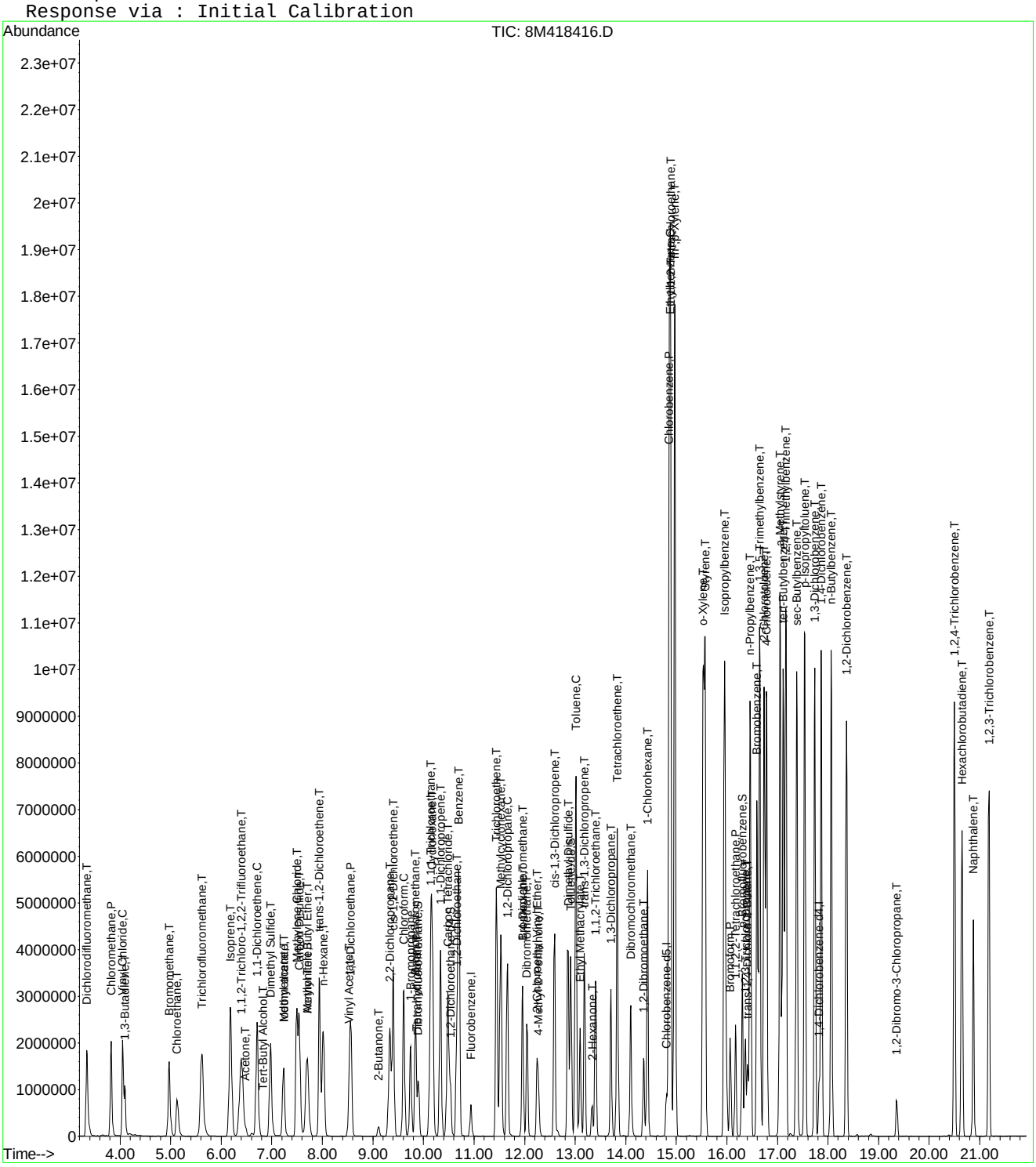
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
51)	1,4-Dioxane	11.96	88	5894	148.3881 ug/L	#	56
52)	Dibromomethane	12.04	93	1034705	233.5899 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.25	63	824539	219.3725 ug/L		99
54)	4-Methyl-2-Pentanone	12.27	58	353091	219.4995 ug/L		97
55)	cis-1,3-Dichloropropene	12.59	75	2990134	220.4572 ug/L		98
56)	Dimethyl Disulfide	12.86	79	1714692	204.9480 ug/L		97
59)	Toluene	13.02	91	7066077	181.0760 ug/L		87
60)	Ethyl Methacrylate	13.10	69	1696639	224.8538 ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	2565952	222.9256 ug/L		97
63)	1,1,2-Trichloroethane	13.40	97	1370694	222.9916 ug/L		99
64)	2-Hexanone	13.34	58	326430	221.5160 ug/L		98
65)	1,3-Dichloropropane	13.71	76	2327428	211.4592 ug/L		99
66)	Tetrachloroethene	13.83	164	1952203	230.8857 ug/L		99
67)	Dibromochloromethane	14.10	129	1918537	199.6557 ug/L		99
68)	1,2-Dibromoethane	14.35	107	1401426	222.2016 ug/L		100
69)	1-Chlorohexane	14.43	91	2769087	208.2186 ug/L		99
70)	Chlorobenzene	14.86	112	6010850	218.8594 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.89	131	2844669	198.8633 ug/L		98
72)	Ethylbenzene	14.88	106	4070062	267.0317 ug/L		54
73)	m-,p-Xylene	14.97	106	7393699	404.4612 ug/L		64
74)	o-Xylene	15.53	106	4210098	232.2508 ug/L		76
75)	Styrene	15.57	104	6305974	215.4872 ug/L		89
76)	Bromoform	16.07	173	1236171	199.7557 ug/L		99
77)	Isopropylbenzene	15.95	105	7963074	181.5702 ug/L		80
79)	1,1,2,2-Tetrachloroethane	16.17	83	1541888	210.8685 ug/L		99
81)	1,2,3-Trichloropropane	16.37	110	447062	214.7564 ug/L	#	27
82)	trans-1,4-Dichloro-2-Buten	16.41	53	356888	208.0817 ug/L	#	27
83)	n-Propylbenzene	16.46	91	8459955	153.0984 ug/L	#	75
84)	Bromobenzene	16.59	156	2759165	225.6095 ug/L		93
85)	1,3,5-Trimethylbenzene	16.65	105	7254610	181.7693 ug/L		82
86)	2-Chlorotoluene	16.74	91	6466926	174.1086 ug/L		80
87)	4-Chlorotoluene	16.78	91	6057890	186.6879 ug/L		82
88)	a-Methylstyrene	17.05	118	4659021	208.8210 ug/L		95
89)	tert-Butylbenzene	17.11	134	2083296	236.3561 ug/L	#	57
90)	1,2,4-Trimethylbenzene	17.16	105	7391093	178.1297 ug/L		77
91)	sec-Butylbenzene	17.38	105	8237032	166.2708 ug/L	#	80
92)	p-Isopropyltoluene	17.54	119	7367846	181.5655 ug/L		81
93)	1,3-Dichlorobenzene	17.74	146	5011738	205.5815 ug/L		91
94)	1,4-Dichlorobenzene	17.87	146	4942655	201.2974 ug/L		91
95)	n-Butylbenzene	18.06	91	6793595	172.5518 ug/L	#	83
96)	1,2-Dichlorobenzene	18.36	146	4482617	211.0254 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.35	75	255085	222.2866 ug/L		95
98)	1,2,4-Trichlorobenzene	20.50	180	3571512	224.7906 ug/L		98
99)	Hexachlorobutadiene	20.65	225	1747005	224.8995 ug/L		98
100)	Naphthalene	20.87	128	4341381	206.8852 ug/L		96
101)	1,2,3-Trichlorobenzene	21.18	180	2943616	224.0379 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M418416.D 8260WTR.M Thu Mar 23 10:19:40 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418416.D Vial: 11
Acq On : 21 Mar 2017 20:12 Operator: TMB
Sample : WG607066-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418417.D Vial: 12
Acq On : 21 Mar 2017 20:43 Operator: TMB
Sample : WG607066-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:42 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	854626	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	660685	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	353320	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	1512153	156.0106	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 624.04%#			
43) 1,2-Dichloroethane-d4	10.54	65	1276620	151.9858	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 607.96%#			
58) Toluene-d8	12.91	98	5029150	151.3246	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 605.28%#			
80) p-Bromofluorobenzene	16.31	95	2183654	163.3241	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 653.28%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	3041	0.2271	ug/L	83
3) Chloromethane	3.82	50	63366	3.9057	ug/L	100
4) Vinyl Chloride	4.05	62	2778	0.1831	ug/L	95
5) 1,3-Butadiene	4.09	54	906476	Below Cal		99
6) Bromomethane	4.96	94	161588	21.0290	ug/L	100
8) Trichlorofluoromethane	5.61	101	2263	0.1379	ug/L #	90
9) Diethyl ether	6.14	59	1714293	322.8862	ug/L	99
10) Isoprene	6.18	67	4082432	321.8604	ug/L	99
11) Acrolein	6.38	56	100475	148.0044	ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	2544	0.2881	ug/L	94
13) Acetone	6.48	43	298562	292.1251	ug/L	99
14) 1,1-Dichloroethene	6.71	61	1663	0.1350	ug/L	76
15) Tert-Butyl Alcohol	6.82	59	206454	634.6694	ug/L	97
16) Dimethyl Sulfide	6.98	62	2746064	313.5344	ug/L	100
17) Iodomethane	7.23	142	2970232	287.4443	ug/L	100
18) Methyl acetate	7.24	43	915640	313.2951	ug/L	98
19) Methylene Chloride	7.49	84	2632	0.2805	ug/L	89
20) Carbon Disulfide	7.54	76	7835015	279.1833	ug/L	93
21) Acrylonitrile	7.67	53	209981	146.8897	ug/L	95
22) Methyl Tert Butyl Ether	7.70	73	2842	0.1574	ug/L #	58
23) trans-1,2-Dichloroethene	7.94	61	3557	0.2977	ug/L	98
24) n-Hexane	8.01	57	3144914	310.7680	ug/L	100
25) Diisopropyl ether	8.35	45	6705988	293.8725	ug/L	96
26) Vinyl Acetate	8.53	43	2581492	287.4541	ug/L	99
28) Ethyl-Tert-Butyl ether	8.93	59	6597567	301.9625	ug/L	96
29) 2-Butanone	9.11	43	495417	300.8567	ug/L	99
30) Propionitrile	9.22	54	155427	318.8431	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	1359	0.1340	ug/L	96
33) Chloroform	9.61	83	3175	0.1758	ug/L	92
34) 1-Bromopropane	9.75	122	656770	339.0302	ug/L	99
35) Bromochloromethane	9.85	130	717	0.1316	ug/L #	46
36) Tetrahydrofuran	9.86	42	312299	298.0038	ug/L	98
39) Cyclohexane	10.17	56	4064272	316.6172	ug/L	99
40) 1,1-Dichloropropene	10.34	75	2189	0.1716	ug/L #	73
41) Tert-Amyl-Methyl ether	10.43	73	6168941	302.5493	ug/L	98
45) 1,2-Dichloroethane	10.65	62	1377	0.1351	ug/L #	42
46) Benzene	10.69	78	5861	0.1593	ug/L #	84
47) Trichloroethene	11.45	130	1789	0.1819	ug/L	85
48) Methylcyclohexane	11.53	83	4736401	320.4638	ug/L	98
51) 1,4-Dioxane	11.94	88	23567	579.8580	ug/L	92

(#) = qualifier out of range (m) = manual integration
8M418417.D 8260WTR.M Thu Mar 23 10:19:44 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418417.D Vial: 12
Acq On : 21 Mar 2017 20:43 Operator: TMB
Sample : WG607066-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:42 2017 Quant Results File: 8260WTR.RES

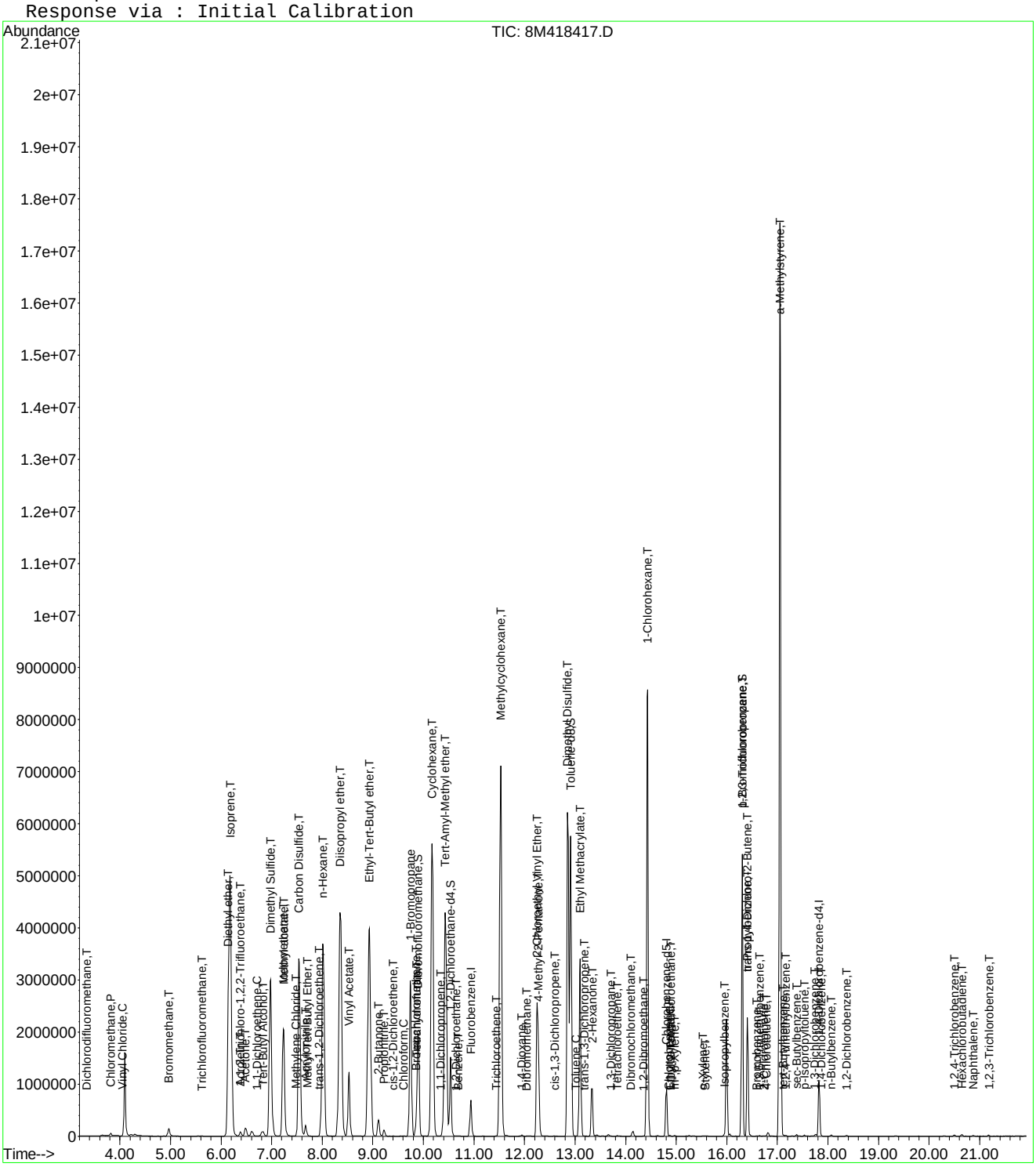
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

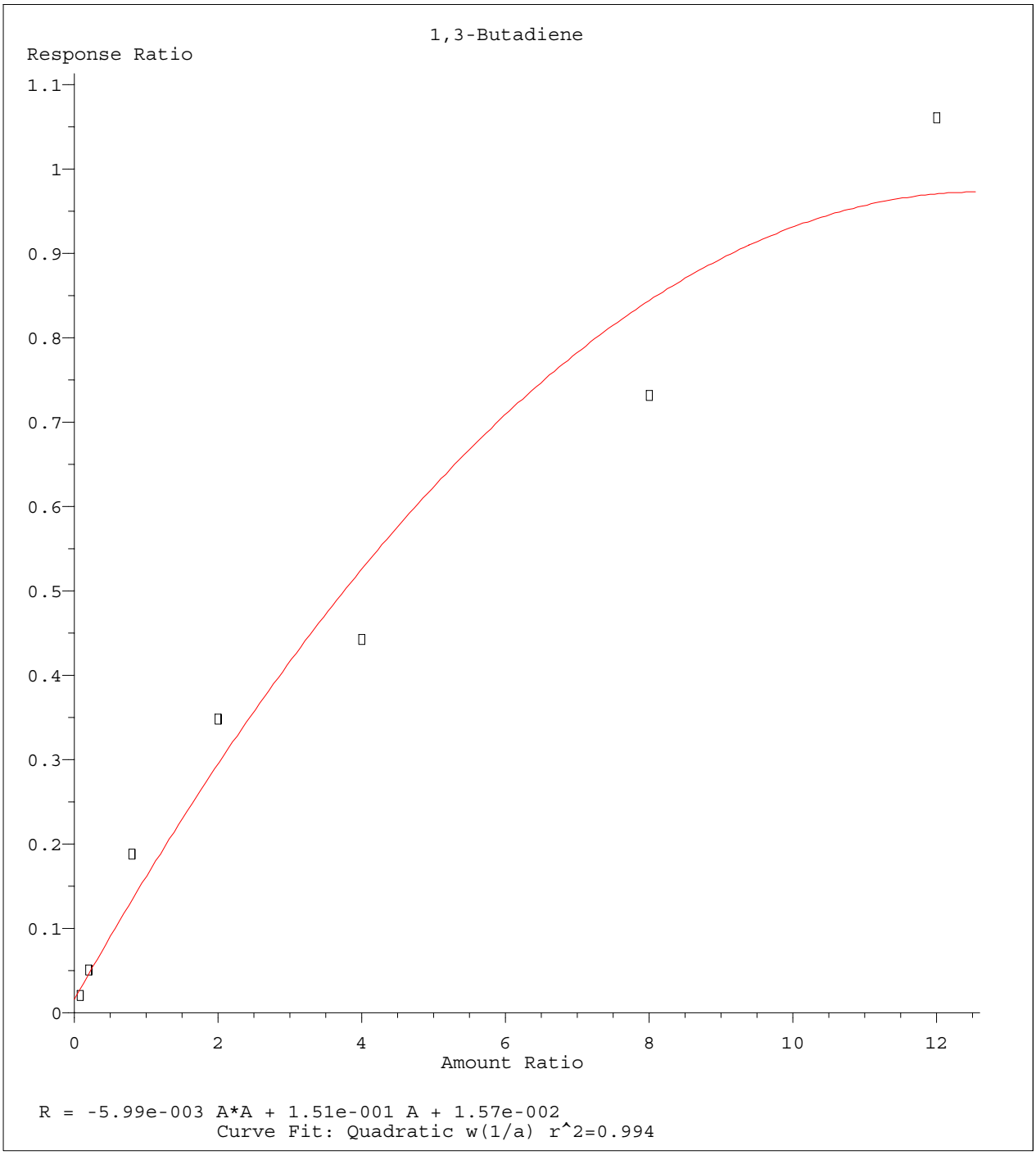
	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
52)	Dibromomethane	12.05	93	756	0.1668 ug/L	#	58
53)	2-Chloroethyl Vinyl Ether	12.25	63	1248752	324.6950 ug/L		98
54)	4-Methyl-2-Pentanone	12.27	58	529345	321.5986 ug/L		95
55)	cis-1,3-Dichloropropene	12.59	75	1919	0.1383 ug/L		99
56)	Dimethyl Disulfide	12.85	79	2633329	306.1987 ug/L		95
59)	Toluene	13.02	91	8233	0.2095 ug/L		94
60)	Ethyl Methacrylate	13.10	69	2538669	334.1087 ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	2586	0.2231 ug/L		90
64)	2-Hexanone	13.34	58	478049	322.1502 ug/L		97
65)	1,3-Dichloropropane	13.71	76	1415	0.1277 ug/L	#	1
66)	Tetrachloroethene	13.83	164	2216	0.2603 ug/L		96
67)	Dibromochloromethane	14.10	129	712	0.2824 ug/L		81
68)	1,2-Dibromoethane	14.35	107	991	0.1560 ug/L		96
69)	1-Chlorohexane	14.43	91	4277378	319.3976 ug/L		98
70)	Chlorobenzene	14.86	112	4861	0.1758 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.89	131	496	0.2331 ug/L		95
72)	Ethylbenzene	14.88	106	2477	0.1614 ug/L		79
73)	m-,p-Xylene	14.97	106	6515	0.3539 ug/L		87
74)	o-Xylene	15.53	106	2539	0.1391 ug/L		89
75)	Styrene	15.57	104	4497	0.1526 ug/L		99
77)	Isopropylbenzene	15.95	105	29050	0.6578 ug/L		94
81)	1,2,3-Trichloropropane	16.31	110	1108	0.5652 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.41	53	495562	306.8032 ug/L	#	1
83)	n-Propylbenzene	16.41	91	145385	2.7937 ug/L	#	62
84)	Bromobenzene	16.60	156	1961	0.1703 ug/L		82
85)	1,3,5-Trimethylbenzene	16.65	105	9752	0.2595 ug/L		100
86)	2-Chlorotoluene	16.74	91	7859	0.2247 ug/L		97
87)	4-Chlorotoluene	16.78	91	8039	0.2631 ug/L		98
88)	a-Methylstyrene	17.05	118	6420210	305.5545 ug/L		87
89)	tert-Butylbenzene	17.11	134	3601	0.4338 ug/L	#	1
90)	1,2,4-Trimethylbenzene	17.16	105	11113	0.2844 ug/L		88
91)	sec-Butylbenzene	17.38	105	34899	0.7480 ug/L		94
92)	p-Isopropyltoluene	17.54	119	17616	0.4610 ug/L		95
93)	1,3-Dichlorobenzene	17.74	146	6996	0.3047 ug/L		99
94)	1,4-Dichlorobenzene	17.87	146	7409	0.3204 ug/L	#	1
95)	n-Butylbenzene	18.06	91	21425	0.5778 ug/L		96
96)	1,2-Dichlorobenzene	18.36	146	4970	0.2484 ug/L		90
98)	1,2,4-Trichlorobenzene	20.50	180	10325	0.6900 ug/L		96
99)	Hexachlorobutadiene	20.65	225	9984	1.3648 ug/L		97
100)	Naphthalene	20.88	128	13994	0.7081 ug/L		91
101)	1,2,3-Trichlorobenzene	21.19	180	9502	0.7679 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M418417.D 8260WTR.M Thu Mar 23 10:19:44 2017 Page 2

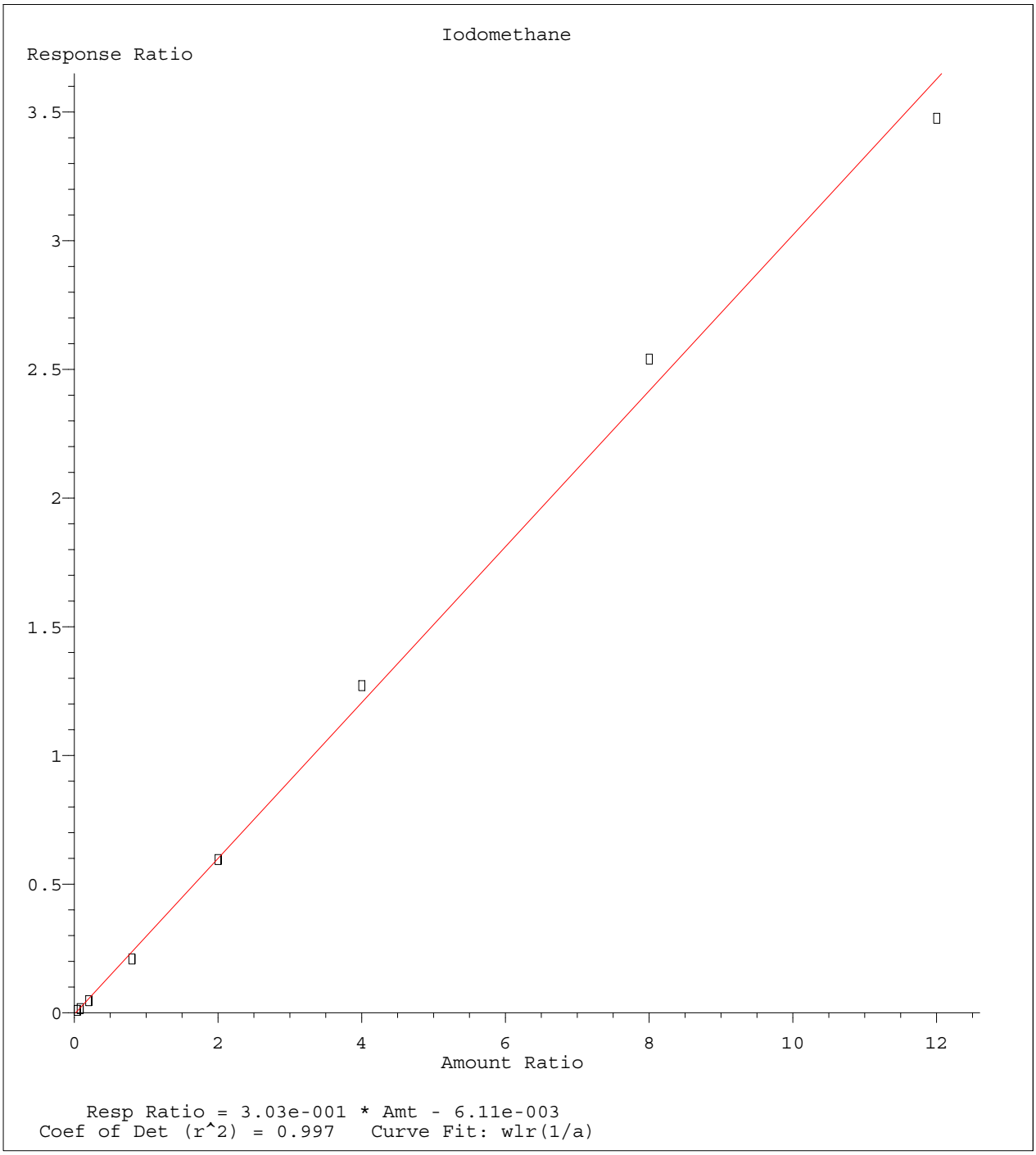
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418417.D Vial: 12
Acq On : 21 Mar 2017 20:43 Operator: TMB
Sample : WG607066-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

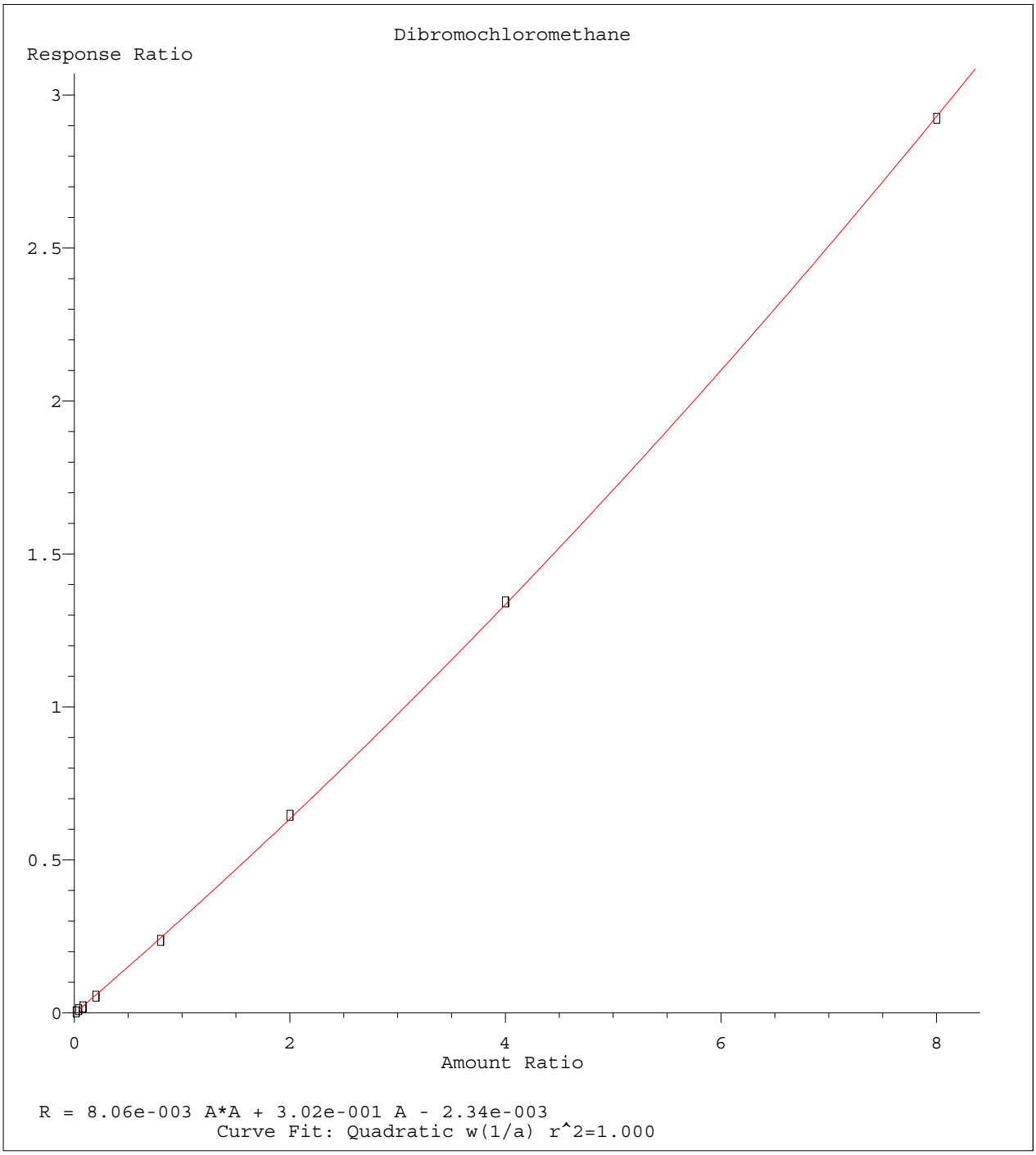




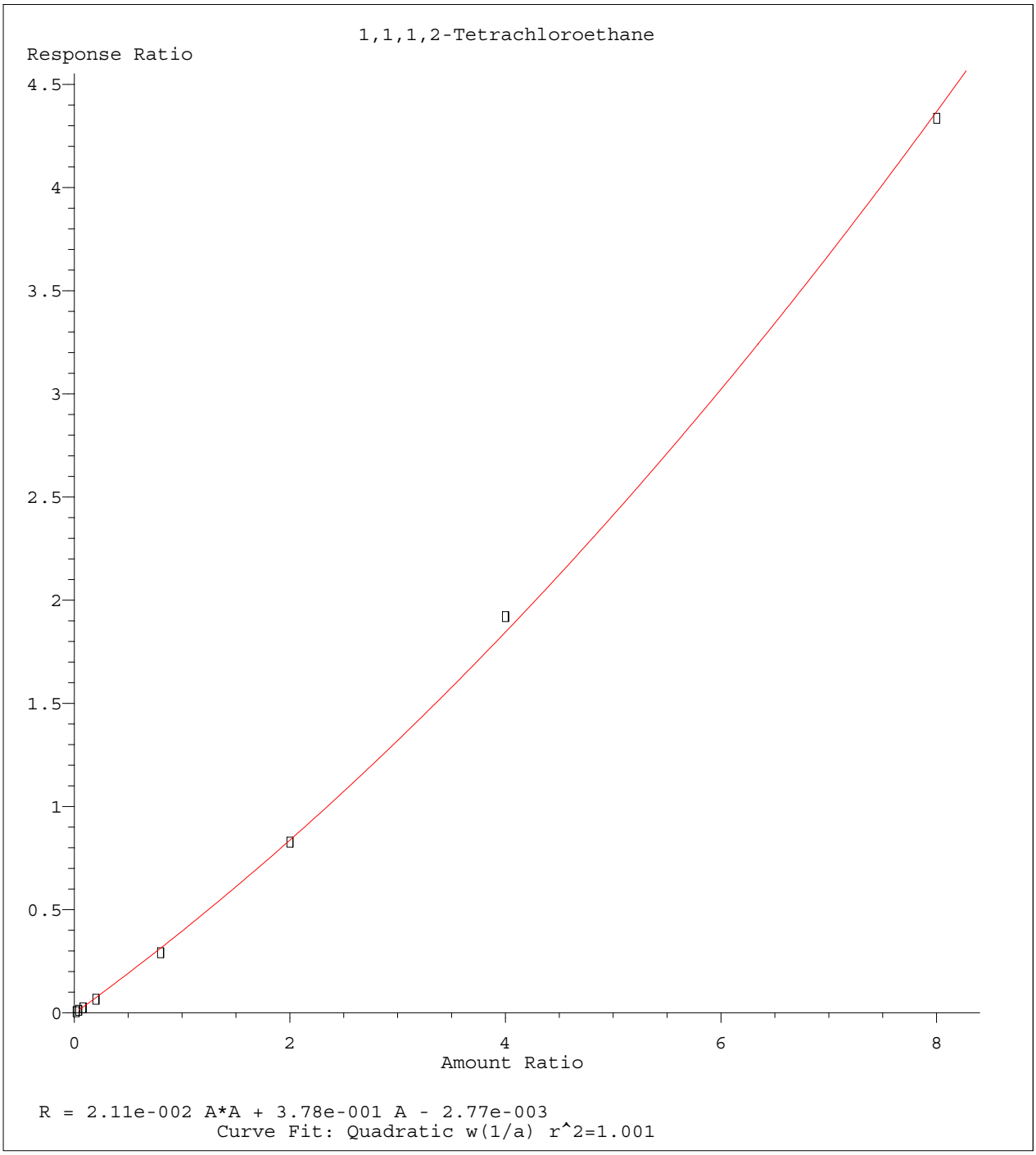
Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



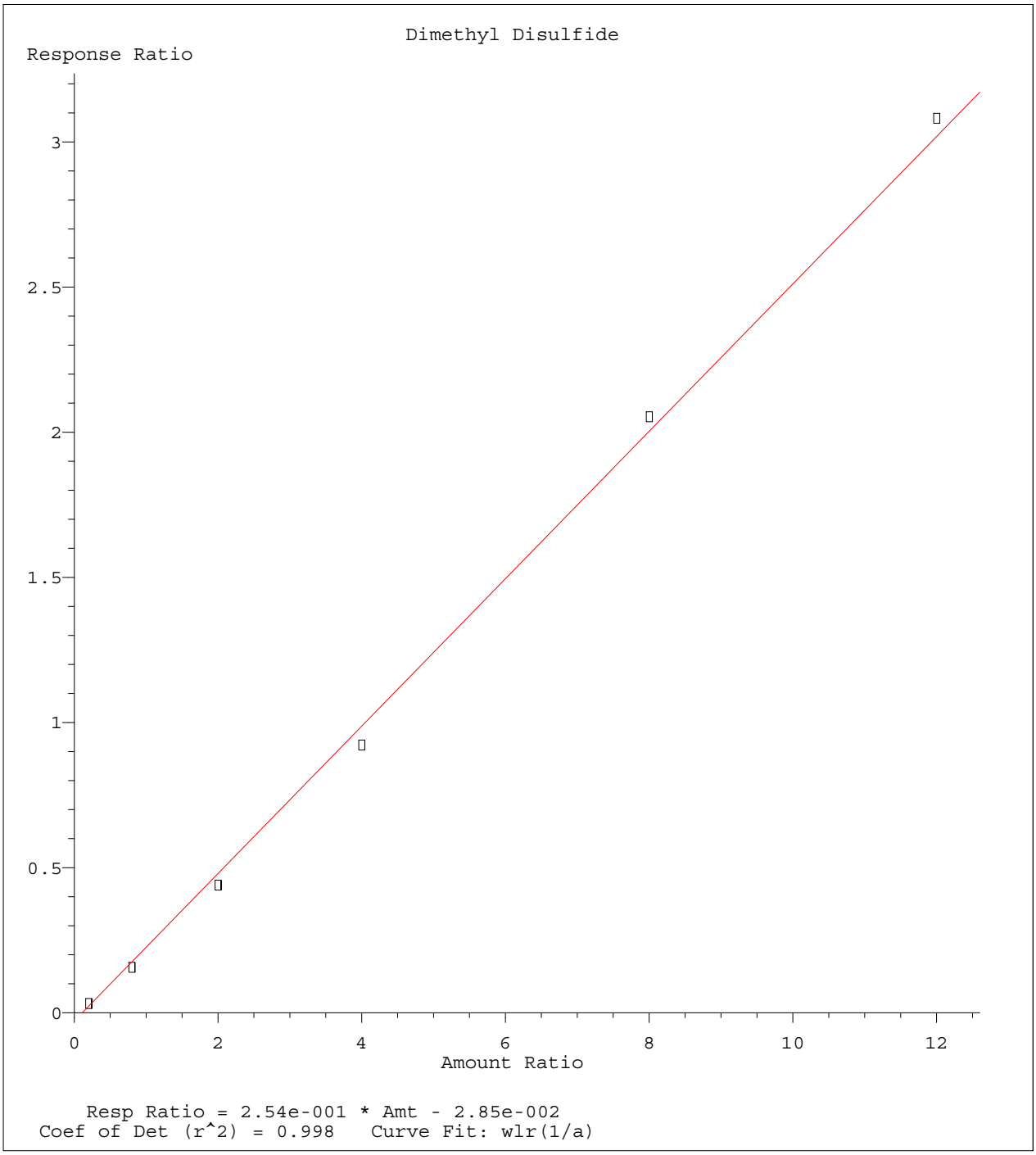
Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



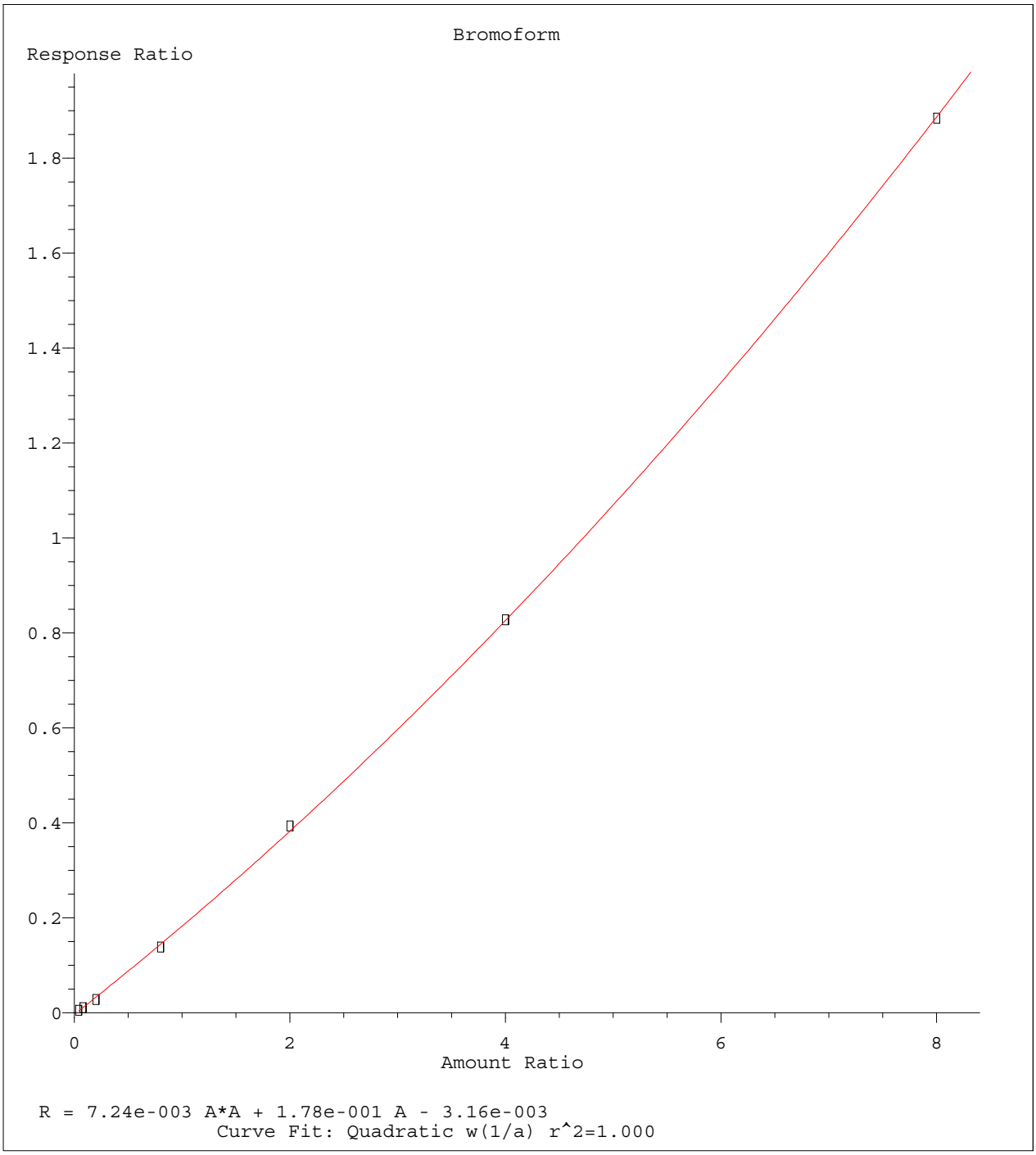
Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:53 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	801802	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	627951	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	347482	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	212466	23.3645	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.44%			
43) 1,2-Dichloroethane-d4	10.54	65	184451	23.4062	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.64%			
58) Toluene-d8	12.92	98	737309	23.3417	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.36%			
80) p-Bromofluorobenzene	16.31	95	296744	22.5675	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	653232	52.0073	ug/L	100
3) Chloromethane	3.82	50	703462	46.2162	ug/L	99
4) Vinyl Chloride	4.05	62	607302	42.6707	ug/L	99
5) 1,3-Butadiene	4.10	54	226310	47.5605	ug/L	99
6) Bromomethane	4.96	94	275374	38.1981	ug/L	99
7) Chloroethane	5.13	64	299125	51.8176	ug/L	100
8) Trichlorofluoromethane	5.62	101	754061	48.9605	ug/L	100
9) Diethyl ether	6.14	59	468990	94.1536	ug/L	99
10) Isoprene	6.18	67	627437	52.7263	ug/L	100
11) Acrolein	6.38	56	42345	66.4856	ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	442568	53.4224	ug/L	99
13) Acetone	6.48	43	45473	47.4239	ug/L	99
14) 1,1-Dichloroethene	6.71	61	560269	48.4665	ug/L	100
15) Tert-Butyl Alcohol	6.83	59	58214	190.7483	ug/L	99
16) Dimethyl Sulfide	6.97	62	422983	51.4762	ug/L	99
17) Iodomethane	7.23	142	833211	86.2998	ug/L	99
18) Methyl acetate	7.24	43	147060	53.6330	ug/L	99
19) Methylene Chloride	7.50	84	430498	48.9068	ug/L	98
20) Carbon Disulfide	7.54	76	1154395	43.8443	ug/L	100
21) Acrylonitrile	7.67	53	69546	51.8552	ug/L	98
22) Methyl Tert Butyl Ether	7.70	73	832099	49.1106	ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	541199	48.2852	ug/L	100
24) n-Hexane	8.01	57	470751	49.5824	ug/L	99
25) Diisopropyl ether	8.36	45	2105023	98.3246	ug/L	100
26) Vinyl Acetate	8.53	43	357461	42.4263	ug/L	100
27) 1,1-Dichloroethane	8.56	63	707513	48.4001	ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	1928091	94.0602	ug/L	100
29) 2-Butanone	9.11	43	70687	45.7549	ug/L	98
30) Propionitrile	9.22	54	47069	102.9187	ug/L	100
31) 2,2-Dichloropropane	9.34	77	597247	45.7988	ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	470265	49.4331	ug/L	98
33) Chloroform	9.61	83	784684	46.3141	ug/L	100
34) 1-Bromopropane	9.75	122	118573	65.2409	ug/L	99
35) Bromochloromethane	9.84	130	252702	49.4505	ug/L	99
36) Tetrahydrofuran	9.87	42	94102	95.7104	ug/L	98
38) 1,1,1-Trichloroethane	10.14	97	720111	51.6743	ug/L	100
39) Cyclohexane	10.18	56	539887	44.8295	ug/L	99
40) 1,1-Dichloropropene	10.34	75	585530	48.9247	ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	1896188	99.1233	ug/L	100
42) Carbon Tetrachloride	10.49	117	656573	52.6576	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M418420.D 8260WTR.M Thu Mar 23 10:19:56 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:53 2017 Quant Results File: 8260WTR.RES

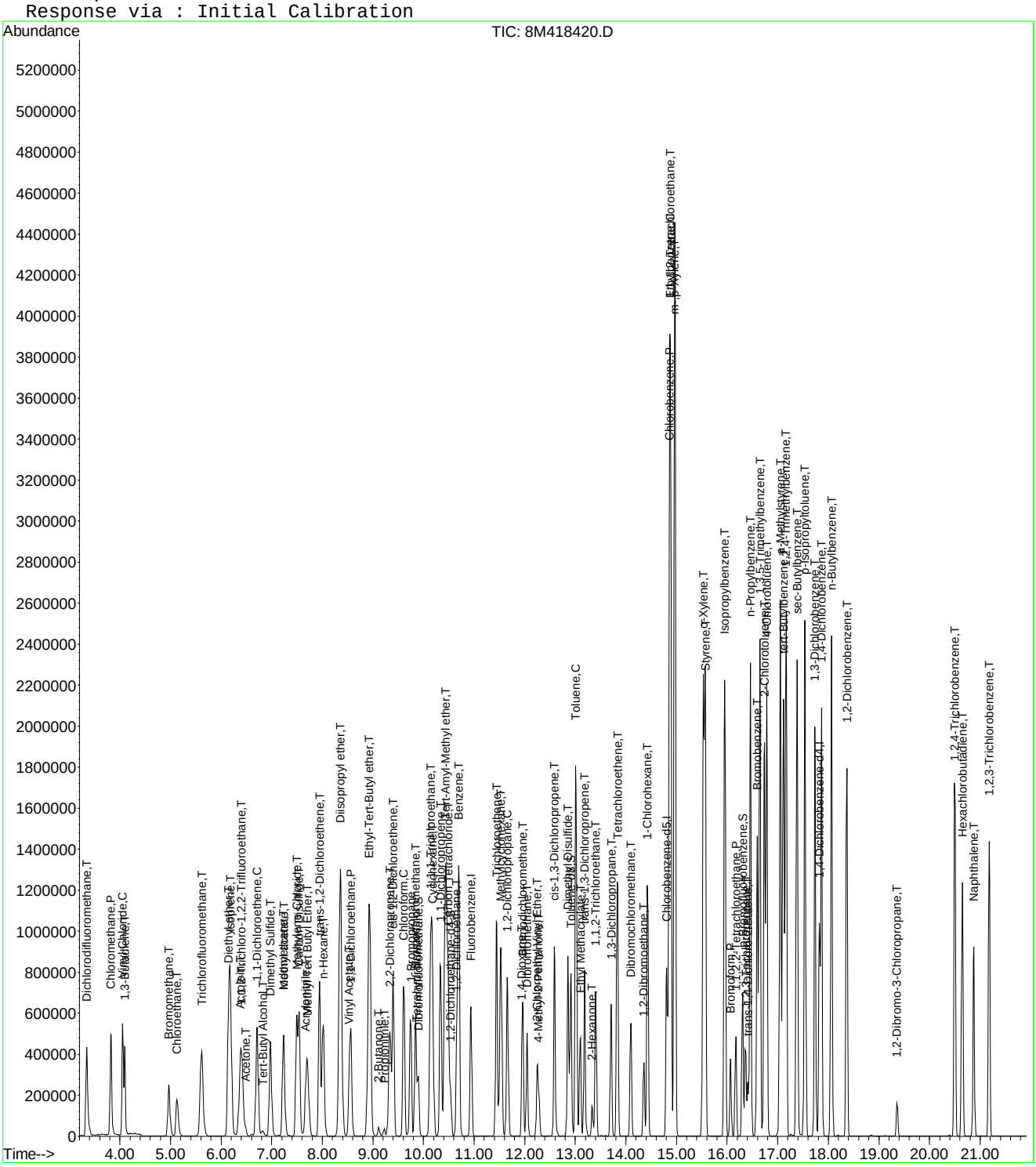
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	464175	48.5264	ug/L	100
46)	Benzene	10.69	78	1685447	48.8376	ug/L	100
47)	Trichloroethene	11.45	130	459220	49.7638	ug/L	100
48)	Methylcyclohexane	11.53	83	657678	47.4300	ug/L	99
49)	1,2-Dichloropropane	11.65	63	387925	48.8878	ug/L	100
50)	Bromodichloromethane	11.95	83	556771	49.6328	ug/L	99
51)	1,4-Dioxane	11.94	88	6615	173.4827	ug/L	89
52)	Dibromomethane	12.05	93	222923	52.4239	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	181816	50.3896	ug/L	99
54)	4-Methyl-2-Pentanone	12.27	58	75335	48.7844	ug/L	97
55)	cis-1,3-Dichloropropene	12.58	75	673080	51.6937	ug/L	99
56)	Dimethyl Disulfide	12.85	79	354985	46.3980	ug/L	98
59)	Toluene	13.01	91	1808929	48.4332	ug/L	100
60)	Ethyl Methacrylate	13.10	69	385866	53.4302	ug/L	98
62)	trans-1,3-Dichloropropene	13.18	75	531028	48.2024	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	284561	48.3685	ug/L	100
64)	2-Hexanone	13.33	58	69958	49.6012	ug/L	99
65)	1,3-Dichloropropane	13.71	76	516975	49.0749	ug/L	100
66)	Tetrachloroethene	13.84	164	396503	48.9957	ug/L	100
67)	Dibromochloromethane	14.09	129	376425	47.4020	ug/L	99
68)	1,2-Dibromoethane	14.35	107	294235	48.7428	ug/L	98
69)	1-Chlorohexane	14.42	91	625773	49.1631	ug/L	100
70)	Chlorobenzene	14.86	112	1280001	48.6944	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	483396	46.3390	ug/L	100
72)	Ethylbenzene	14.88	106	754815	51.7418	ug/L	99
73)	m-,p-Xylene	14.96	106	1798995	102.8217	ug/L	100
74)	o-Xylene	15.53	106	847920	48.8719	ug/L	100
75)	Styrene	15.57	104	1465666	52.3292	ug/L	98
76)	Bromoform	16.07	173	232001	48.4254	ug/L	99
77)	Isopropylbenzene	15.95	105	2098312	49.9889	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.17	83	321369	47.4525	ug/L	99
81)	1,2,3-Trichloropropane	16.37	110	96471	50.0346	ug/L	90
82)	trans-1,4-Dichloro-2-Buten	16.41	53	61346	38.6175	ug/L	58
83)	n-Propylbenzene	16.46	91	2448771	47.8461	ug/L	100
84)	Bromobenzene	16.60	156	551938	48.7266	ug/L	100
85)	1,3,5-Trimethylbenzene	16.65	105	1853525	50.1419	ug/L	100
86)	2-Chlorotoluene	16.74	91	1666013	48.4280	ug/L	95
87)	4-Chlorotoluene	16.78	91	1456305	48.4555	ug/L	100
88)	a-Methylstyrene	17.05	118	1084857	52.4986	ug/L	99
89)	tert-Butylbenzene	17.11	134	395877	48.4922	ug/L	98
90)	1,2,4-Trimethylbenzene	17.16	105	1927292	50.1500	ug/L	100
91)	sec-Butylbenzene	17.38	105	2279854	49.6876	ug/L	100
92)	p-Isopropyltoluene	17.54	119	1923816	51.1861	ug/L	100
93)	1,3-Dichlorobenzene	17.73	146	1091346	48.3341	ug/L	99
94)	1,4-Dichlorobenzene	17.87	146	1091510	47.9956	ug/L	100
95)	n-Butylbenzene	18.06	91	1817919	49.8529	ug/L	100
96)	1,2-Dichlorobenzene	18.36	146	960441	48.8168	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.36	75	52166	49.0808	ug/L	97
98)	1,2,4-Trichlorobenzene	20.50	180	704275	47.8591	ug/L	100
99)	Hexachlorobutadiene	20.65	225	337004	46.8409	ug/L	99
100)	Naphthalene	20.88	128	957287	49.2538	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	585339	48.0998	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418420.D 8260WTR.M Thu Mar 23 10:19:56 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	50.0000	52.0073	-4.0	92	0.00
3	P	Chloromethane	50.0000	46.2162	7.6	92	-0.01
4	C	Vinyl Chloride	50.0000	42.6707	14.7	87	0.00
5	T	1,3-Butadiene	50.0000	47.5605	4.9	79	0.00
6	T	Bromomethane	50.0000	38.1981	23.6	74	-0.01
7	T	Chloroethane	50.0000	51.8176	-3.6	98	0.00
8	T	Trichlorofluoromethane	50.0000	48.9605	2.1	93	0.00
9	T	Diethyl ether	100.0000	94.1536	5.8	90	0.00
10	T	Isoprene	50.0000	52.7263	-5.5	104	0.00
11	T	Acrolein	50.0000	66.4856	-33.0#	126	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.4224	-6.8	100	0.00
13	T	Acetone	50.0000	47.4239	5.2	91	0.00
14	C	1,1-Dichloroethene	50.0000	48.4665	3.1	93	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.7483	4.6	88	0.01
16	T	Dimethyl Sulfide	50.0000	51.4762	-3.0	101	-0.01
17	T	Iodomethane	50.0000	86.2998	-72.6#	170	0.00
18	T	Methyl acetate	50.0000	53.6330	-7.3	106	0.00
19	T	Methylene Chloride	50.0000	48.9068	2.2	95	0.00
20	T	Carbon Disulfide	50.0000	43.8443	12.3	84	0.00
21	T	Acrylonitrile	50.0000	51.8552	-3.7	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.1106	1.8	91	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.2852	3.4	95	0.00
24	T	n-Hexane	50.0000	49.5824	0.8	98	-0.01
25	T	Diisopropyl ether	100.0000	98.3246	1.7	94	0.00
26	T	Vinyl Acetate	50.0000	42.4263	15.1	86	0.00
27	P	1,1-Dichloroethane	50.0000	48.4001	3.2	93	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	94.0602	5.9	88	-0.01
29	T	2-Butanone	50.0000	45.7549	8.5	89	0.00
30	T	Propionitrile	100.0000	102.9187	-2.9	96	0.00
31	T	2,2-Dichloropropane	50.0000	45.7988	8.4	91	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.4331	1.1	95	0.00
33	C	Chloroform	50.0000	46.3141	7.4	96	0.00
34		1-Bromopropane	50.0000	65.2409	-30.5#	126	0.00
35	T	Bromochloromethane	50.0000	49.4505	1.1	93	0.00
36	T	Tetrahydrofuran	100.0000	95.7104	4.3	91	0.00
37	S	Dibromofluoromethane	25.0000	23.3645	6.5	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.6743	-3.3	97	0.00
39	T	Cyclohexane	50.0000	44.8295	10.3	87	0.00
40	T	1,1-Dichloropropene	50.0000	48.9247	2.2	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.1233	0.9	92	0.00
42	T	Carbon Tetrachloride	50.0000	52.6576	-5.3	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.4062	6.4	93	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	50.0000	48.5264	2.9	93	-0.01
46	T	Benzene	50.0000	48.8376	2.3	94	0.00
47	T	Trichloroethene	50.0000	49.7638	0.5	94	0.00
48	T	Methylcyclohexane	50.0000	47.4300	5.1	94	0.00
49	C	1,2-Dichloropropane	50.0000	48.8878	2.2	93	0.00
50	T	Bromodichloromethane	50.0000	49.6328	0.7	91	0.00
51	T	1,4-Dioxane	200.0000	173.4827	13.3	73	0.00
52	T	Dibromomethane	50.0000	52.4239	-4.8	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.3896	-0.8	99	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.7844	2.4	94	0.00

(#) = Out of Range
8M418420.D 8260WTR.M Thu Mar 23 10:23:04 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6937	-3.4	96	0.00
56	T	Dimethyl Disulfide	50.0000	46.3980	7.2	98	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	99	0.00
58	S	Toluene-d8	25.0000	23.3417	6.6	95	0.00
59	C	Toluene	50.0000	48.4333	3.1	94	0.00
60	T	Ethyl Methacrylate	50.0000	53.4302	-6.9	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	50.0000	48.2024	3.6	90	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.3685	3.3	92	0.00
64	T	2-Hexanone	50.0000	49.6012	0.8	95	-0.01
65	T	1,3-Dichloropropane	50.0000	49.0749	1.9	95	0.00
66	T	Tetrachloroethene	50.0000	48.9957	2.0	97	0.00
67	T	Dibromochloromethane	50.0000	47.4020	5.2	92	0.00
68	T	1,2-Dibromoethane	50.0000	48.7428	2.5	92	0.00
69	T	1-Chlorohexane	50.0000	49.1631	1.7	101	-0.01
70	P	Chlorobenzene	50.0000	48.6944	2.6	94	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	46.3390	7.3	92	0.00
72	C	Ethylbenzene	50.0000	51.7418	-3.5	95	0.00
73	T	m-,p-Xylene	100.0000	102.8217	-2.8	96	0.00
74	T	o-Xylene	50.0000	48.8719	2.3	96	0.00
75	T	Styrene	50.0000	52.3292	-4.7	96	0.00
76	P	Bromoform	50.0000	48.4254	3.1	93	0.00
77	T	Isopropylbenzene	50.0000	49.9889	0.0	94	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.4525	5.1	92	0.00
80	S	p-Bromofluorobenzene	25.0000	22.5675	9.7	96	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0346	-0.1	95	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	38.6175	22.8	71	0.00
83	T	n-Propylbenzene	50.0000	47.8461	4.3	93	0.00
84	T	Bromobenzene	50.0000	48.7266	2.5	95	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1419	-0.3	96	0.00
86	T	2-Chlorotoluene	50.0000	48.4280	3.1	95	0.00
87	T	4-Chlorotoluene	50.0000	48.4555	3.1	94	0.00
88	T	a-Methylstyrene	50.0000	52.4986	-5.0	105	0.00
89	T	tert-Butylbenzene	50.0000	48.4922	3.0	96	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1500	-0.3	96	0.00
91	T	sec-Butylbenzene	50.0000	49.6876	0.6	95	0.00
92	T	p-Isopropyltoluene	50.0000	51.1861	-2.4	97	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.3341	3.3	95	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.9956	4.0	96	0.00
95	T	n-Butylbenzene	50.0000	49.8529	0.3	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.8168	2.4	95	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.0808	1.8	92	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.8591	4.3	96	0.00
99	T	Hexachlorobutadiene	50.0000	46.8409	6.3	97	0.00
100	T	Naphthalene	50.0000	49.2538	1.5	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.0998	3.8	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418420.D 8260WTR.M Thu Mar 23 10:23:04 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\032317\11M16974.D Vial: 1
Acq On : 23 Mar 2017 13:34 Operator: JDS
Sample : WG607453-02 50ug/L CCV Inst : hpms11
Misc : 1,1 STD80847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:36:19 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	411909	25.00	ug/L	-0.01
56) Chlorobenzene-d5	14.17	117	291172	25.00	ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	16.98	152	156031	25.00	ug/L	-0.02
System Monitoring Compounds						
37) Dibromofluoromethane	9.54	111	109645	25.7063	ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.84%			
43) 1,2-Dichloroethane-d4	10.15	65	134033	25.8589	ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.44%			
57) Toluene-d8	12.40	98	420153	25.6558	ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.64%			
78) p-Bromofluorobenzene	15.56	95	160970	24.6273	ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.52%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.21	85	357667	55.5224	ug/L	99
3) Chloromethane	3.66	50	349117	40.6435	ug/L	98
4) Vinyl Chloride	3.89	62	340823	49.8719	ug/L	100
5) 1,3-Butadiene	3.93	54	154832	52.1854	ug/L	99
6) Bromomethane	4.78	94	175222	40.5186	ug/L	98
7) Chloroethane	4.93	64	212503	49.2393	ug/L	100
8) Trichlorofluoromethane	5.41	101	378709	48.4447	ug/L	100
9) Diethyl ether	5.92	59	467759	98.3457	ug/L	99
10) Isoprene	5.97	67	356801	45.1678	ug/L	100
11) Acrolein	6.16	56	42860	96.6274	ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	211477	49.4485	ug/L	99
13) Acetone	6.26	43	68074	55.8448	ug/L	98
14) 1,1-Dichloroethene	6.48	61	424128	49.0024	ug/L	99
15) Tert-Butyl Alcohol	6.58	59	95630	371.5133	ug/L	98
16) Dimethyl Sulfide	6.73	62	298339	44.7401	ug/L	99
17) Iodomethane	6.98	142	292163	52.6098	ug/L	100
18) Methyl acetate	6.99	43	179720	47.1390	ug/L	99
19) Methylene Chloride	7.24	84	249186	47.5792	ug/L	99
20) Carbon Disulfide	7.28	76	655349	45.1239	ug/L	99
21) Acrylonitrile	7.41	53	96986	53.0326	ug/L	97
22) Methyl Tert Butyl Ether	7.44	73	638510	48.2633	ug/L	100
23) trans-1,2-Dichloroethene	7.67	96	239662	49.8373	ug/L	99
24) n-Hexane	7.74	57	410215	52.2479	ug/L	99
25) Diisopropyl ether	8.08	45	1817457	90.7932	ug/L	98
26) Vinyl Acetate	8.24	43	525517	56.1285	ug/L	100
27) 1,1-Dichloroethane	8.27	63	508586	48.6501	ug/L	99
28) Ethyl-Tert-Butyl ether	8.62	59	1646874	94.5533	ug/L	99
29) 2-Butanone	8.80	43	106244	51.7367	ug/L	100
30) Propionitrile	8.90	54	67982	116.4193	ug/L	97
31) 2,2-Dichloropropane	9.02	77	383808	51.0638	ug/L	99
32) cis-1,2-Dichloroethene	9.08	96	267026	47.6581	ug/L	99
33) Chloroform	9.27	83	420609	46.2040	ug/L	99
34) 1-Bromopropane	9.41	122	46699	44.2974	ug/L	97
35) Bromochloromethane	9.49	130	148482	48.4740	ug/L	98
36) Tetrahydrofuran	9.51	42	147658	98.6270	ug/L	99
38) 1,1,1-Trichloroethane	9.78	97	376717	46.7473	ug/L	99
39) Cyclohexane	9.81	56	490623	45.6359	ug/L	99
40) 1,1-Dichloropropene	9.97	75	336662	49.3518	ug/L	100
41) Carbon Tetrachloride	10.10	117	326649	47.7027	ug/L	99
42) Tert-Amyl-Methyl ether	10.06	73	1285782	91.6748	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M16974.D 8260WTR.M Wed Mar 29 18:36:19 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032317\11M16974.D Vial: 1
Acq On : 23 Mar 2017 13:34 Operator: JDS
Sample : WG607453-02 50ug/L CCV Inst : hpms11
Misc : 1,1 STD80847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:36:19 2017 Quant Results File: 8260WTR.RES

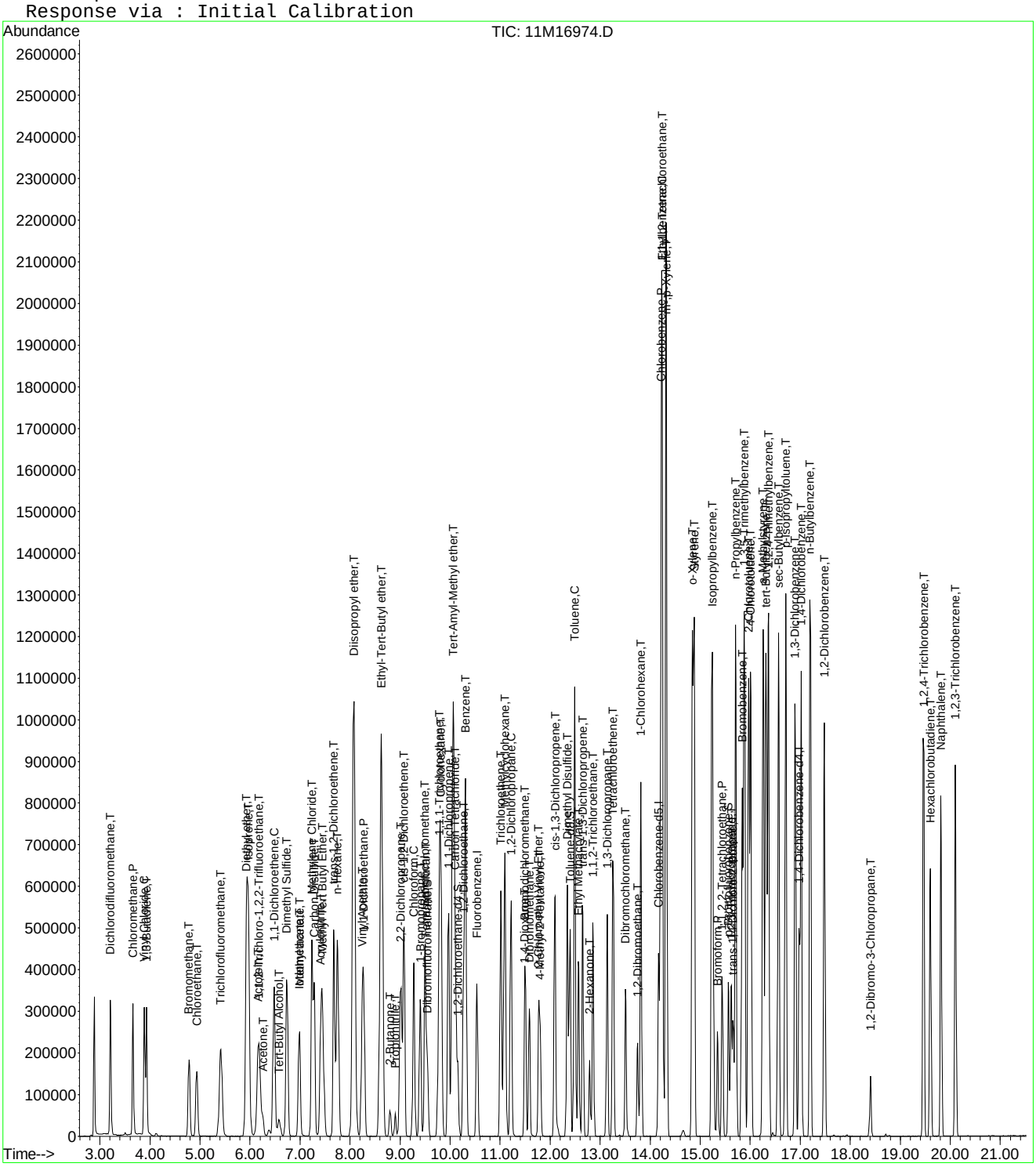
Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.27	62	348449	48.2289	ug/L	99
45)	Benzene	10.31	78	924480	47.1147	ug/L	100
46)	Trichloroethene	11.01	130	235674	47.3688	ug/L	99
47)	Methylcyclohexane	11.09	83	392703	46.4040	ug/L	100
48)	1,2-Dichloropropane	11.22	63	293679	49.8602	ug/L	98
49)	1,4-Dioxane	11.49	88	9513	491.4529	ug/L	88
50)	Bromodichloromethane	11.50	83	323702	48.3614	ug/L	99
51)	Dibromomethane	11.58	93	139148	48.1635	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.77	63	141761	41.2899	ug/L	98
53)	4-Methyl-2-Pentanone	11.80	58	88621	47.8657	ug/L	100
54)	cis-1,3-Dichloropropene	12.10	75	394022	48.8793	ug/L	99
55)	Dimethyl Disulfide	12.35	79	216033	43.5648	ug/L	99
58)	Toluene	12.49	91	958823	43.9584	ug/L	99
59)	Ethyl Methacrylate	12.56	69	275792	47.6239	ug/L	98
60)	trans-1,3-Dichloropropene	12.66	75	351375	49.9443	ug/L	99
61)	1,1,2-Trichloroethane	12.85	97	201797	48.0427	ug/L	99
62)	2-Hexanone	12.79	43	153276	48.1538	ug/L	98
63)	1,3-Dichloropropane	13.14	76	345941	48.2262	ug/L	97
64)	Tetrachloroethene	13.26	164	194320	48.1917	ug/L	98
65)	Dibromochloromethane	13.50	129	235232	48.8380	ug/L	98
66)	1,2-Dibromoethane	13.75	107	185142	47.8463	ug/L	100
67)	1-Chlorohexane	13.81	91	319075	47.6332	ug/L	100
68)	Chlorobenzene	14.22	112	612998	47.0351	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.24	131	229936	47.1077	ug/L	99
70)	Ethylbenzene	14.24	106	358084	49.3861	ug/L	95
71)	m-,p-Xylene	14.32	106	814176	95.3862	ug/L	95
72)	o-Xylene	14.85	106	419048	48.4695	ug/L	98
73)	Styrene	14.88	104	694949	49.7364	ug/L	97
74)	Bromoform	15.34	173	147239	47.4306	ug/L	100
75)	Isopropylbenzene	15.24	105	1011688	44.8006	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.44	83	254355	47.4047	ug/L	100
79)	1,2,3-Trichloropropane	15.62	110	69426	45.0856	ug/L	99
80)	trans-1,4-Dichloro-2-Buten	15.65	53	81797	43.5734	ug/L	96
81)	n-Propylbenzene	15.71	91	1245165	43.2178	ug/L	98
82)	Bromobenzene	15.84	156	276492	45.7765	ug/L	98
83)	1,3,5-Trimethylbenzene	15.88	105	876480	43.3991	ug/L	99
84)	2-Chlorotoluene	15.96	91	781956	39.4556	ug/L	99
85)	4-Chlorotoluene	16.01	91	789588	47.4283	ug/L	87
86)	a-Methylstyrene	16.25	118	466493	46.6282	ug/L	100
87)	tert-Butylbenzene	16.32	134	193227	44.4043	ug/L	95
88)	1,2,4-Trimethylbenzene	16.37	105	896076	42.9578	ug/L	99
89)	sec-Butylbenzene	16.56	105	1100023	44.7168	ug/L	99
90)	p-Isopropyltoluene	16.71	119	942108	45.7841	ug/L	99
91)	1,3-Dichlorobenzene	16.90	146	524642	46.6350	ug/L	99
92)	1,4-Dichlorobenzene	17.02	146	524412	46.0118	ug/L	99
93)	n-Butylbenzene	17.19	91	936646	48.2216	ug/L	99
94)	1,2-Dichlorobenzene	17.48	146	495584	47.0191	ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.40	75	46377	46.0827	ug/L	99
96)	1,2,4-Trichlorobenzene	19.47	180	375143	49.3342	ug/L	99
97)	Hexachlorobutadiene	19.60	225	172857	45.0960	ug/L	98
98)	Naphthalene	19.81	128	761132	47.0444	ug/L	99
99)	1,2,3-Trichlorobenzene	20.10	180	339420	46.6350	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M16974.D 8260WTR.M Wed Mar 29 18:36:19 2017 Page 2

Data File : C:\MSDCHEM\1\DATA\032317\11M16974.D Vial: 1
Acq On : 23 Mar 2017 13:34 Operator: JDS
Sample : WG607453-02 50ug/L CCV Inst : hpms11
Misc : 1,1 STD80847 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:36 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\032317\11M16974.D Vial: 1
Acq On : 23 Mar 2017 13:34 Operator: JDS
Sample : WG607453-02 50ug/L CCV Inst : hpms11
Misc : 1,1 STD80847 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	70	-0.01
2	T	Dichlorodifluoromethane	0.3910	0.4342	-11.0	68	-0.01
3	P	Chloromethane	0.5213	0.4238	18.7	59	0.00
4	C	Vinyl Chloride	0.4148	0.4137	0.3	69	-0.01
5	T	1,3-Butadiene	0.2422	0.1879	22.4	75	0.00
6	T	Bromomethane	0.2625	0.2127	19.0	62	-0.02
7	T	Chloroethane	0.2619	0.2580	1.5	65	-0.02
8	T	Trichlorofluoromethane	0.4745	0.4597	3.1	65	-0.02
9	T	Diethyl ether	0.2887	0.2839	1.7	67	-0.02
10	T	Isoprene	0.4794	0.4331	9.7	59	-0.02
11	T	Acrolein	0.0269	0.0520	-93.3#	126	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2596	0.2567	1.1	66	-0.02
13	T	Acetone	0.0740	0.0826	-11.7	81	-0.02
14	C	1,1-Dichloroethene	0.5253	0.5148	2.0	64	-0.01
15	T	Tert-Butyl Alcohol	0.0156	0.0290	-85.8#	134	-0.02
16	T	Dimethyl Sulfide	0.4047	0.3621	10.5	59	-0.02
17	T	Iodomethane	0.2714	0.3547	-30.7#	66	-0.02
18	T	Methyl acetate	0.2314	0.2182	5.7	66	-0.02
19	T	Methylene Chloride	0.3179	0.3025	4.8	65	-0.02
20	T	Carbon Disulfide	0.8815	0.7955	9.8	60	-0.02
21	T	Acrylonitrile	0.1110	0.1177	-6.1	70	-0.01
22	T	Methyl Tert Butyl Ether	0.8030	0.7751	3.5	63	-0.01
23	T	trans-1,2-Dichloroethene	0.2919	0.2909	0.3	66	-0.02
24	T	n-Hexane	0.4765	0.4979	-4.5	68	-0.02
25	T	Diisopropyl ether	1.2149	1.1031	9.2	65	0.00
26	T	Vinyl Acetate	0.5683	0.6379	-12.3	75	-0.01
27	P	1,1-Dichloroethane	0.6345	0.6173	2.7	63	-0.01
28	T	Ethyl-Tert-Butyl ether	1.0571	0.9995	5.4	64	-0.01
29	T	2-Butanone	0.1246	0.1290	-3.5	72	-0.02
30	T	Propionitrile	0.0354	0.0413	-16.4	80	-0.01
31	T	2,2-Dichloropropane	0.4562	0.4659	-2.1	69	-0.01
32	T	cis-1,2-Dichloroethene	0.3401	0.3241	4.7	64	-0.01
33	C	Chloroform	0.5525	0.5106	7.6	63	-0.02
34	T	1-Bromopropane	0.0640	0.0567	11.4	58	-0.01
35	T	Bromochloromethane	0.1859	0.1802	3.0	64	-0.02
36	T	Tetrahydrofuran	0.0909	0.0896	1.4	69	-0.02
37	S	Dibromofluoromethane	0.2589	0.2662	-2.8	72	-0.02
38	T	1,1,1-Trichloroethane	0.4891	0.4573	6.5	61	-0.01
39	T	Cyclohexane	0.6525	0.5956	8.7	60	-0.01
40	T	1,1-Dichloropropene	0.4140	0.4087	1.3	64	-0.01
41	T	Carbon Tetrachloride	0.4156	0.3965	4.6	60	-0.02
42	T	Tert-Amyl-Methyl ether	0.8512	0.7804	8.3	62	-0.01
43	S	1,2-Dichloroethane-d4	0.3146	0.3254	-3.4	71	-0.02
44	T	1,2-Dichloroethane	0.4385	0.4230	3.5	63	-0.02
45	T	Benzene	1.1909	1.1222	5.8	64	-0.01
46	T	Trichloroethene	0.3020	0.2861	5.3	61	-0.02
47	T	Methylcyclohexane	0.5136	0.4767	7.2	61	-0.01
48	C	1,2-Dichloropropane	0.3575	0.3565	0.3	64	-0.01
49	T	1,4-Dioxane	0.0012	0.0029	-147.0#	180#	0.00
50	T	Bromodichloromethane	0.4062	0.3929	3.3	62	-0.02
51	T	Dibromomethane	0.1754	0.1689	3.7	63	-0.02
52	T	2-Chloroethyl Vinyl Ether	0.2084	0.1721	17.4	54	-0.02
53	T	4-Methyl-2-Pentanone	0.1124	0.1076	4.3	64	-0.01
54	T	cis-1,3-Dichloropropene	0.4893	0.4783	2.2	63	-0.01

(#) = Out of Range
11M16974.D 8260WTR.M Thu Mar 23 13:58:31 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032317\11M16974.D Vial: 1
Acq On : 23 Mar 2017 13:34 Operator: JDS
Sample : WG607453-02 50ug/L CCV Inst : hpms11
Misc : 1,1 STD80847 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.3010	0.2622	12.9	56	-0.01
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	72	-0.02
57	S	Toluene-d8	1.4061	1.4430	-2.6	70	-0.01
58	C	Toluene	1.8728	1.6465	12.1	64	0.00
59	T	Ethyl Methacrylate	0.4972	0.4736	4.8	62	-0.02
60	T	trans-1,3-Dichloropropene	0.6040	0.6034	0.1	64	-0.01
61	T	1,1,2-Trichloroethane	0.3606	0.3465	3.9	64	-0.02
62	T	2-Hexanone	0.2733	0.2632	3.7	66	-0.01
63	T	1,3-Dichloropropane	0.6159	0.5940	3.5	63	-0.01
64	T	Tetrachloroethene	0.3462	0.3337	3.6	63	-0.02
65	T	Dibromochloromethane	0.4135	0.4039	2.3	62	-0.02
66	T	1,2-Dibromoethane	0.3322	0.3179	4.3	63	-0.01
67	T	1-Chlorohexane	0.5751	0.5479	4.7	63	-0.02
68	P	Chlorobenzene	1.1190	1.0526	5.9	64	0.00
69	T	1,1,1,2-Tetrachloroethane	0.4191	0.3948	5.8	61	-0.02
70	C	Ethylbenzene	0.6225	0.6149	1.2	63	-0.01
71	T	m-,p-Xylene	0.7329	0.6990	4.6	63	0.00
72	T	o-Xylene	0.7423	0.7196	3.1	62	-0.01
73	T	Styrene	1.1997	1.1934	0.5	64	-0.02
74	P	Bromoform	0.2665	0.2528	5.1	60	-0.02
75	T	Isopropylbenzene	1.9389	1.7373	10.4	64	-0.01
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	75	-0.02
77	P	1,1,2,2-Tetrachloroethane	0.8597	0.8151	5.2	66	-0.02
78	S	p-Bromofluorobenzene	1.0473	1.0317	1.5	70	-0.02
79	T	1,2,3-Trichloropropane	0.2467	0.2225	9.8	63	-0.01
80	T	trans-1,4-Dichloro-2-Butene	0.3008	0.2621	12.9	61	-0.02
81	T	n-Propylbenzene	4.6163	3.9901	13.6	66	-0.02
82	T	Bromobenzene	0.9678	0.8860	8.4	63	-0.02
83	T	1,3,5-Trimethylbenzene	3.2359	2.8087	13.2	64	-0.02
84	T	2-Chlorotoluene	3.1754	2.5058	21.1	59	-0.02
85	T	4-Chlorotoluene	2.6674	2.5302	5.1	71	-0.02
86	T	a-Methylstyrene	1.6030	1.4949	6.7	60	-0.02
87	T	tert-Butylbenzene	0.6972	0.6192	11.2	61	-0.02
88	T	1,2,4-Trimethylbenzene	3.3422	2.8715	14.1	64	-0.01
89	T	sec-Butylbenzene	3.9415	3.5250	10.6	65	-0.02
90	T	p-Isopropyltoluene	3.2970	3.0190	8.4	65	-0.02
91	T	1,3-Dichlorobenzene	1.8025	1.6812	6.7	64	-0.02
92	T	1,4-Dichlorobenzene	1.8261	1.6805	8.0	65	-0.02
93	T	n-Butylbenzene	3.1122	3.0015	3.6	68	-0.02
94	T	1,2-Dichlorobenzene	1.6888	1.5881	6.0	63	-0.02
95	T	1,2-Dibromo-3-Chloropropane	0.1613	0.1486	7.8	64	-0.02
96	T	1,2,4-Trichlorobenzene	1.2184	1.2021	1.3	67	-0.01
97	T	Hexachlorobutadiene	0.6142	0.5539	9.8	62	-0.02
98	T	Naphthalene	2.5923	2.4390	5.9	66	-0.02
99	T	1,2,3-Trichlorobenzene	1.1662	1.0877	6.7	65	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M16974.D 8260WTR.M Thu Mar 23 13:58:31 2017 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032317\11M16974.D Vial: 1
Acq On : 23 Mar 2017 13:34 Operator: JDS
Sample : WG607453-02 50ug/L CCV Inst : hpms11
Misc : 1,1 STD80847 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	70	-0.01
2	T	Dichlorodifluoromethane	50.0000	55.5224	-11.0	68	-0.01
3	P	Chloromethane	50.0000	40.6435	18.7	59	0.00
4	C	Vinyl Chloride	50.0000	49.8719	0.3	69	-0.01
5	T	1,3-Butadiene	50.0000	52.1854	-4.4	75	0.00
6	T	Bromomethane	50.0000	40.5187	19.0	62	-0.02
7	T	Chloroethane	50.0000	49.2393	1.5	65	-0.02
8	T	Trichlorofluoromethane	50.0000	48.4447	3.1	65	-0.02
9	T	Diethyl ether	100.0000	98.3457	1.7	67	-0.02
10	T	Isoprene	50.0000	45.1678	9.7	59	-0.02
11	T	Acrolein	50.0000	96.6274	-93.3#	126	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.4485	1.1	66	-0.02
13	T	Acetone	50.0000	55.8448	-11.7	81	-0.02
14	C	1,1-Dichloroethene	50.0000	49.0024	2.0	64	-0.01
15	T	Tert-Butyl Alcohol	200.0000	371.5133	-85.8#	134	-0.02
16	T	Dimethyl Sulfide	50.0000	44.7401	10.5	59	-0.02
17	T	Iodomethane	50.0000	52.6098	-5.2	66	-0.02
18	T	Methyl acetate	50.0000	47.1390	5.7	66	-0.02
19	T	Methylene Chloride	50.0000	47.5792	4.8	65	-0.02
20	T	Carbon Disulfide	50.0000	45.1239	9.8	60	-0.02
21	T	Acrylonitrile	50.0000	53.0326	-6.1	70	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	48.2633	3.5	63	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	49.8373	0.3	66	-0.02
24	T	n-Hexane	50.0000	52.2479	-4.5	68	-0.02
25	T	Diisopropyl ether	100.0000	90.7932	9.2	65	0.00
26	T	Vinyl Acetate	50.0000	56.1285	-12.3	75	-0.01
27	P	1,1-Dichloroethane	50.0000	48.6501	2.7	63	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	94.5533	5.4	64	-0.01
29	T	2-Butanone	50.0000	51.7367	-3.5	72	-0.02
30	T	Propionitrile	100.0000	116.4193	-16.4	80	-0.01
31	T	2,2-Dichloropropane	50.0000	51.0638	-2.1	69	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	47.6581	4.7	64	-0.01
33	C	Chloroform	50.0000	46.2040	7.6	63	-0.02
34	T	1-Bromopropane	50.0000	44.2974	11.4	58	-0.01
35	T	Bromochloromethane	50.0000	48.4740	3.1	64	-0.02
36	T	Tetrahydrofuran	100.0000	98.6270	1.4	69	-0.02
37	S	Dibromofluoromethane	25.0000	25.7064	-2.8	72	-0.02
38	T	1,1,1-Trichloroethane	50.0000	46.7473	6.5	61	-0.01
39	T	Cyclohexane	50.0000	45.6359	8.7	60	-0.01
40	T	1,1-Dichloropropene	50.0000	49.3518	1.3	64	-0.01
41	T	Carbon Tetrachloride	50.0000	47.7027	4.6	60	-0.02
42	T	Tert-Amyl-Methyl ether	100.0000	91.6748	8.3	62	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	25.8589	-3.4	71	-0.02
44	T	1,2-Dichloroethane	50.0000	48.2289	3.5	63	-0.02
45	T	Benzene	50.0000	47.1147	5.8	64	-0.01
46	T	Trichloroethene	50.0000	47.3688	5.3	61	-0.02
47	T	Methylcyclohexane	50.0000	46.4040	7.2	61	-0.01
48	C	1,2-Dichloropropane	50.0000	49.8602	0.3	64	-0.01
49	T	1,4-Dioxane	200.0000	491.4529	-145.7#	180	0.00
50	T	Bromodichloromethane	50.0000	48.3614	3.3	62	-0.02
51	T	Dibromomethane	50.0000	48.1635	3.7	63	-0.02
52	T	2-Chloroethyl Vinyl Ether	50.0000	41.2899	17.4	54	-0.02
53	T	4-Methyl-2-Pentanone	50.0000	47.8657	4.3	64	-0.01
54	T	cis-1,3-Dichloropropene	50.0000	48.8793	2.2	63	-0.01

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\032317\11M16974.D Vial: 1
Acq On : 23 Mar 2017 13:34 Operator: JDS
Sample : WG607453-02 50ug/L CCV Inst : hpms11
Misc : 1,1 STD80847 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	43.5648	12.9	56	-0.01
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	72	-0.02
57	S	Toluene-d8	25.0000	25.6558	-2.6	70	-0.01
58	C	Toluene	50.0000	43.9584	12.1	64	0.00
59	T	Ethyl Methacrylate	50.0000	47.6239	4.8	62	-0.02
60	T	trans-1,3-Dichloropropene	50.0000	49.9443	0.1	64	-0.01
61	T	1,1,2-Trichloroethane	50.0000	48.0427	3.9	64	-0.02
62	T	2-Hexanone	50.0000	48.1538	3.7	66	-0.01
63	T	1,3-Dichloropropane	50.0000	48.2262	3.5	63	-0.01
64	T	Tetrachloroethene	50.0000	48.1917	3.6	63	-0.02
65	T	Dibromochloromethane	50.0000	48.8381	2.3	62	-0.02
66	T	1,2-Dibromoethane	50.0000	47.8463	4.3	63	-0.01
67	T	1-Chlorohexane	50.0000	47.6332	4.7	63	-0.02
68	P	Chlorobenzene	50.0000	47.0351	5.9	64	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	47.1077	5.8	61	-0.02
70	C	Ethylbenzene	50.0000	49.3861	1.2	63	-0.01
71	T	m-,p-Xylene	100.0000	95.3862	4.6	63	0.00
72	T	o-Xylene	50.0000	48.4695	3.1	62	-0.01
73	T	Styrene	50.0000	49.7364	0.5	64	-0.02
74	P	Bromoform	50.0000	47.4306	5.1	60	-0.02
75	T	Isopropylbenzene	50.0000	44.8006	10.4	64	-0.01
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	75	-0.02
77	P	1,1,2,2-Tetrachloroethane	50.0000	47.4048	5.2	66	-0.02
78	S	p-Bromofluorobenzene	25.0000	24.6273	1.5	70	-0.02
79	T	1,2,3-Trichloropropane	50.0000	45.0856	9.8	63	-0.01
80	T	trans-1,4-Dichloro-2-Butene	50.0000	43.5734	12.9	61	-0.02
81	T	n-Propylbenzene	50.0000	43.2178	13.6	66	-0.02
82	T	Bromobenzene	50.0000	45.7766	8.4	63	-0.02
83	T	1,3,5-Trimethylbenzene	50.0000	43.3991	13.2	64	-0.02
84	T	2-Chlorotoluene	50.0000	39.4556	21.1	59	-0.02
85	T	4-Chlorotoluene	50.0000	47.4283	5.1	71	-0.02
86	T	a-Methylstyrene	50.0000	46.6283	6.7	60	-0.02
87	T	tert-Butylbenzene	50.0000	44.4043	11.2	61	-0.02
88	T	1,2,4-Trimethylbenzene	50.0000	42.9578	14.1	64	-0.01
89	T	sec-Butylbenzene	50.0000	44.7168	10.6	65	-0.02
90	T	p-Isopropyltoluene	50.0000	45.7841	8.4	65	-0.02
91	T	1,3-Dichlorobenzene	50.0000	46.6350	6.7	64	-0.02
92	T	1,4-Dichlorobenzene	50.0000	46.0118	8.0	65	-0.02
93	T	n-Butylbenzene	50.0000	48.2216	3.6	68	-0.02
94	T	1,2-Dichlorobenzene	50.0000	47.0191	6.0	63	-0.02
95	T	1,2-Dibromo-3-Chloropropane	50.0000	46.0827	7.8	64	-0.02
96	T	1,2,4-Trichlorobenzene	50.0000	49.3342	1.3	67	-0.01
97	T	Hexachlorobutadiene	50.0000	45.0960	9.8	62	-0.02
98	T	Naphthalene	50.0000	47.0444	5.9	66	-0.02
99	T	1,2,3-Trichlorobenzene	50.0000	46.6351	6.7	65	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M16974.D 8260WTR.M Wed Mar 29 18:49:17 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418485.D Vial: 3
Acq On : 24 Mar 2017 10:21 Operator: TMB
Sample : WG607571-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:52:45 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	753298	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	600706	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	327178	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	211599	24.7674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.08%		
43) 1,2-Dichloroethane-d4	10.53	65	177888	24.0269 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.12%		
58) Toluene-d8	12.91	98	737677	24.4126 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.64%		
80) p-Bromofluorobenzene	16.30	95	293051	23.6698 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.68%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.34	85	633108	53.6507 ug/L	99
3) Chloromethane	3.82	50	691538	48.3582 ug/L	99
4) Vinyl Chloride	4.05	62	656938	49.1304 ug/L	100
5) 1,3-Butadiene	4.09	54	251688	57.8326 ug/L	99
6) Bromomethane	4.97	94	314659	46.4579 ug/L	99
7) Chloroethane	5.13	64	264527	48.7747 ug/L	100
8) Trichlorofluoromethane	5.61	101	707217	48.8756 ug/L	100
9) Diethyl ether	6.14	59	463957	99.1406 ug/L	99
10) Isoprene	6.18	67	587545	52.5532 ug/L	99
11) Acrolein	6.38	56	29895	49.9602 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	385828	49.5721 ug/L	100
13) Acetone	6.48	43	44658	49.5727 ug/L	99
14) 1,1-Dichloroethene	6.71	61	525192	48.3575 ug/L	98
15) Tert-Butyl Alcohol	6.81	59	64726	225.7420 ug/L	97
16) Dimethyl Sulfide	6.97	62	395155	51.1860 ug/L	99
17) Iodomethane	7.23	142	366826	40.7084 ug/L	100
18) Methyl acetate	7.24	43	131895	51.1996 ug/L	99
19) Methylene Chloride	7.50	84	400158	48.3871 ug/L	98
20) Carbon Disulfide	7.54	76	1326777	53.6361 ug/L	100
21) Acrylonitrile	7.67	53	68288	54.1957 ug/L	98
22) Methyl Tert Butyl Ether	7.70	73	817140	51.3330 ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	501289	47.6042 ug/L	100
24) n-Hexane	8.01	57	465368	52.1715 ug/L	98
25) Diisopropyl ether	8.35	45	1975215	98.2019 ug/L	99
26) Vinyl Acetate	8.52	43	461351	58.2825 ug/L	100
27) 1,1-Dichloroethane	8.56	63	677363	49.3212 ug/L	100
28) Ethyl-Tert-Butyl ether	8.92	59	1955806	101.5557 ug/L	99
29) 2-Butanone	9.11	43	71817	49.4795 ug/L	98
30) Propionitrile	9.22	54	46480	108.1748 ug/L	98
31) 2,2-Dichloropropane	9.34	77	643735	52.5421 ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	446513	49.9585 ug/L	99
33) Chloroform	9.60	83	728985	45.7970 ug/L	100
34) 1-Bromopropane	9.74	122	88049	51.5655 ug/L	99
35) Bromochloromethane	9.84	130	240570	50.1076 ug/L	99
36) Tetrahydrofuran	9.86	42	92668	100.3206 ug/L	98
38) 1,1,1-Trichloroethane	10.14	97	655504	50.0669 ug/L	100
39) Cyclohexane	10.17	56	563497	49.8027 ug/L	98
40) 1,1-Dichloropropene	10.33	75	552334	49.1225 ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	1885959	104.9366 ug/L	98
42) Carbon Tetrachloride	10.48	117	605074	51.6520 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418485.D 8260WTR.M Fri Mar 24 12:52:48 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418485.D Vial: 3
Acq On : 24 Mar 2017 10:21 Operator: TMB
Sample : WG607571-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:52:45 2017 Quant Results File: 8260WTR.RES

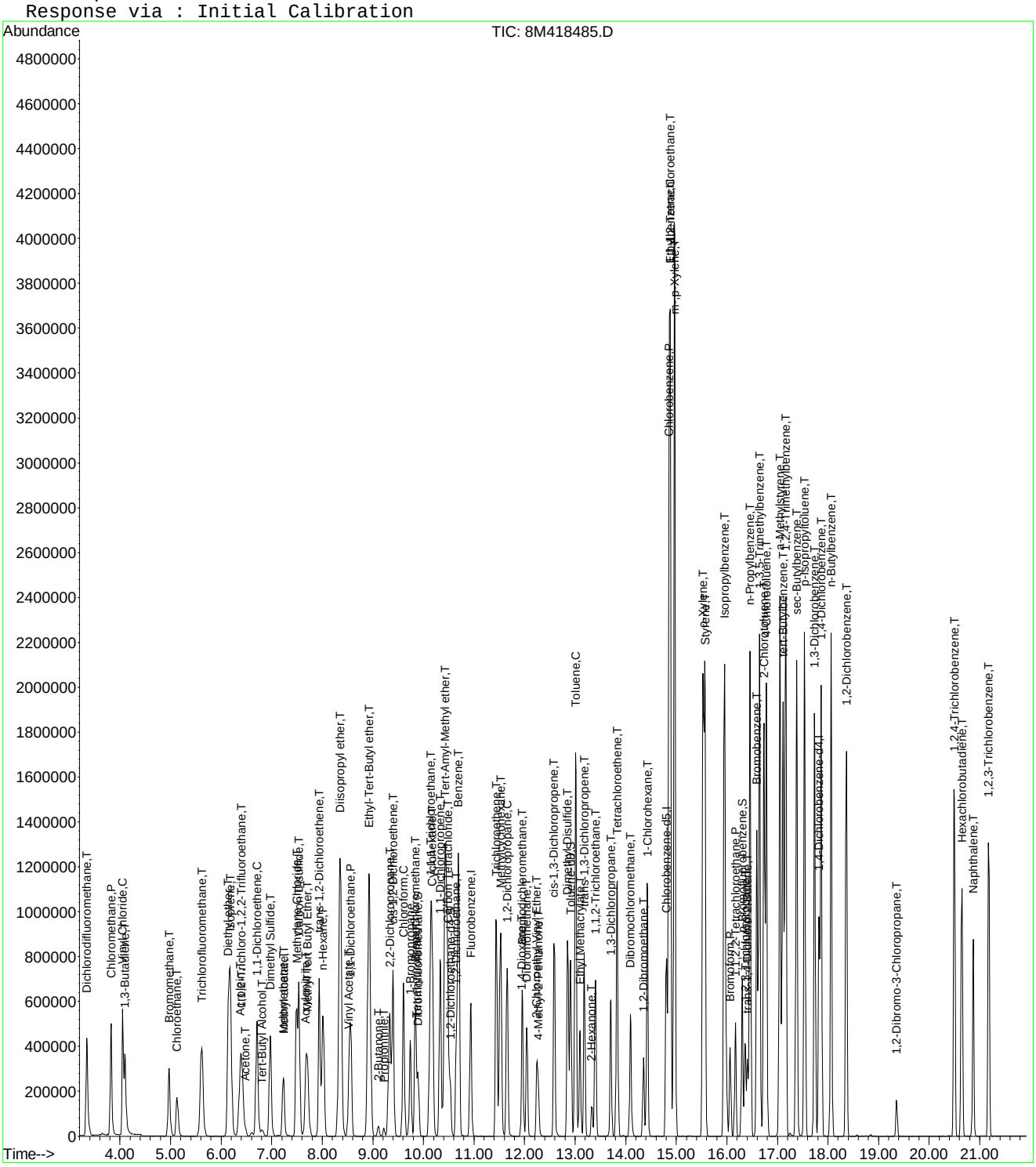
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.65	62	440116	48.9738	ug/L		100
46)	Benzene	10.69	78	1598763	49.3087	ug/L		99
47)	Trichloroethene	11.44	130	419836	48.4253	ug/L		99
48)	Methylcyclohexane	11.53	83	645101	49.5185	ug/L		98
49)	1,2-Dichloropropane	11.65	63	369276	49.5341	ug/L		100
50)	Bromodichloromethane	11.95	83	549802	52.1674	ug/L		100
51)	1,4-Dioxane	11.94	88	8959	250.0841	ug/L		96
52)	Dibromomethane	12.04	93	210265	52.6311	ug/L		100
53)	2-Chloroethyl Vinyl Ether	12.24	63	173737	51.2508	ug/L		99
54)	4-Methyl-2-Pentanone	12.27	58	73236	50.4788	ug/L		96
55)	cis-1,3-Dichloropropene	12.58	75	633886	51.8182	ug/L		98
56)	Dimethyl Disulfide	12.85	79	358961	49.7246	ug/L		100
59)	Toluene	13.01	91	1736499	48.6027	ug/L		99
60)	Ethyl Methacrylate	13.10	69	375258	54.3180	ug/L		97
62)	trans-1,3-Dichloropropene	13.18	75	540654	51.3020	ug/L		100
63)	1,1,2-Trichloroethane	13.40	97	279435	49.6515	ug/L		100
64)	2-Hexanone	13.33	58	67847	50.2862	ug/L		100
65)	1,3-Dichloropropane	13.71	76	488424	48.4675	ug/L		97
66)	Tetrachloroethene	13.83	164	362328	46.8034	ug/L		99
67)	Dibromochloromethane	14.09	129	374052	49.1454	ug/L		100
68)	1,2-Dibromoethane	14.35	107	287533	49.7930	ug/L		99
69)	1-Chlorohexane	14.43	91	586649	48.1798	ug/L		98
70)	Chlorobenzene	14.86	112	1221132	48.5619	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.88	131	470163	47.0447	ug/L		100
72)	Ethylbenzene	14.88	106	699389	50.1169	ug/L		98
73)	m-,p-Xylene	14.97	106	1679905	100.3698	ug/L		99
74)	o-Xylene	15.53	106	784851	47.2885	ug/L		100
75)	Styrene	15.57	104	1373595	51.2662	ug/L		98
76)	Bromoform	16.07	173	240280	52.1055	ug/L		100
77)	Isopropylbenzene	15.95	105	1953850	48.6585	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.17	83	330733	51.8657	ug/L		100
81)	1,2,3-Trichloropropane	16.37	110	90643	49.9294	ug/L	#	29
82)	trans-1,4-Dichloro-2-Buten	16.41	53	87065	58.2089	ug/L	#	17
83)	n-Propylbenzene	16.46	91	2319087	48.1242	ug/L		100
84)	Bromobenzene	16.59	156	517440	48.5159	ug/L		99
85)	1,3,5-Trimethylbenzene	16.65	105	1701154	48.8758	ug/L		99
86)	2-Chlorotoluene	16.74	91	1548868	47.8168	ug/L		95
87)	4-Chlorotoluene	16.78	91	1356279	47.9278	ug/L		100
88)	a-Methylstyrene	17.05	118	986768	50.7153	ug/L		100
89)	tert-Butylbenzene	17.11	134	357329	46.4866	ug/L		98
90)	1,2,4-Trimethylbenzene	17.16	105	1800169	49.7491	ug/L		100
91)	sec-Butylbenzene	17.38	105	2102775	48.6723	ug/L		99
92)	p-Isopropyltoluene	17.53	119	1746476	49.3514	ug/L		100
93)	1,3-Dichlorobenzene	17.73	146	1038774	48.8608	ug/L		99
94)	1,4-Dichlorobenzene	17.87	146	1031197	48.1575	ug/L		99
95)	n-Butylbenzene	18.06	91	1664767	48.4861	ug/L		100
96)	1,2-Dichlorobenzene	18.36	146	912254	49.2451	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.35	75	51333	51.2943	ug/L		95
98)	1,2,4-Trichlorobenzene	20.50	180	655645	47.3194	ug/L		99
99)	Hexachlorobutadiene	20.65	225	299817	44.2583	ug/L		100
100)	Naphthalene	20.87	128	894938	48.9033	ug/L		100
101)	1,2,3-Trichlorobenzene	21.17	180	533756	46.5830	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M418485.D 8260WTR.M Fri Mar 24 12:52:48 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418485.D Vial: 3
Acq On : 24 Mar 2017 10:21 Operator: TMB
Sample : WG607571-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:52 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 21 Mar 2017 19:11
CCV date: 24 Mar 2017 10:21
CCV Filename: 8M418485.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	821515	10.94	635449	14.81	345493	17.83
CCV	753298	10.94	600706	14.81	327178	17.82

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418485.D Vial: 3
Acq On : 24 Mar 2017 10:21 Operator: TMB
Sample : WG607571-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	0.3916	0.4202	-7.3	89	0.00
3	P	Chloromethane	0.4746	0.4590	3.3	91	0.00
4	C	Vinyl Chloride	0.4438	0.4360	1.7	94	0.00
5	T	1,3-Butadiene	0.1726	0.1671	3.2	88	-0.01
6	T	Bromomethane	0.2248	0.2089	7.1	85	0.00
7	T	Chloroethane	0.1800	0.1756	2.5	87	0.00
8	T	Trichlorofluoromethane	0.4802	0.4694	2.2	88	0.00
9	T	Diethyl ether	0.1553	0.1540	0.9	89	0.00
10	T	Isoprene	0.3710	0.3900	-5.1	97	0.00
11	T	Acrolein	0.0199	0.0198	0.1	89	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2561	0.9	87	0.00
13	T	Acetone	0.0299	0.0296	0.9	89	0.00
14	C	1,1-Dichloroethene	0.3604	0.3486	3.3	87	0.00
15	T	Tert-Butyl Alcohol	0.0095	0.0107	-12.8	98	0.00
16	T	Dimethyl Sulfide	0.2562	0.2623	-2.4	94	-0.01
17	T	Iodomethane	0.2687	0.2435	9.4	75	-0.01
18	T	Methyl acetate	0.0855	0.0876	-2.4	95	0.00
19	T	Methylene Chloride	0.2745	0.2656	3.2	88	0.00
20	T	Carbon Disulfide	0.8209	0.8807	-7.3	97	0.00
21	T	Acrylonitrile	0.0418	0.0453	-8.4	91	0.00
22	T	Methyl Tert Butyl Ether	0.5283	0.5424	-2.7	89	0.00
23	T	trans-1,2-Dichloroethene	0.3495	0.3327	4.8	88	0.00
24	T	n-Hexane	0.2960	0.3089	-4.3	97	-0.01
25	T	Diisopropyl ether	0.6675	0.6555	1.8	88	0.00
26	T	Vinyl Acetate	0.2627	0.3062	-16.6	110	-0.01
27	P	1,1-Dichloroethane	0.4558	0.4496	1.4	89	0.00
28	T	Ethyl-Tert-Butyl ether	0.6391	0.6491	-1.6	89	-0.01
29	T	2-Butanone	0.0482	0.0477	1.0	90	0.00
30	T	Propionitrile	0.0143	0.0154	-8.2	95	0.00
31	T	2,2-Dichloropropane	0.4066	0.4273	-5.1	98	0.00
32	T	cis-1,2-Dichloroethene	0.2966	0.2964	0.1	90	0.00
33	C	Chloroform	0.5283	0.4839	8.4	89	0.00
34		1-Bromopropane	0.0567	0.0584	-3.1	94	-0.01
35	T	Bromochloromethane	0.1593	0.1597	-0.2	88	0.00
36	T	Tetrahydrofuran	0.0307	0.0308	-0.3	89	0.00
37	S	Dibromofluoromethane	0.2835	0.2809	0.9	93	0.00
38	T	1,1,1-Trichloroethane	0.4345	0.4351	-0.1	89	0.00
39	T	Cyclohexane	0.3755	0.3740	0.4	91	0.00
40	T	1,1-Dichloropropene	0.3732	0.3666	1.8	90	-0.01
41	T	Tert-Amyl-Methyl ether	0.5965	0.6259	-4.9	91	0.00
42	T	Carbon Tetrachloride	0.3888	0.4016	-3.3	90	0.00
43	S	1,2-Dichloroethane-d4	0.2457	0.2362	3.9	89	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.61#
45	T	1,2-Dichloroethane	0.2983	0.2921	2.1	88	-0.01
46	T	Benzene	1.0761	1.0612	1.4	89	-0.01
47	T	Trichloroethene	0.2877	0.2787	3.1	86	0.00
48	T	Methylcyclohexane	0.4324	0.4282	1.0	92	0.00
49	C	1,2-Dichloropropane	0.2474	0.2451	0.9	89	0.00
50	T	Bromodichloromethane	0.3498	0.3649	-4.3	90	-0.01
51	T	1,4-Dioxane	0.0012	0.0015	-25.2#	99	0.00
52	T	Dibromomethane	0.1326	0.1396	-5.3	89	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1125	0.1153	-2.5	95	0.00
54	T	4-Methyl-2-Pentanone	0.0481	0.0486	-1.0	91	0.00

(#) = Out of Range
8M418485.D 8260WTR.M Fri Mar 24 12:53:28 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418485.D Vial: 3
Acq On : 24 Mar 2017 10:21 Operator: TMB
Sample : WG607571-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4060	0.4207	-3.6	91	-0.01
56	T	Dimethyl Disulfide	0.2197	0.2383	-8.5	99	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	95	0.00
58	S	Toluene-d8	1.2576	1.2280	2.3	95	0.00
59	C	Toluene	1.4869	1.4454	2.8	90	-0.01
60	T	Ethyl Methacrylate	0.2875	0.3124	-8.6	97	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.40#
62	T	trans-1,3-Dichloropropene	0.4386	0.4500	-2.6	92	0.00
63	T	1,1,2-Trichloroethane	0.2342	0.2326	0.7	90	0.00
64	T	2-Hexanone	0.0561	0.0565	-0.6	92	-0.01
65	T	1,3-Dichloropropane	0.4194	0.4065	3.1	90	0.00
66	T	Tetrachloroethene	0.3222	0.3016	6.4	89	0.00
67	T	Dibromochloromethane	0.2861	0.3113	-8.8	91	0.00
68	T	1,2-Dibromoethane	0.2403	0.2393	0.4	90	0.00
69	T	1-Chlorohexane	0.5068	0.4883	3.6	94	0.00
70	P	Chlorobenzene	1.0465	1.0164	2.9	89	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3805	0.3913	-2.9	89	0.00
72	C	Ethylbenzene	0.5808	0.5821	-0.2	88	0.00
73	T	m-,p-Xylene	0.6966	0.6991	-0.4	89	0.00
74	T	o-Xylene	0.6907	0.6533	5.4	89	0.00
75	T	Styrene	1.1151	1.1433	-2.5	90	0.00
76	P	Bromoform	0.1739	0.2000	-15.0	96	0.00
77	T	Isopropylbenzene	1.6711	1.6263	2.7	88	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	95	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4873	0.5054	-3.7	95	0.00
80	S	p-Bromofluorobenzene	0.9460	0.8957	5.3	94	0.00
81	T	1,2,3-Trichloropropane	0.1387	0.1385	0.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1143	0.1331	-16.4	101	0.00
83	T	n-Propylbenzene	3.6822	3.5441	3.8	88	0.00
84	T	Bromobenzene	0.8149	0.7908	3.0	89	0.00
85	T	1,3,5-Trimethylbenzene	2.6595	2.5997	2.2	88	0.00
86	T	2-Chlorotoluene	2.4751	2.3670	4.4	88	0.00
87	T	4-Chlorotoluene	2.1623	2.0727	4.1	88	0.00
88	T	a-Methylstyrene	1.4867	1.5080	-1.4	96	0.00
89	T	tert-Butylbenzene	0.5874	0.5461	7.0	87	0.00
90	T	1,2,4-Trimethylbenzene	2.7649	2.7511	0.5	89	0.00
91	T	sec-Butylbenzene	3.3012	3.2135	2.7	88	0.00
92	T	p-Isopropyltoluene	2.7041	2.6690	1.3	88	0.00
93	T	1,3-Dichlorobenzene	1.6245	1.5875	2.3	90	-0.01
94	T	1,4-Dichlorobenzene	1.6362	1.5759	3.7	90	0.00
95	T	n-Butylbenzene	2.6236	2.5441	3.0	88	0.00
96	T	1,2-Dichlorobenzene	1.4155	1.3941	1.5	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0765	0.0785	-2.6	90	0.00
98	T	1,2,4-Trichlorobenzene	1.0587	1.0020	5.4	89	0.00
99	T	Hexachlorobutadiene	0.5176	0.4582	11.5	86	0.00
100	T	Naphthalene	1.3983	1.3677	2.2	86	0.00
101	T	1,2,3-Trichlorobenzene	0.8755	0.8157	6.8	87	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418485.D 8260WTR.M Fri Mar 24 12:53:28 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418485.D Vial: 3
Acq On : 24 Mar 2017 10:21 Operator: TMB
Sample : WG607571-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	50.0000	53.6506	-7.3	89	0.00
3	P	Chloromethane	50.0000	48.3582	3.3	91	0.00
4	C	Vinyl Chloride	50.0000	49.1304	1.7	94	0.00
5	T	1,3-Butadiene	50.0000	57.8326	-15.7	88	-0.01
6	T	Bromomethane	50.0000	46.4579	7.1	85	0.00
7	T	Chloroethane	50.0000	48.7747	2.5	87	0.00
8	T	Trichlorofluoromethane	50.0000	48.8756	2.2	88	0.00
9	T	Diethyl ether	100.0000	99.1406	0.9	89	0.00
10	T	Isoprene	50.0000	52.5532	-5.1	97	0.00
11	T	Acrolein	50.0000	49.9602	0.1	89	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.5721	0.9	87	0.00
13	T	Acetone	50.0000	49.5727	0.9	89	0.00
14	C	1,1-Dichloroethene	50.0000	48.3575	3.3	87	0.00
15	T	Tert-Butyl Alcohol	200.0000	225.7420	-12.9	98	0.00
16	T	Dimethyl Sulfide	50.0000	51.1860	-2.4	94	-0.01
17	T	Iodomethane	50.0000	40.7084	18.6	75	-0.01
18	T	Methyl acetate	50.0000	51.1996	-2.4	95	0.00
19	T	Methylene Chloride	50.0000	48.3871	3.2	88	0.00
20	T	Carbon Disulfide	50.0000	53.6361	-7.3	97	0.00
21	T	Acrylonitrile	50.0000	54.1957	-8.4	91	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.3330	-2.7	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.6042	4.8	88	0.00
24	T	n-Hexane	50.0000	52.1715	-4.3	97	-0.01
25	T	Diisopropyl ether	100.0000	98.2019	1.8	88	0.00
26	T	Vinyl Acetate	50.0000	58.2826	-16.6	110	-0.01
27	P	1,1-Dichloroethane	50.0000	49.3212	1.4	89	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.5557	-1.6	89	-0.01
29	T	2-Butanone	50.0000	49.4795	1.0	90	0.00
30	T	Propionitrile	100.0000	108.1748	-8.2	95	0.00
31	T	2,2-Dichloropropane	50.0000	52.5421	-5.1	98	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.9585	0.1	90	0.00
33	C	Chloroform	50.0000	45.7970	8.4	89	0.00
34		1-Bromopropane	50.0000	51.5654	-3.1	94	-0.01
35	T	Bromochloromethane	50.0000	50.1076	-0.2	88	0.00
36	T	Tetrahydrofuran	100.0000	100.3207	-0.3	89	0.00
37	S	Dibromofluoromethane	25.0000	24.7674	0.9	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.0669	-0.1	89	0.00
39	T	Cyclohexane	50.0000	49.8027	0.4	91	0.00
40	T	1,1-Dichloropropene	50.0000	49.1225	1.8	90	-0.01
41	T	Tert-Amyl-Methyl ether	100.0000	104.9366	-4.9	91	0.00
42	T	Carbon Tetrachloride	50.0000	51.6520	-3.3	90	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.0269	3.9	89	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	50.0000	48.9738	2.1	88	-0.01
46	T	Benzene	50.0000	49.3087	1.4	89	-0.01
47	T	Trichloroethene	50.0000	48.4253	3.1	86	0.00
48	T	Methylcyclohexane	50.0000	49.5185	1.0	92	0.00
49	C	1,2-Dichloropropane	50.0000	49.5341	0.9	89	0.00
50	T	Bromodichloromethane	50.0000	52.1674	-4.3	90	-0.01
51	T	1,4-Dioxane	200.0000	250.0841	-25.0#	99	0.00
52	T	Dibromomethane	50.0000	52.6311	-5.3	89	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2509	-2.5	95	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.4788	-1.0	91	0.00

(#) = Out of Range
8M418485.D 8260WTR.M Fri Mar 24 12:53:32 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418485.D Vial: 3
Acq On : 24 Mar 2017 10:21 Operator: TMB
Sample : WG607571-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD81106 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

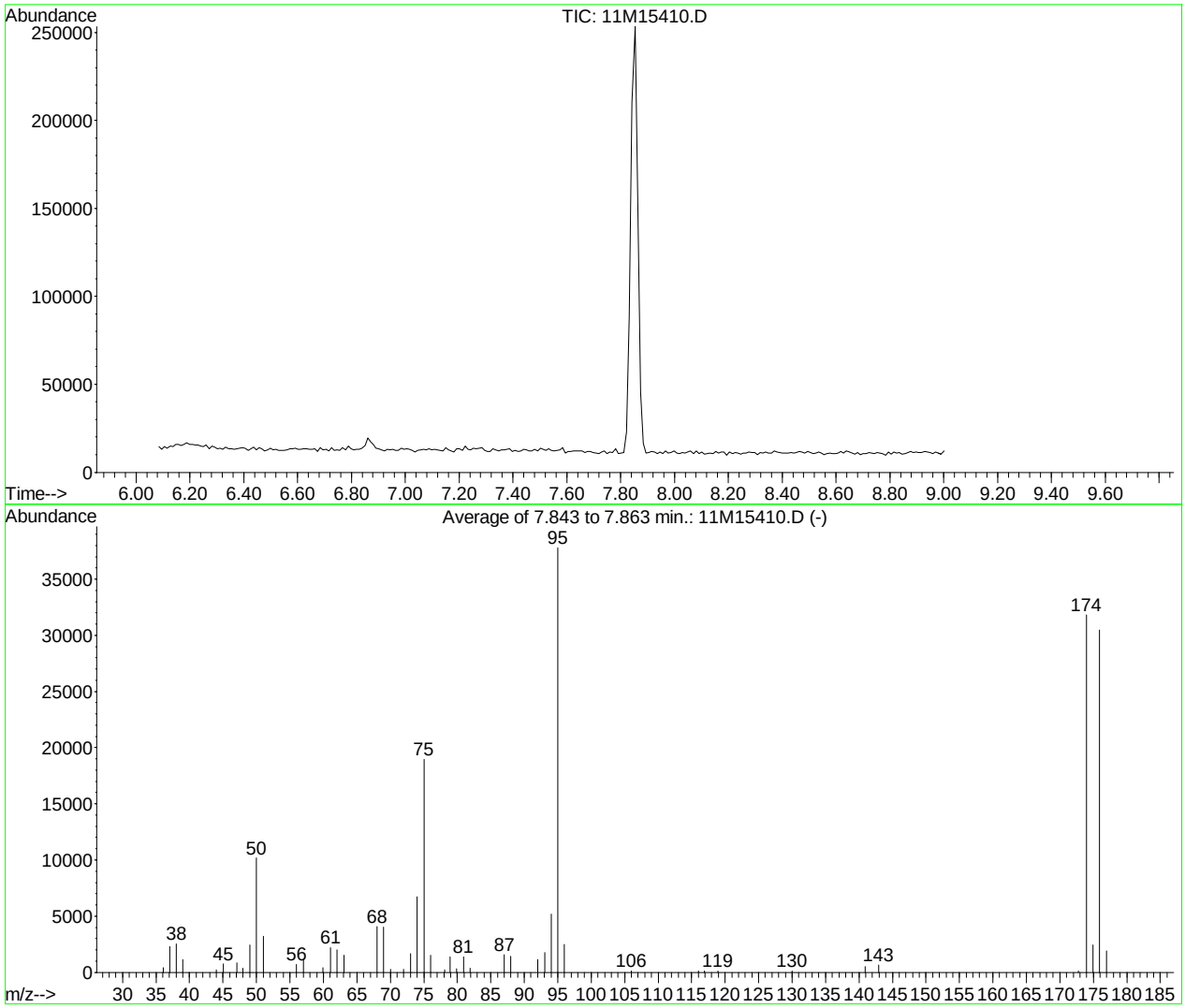
		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.8182	-3.6	91	-0.01
56	T	Dimethyl Disulfide	50.0000	49.7246	0.6	99	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
58	S	Toluene-d8	25.0000	24.4126	2.3	95	0.00
59	C	Toluene	50.0000	48.6027	2.8	90	-0.01
60	T	Ethyl Methacrylate	50.0000	54.3180	-8.6	97	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	50.0000	51.3020	-2.6	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.6515	0.7	90	0.00
64	T	2-Hexanone	50.0000	50.2862	-0.6	92	-0.01
65	T	1,3-Dichloropropane	50.0000	48.4675	3.1	90	0.00
66	T	Tetrachloroethene	50.0000	46.8034	6.4	89	0.00
67	T	Dibromochloromethane	50.0000	49.1454	1.7	91	0.00
68	T	1,2-Dibromoethane	50.0000	49.7930	0.4	90	0.00
69	T	1-Chlorohexane	50.0000	48.1798	3.6	94	0.00
70	P	Chlorobenzene	50.0000	48.5619	2.9	89	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	47.0447	5.9	89	0.00
72	C	Ethylbenzene	50.0000	50.1169	-0.2	88	0.00
73	T	m-,p-Xylene	100.0000	100.3699	-0.4	89	0.00
74	T	o-Xylene	50.0000	47.2885	5.4	89	0.00
75	T	Styrene	50.0000	51.2662	-2.5	90	0.00
76	P	Bromoform	50.0000	52.1055	-4.2	96	0.00
77	T	Isopropylbenzene	50.0000	48.6585	2.7	88	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	95	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.8657	-3.7	95	0.00
80	S	p-Bromofluorobenzene	25.0000	23.6698	5.3	94	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.9294	0.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	58.2089	-16.4	101	0.00
83	T	n-Propylbenzene	50.0000	48.1242	3.8	88	0.00
84	T	Bromobenzene	50.0000	48.5159	3.0	89	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.8758	2.2	88	0.00
86	T	2-Chlorotoluene	50.0000	47.8168	4.4	88	0.00
87	T	4-Chlorotoluene	50.0000	47.9278	4.1	88	0.00
88	T	a-Methylstyrene	50.0000	50.7153	-1.4	96	0.00
89	T	tert-Butylbenzene	50.0000	46.4866	7.0	87	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.7491	0.5	89	0.00
91	T	sec-Butylbenzene	50.0000	48.6723	2.7	88	0.00
92	T	p-Isopropyltoluene	50.0000	49.3514	1.3	88	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.8608	2.3	90	-0.01
94	T	1,4-Dichlorobenzene	50.0000	48.1574	3.7	90	0.00
95	T	n-Butylbenzene	50.0000	48.4861	3.0	88	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.2451	1.5	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	51.2943	-2.6	90	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.3194	5.4	89	0.00
99	T	Hexachlorobutadiene	50.0000	44.2583	11.5	86	0.00
100	T	Naphthalene	50.0000	48.9033	2.2	86	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.5830	6.8	87	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418485.D 8260WTR.M Fri Mar 24 12:53:33 2017 Page 2

2.1.1.5 Raw QC Data

CLPBFB

Data File : C:\MSDCHEM\1\DATA\112916\11M15410.D Vial: 1
Acq On : 29 Nov 2016 14:38 Operator: JDS
Sample : WG593075-01 BFB 50ng 8260 Inst : hpms11
Misc : 1,1 STD78474 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\A9FOOW.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 112916 HPMS11



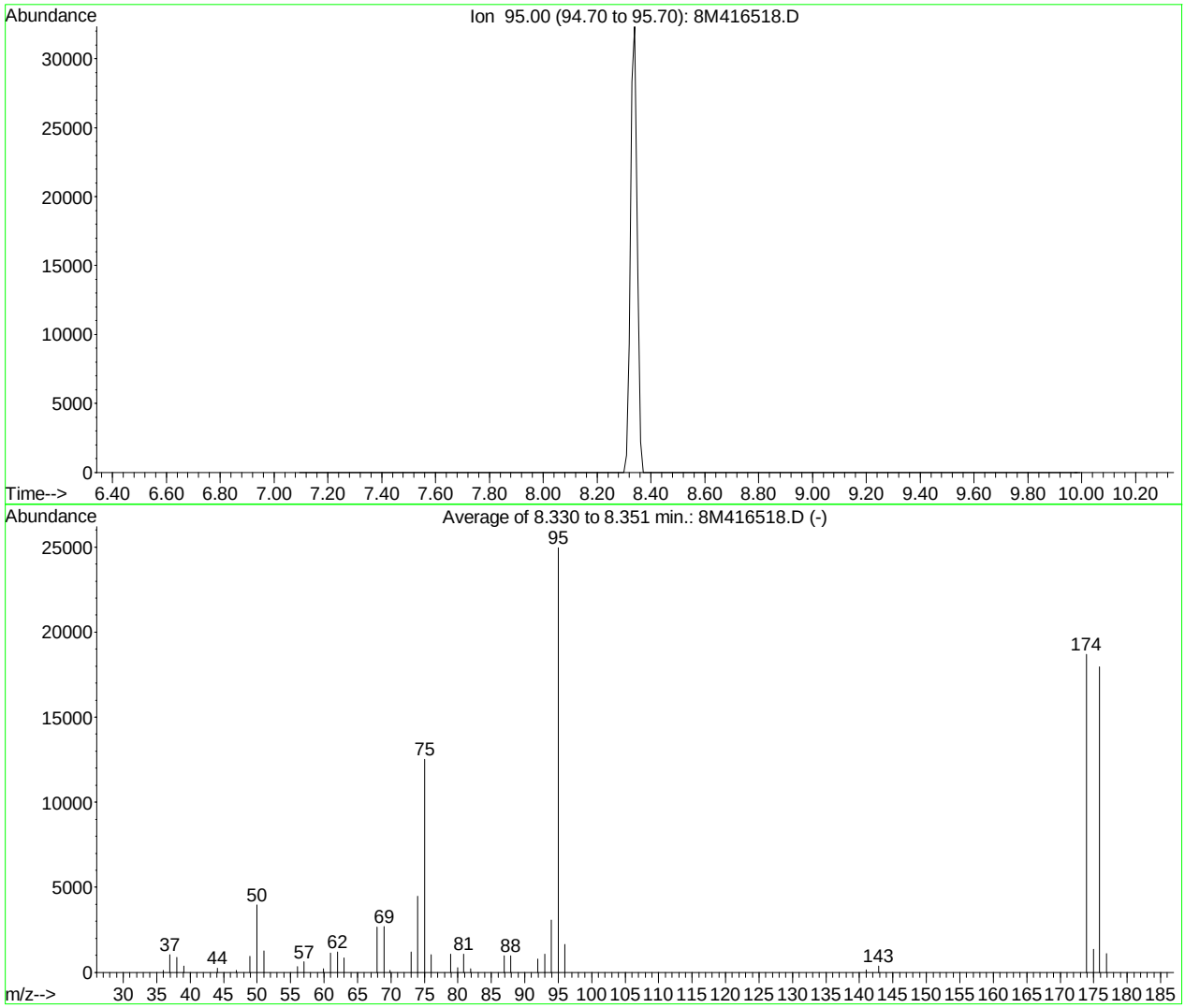
AutoFind: Scans 171, 172, 173; Background Corrected with Scan 165

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.9	10170	PASS
75	95	30	60	50.2	18975	PASS
95	95	100	100	100.0	37813	PASS
96	95	5	9	6.5	2474	PASS
173	174	0.00	2	0.4	114	PASS
174	95	50	100	84.1	31818	PASS
175	174	5	9	7.6	2425	PASS
176	174	95	101	95.8	30490	PASS
177	176	5	9	6.2	1892	PASS

11M15410.D A9FOOW.M Wed Nov 30 09:54:46 2016

CLPBFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416518.D Vial: 1
Acq On : 8 Dec 2016 8:55 Operator: TMB
Sample : WG594051-01 50ng BFB STD A9/FOO Inst : HPMS8
Misc : 1,1 STD78995 Multiplr: 1.00
MS Integration Params: rteint.p
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8



AutoFind: Scans 122, 123, 124; Background Corrected with Scan 117

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.9	3959	PASS
75	95	30	60	50.2	12523	PASS
95	95	100	100	100.0	24967	PASS
96	95	5	9	6.6	1651	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.9	18700	PASS
175	174	5	9	7.2	1355	PASS
176	174	95	101	96.0	17959	PASS
177	176	5	9	6.1	1092	PASS

8M416518.D A9FOOWTR.M Thu Dec 08 14:42:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022217\11M16435.D Vial: 7
Acq On : 22 Feb 2017 13:01 Operator: ADC
Sample : screen 1000x 0995-01 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 22 14:24:06 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 021617 HPMS11
Last Update : Fri Feb 17 10:56:03 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

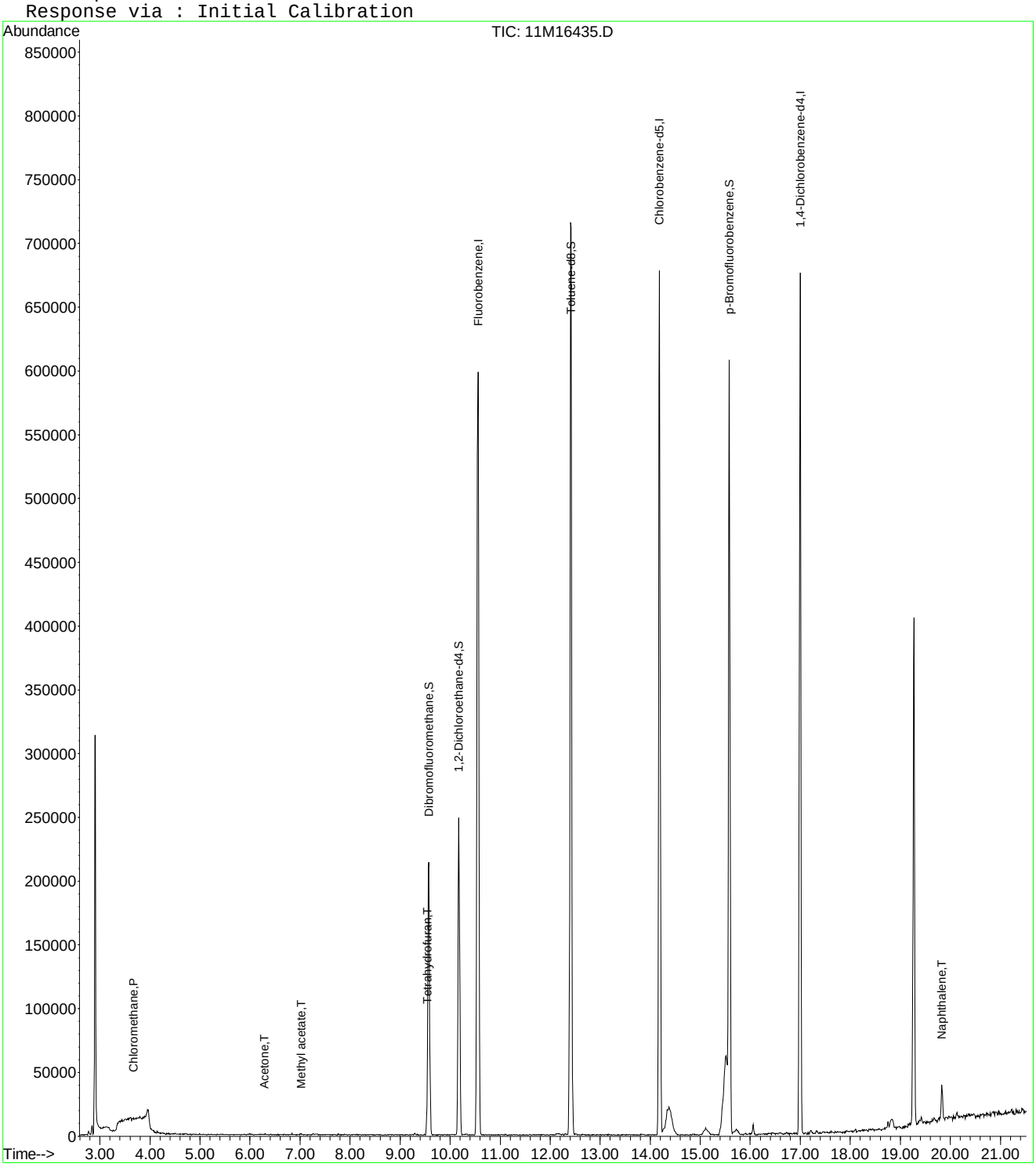
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	660477	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	447415	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	205458	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.57	111	177957	25.2600 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.04%		
43) 1,2-Dichloroethane-d4	10.17	65	211835	24.4288 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%		
57) Toluene-d8	12.42	98	613549	25.1864 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
78) p-Bromofluorobenzene	15.58	95	251659	27.5694 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.28%		
Target Compounds					Qvalue
3) Chloromethane	3.67	50	2233	0.2225 ug/L	# 1
13) Acetone	6.29	43	403	0.2071 ug/L	# 45
18) Methyl acetate	7.02	43	1001	0.1632 ug/L	# 58
36) Tetrahydrofuran	9.54	42	1802	0.8328 ug/L	# 50
45) Benzene	10.33	78	983	Below Cal	# 46
98) Naphthalene	19.83	128	23168	1.2301 ug/L	# 95

(#) = qualifier out of range (m) = manual integration
11M16435.D 8260WTR.M Wed Feb 22 14:24:07 2017 Page 1

Quantitation Report (Not Reviewed)

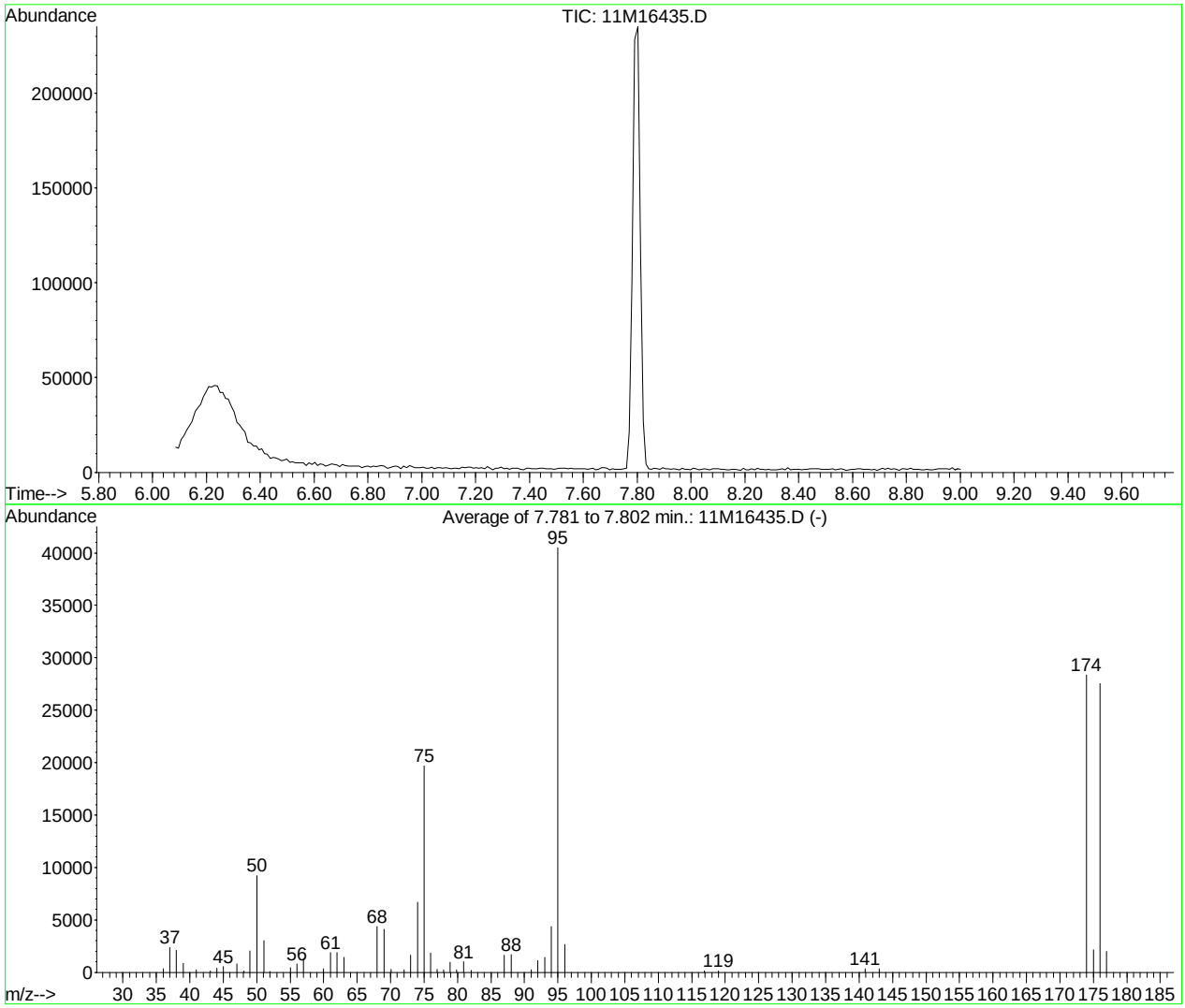
Data File : C:\MSDCHEM\1\DATA\022217\11M16435.D Vial: 7
Acq On : 22 Feb 2017 13:01 Operator: ADC
Sample : screen 1000x 0995-01 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 22 14:24 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 021617 HPMS11
Last Update : Fri Feb 17 10:56:03 2017
Response via : Initial Calibration



BFB

Data File : C:\MSDCHEM\1\DATA\022817\11M16435.D Vial: 1
Acq On : 28 Feb 2017 15:47 Operator: ADC
Sample : WG604519-01 50ng BFB Inst : hpms11
Misc : 1,1 STD79950 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11



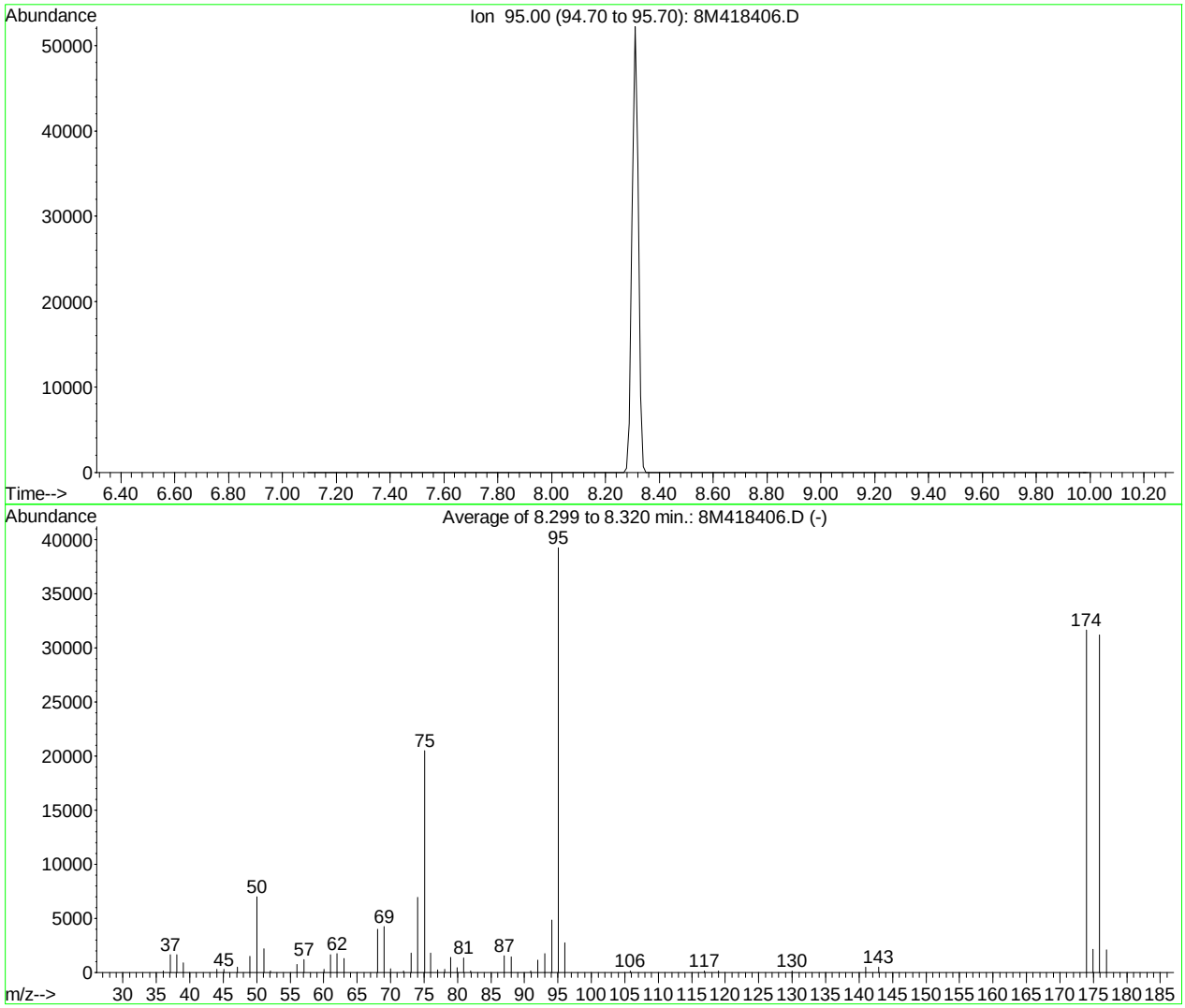
AutoFind: Scans 165, 166, 167; Background Corrected with Scan 160

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.8	9241	PASS
75	95	30	60	48.6	19685	PASS
95	95	100	100	100.0	40504	PASS
96	95	5	9	6.6	2667	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	70.0	28341	PASS
175	174	5	9	7.5	2138	PASS
176	174	95	101	97.2	27539	PASS
177	176	5	9	7.2	1995	PASS

11M16435.D 8260WTR.M Wed Mar 01 08:59:19 2017

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418406.D Vial: 1
Acq On : 21 Mar 2017 15:10 Operator: TMB
Sample : WG607066-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8



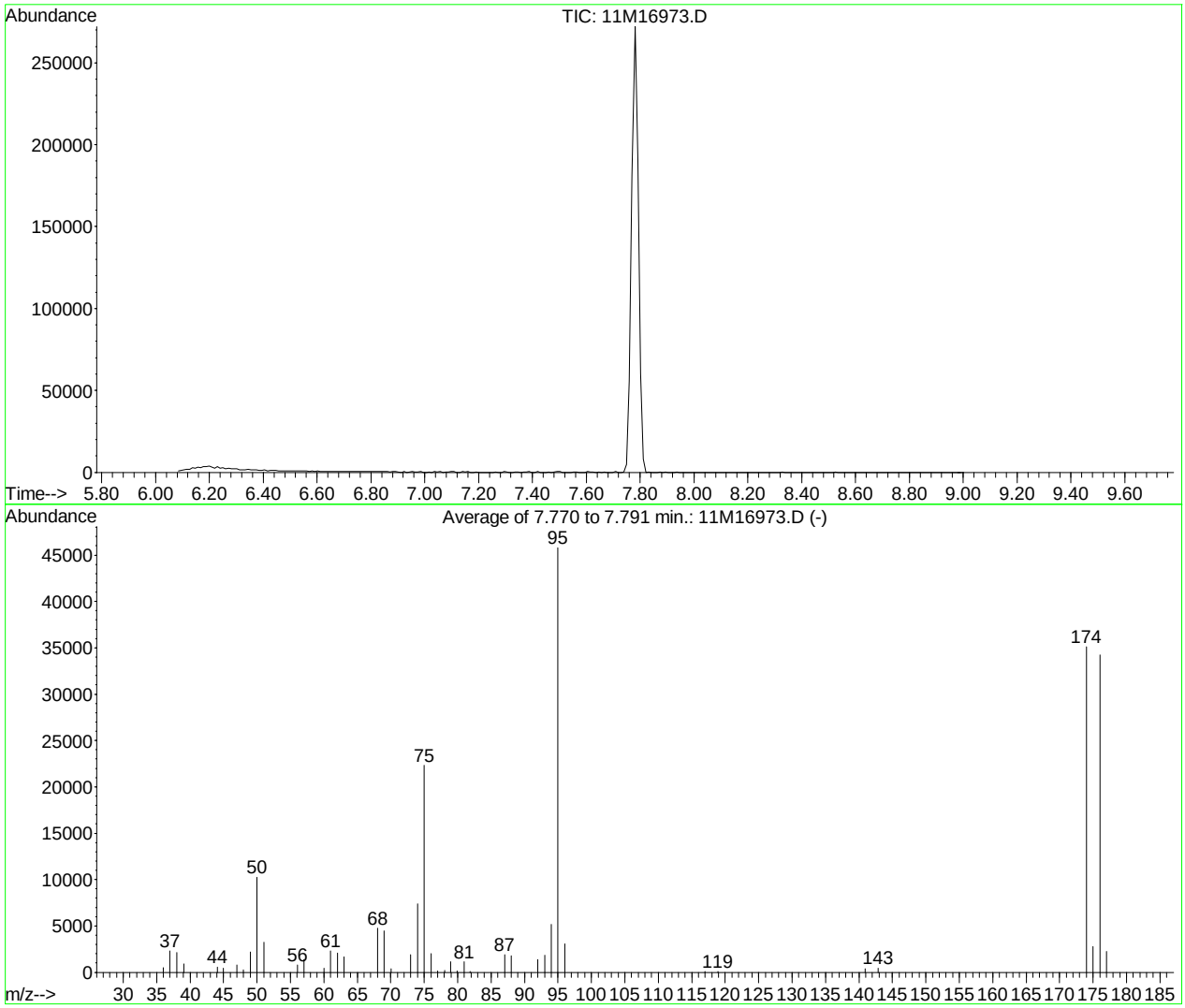
AutoFind: Scans 119, 120, 121; Background Corrected with Scan 114

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.8	6993	PASS
75	95	30	60	52.2	20477	PASS
95	95	100	100	100.0	39240	PASS
96	95	5	9	6.9	2704	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.6	31623	PASS
175	174	5	9	6.8	2141	PASS
176	174	95	101	98.6	31189	PASS
177	176	5	9	6.6	2060	PASS

8M418406.D 8260WTR.M Thu Mar 23 08:41:50 2017

BFB

Data File : C:\MSDCHEM\1\DATA\032317\11M16973.D Vial: 1
Acq On : 23 Mar 2017 13:10 Operator: JDS
Sample : WG607453-01 50ng BFB Inst : hpms11
Misc : 1,1 STD80536 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11

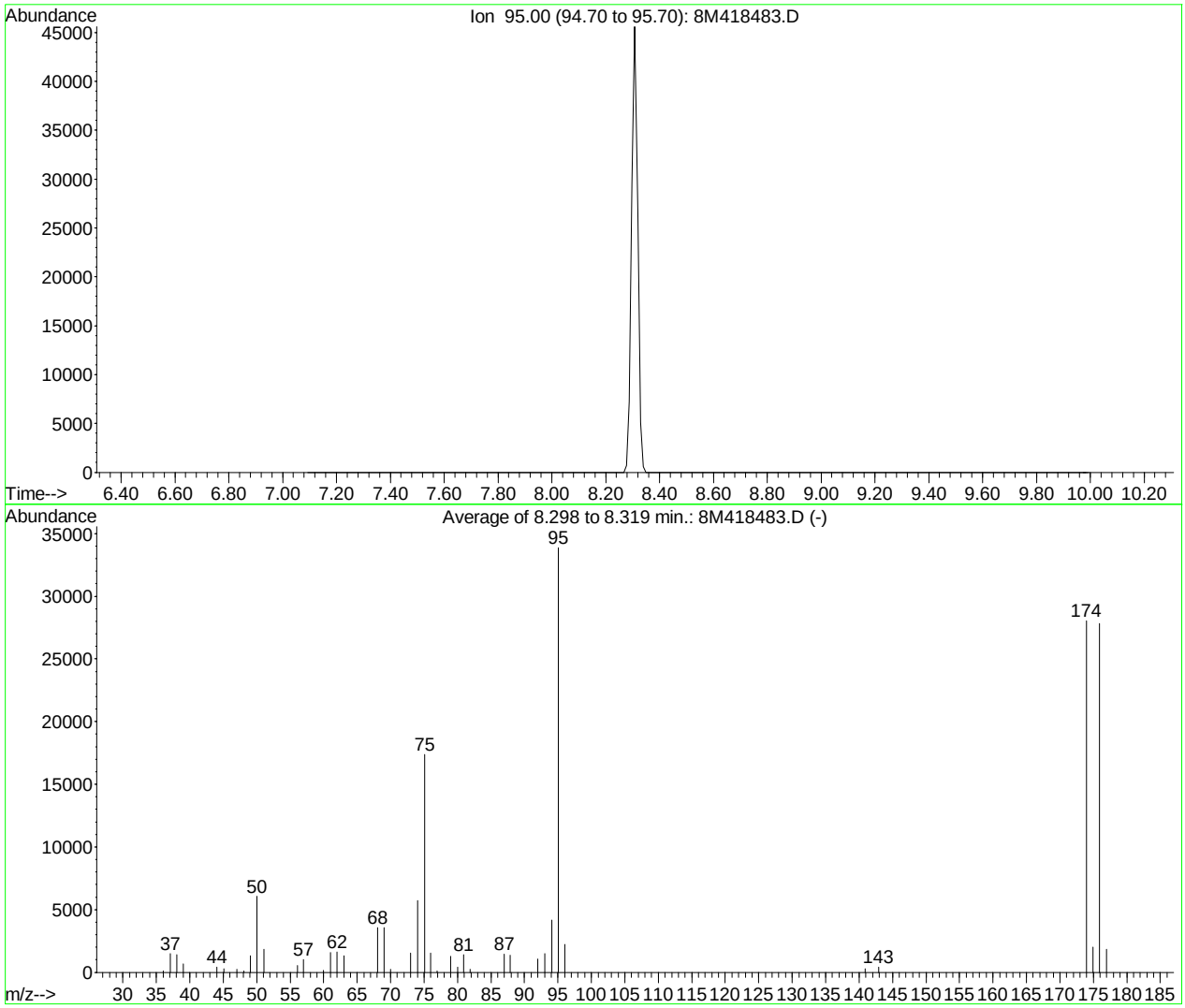


AutoFind: Scans 164, 165, 166; Background Corrected with Scan 159

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.3	10218	PASS
75	95	30	60	48.7	22306	PASS
95	95	100	100	100.0	45805	PASS
96	95	5	9	6.7	3063	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.6	35101	PASS
175	174	5	9	7.8	2754	PASS
176	174	95	101	97.5	34237	PASS
177	176	5	9	6.6	2264	PASS

11M16973.D 8260WTR.M Thu Mar 23 17:47:02 2017

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418483.D Vial: 1
Acq On : 24 Mar 2017 9:24 Operator: TMB
Sample : WG607571-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD80989 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8



AutoFind: Scans 119, 120, 121; Background Corrected with Scan 114

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.9	6077	PASS
75	95	30	60	51.3	17371	PASS
95	95	100	100	100.0	33877	PASS
96	95	5	9	6.6	2226	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	82.8	28050	PASS
175	174	5	9	7.1	1998	PASS
176	174	95	101	99.2	27824	PASS
177	176	5	9	6.6	1840	PASS

8M418483.D 8260WTR.M Fri Mar 24 12:52:26 2017

Data File : C:\MSDCHEM\1\DATA\032317\11M16976.D Vial: 3
Acq On : 23 Mar 2017 14:35 Operator: JDS
Sample : WG607454-01 BLK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:43:14 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

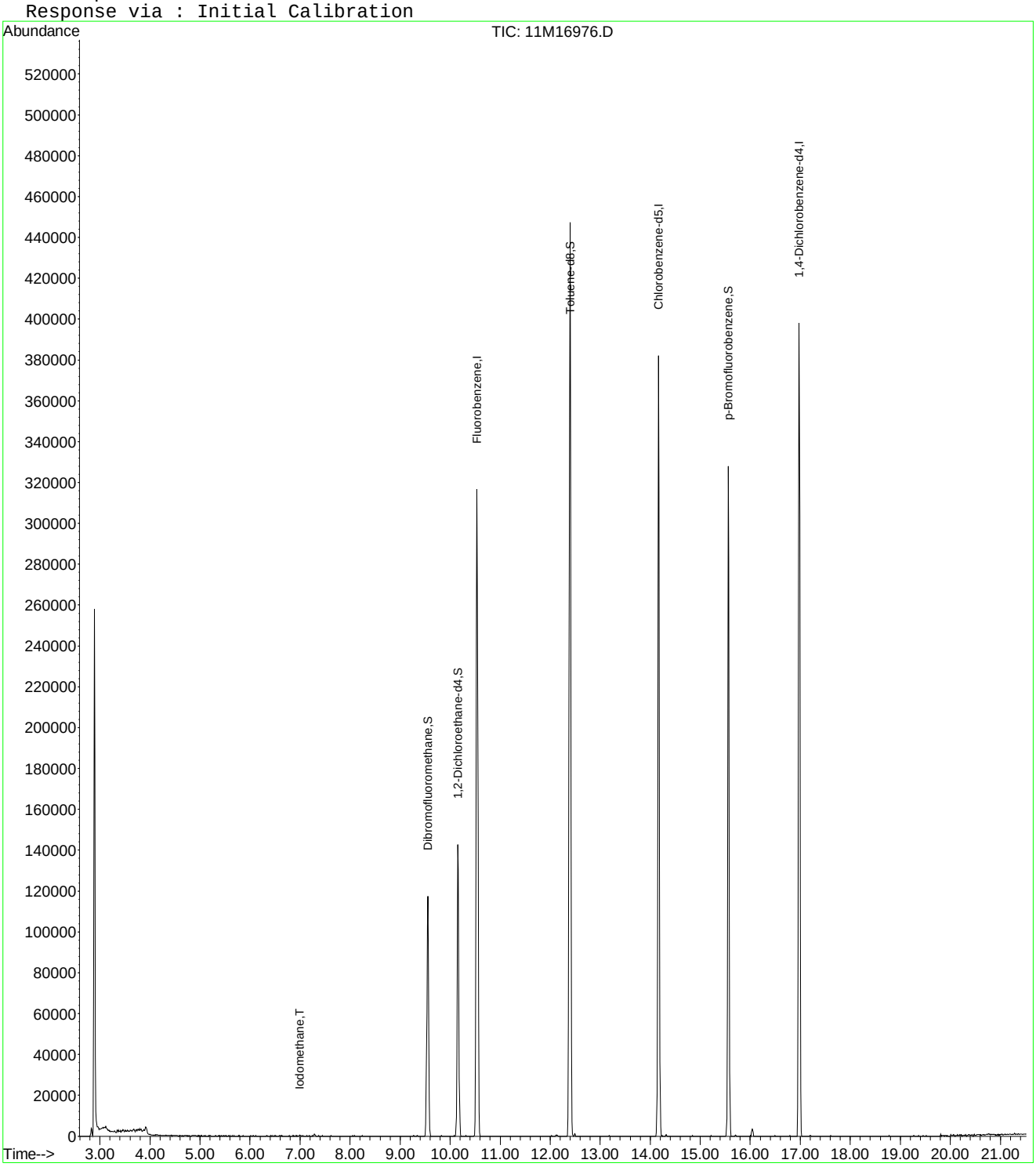
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	354178	25.00	ug/L	-0.01
56) Chlorobenzene-d5	14.17	117	249570	25.00	ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	16.98	152	123635	25.00	ug/L	-0.02
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	95719	26.0993	ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.40%			
43) 1,2-Dichloroethane-d4	10.15	65	120842	27.1141	ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.44%			
57) Toluene-d8	12.40	98	370796	26.4162	ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.68%			
78) p-Bromofluorobenzene	15.56	95	137453	26.5397	ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.16%			
Target Compounds						Qvalue
17) Iodomethane	6.99	142	983	2.2004	ug/L #	32

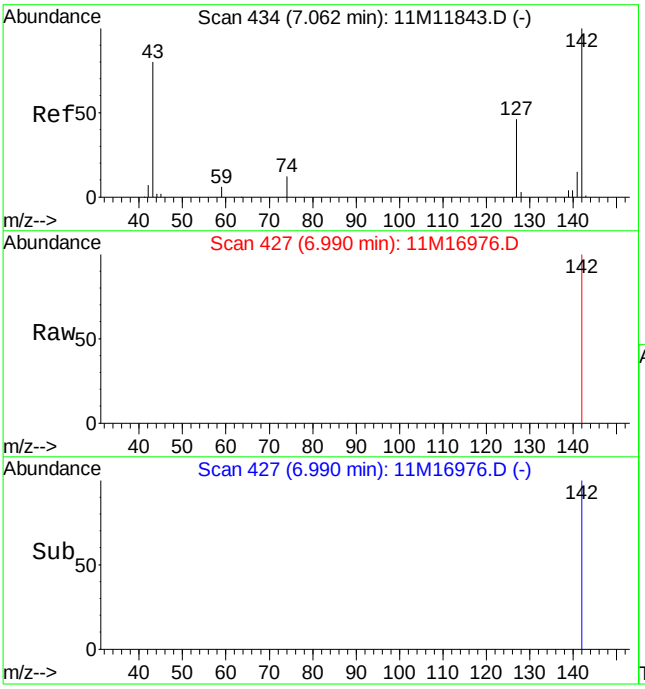
(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032317\11M16976.D Vial: 3
Acq On : 23 Mar 2017 14:35 Operator: JDS
Sample : WG607454-01 BLK 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:43 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration

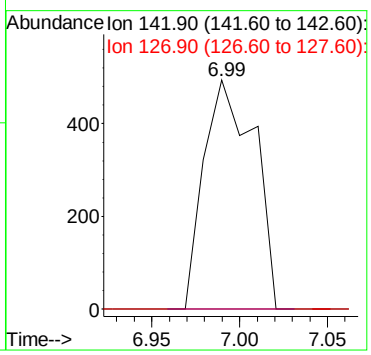




#17
Iodomethane
Concen: 2.20 ug/L
RT: 6.99 min Scan# 427
Delta R.T. -0.01 min
Lab File: 11M16976.D
Acq: 23 Mar 2017 14:35

Tgt Ion:142 Resp: 983

Ion	Ratio	Lower	Upper
142	100		
127	0.0	26.2	61.2#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418487.D Vial: 5
Acq On : 24 Mar 2017 11:21 Operator: TMB
Sample : WG607572-01 VBLK0324 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:22:51 2017 Quant Results File: 8260WTR.RES

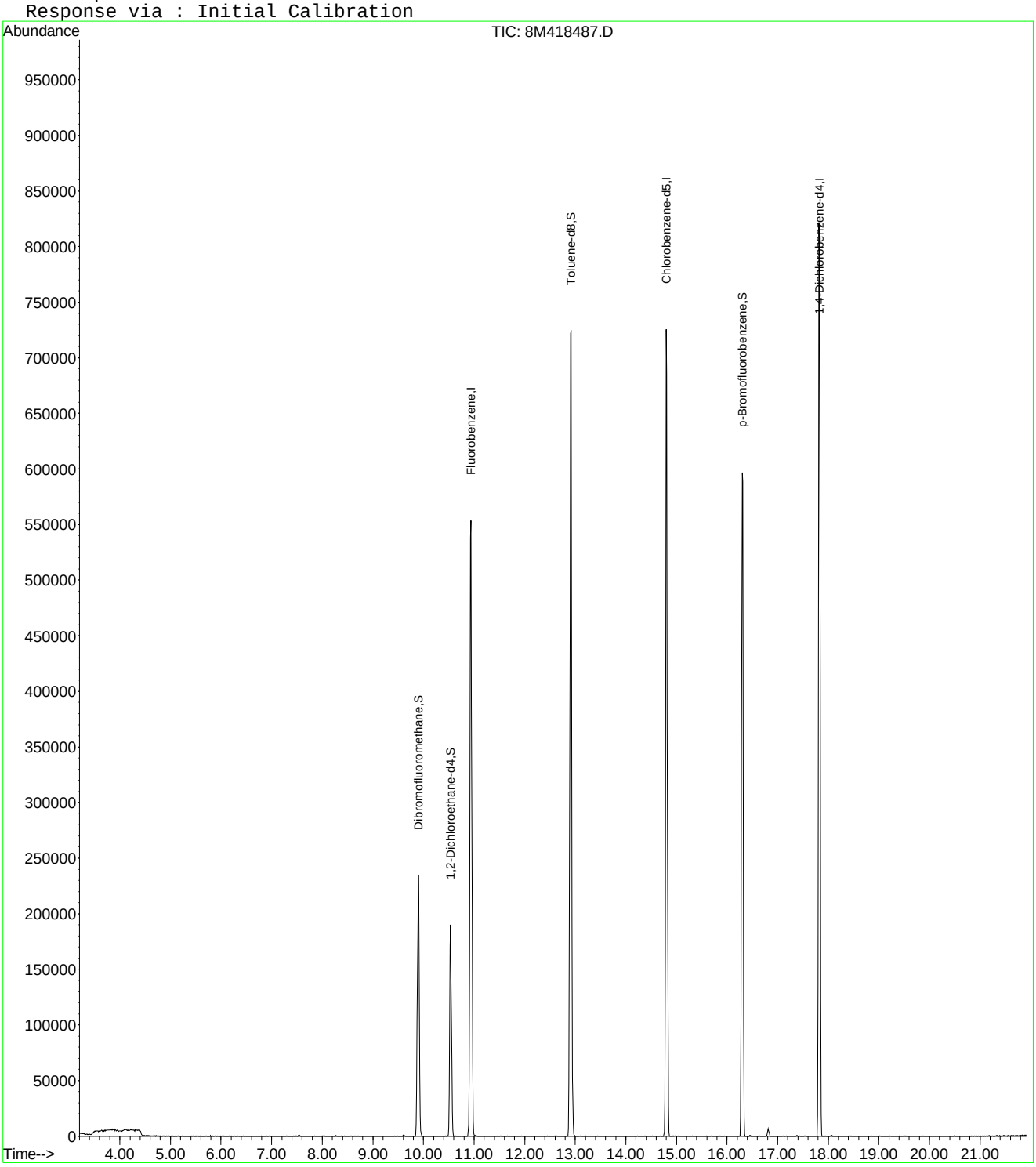
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	708511	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.80	117	546958	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	286866	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	192187	23.9173	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.68%			
43) 1,2-Dichloroethane-d4	10.54	65	163817	23.5250	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.12%			
58) Toluene-d8	12.92	98	689415	25.0574	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.24%			
80) p-Bromofluorobenzene	16.30	95	266263	24.5282	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%			
Target Compounds						Qvalue

(#) = qualifier out of range (m) = manual integration
8M418487.D 8260WTR.M Mon Mar 27 08:22:54 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418487.D Vial: 5
Acq On : 24 Mar 2017 11:21 Operator: TMB
Sample : WG607572-01 VBLK0324 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:22 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032317\11M16977.D Vial: 4
Acq On : 23 Mar 2017 15:05 Operator: JDS
Sample : WG607454-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD80765 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:36:23 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.54	96	327137	25.00	ug/L	-0.01
56) Chlorobenzene-d5	14.17	117	229108	25.00	ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	16.98	152	117841	25.00	ug/L	-0.02
System Monitoring Compounds						
37) Dibromofluoromethane	9.55	111	85677	25.2922	ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.16%			
43) 1,2-Dichloroethane-d4	10.15	65	105837	25.7103	ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.84%			
57) Toluene-d8	12.40	98	336712	26.1304	ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.52%			
78) p-Bromofluorobenzene	15.56	95	127152	25.7578	ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.22	85	120866	23.6246	ug/L	98
3) Chloromethane	3.67	50	130449	19.1219	ug/L	99
4) Vinyl Chloride	3.89	62	110883	20.4298	ug/L	99
5) 1,3-Butadiene	3.93	54	55075	22.5423	ug/L	99
6) Bromomethane	4.78	94	62002	18.0528	ug/L	98
7) Chloroethane	4.94	64	74994	21.8799	ug/L	97
8) Trichlorofluoromethane	5.42	101	125960	20.2883	ug/L	100
9) Diethyl ether	5.94	59	392687	103.9564	ug/L	99
10) Isoprene	5.98	67	136258	21.7188	ug/L	99
11) Acrolein	6.16	56	51600	146.4770	ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	73752	21.7138	ug/L	99
13) Acetone	6.27	43	24966	25.7882	ug/L	93
14) 1,1-Dichloroethene	6.48	61	148238	21.5651	ug/L	100
15) Tert-Butyl Alcohol	6.60	59	92974	454.7925	ug/L	98
16) Dimethyl Sulfide	6.74	62	116569	22.0111	ug/L	99
17) Iodomethane	6.99	142	103474	24.5703	ug/L	99
18) Methyl acetate	7.00	43	75804	25.0350	ug/L	99
19) Methylene Chloride	7.24	84	91113	21.9051	ug/L	99
20) Carbon Disulfide	7.29	76	208415	18.0690	ug/L	98
21) Acrylonitrile	7.41	53	35590	24.5038	ug/L	98
22) Methyl Tert Butyl Ether	7.44	73	238353	22.6851	ug/L	100
23) trans-1,2-Dichloroethene	7.68	96	84442	22.1098	ug/L	99
24) n-Hexane	7.74	57	134903	21.6347	ug/L	99
25) Diisopropyl ether	8.08	45	1597889	100.5096	ug/L	97
26) Vinyl Acetate	8.24	43	187128	25.1656	ug/L	100
27) 1,1-Dichloroethane	8.27	63	183174	22.0625	ug/L	100
28) Ethyl-Tert-Butyl ether	8.62	59	1399731	101.1888	ug/L	98
29) 2-Butanone	8.80	43	41235	25.2832	ug/L	98
30) Propionitrile	8.91	54	63694	137.3413	ug/L	98
31) 2,2-Dichloropropane	9.02	77	129239	21.6503	ug/L	99
32) cis-1,2-Dichloroethene	9.08	96	97161	21.8347	ug/L	99
33) Chloroform	9.27	83	160965	22.2641	ug/L	98
34) 1-Bromopropane	9.41	122	21840	26.0853	ug/L	94
35) Bromochloromethane	9.50	130	54567	22.4304	ug/L	98
36) Tetrahydrofuran	9.52	42	138689	116.6413	ug/L	100
38) 1,1,1-Trichloroethane	9.78	97	139781	21.8404	ug/L	100
39) Cyclohexane	9.81	56	163149	19.1080	ug/L	99
40) 1,1-Dichloropropene	9.97	75	118930	21.9519	ug/L	99
41) Carbon Tetrachloride	10.11	117	117152	21.5419	ug/L	99
42) Tert-Amyl-Methyl ether	10.06	73	1157737	103.9355	ug/L	100

(#) = qualifier out of range (m) = manual integration
11M16977.D 8260WTR.M Wed Mar 29 18:36:24 2017 Page 1

Data File : C:\MSDCHEM\1\DATA\032317\11M16977.D Vial: 4
Acq On : 23 Mar 2017 15:05 Operator: JDS
Sample : WG607454-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD80765 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:36:23 2017 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

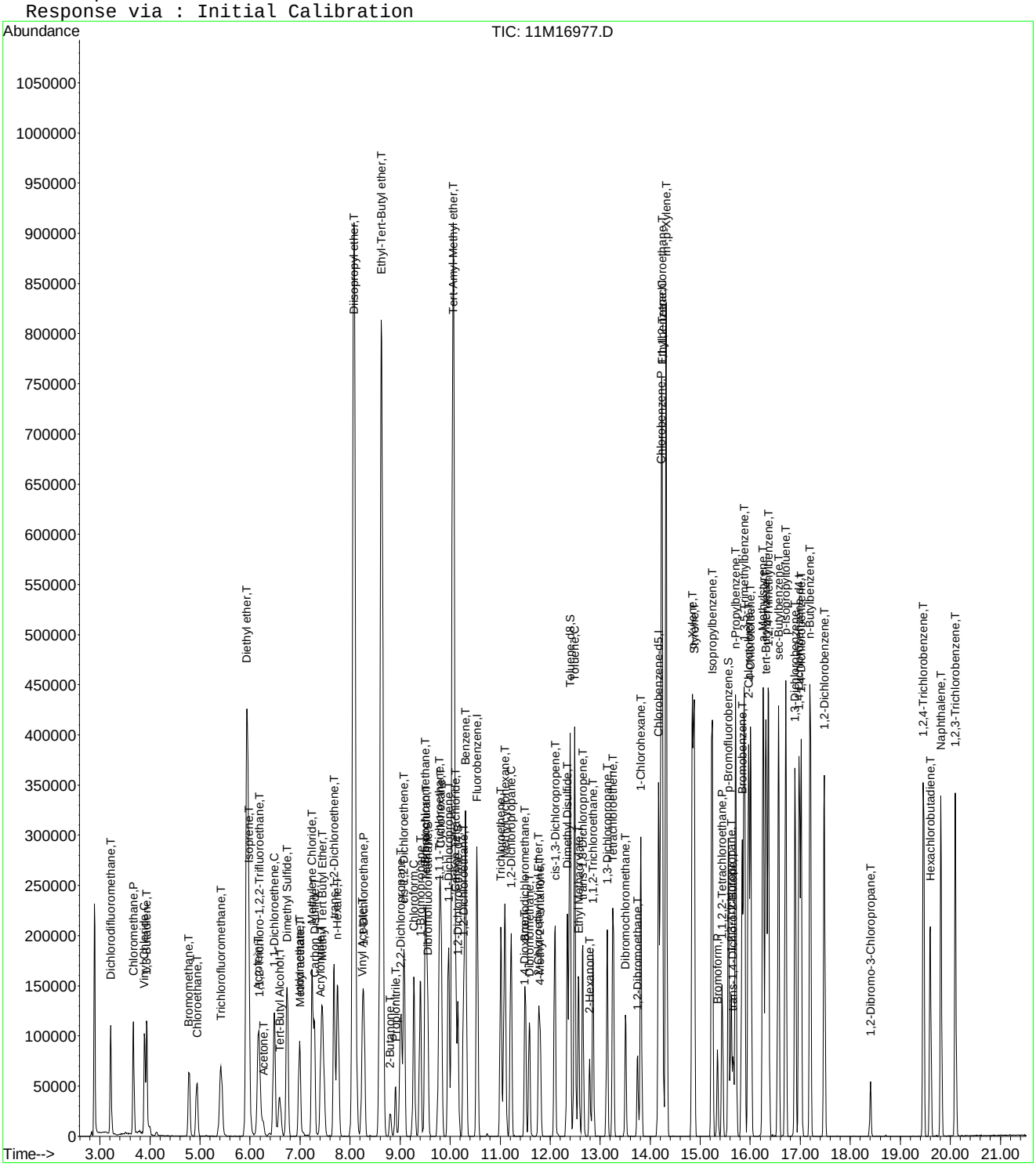
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.27	62	131665	22.9462	ug/L	98
45)	Benzene	10.31	78	356507	22.8770	ug/L	97
46)	Trichloroethene	11.01	130	83121	21.0360	ug/L	98
47)	Methylcyclohexane	11.09	83	134563	20.0211	ug/L	99
48)	1,2-Dichloropropane	11.22	63	104365	22.3104	ug/L	99
49)	1,4-Dioxane	11.49	88	7715	501.8477	ug/L	85
50)	Bromodichloromethane	11.50	83	114428	21.5257	ug/L	100
51)	Dibromomethane	11.58	93	51949	22.6407	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.77	63	57570	21.1132	ug/L	98
53)	4-Methyl-2-Pentanone	11.80	58	35168	23.9170	ug/L	99
54)	cis-1,3-Dichloropropene	12.10	75	146214	22.8384	ug/L	100
55)	Dimethyl Disulfide	12.35	79	78072	19.8236	ug/L	92
58)	Toluene	12.49	91	365081	21.2717	ug/L	97
59)	Ethyl Methacrylate	12.57	69	108487	23.8084	ug/L	96
60)	trans-1,3-Dichloropropene	12.66	75	123463	22.3029	ug/L	97
61)	1,1,2-Trichloroethane	12.85	97	75432	22.8232	ug/L	98
62)	2-Hexanone	12.79	43	64639	25.8084	ug/L	100
63)	1,3-Dichloropropane	13.14	76	132795	23.5273	ug/L	97
64)	Tetrachloroethene	13.26	164	67416	21.2485	ug/L	97
65)	Dibromochloromethane	13.50	129	81146	21.4111	ug/L	99
66)	1,2-Dibromoethane	13.75	107	67939	22.3137	ug/L	100
67)	1-Chlorohexane	13.81	91	114509	21.7253	ug/L	99
68)	Chlorobenzene	14.22	112	227136	22.1492	ug/L	97
69)	1,1,1,2-Tetrachloroethane	14.24	131	81347	21.1805	ug/L	98
70)	Ethylbenzene	14.24	106	129491	22.6970	ug/L	85
71)	m-,p-Xylene	14.32	106	303731	45.2236	ug/L	83
72)	o-Xylene	14.85	106	151905	22.3299	ug/L	90
73)	Styrene	14.88	104	251106	22.8395	ug/L	97
74)	Bromoform	15.34	173	51394	21.0406	ug/L	98
75)	Isopropylbenzene	15.24	105	375805	21.1499	ug/L	95
77)	1,1,2,2-Tetrachloroethane	15.44	83	98347	24.2693	ug/L	98
79)	1,2,3-Trichloropropane	15.62	110	27926	24.0126	ug/L	89
80)	trans-1,4-Dichloro-2-Buten	15.65	53	24462	17.2540	ug/L	76
81)	n-Propylbenzene	15.71	91	460474	21.1619	ug/L	93
82)	Bromobenzene	15.84	156	100759	22.0881	ug/L	99
83)	1,3,5-Trimethylbenzene	15.88	105	326483	21.4049	ug/L	95
84)	2-Chlorotoluene	15.96	91	287606	19.2149	ug/L	96
85)	4-Chlorotoluene	16.01	91	290413	23.0977	ug/L	96
86)	a-Methylstyrene	16.25	118	171451	22.6913	ug/L	100
87)	tert-Butylbenzene	16.32	134	67464	20.5279	ug/L	88
88)	1,2,4-Trimethylbenzene	16.37	105	332586	21.1113	ug/L	96
89)	sec-Butylbenzene	16.56	105	403496	21.7182	ug/L	94
90)	p-Isopropyltoluene	16.71	119	346551	22.2995	ug/L	94
91)	1,3-Dichlorobenzene	16.90	146	187270	22.0410	ug/L	97
92)	1,4-Dichlorobenzene	17.02	146	188865	21.9413	ug/L	97
93)	n-Butylbenzene	17.19	91	329901	22.4887	ug/L	95
94)	1,2-Dichlorobenzene	17.48	146	184313	23.1541	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.40	75	17693	23.2783	ug/L	96
96)	1,2,4-Trichlorobenzene	19.46	180	136543	23.7758	ug/L	97
97)	Hexachlorobutadiene	19.60	225	59235	20.4618	ug/L	98
98)	Naphthalene	19.81	128	316098	25.8693	ug/L	97
99)	1,2,3-Trichlorobenzene	20.10	180	129872	23.6268	ug/L	98

(#) = qualifier out of range (m) = manual integration
11M16977.D 8260WTR.M Wed Mar 29 18:36:24 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032317\11M16977.D Vial: 4
Acq On : 23 Mar 2017 15:05 Operator: JDS
Sample : WG607454-02 20ug/L LCS 8260 Inst : hpms11
Misc : 1,1 STD80765 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Mar 29 18:36 2017 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 022517 HPMS11
Last Update : Tue Feb 28 14:56:34 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418493.D Vial: 11
Acq On : 24 Mar 2017 14:22 Operator: TMB
Sample : WG607572-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 15:18:23 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	702130	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	539518	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	296683	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	192035	24.1156 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.48%		
43) 1,2-Dichloroethane-d4	10.54	65	160379	23.2406 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.96%		
58) Toluene-d8	12.91	98	683463	25.1836 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.72%		
80) p-Bromofluorobenzene	16.31	95	264765	23.5832 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.32%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.34	85	214526	19.5041 ug/L	99
3) Chloromethane	3.83	50	277487	20.8183 ug/L	100
4) Vinyl Chloride	4.05	62	261957	21.0187 ug/L	99
5) 1,3-Butadiene	4.09	54	101272	21.9685 ug/L	99
6) Bromomethane	4.97	94	113769	18.0216 ug/L	100
7) Chloroethane	5.13	64	99560	19.6951 ug/L	99
8) Trichlorofluoromethane	5.62	101	252019	18.6862 ug/L	99
9) Diethyl ether	6.14	59	386690	88.6515 ug/L	99
10) Isoprene	6.18	67	209014	20.0578 ug/L	99
11) Acrolein	6.38	56	32892	58.9747 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	144987	19.9858 ug/L	100
13) Acetone	6.48	43	15080	17.9595 ug/L	99
14) 1,1-Dichloroethene	6.71	61	190389	18.8078 ug/L	100
15) Tert-Butyl Alcohol	6.81	59	50515	189.0180 ug/L	95
16) Dimethyl Sulfide	6.98	62	140727	19.5574 ug/L	99
17) Iodomethane	7.24	142	119015	14.4989 ug/L	98
18) Methyl acetate	7.24	43	45447	18.9275 ug/L	99
19) Methylene Chloride	7.50	84	144814	18.7870 ug/L	100
20) Carbon Disulfide	7.54	76	381474	16.5452 ug/L	100
21) Acrylonitrile	7.67	53	22188	18.8924 ug/L	97
22) Methyl Tert Butyl Ether	7.70	73	276818	18.6571 ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	184017	18.7484 ug/L	99
24) n-Hexane	8.01	57	152935	18.3947 ug/L	99
25) Diisopropyl ether	8.35	45	1794371	95.7121 ug/L	100
26) Vinyl Acetate	8.53	43	119701	16.2239 ug/L	99
27) 1,1-Dichloroethane	8.56	63	243871	19.0512 ug/L	100
28) Ethyl-Tert-Butyl ether	8.93	59	1643901	91.5806 ug/L	100
29) 2-Butanone	9.11	43	23834	17.6175 ug/L	94
30) Propionitrile	9.22	54	39879	99.5757 ug/L	98
31) 2,2-Dichloropropane	9.34	77	203146	17.7892 ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	161371	19.3709 ug/L	98
33) Chloroform	9.61	83	274835	18.5242 ug/L	99
34) 1-Bromopropane	9.75	122	39643	24.9087 ug/L	99
35) Bromochloromethane	9.84	130	86076	19.2351 ug/L	99
36) Tetrahydrofuran	9.86	42	77323	89.8087 ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	244899	20.0683 ug/L	100
39) Cyclohexane	10.17	56	181176	17.1795 ug/L	99
40) 1,1-Dichloropropene	10.34	75	202862	19.3566 ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	1631548	97.3966 ug/L	99
42) Carbon Tetrachloride	10.48	117	223472	20.4668 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418493.D 8260WTR.M Fri Mar 24 15:18:26 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418493.D Vial: 11
Acq On : 24 Mar 2017 14:22 Operator: TMB
Sample : WG607572-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 15:18:23 2017 Quant Results File: 8260WTR.RES

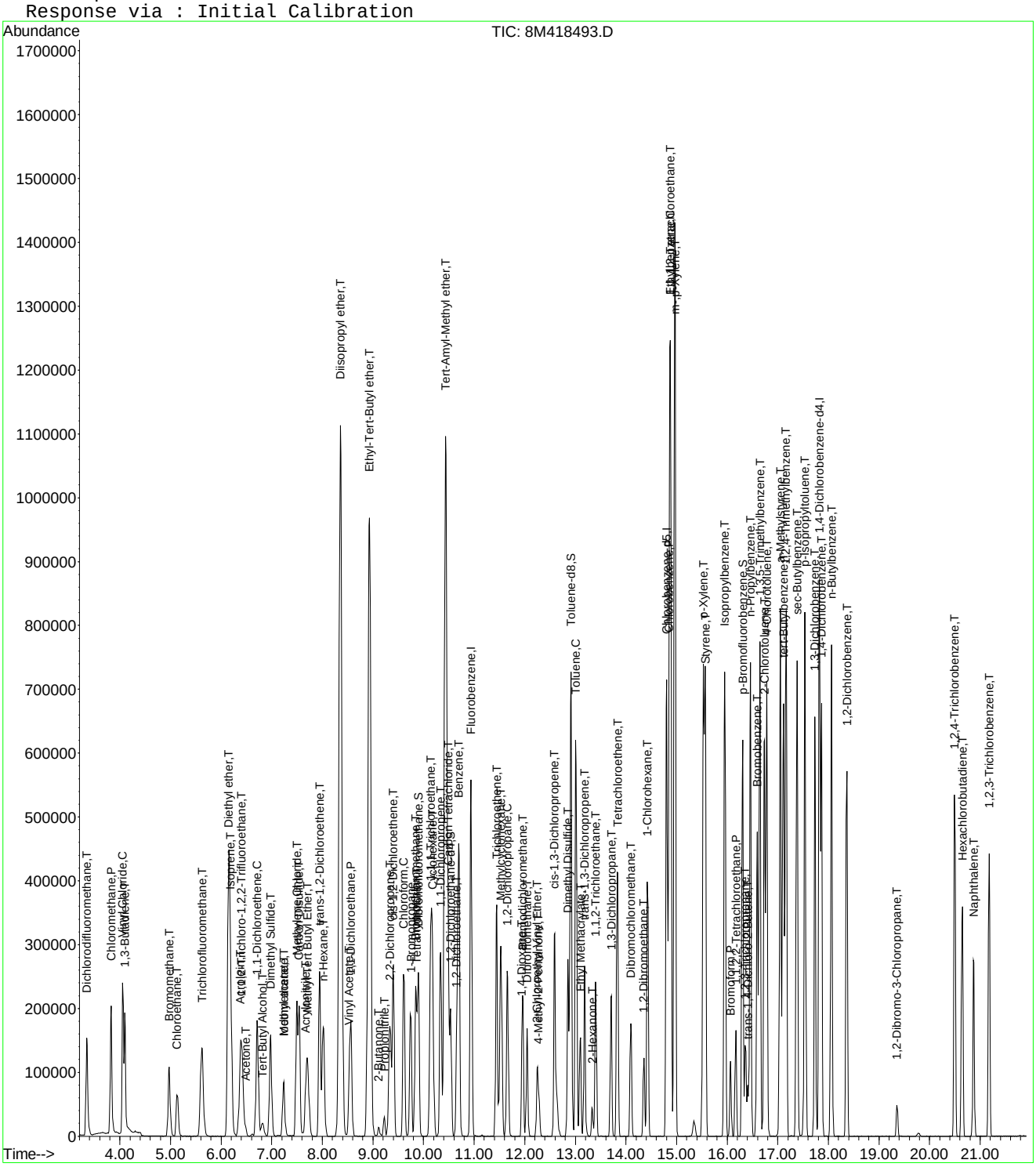
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	157183	18.7651	ug/L	99
46)	Benzene	10.69	78	598833	19.8150	ug/L	99
47)	Trichloroethene	11.45	130	156164	19.3252	ug/L	99
48)	Methylcyclohexane	11.53	83	213198	17.5579	ug/L	99
49)	1,2-Dichloropropane	11.65	63	134724	19.3886	ug/L	99
50)	Bromodichloromethane	11.95	83	185655	18.8994	ug/L	98
51)	1,4-Dioxane	11.94	88	5012	150.1022	ug/L	90
52)	Dibromomethane	12.05	93	75160	20.1842	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	58681	18.5719	ug/L	97
54)	4-Methyl-2-Pentanone	12.27	58	23335	17.2561	ug/L	97
55)	cis-1,3-Dichloropropene	12.58	75	227651	19.9660	ug/L	99
56)	Dimethyl Disulfide	12.85	79	114928	18.9216	ug/L	92
59)	Toluene	13.01	91	636603	19.8386	ug/L	98
60)	Ethyl Methacrylate	13.10	69	129112	20.8083	ug/L	94
62)	trans-1,3-Dichloropropene	13.18	75	178827	18.8931	ug/L	99
63)	1,1,2-Trichloroethane	13.40	97	95632	18.9195	ug/L	97
64)	2-Hexanone	13.34	58	22175	18.2995	ug/L	100
65)	1,3-Dichloropropane	13.71	76	180328	19.9238	ug/L	96
66)	Tetrachloroethene	13.83	164	131446	18.9051	ug/L	100
67)	Dibromochloromethane	14.09	129	122331	18.5880	ug/L	100
68)	1,2-Dibromoethane	14.35	107	99032	19.0947	ug/L	99
69)	1-Chlorohexane	14.42	91	206561	18.8882	ug/L	99
70)	Chlorobenzene	14.85	112	421693	18.6718	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	151246	18.0132	ug/L	99
72)	Ethylbenzene	14.88	106	241367	19.2575	ug/L	94
73)	m-,p-Xylene	14.97	106	585734	38.9650	ug/L	94
74)	o-Xylene	15.53	106	282137	18.9271	ug/L	100
75)	Styrene	15.57	104	480763	19.9784	ug/L	98
76)	Bromoform	16.07	173	72219	18.6426	ug/L	99
77)	Isopropylbenzene	15.95	105	698801	19.3766	ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.17	83	107362	18.5671	ug/L	100
81)	1,2,3-Trichloropropane	16.36	110	31804	19.3195	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	16.41	53	18545	13.6730	ug/L	56
83)	n-Propylbenzene	16.46	91	831069	19.0184	ug/L	98
84)	Bromobenzene	16.59	156	181138	18.7294	ug/L	99
85)	1,3,5-Trimethylbenzene	16.65	105	609875	19.3234	ug/L	98
86)	2-Chlorotoluene	16.74	91	555881	18.9252	ug/L	96
87)	4-Chlorotoluene	16.78	91	479363	18.6808	ug/L	99
88)	a-Methylstyrene	17.05	118	344127	19.5045	ug/L	100
89)	tert-Butylbenzene	17.11	134	125491	18.0038	ug/L	96
90)	1,2,4-Trimethylbenzene	17.16	105	633698	19.3128	ug/L	98
91)	sec-Butylbenzene	17.38	105	747914	19.0912	ug/L	98
92)	p-Isopropyltoluene	17.54	119	624619	19.4645	ug/L	98
93)	1,3-Dichlorobenzene	17.73	146	356262	18.4799	ug/L	98
94)	1,4-Dichlorobenzene	17.87	146	359989	18.5397	ug/L	100
95)	n-Butylbenzene	18.06	91	590982	18.9815	ug/L	98
96)	1,2-Dichlorobenzene	18.36	146	313303	18.6510	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	16497	18.1789	ug/L	99
98)	1,2,4-Trichlorobenzene	20.49	180	216818	17.2567	ug/L	99
99)	Hexachlorobutadiene	20.65	225	99609	16.2154	ug/L	100
100)	Naphthalene	20.88	128	293727	17.7003	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	178756	17.2043	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418493.D 8260WTR.M Fri Mar 24 15:18:26 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032417\8M418493.D Vial: 11
Acq On : 24 Mar 2017 14:22 Operator: TMB
Sample : WG607572-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 15:18 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW08-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 10:42
Collect Date:	03/20/2017 08:25	**Dilution:**	1	**File ID:**	T3.032917.104254
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.627		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	4.96		0.500	0.250	0.125
Iron, Total	7439-89-6	4.95		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	6.21		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.862	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW08-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 12:17
Collect Date:	03/20/2017 08:25	**Dilution:**	10	**File ID:**	T3.032917.121717
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	147		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW08MS-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 10:46
Collect Date:	03/20/2017 08:25	**Dilution:**	1	**File ID:**	T3.032917.104634
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	7.18		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0311		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	11.2		0.500	0.250	0.125
Iron, Total	7439-89-6	7.78		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	12.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	31.3		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.243		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L17031161-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW08MS-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 12:20
Collect Date:	03/20/2017 08:25	**Dilution:**	10	**File ID:**	T3.032917.122058
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	176		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW08MSD-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 10:50
Collect Date:	03/20/2017 08:25	**Dilution:**	1	**File ID:**	T3.032917.105003
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	7.35		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0309		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	11.3		0.500	0.250	0.125
Iron, Total	7439-89-6	7.91		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	12.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	31.2		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.240		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L17031161-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW08MSD-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 12:24
Collect Date:	03/20/2017 08:25	**Dilution:**	10	**File ID:**	T3.032917.122434
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	196		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW23SW-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 10:53
Collect Date:	03/20/2017 09:40	**Dilution:**	1	**File ID:**	T3.032917.105332
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.157	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	23.3		0.500	0.250	0.125
Magnesium, Total	7439-95-4	11.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.75		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	80.9		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW23SW-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 12:28
Collect Date:	03/20/2017 09:40	**Dilution:**	10	**File ID:**	T3.032917.122809
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	56.5		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 10:57
Collect Date:	03/20/2017 10:40	**Dilution:**	1	**File ID:**	T3.032917.105710
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.201		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.202		0.200	0.100	0.0500
Potassium, Total	7440-09-7	0.966	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 12:39
Collect Date:	03/20/2017 10:40	**Dilution:**	10	**File ID:**	T3.032917.123903
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	29.9		5.00	2.50	1.25
Magnesium, Total	7439-95-4	26.7		10.0	5.00	2.50
Sodium, Total	7440-23-5	575		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 11:15
Collect Date:	03/20/2017 13:25	**Dilution:**	1	**File ID:**	T3.032917.111512
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	23.1		0.500	0.250	0.125
Magnesium, Total	7439-95-4	13.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.48	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	42.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 12:49
Collect Date:	03/20/2017 13:25	**Dilution:**	10	**File ID:**	T3.032917.124954
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	13.2		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW10F-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 11:18
Collect Date:	03/20/2017 14:25	**Dilution:**	1	**File ID:**	T3.032917.111852
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.0		0.500	0.250	0.125
Magnesium, Total	7439-95-4	6.87		1.00	0.500	0.250
Potassium, Total	7440-09-7	3.02		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	55.4		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW10F-032017	**Prep Method:**	3015A	**Prep Date:**	03/23/2017 07:42
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607769	**Analyst:**	JYH	**Run Date:**	03/29/2017 12:53
Collect Date:	03/20/2017 14:25	**Dilution:**	10	**File ID:**	T3.032917.125334
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	23.2		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG607345
Analyst: ERP
Spike Analyst: ERP
Run Date: 03/23/2017 07:42
Method: 3015A
Balance: BAL019
Instrument: MW-1
Instrument Start: 03/23/2017 08:03

SOP: ME407 Revison 19
Spike Solution: STD80805
Spike Witness: VC
HNO3 Lot #: COA19483
HCL Lot #: COA19441
40 & 50 ML. DIGESTION TU COA19487
ICP FILTERS LOT#R6EA4780 RGT38286

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG607345-02	BLANK	1	40 mL	50 mL	205.882 g	205.866 g		
2	WG607345-03	LCS	1	40 mL	50 mL	209.235 g	209.24 g	5 mL	
3	WG607345-01	REF	1	40 mL	50 mL	203.227 g	203.22 g		
4	L17031161-01	RS01	1	40 mL	50 mL	203.227 g	203.22 g		03/31/17
5	WG607345-04	MS	1	40 mL	50 mL	212.579 g	212.569 g	5 mL	
6	L17031161-02	MS01	1	40 mL	50 mL	212.579 g	212.569 g	5 mL	03/31/17
7	WG607345-05	MSD	1	40 mL	50 mL	211.81 g	211.796 g	5 mL	
8	L17031161-03	SD01	1	40 mL	50 mL	211.81 g	211.796 g	5 mL	03/31/17
9	L17031161-04	SAMP	1	40 mL	50 mL	204.836 g	204.83 g		03/31/17
10	L17031161-05	SAMP	1	40 mL	50 mL	204.76 g	204.734 g		03/31/17
11	L17031161-07	SAMP	1	40 mL	50 mL	206.681 g	206.657 g		03/31/17
12	L17031161-09	SAMP	1	40 mL	50 mL	204.821 g	204.838 g		03/31/17
13	L17031176-01	SAMP	1	40 mL	50 mL	205.373 g	205.367 g		03/31/17
14	L17031176-02	SAMP	1	40 mL	50 mL	205.401 g	205.391 g		03/31/17
15	L17031176-03	SAMP	1	40 mL	50 mL	205.91 g	205.904 g		03/31/17
16	L17031176-05	SAMP	1	40 mL	50 mL	207.426 g	207.425 g		03/31/17
17	L17031184-01	SAMP	1	40 mL	50 mL	206.1 g	206.092 g		03/29/17
18	L17031184-02	SAMP	1	40 mL	50 mL	206.293 g	206.274 g		03/29/17
19	L17031188-01	SAMP	1	40 mL	50 mL	207.761 g	207.74 g		03/29/17
20	L17031188-02	SAMP	1	40 mL	50 mL	205.152 g	205.132 g		03/29/17
21	L17031188-03	SAMP	1	40 mL	50 mL	203.251 g	203.259 g		03/29/17
22	L17031188-04	SAMP	1	40 mL	50 mL	206.83 g	206.822 g		03/29/17
23	L17031202-02	SAMP	1	1 mL	50 mL	205.933 g	205.929 g		03/31/17
24	L17031202-04	SAMP	1	1 mL	50 mL	205.615 g	205.598 g		03/31/17
25	L17031202-06	SAMP	1	1 mL	50 mL	204.563 g	204.542 g		03/31/17
26	L17031215-01	SAMP	1	40 mL	50 mL	204.856 g	204.838 g		03/29/17
27	L17031215-02	SAMP	1	40 mL	50 mL	206.522 g	206.495 g		03/29/17

L17031202-04	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 5212015
Report generated: 03/23/2017 08:55

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.032917.095205	WG608115-01	Calibration Point		1		03/29/17 09:52
2	T3.032917.095542	WG608115-02	Calibration Point		1		03/29/17 09:55
3	T3.032917.095929	WG608115-03	Calibration Point		1		03/29/17 09:59
4	T3.032917.100316	WG608115-04	Calibration Point		1		03/29/17 10:03
5	T3.032917.100650	WG608115-05	Calibration Point		1		03/29/17 10:06
6	T3.032917.101018	WG608115-06	Initial Calibration Verification		1		03/29/17 10:10
7	T3.032917.101349	WG608115-07	Initial Calib Blank		1		03/29/17 10:13
8	T3.032917.101727	WG608115-08	Low Level Initial Calibration V		1		03/29/17 10:17
9	T3.032917.102104	WG608115-09	Interference Check		1		03/29/17 10:21
10	T3.032917.102448	WG608115-10	Interference Check		1		03/29/17 10:24
11	T3.032917.102827	WG608115-11	CCV		1		03/29/17 10:28
12	T3.032917.103156	WG608115-12	CCB		1		03/29/17 10:31
13	T3.032917.103539	WG607345-02	Method/Prep Blank	40/50	1		03/29/17 10:35
14	T3.032917.103923	WG607345-03	Laboratory Control S	40/50	1		03/29/17 10:39
15	T3.032917.104254	WG607345-01	Reference Sample		1	L17031161-01	03/29/17 10:42
16	T3.032917.104634	WG607345-04	Matrix Spike	40/50	1	L17031161-01	03/29/17 10:46
17	T3.032917.105003	WG607345-05	Matrix Spike Duplica	40/50	1	L17031161-01	03/29/17 10:50
18	T3.032917.105332	L17031161-04	18CPTMW23SW-032017	40/50	1		03/29/17 10:53
19	T3.032917.105710	L17031161-05	18WW24-032017	40/50	1		03/29/17 10:57
20	T3.032917.110050	WG607769-03	Post Digestion Spike		1	L17031161-05	03/29/17 11:00
21	T3.032917.110421	WG607769-04	Serial Dilution		5	L17031161-05	03/29/17 11:04
22	T3.032917.110800	WG608115-13	CCV		1		03/29/17 11:08
23	T3.032917.111130	WG608115-14	CCB		1		03/29/17 11:11
24	T3.032917.111512	L17031161-07	18WW25F-032017	40/50	1		03/29/17 11:15
25	T3.032917.111852	L17031161-09	MW10F-032017	40/50	1		03/29/17 11:18
26	T3.032917.112231	L17031188-01	12610-B01-WQ-W0002	40/50	1		03/29/17 11:22
27	T3.032917.112611	L17031188-02	14310-F01-WQ-W0015	40/50	1		03/29/17 11:26
28	T3.032917.112952	L17031188-03	46002-G18-WQ-W0095	40/50	1		03/29/17 11:29
29	T3.032917.113335	L17031188-04	46010-G24-WQ-W0053	40/50	1		03/29/17 11:33
30	T3.032917.113718	L17031215-02	17C0685-02	40/50	1		03/29/17 11:37
31	T3.032917.114054	L17031176-01	A05-MW03D-Y2S2	40/50	10		03/29/17 11:40
32	T3.032917.114436	L17031176-02	A05-MW08D-Y2S2	40/50	10		03/29/17 11:44
33	T3.032917.114817	L17031176-03	A05-MW08S-Y2S2	40/50	10		03/29/17 11:48
34	T3.032917.115155	WG608115-15	CCV		1		03/29/17 11:51

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Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.032917.115525	WG608115-16	CCB		1		03/29/17 11:55
36	T3.032917.115856	L17031176-01	A05-MW03D-Y2S2	40/50	1		03/29/17 11:58
37	T3.032917.120236	L17031176-02	A05-MW08D-Y2S2	40/50	1		03/29/17 12:02
38	T3.032917.120616	L17031176-03	A05-MW08S-Y2S2	40/50	1		03/29/17 12:06
39	T3.032917.120956	L17031176-05	A05-TM06-Y2S2	40/50	1		03/29/17 12:09
40	T3.032917.121336	L17031176-05	A05-TM06-Y2S2	40/50	10		03/29/17 12:13
41	T3.032917.121717	WG607345-01	Reference Sample		10	L17031161-01	03/29/17 12:17
42	T3.032917.122058	WG607345-04	Matrix Spike	40/50	10	L17031161-01	03/29/17 12:20
43	T3.032917.122434	WG607345-05	Matrix Spike Duplica	40/50	10	L17031161-01	03/29/17 12:24
44	T3.032917.122809	L17031161-04	18CPTMW23SW-032017	40/50	10		03/29/17 12:28
45	T3.032917.123150	WG608115-17	CCV		1		03/29/17 12:31
46	T3.032917.123519	WG608115-18	CCB		1		03/29/17 12:35
47	T3.032917.123903	L17031161-05	18WW24-032017	40/50	10		03/29/17 12:39
48	T3.032917.124243	WG607769-03	Post Digestion Spike		10	L17031161-05	03/29/17 12:42
49	T3.032917.124613	WG607769-04	Serial Dilution		50	L17031161-05	03/29/17 12:46
50	T3.032917.124954	L17031161-07	18WW25F-032017	40/50	10		03/29/17 12:49
51	T3.032917.125334	L17031161-09	MW10F-032017	40/50	10		03/29/17 12:53
52	T3.032917.125716	WG608115-19	CCV		1		03/29/17 12:57
53	T3.032917.130045	WG608115-20	CCB		1		03/29/17 13:00
54	T3.032917.130428	WG608115-21	Low Level Continuing Calibra		1		03/29/17 13:04
55	T3.032917.130804	WG607726-02	Method/Prep Blank	40/50	1		03/29/17 13:08
56	T3.032917.131146	WG607726-03	Laboratory Control S	40/50	1		03/29/17 13:11
57	T3.032917.131517	WG607726-01	Reference Sample		1	L17031383-01	03/29/17 13:15
58	T3.032917.131857	WG607726-04	Matrix Spike	40/50	1	L17031383-01	03/29/17 13:18
59	T3.032917.133259	WG607726-05	Matrix Spike Duplica	40/50	1	L17031383-01	03/29/17 13:32
60	T3.032917.133633	L17031266-01	A05-MW10D-Y2S2	40/50	1		03/29/17 13:36
61	T3.032917.134020	WG607804-03	Post Digestion Spike		1	L17031266-01	03/29/17 13:40
62	T3.032917.134355	WG607804-04	Serial Dilution		5	L17031266-01	03/29/17 13:43
63	T3.032917.134741	L17031266-02	A05-MW11S-Y2S2	40/50	1		03/29/17 13:47
64	T3.032917.135125	L17031339-02	126F-032117	40/50	100		03/29/17 13:51
65	T3.032917.135512	WG608115-22	CCV		1		03/29/17 13:55
66	T3.032917.135846	WG608115-23	CCB		1		03/29/17 13:58
67	T3.032917.140234	L17031339-04	126FDF-032117	40/50	100		03/29/17 14:02
68	T3.032917.140620	L17031339-05	MW2-032117	40/50	10		03/29/17 14:06

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.032917.141004	L17031339-06	18CPTMW01DW-032117	40/50	10		03/29/17 14:10
70	T3.032917.141352	L17031339-07	18CPTMW01SW-032117	40/50	20		03/29/17 14:13
71	T3.032917.141738	L17031339-08	MW13-032117	40/50	20		03/29/17 14:17
72	T3.032917.142124	L17031339-09	MW13FD-032117	40/50	20		03/29/17 14:21
73	T3.032917.142511	L17031339-11	CO2F-032117	40/50	10		03/29/17 14:25
74	T3.032917.142857	L17031339-13	MW16F-032217	40/50	10		03/29/17 14:28
75	T3.032917.143242	L17031339-15	MW19F-032217	40/50	20		03/29/17 14:32
76	T3.032917.143629	WG608115-24	CCV		1		03/29/17 14:36
77	T3.032917.144003	WG608115-25	CCB		1		03/29/17 14:40
78	T3.032917.144352	WG608115-26	Low Level Continuing Calibra		1		03/29/17 14:43
79	T3.032917.151537	WG607688-02	Method/Prep Blank	40/50	1		03/29/17 15:15
80	T3.032917.151924	WG607688-03	Laboratory Control S	40/50	1		03/29/17 15:19
81	T3.032917.152259	L17031237-01	HAMILTON_03-04-0105_Pl	40/50	1		03/29/17 15:22
82	T3.032917.152643	WG607688-01	Reference Sample		1	L17031268-01	03/29/17 15:26
83	T3.032917.153025	L17031268-02	A05-MW09S-Y2S2	40/50	1		03/29/17 15:30
84	T3.032917.153408	WG607688-04	Matrix Spike	40/50	1	L17031268-01	03/29/17 15:34
85	T3.032917.153742	WG607688-05	Matrix Spike Duplica	40/50	1	L17031268-01	03/29/17 15:37
86	T3.032917.154117	L17031268-05	A05-TM07-Y2S2	40/50	1		03/29/17 15:41
87	T3.032917.154504	WG607776-01	Post Digestion Spike		1	L17031268-05	03/29/17 15:45
88	T3.032917.154838	WG607776-02	Serial Dilution		5	L17031268-05	03/29/17 15:48
89	T3.032917.155224	WG608115-27	CCV		1		03/29/17 15:52
90	T3.032917.155559	WG608115-28	CCB		1		03/29/17 15:55
91	T3.032917.155946	L17031268-07	A05-RB01-Y2S2	40/50	1		03/29/17 15:59
92	T3.032917.160333	L17031317-01	1001-142 W1	40/50	1		03/29/17 16:03
93	T3.032917.160714	L17031317-02	1001-142 P1	40/50	1		03/29/17 16:07
94	T3.032917.161100	L17031317-03	1001-142 S2	40/50	1		03/29/17 16:11
95	T3.032917.161445	L17031318-01	2211-112 S1	40/50	1		03/29/17 16:14
96	T3.032917.161830	L17031318-02	2211-112 S2	40/50	1		03/29/17 16:18
97	T3.032917.162213	L17031318-03	2211-112 S3	40/50	1		03/29/17 16:22
98	T3.032917.162557	L17031318-04	2211-112 S4	40/50	1		03/29/17 16:25
99	T3.032917.162941	L17031319-01	0302-112D W1	40/50	1		03/29/17 16:29
100	T3.032917.163323	L17031320-01	1802-126 S1	40/50	1		03/29/17 16:33
101	T3.032917.163708	WG608115-29	CCV		1		03/29/17 16:37
102	T3.032917.164043	WG608115-30	CCB		1		03/29/17 16:40

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.032917.164419	L17031354-01	T7C0981-01	40/50	1		03/29/17 16:44
104	T3.032917.164752	L17031354-02	T7C0981-02	40/50	1		03/29/17 16:47
105	T3.032917.165135	L17031363-01	17702-F01-WQ-W0013	40/50	1		03/29/17 16:51
106	T3.032917.165520	L17031363-02	19301-C10-WQ-W0096	40/50	1		03/29/17 16:55
107	T3.032917.165907	L17031363-03	46011-G09-WQ-W0023	40/50	1		03/29/17 16:59
108	T3.032917.170253	L17031382-01	0303-105A-S1	40/50	1		03/29/17 17:02
109	T3.032917.170637	WG607688-01	Reference Sample		10	L17031268-01	03/29/17 17:06
110	T3.032917.171023	L17031268-02	A05-MW09S-Y2S2	40/50	10		03/29/17 17:10
111	T3.032917.171409	WG607688-04	Matrix Spike	40/50	10	L17031268-01	03/29/17 17:14
112	T3.032917.171749	WG607688-05	Matrix Spike Duplica	40/50	10	L17031268-01	03/29/17 17:17
113	T3.032917.172129	WG608115-31	CCV		1		03/29/17 17:21
114	T3.032917.172503	WG608115-32	CCB		1		03/29/17 17:25
115	T3.032917.172850	L17031363-01	17702-F01-WQ-W0013		10		03/29/17 17:28
116	T3.032917.173237	L17031363-02	19301-C10-WQ-W0096		10		03/29/17 17:32
117	T3.032917.173623	L17031363-03	46011-G09-WQ-W0023		10		03/29/17 17:36
118	T3.032917.174011	WG608115-33	CCV		1		03/29/17 17:40
119	T3.032917.174346	WG608115-34	CCB		1		03/29/17 17:43
120	T3.032917.174731	WG608115-35	Low Level Continuing Calibra		1		03/29/17 17:47
121	T3.032917.175114	WG607863-02	Method/Prep Blank	40/50	1		03/29/17 17:51
122	T3.032917.175501	WG607863-03	Laboratory Control S	40/50	1		03/29/17 17:55
123	T3.032917.175836	L17031409-01	J7C1297-01		1	WG607863-01	03/29/17 17:58
124	T3.032917.180217	WG607863-04	Matrix Spike	5/50	1	L17031409-01	03/29/17 18:02
125	T3.032917.180552	WG607863-05	Matrix Spike Duplica	5/50	1	L17031409-01	03/29/17 18:05
126	T3.032917.180926	L17031386-01	40561-03	40/50	1		03/29/17 18:09
127	T3.032917.181311	WG607947-03	Post Digestion Spike		1	L17031386-01	03/29/17 18:13
128	T3.032917.181646	WG607947-04	Serial Dilution		5	L17031386-01	03/29/17 18:16
129	T3.032917.182030	WG608115-36	CCV		1		03/29/17 18:20
130	T3.032917.182404	WG608115-37	CCB		1		03/29/17 18:24
131	T3.032917.182751	L17031387-01	1801-145-W4	40/50	1		03/29/17 18:27
132	T3.032917.183132	L17031388-01	32758-04	40/50	1		03/29/17 18:31
133	T3.032917.183517	L17031389-01	1802-115-S5	40/50	1		03/29/17 18:35
134	T3.032917.183902	L17031396-01	1804-118 W1	40/50	1		03/29/17 18:39
135	T3.032917.184247	L17031397-01	2212-147-C W1	40/50	1		03/29/17 18:42
136	T3.032917.184630	L17031397-02	2212-147-C W1	40/50	1		03/29/17 18:46

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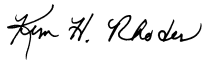

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 032917T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD81180 ICV Std: STD81182 Post Spike: STD80131
ICSA: STD81187 ICSAB: STD81114 Int. Std: RGT37691
CCV: STD81186 LLCCV: STD81025 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 607769,607804,607776,607947

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.032917.185014	WG608115-38	CCV		1		03/29/17 18:50
138	T3.032917.185348	WG608115-39	CCB		1		03/29/17 18:53

Page: 5 Approved: March 29, 2017

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 608115
Runlog ID: 81238
Analytical Workgroups: 607769,607804,607776,607947

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1161,1188,1339,1268,1363
Client Forms	X
Level X	
Level 3	
Level 4	1161,1176,1188,1266,1339,1268
	1363
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
30-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-30-2017 09:08:11

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C AAB#: WG607769

Login Number: L17031161

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW08-032017	01	03/20/17					03/23/2017	3	180		03/29/17	9.2	180	
18WW08-032017	01	03/20/17					03/23/2017	3	180		03/29/17	9.1	180	
18WW08MS-032017	02	03/20/17					03/23/2017	3	180		03/29/17	9.1	180	
18WW08MS-032017	02	03/20/17					03/23/2017	3	180		03/29/17	9.2	180	
18WW08MSD-032017	03	03/20/17					03/23/2017	3	180		03/29/17	9.1	180	
18WW08MSD-032017	03	03/20/17					03/23/2017	3	180		03/29/17	9.2	180	
18CPTMW23SW-032017	04	03/20/17					03/23/2017	2.9	180		03/29/17	9.1	180	
18CPTMW23SW-032017	04	03/20/17					03/23/2017	2.9	180		03/29/17	9.1	180	
18WW24-032017	05	03/20/17					03/23/2017	2.9	180		03/29/17	9	180	
18WW24-032017	05	03/20/17					03/23/2017	2.9	180		03/29/17	9.1	180	
18WW25F-032017	07	03/20/17					03/23/2017	2.8	180		03/29/17	9	180	
18WW25F-032017	07	03/20/17					03/23/2017	2.8	180		03/29/17	8.9	180	
MW10F-032017	09	03/20/17					03/23/2017	2.7	180		03/29/17	8.9	180	
MW10F-032017	09	03/20/17					03/23/2017	2.7	180		03/29/17	8.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5222494
Report generated 03/29/2017 14:33

METHOD BLANK SUMMARY

Login Number: L17031161
Blank File ID: T3.032917.103539
Prep Date: 03/23/17 07:42
Analyzed Date: 03/29/17 10:35
Analyst: JYH

Work Group: WG607769
Blank Sample ID: WG607345-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607345-03	T3.032717.171256	03/27/17 17:12	01
LCS	WG607345-03	T3.032917.103923	03/29/17 10:39	02
18WW08-032017	L17031161-01	T3.032917.104254	03/29/17 10:42	02
18WW08MS-032017	L17031161-02	T3.032917.104634	03/29/17 10:46	02
18WW08MSD-032017	L17031161-03	T3.032917.105003	03/29/17 10:50	02
18CPTMW23SW-032017	L17031161-04	T3.032917.105332	03/29/17 10:53	01
18WW24-032017	L17031161-05	T3.032917.105710	03/29/17 10:57	01
18WW25F-032017	L17031161-07	T3.032917.111512	03/29/17 11:15	02
MW10F-032017	L17031161-09	T3.032917.111852	03/29/17 11:18	01
18WW08-032017	L17031161-01	T3.032917.121717	03/29/17 12:17	DL01
18WW08MS-032017	L17031161-02	T3.032917.122058	03/29/17 12:20	DL01
18WW08MSD-032017	L17031161-03	T3.032917.122434	03/29/17 12:24	DL01
18CPTMW23SW-032017	L17031161-04	T3.032917.122809	03/29/17 12:28	DL01
18WW24-032017	L17031161-05	T3.032917.123903	03/29/17 12:39	DL01
18WW25F-032017	L17031161-07	T3.032917.124954	03/29/17 12:49	DL01
MW10F-032017	L17031161-09	T3.032917.125334	03/29/17 12:53	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5222495
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031161 Prep Date: 03/23/17 07:42 Sample ID: WG607345-02
Instrument ID: ICP-THERMO3 Run Date: 03/29/17 10:35 Prep Method: 3015A
File ID: T3.032917.103539 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607769 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-29-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5222496
29-MAR-2017 14:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG607345-03
Instrument ID: ICP-THERMO3 Run Time: 10:39 Prep Method: 3015A
File ID: T3.032917.103923 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG607769 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD80805 Cal ID: ICP-TH-29-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.06	97.0	80 - 120	
Beryllium, Total	0.0313	0.0297	95.0	80 - 120	
Calcium, Total	6.25	6.08	97.3	80 - 120	
Iron, Total	2.50	2.47	99.0	80 - 120	
Magnesium, Total	6.25	6.17	98.8	80 - 120	
Potassium, Total	31.3	30.8	98.5	80 - 120	
Selenium, Total	0.250	0.237	94.8	80 - 120	
Sodium, Total	31.3	31.2	99.9	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5222497
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum:L17031161 Cal ID: ICP-THERMO3- 29-MAR-17 Worknum:WG607769

Instrument ID:ICP-THERMO3 Contract #: Prep Method:3015A

Parent ID:L17031161-01 File ID:T3.032917.104254 Dil:1 Method:6010B

Sample ID:L17031161-02 MS File ID:T3.032917.104634 Dil:1 Matrix:Water

Sample ID:L17031161-03 MSD File ID:T3.032917.105003 Dil:1 Units:mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Total	0.627	6.25	7.18	105	6.25	7.35	108	2.36	80 - 120	20	
Beryllium, Total	U	0.0313	0.0311	99.5	0.0313	0.0309	98.8	0.726	80 - 120	20	
Calcium, Total	4.96	6.25	11.2	99	6.25	11.3	101	0.978	80 - 120	20	
Iron, Total	4.95	2.50	7.78	113	2.50	7.91	118	1.63	80 - 120	20	
Magnesium, Total	6.21	6.25	12.5	101	6.25	12.6	102	0.477	80 - 120	20	
Potassium, Total	0.862	31.3	31.3	97.3	31.3	31.2	97	0.284	80 - 120	20	
Selenium, Total	U	0.250	0.243	97	0.250	0.240	96.1	0.958	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 5222498

Report generated 03/30/2017 12:40

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum:L17031161 Cal ID: ICP-THERMO3- 29-MAR-17 Worknum:WG607769

Instrument ID:ICP-THERMO3 Contract #: Prep Method:3015A

Parent ID:L17031161-01 File ID:T3.032917.121717 Dil:10 Method:6010B

Sample ID:L17031161-02 MS File ID:T3.032917.122058 Dil:10 Matrix:Water

Sample ID:L17031161-03 MSD File ID:T3.032917.122434 Dil:10 Units:mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Sodium, Total	147	31.3	176	92.2	31.3	196	157	10.9	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 5222498

Report generated 03/30/2017 12:40

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031161 **Worknum:** WG607769
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG607769-04 **File ID:** T3.032917.124613 **Dil:** 50 **Units:** ug/L
Sample: L17031161-05 **File ID:** T3.032917.123903 **Dil:** 10

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	215		203		5.81	
Beryllium	0.900	X	ND	U		
Calcium	23900		21300		10.90	E
Iron	150		ND	U		
Magnesium	21300		20300		4.74	
Potassium	ND	U	ND	U		
Selenium	10.0		ND	U		
Sodium	460000		441000		4.20	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5222492
03/29/2017 14:33

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031161 **Worknum:** WG607769
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG607769-04 **File ID:** T3.032917.110421 **Dil:** 5 **Units:** ug/L
Sample: L17031161-05 **File ID:** T3.032917.105710 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	161		157		2.59	
Beryllium	0.300		0.450		50.00	E
Calcium	24300		22600		7.31	
Iron	161		141		12.40	E
Magnesium	21500		20300		5.48	
Potassium	773		624		19.30	E
Selenium	ND	U	ND	U		
Sodium	462000		436000		5.48	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5222492
03/29/2017 14:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031161 **Worknum:** WG607769
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG607769-03 **File ID:** T3.032917.110050 **Dil:** 1 **Units:** ug/L
Sample ID: L17031161-05 **File ID:** T3.032917.105710 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4860		161		5000	94.3	75 - 125	
BERYLLIUM	25.2		0	U	25	100.8	75 - 125	
CALCIUM	26600		24300		5000	94.2	75 - 125	
IRON	2130		161		2000	99.0	75 - 125	
MAGNESIUM	24100		21500		5000	94.9	75 - 125	
POTASSIUM	26200		773	F	25000	101.9	75 - 125	
SELENIUM	191		0	U	200	95.5	75 - 125	
SODIUM	439000		462000		25000	95.1	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5222493
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031161 **Worknum:** WG607769
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG607769-03 **File ID:** T3.032917.124243 **Dil:** 10 **Units:** ug/L
Sample ID: L17031161-05 **File ID:** T3.032917.123903 **Dil:** 10 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4980		0	U	5000	99.7	75 - 125	
BERYLLIUM	24.5		0	U	25	97.9	75 - 125	
CALCIUM	7160		2390		5000	95.3	75 - 125	
IRON	1940		0	U	2000	96.9	75 - 125	
MAGNESIUM	7040		2130		5000	98.1	75 - 125	
POTASSIUM	23900		0	U	25000	95.6	75 - 125	
SELENIUM	207		0	U	200	103.6	75 - 125	
SODIUM	69200		46000		25000	92.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5222493
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031161**	Workgroup (AAB#):	**WG607769**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO3**
ICAL Worknum:	**WG608115**	Initial Calibration Date:	**29-MAR-2017 10:06**

	WG608115-01		WG608115-02		WG608115-03		WG608115-04		WG608115-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000930	.1	0.00200	.2	0.00283	10	0.123	20	0.248	.999982	
BERYLLIUM	0	0.000430	.0005	0.000850	.001	0.00132	.05	0.0625	.1	0.125	.99994	
CALCIUM	0	0.00452	.1	0.00673	.2	0.00952	10	0.307	20	0.617	.999968	
IRON	0	-0.000270	.04	0.0000200	.08	0.000960	4	0.102	8	0.212	.999105	
MAGNESIUM	0	-0.0000700	NA	NA	.2	0.000620	10	0.0821	20	0.170	.999259	
POTASSIUM	0	-0.0164	.5	0.00198	1	0.0190	50	2.04	100	4.12	.999969	
SELENIUM	0	-0.000200	NA	NA	.008	-0.000100	.4	0.00581	.8	0.0120	.999986	
SODIUM	0	-0.00758	.5	0.0329	1	0.0722	50	5.46	100	11.1	.999949	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5222501
Report generated: 29-MAR-2017 14:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-07
Instrument ID: ICP-THERMO3 Run Time: 10:13 Method: 6010C
File ID: T3.032917.101349 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607769 Cal ID: ICP-THERI - 29-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.00514	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5222503
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/29/2017 | Sample ID: WG608115-12
Instrument ID: ICP-THERMO3 | Run Time: 10:31 | Method: 6010C
File ID: T3.032917.103156 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607769 | Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5222506
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-14

Instrument ID: ICP-THERMO3 Run Time: 11:11 Method: 6010C

File ID: T3.032917.111130 Analyst: JYH Units: mg/L

Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5222506
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/29/2017 | Sample ID: WG608115-16
Instrument ID: ICP-THERMO3 | Run Time: 11:55 | Method: 6010C
File ID: T3.032917.115525 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607769 | Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5222506
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-18
Instrument ID: ICP-THERMO3 Run Time: 12:35 Method: 6010C
File ID: T3.032917.123519 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5222506
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/29/2017 | Sample ID: WG608115-20
Instrument ID: ICP-THERMO3 | Run Time: 13:00 | Method: 6010C
File ID: T3.032917.130045 | Analyst: JYH | Units: mg/L
Workgroup (AAB#): WG607769 | Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5222506
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-06
Instrument ID: ICP-THERMO3 Run Time: 10:10 Method: 6010C
File ID: T3.032917.101018 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.78	97.8	90 - 110	
Beryllium		.05	0.0490	98.1	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	3.95	98.8	90 - 110	
Magnesium		10	9.86	98.6	90 - 110	
Potassium		50	49.3	98.5	90 - 110	
Selenium		.4	0.390	97.5	90 - 110	
Sodium		50	49.4	98.7	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5222502
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-11

Instrument ID: ICP-THERMO3 Run Time: 10:28 Method: 6010C

File ID: T3.032917.102827 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.51	mg/L	95.1	90 - 110		
Beryllium		0.0500	0.0475	mg/L	95.0	90 - 110		
Calcium		10.0	9.50	mg/L	95.0	90 - 110		
Iron		4.00	3.82	mg/L	95.6	90 - 110		
Magnesium		10.0	9.53	mg/L	95.3	90 - 110		
Potassium		50.0	48.6	mg/L	97.2	90 - 110		
Selenium		0.400	0.385	mg/L	96.2	90 - 110		
Sodium		50.0	48.5	mg/L	97.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5222505

Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-13

Instrument ID: ICP-THERMO3 Run Time: 11:08 Method: 6010C

File ID: T3.032917.110800 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0516	mg/L	103	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	51.4	mg/L	103	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	51.7	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5222505

Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-15

Instrument ID: ICP-THERMO3 Run Time: 11:51 Method: 6010C

File ID: T3.032917.115155 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.95	mg/L	99.5	90 - 110		
Beryllium		0.0500	0.0495	mg/L	98.9	90 - 110		
Calcium		10.0	9.93	mg/L	99.3	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Magnesium		10.0	9.99	mg/L	99.9	90 - 110		
Potassium		50.0	50.2	mg/L	100	90 - 110		
Selenium		0.400	0.391	mg/L	97.7	90 - 110		
Sodium		50.0	50.1	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5222505

Report generated 03/29/2017 14:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-17

Instrument ID: ICP-THERMO3 Run Time: 12:31 Method: 6010C

File ID: T3.032917.123150 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0495	mg/L	99.1	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.00	mg/L	100	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Potassium		50.0	49.8	mg/L	99.6	90 - 110		
Selenium		0.400	0.395	mg/L	98.7	90 - 110		
Sodium		50.0	49.9	mg/L	99.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5222505

Report generated 03/29/2017 14:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-19
Instrument ID: ICP-THERMO3 Run Time: 12:57 Method: 6010C
File ID: T3.032917.125716 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.8	mg/L	108	90 - 110		
Beryllium		0.0500	0.0529	mg/L	106	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.18	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.0	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5222505
Report generated 03/29/2017 14:33

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-08
Instrument ID: ICP-THERMO3 Run Time: 10:17 Method: 6010C
File ID: T3.032917.101727 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.169	mg/L	106	70 - 130		
Beryllium		0.00160	0.00146	mg/L	91.3	70 - 130		
Calcium		0.400	0.402	mg/L	101	70 - 130		
Iron		0.0800	0.0915	mg/L	114	70 - 130		
Magnesium		0.400	0.345	mg/L	86.3	70 - 130		
Potassium		0.800	0.877	mg/L	110	70 - 130		
Selenium		0.0160	0.0189	mg/L	118	70 - 130		
Sodium		0.400	0.389	mg/L	97.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5222507
Report generated 03/30/2017 09:33

Login Number: L17031161 Run Date: 03/29/2017 Sample ID: WG608115-21
Instrument ID: ICP-THERMO3 Run Time: 13:04 Method: 6010C
File ID: T3.032917.130428 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607769 Cal ID: ICP-TH - 29-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.177	mg/L	111	70 - 130		
Beryllium		0.00160	0.00159	mg/L	99.4	70 - 130		
Calcium		0.400	0.474	mg/L	118	70 - 130		
Iron		0.0800	0.0889	mg/L	111	70 - 130		
Magnesium		0.400	0.371	mg/L	92.7	70 - 130		
Potassium		0.800	0.738	mg/L	92.2	70 - 130		
Selenium		0.0160	0.0195	mg/L	122	70 - 130		
Sodium		0.400	0.440	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5222507
Report generated 03/30/2017 09:33

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031161 **Workgroup (AAB#):** WG607769
Instrument ID: ICP-THERMO3 **Method:** 6010C
Sol. A : WG608115-09 **File ID:** T3.032917.102104 **Units:** mg/L
Sol. AB : WG608115-10 **File ID:** T3.032917.102448 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	250	100	250	248	99.2	
Beryllium	NS	0.0000300	NS	0.250	0.243	97.2	
Calcium	250	233	93.2	250	230	92.0	
Iron	100	93.9	93.9	100	92.6	92.6	
Magnesium	250	242	96.8	250	237	94.8	
Potassium	NS	0.147	NS	5.00	5.09	102	
Selenium	NS	-0.00228	NS	0.250	0.247	98.8	
Sodium	NS	-0.0138	NS	5.00	5.05	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5222504
Report generated 03/29/2017 14:33

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031161 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000310	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0145	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000250	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000400	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.00000700	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222500
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031161 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0260
ARSENIC	189.00	0	0	0	0	-0.00730
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00350
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222500
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031161 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000210	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.000220	0	0	0
CADMIUM	228.80	0	-0.0000100	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000400	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.000650	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	0.0390	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000150	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000300	0	0	0
VANADIUM	292.40	0	0.0000100	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222500
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031161 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	0.000910	0	-0.00190	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.000610	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000100	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00160	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222500
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031161 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0320
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031161 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0720	0
ANTIMONY	206.80	0	0.000500	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00170	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.00100	0	-0.0420	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222500
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L17031161 **Date:** 01/04/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 5222500
Report generated: 03/29/2017 14:33

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L17031161 **Date:** 01/13/2017
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	4.5
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	90.0
Iron	5.00	810.0
Lead	20.00	180.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	360.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	45.0
Vanadium	20.00	36.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

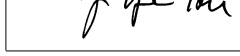
Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 5222499
Report generated: 03/29/2017 14:33

2.2.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	3/29/2017 10:10:14	3/29/2017 10:10:14	Linear	1/Conc	-0.000030	0.066055	0.000000	1.000000
Al 308.215 {109}	3/29/2017 10:10:14	3/29/2017 10:10:14	Linear	1/Conc	0.000929	0.012202	0.000000	1.000000
As 189.042 {478}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000031	0.022208	0.000000	1.000000
B 249.678 {135}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000276	0.024335	0.000000	1.000000
Ba 455.403 { 74}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.011343	1.475134	0.000000	1.000000
Be 313.107 {108}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000427	1.219358	0.000000	1.000000
Ca 422.673 { 80}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.004516	0.030499	0.000000	1.000000
Cd 228.802 {447}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000050	0.463802	0.000000	1.000000
Co 228.616 {447}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000227	0.316667	0.000000	1.000000
Cr 267.716 {126}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000206	0.074048	0.000000	1.000000
Cu 224.700 {450}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000007	0.140017	0.000000	1.000000
Fe 261.187 {129}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000267	0.026141	0.000000	1.000000
K 766.490 { 44}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.016364	0.041319	0.000000	1.000000
Li 670.784 { 50}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.029327	0.913578	0.000000	1.000000
Mg 279.079 {121}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000067	0.008395	0.000000	1.000000
Mn 257.610 {131}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000398	0.297096	0.000000	1.000000
Mo 202.030 {467}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000006	0.164690	0.000000	1.000000
Na 589.592 { 57}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.007584	0.110148	0.000000	1.000000
Ni 231.604 {446}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000955	0.125135	0.000000	1.000000
P 214.914 {457}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000168	0.011935	0.000000	1.000000
Pb 220.353 {453}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000417	0.061746	0.000000	1.000000
Sb 206.833 {463}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000781	0.025878	0.000000	1.000000
Se 196.090 {472}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000197	0.015116	0.000000	1.000000
Si 212.412 {459}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000466	0.031226	0.000000	1.000000
Sn 189.989 {477}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000046	0.066968	0.000000	1.000000
Sr 407.771 { 83}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.002256	2.327491	0.000000	1.000000
Ti 337.280 {100}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.002642	0.120170	0.000000	1.000000
Tl 190.856 {477}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.000282	0.026590	0.000000	1.000000
V 292.402 {115}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000114	0.086567	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	0.000020	0.427403	0.000000	1.000000
Zr 339.198 { 99}	3/29/2017 10:10:15	3/29/2017 10:10:15	Linear	1/Conc	-0.008563	0.008102	0.000000	1.000000

Approved: March 30, 2017



Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999841	0.000003	0.001739	0.005796	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999982	0.000005	0.006861	0.022871	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999838	0.000002	0.002985	0.009951	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999737	0.000003	0.002803	0.009344	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999938	0.000105	0.001480	0.004933	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999940	0.000004	0.000081	0.000271	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999968	0.000015	0.058240	0.194132	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999546	0.000005	0.000293	0.000977	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999985	0.000002	0.000413	0.001377	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999685	0.000006	0.001049	0.003496	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999839	0.000008	0.001131	0.003769	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999105	0.000028	0.025653	0.085510	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999969	0.000104	0.136258	0.454194	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999829	0.000166	0.005814	0.019381	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999259	0.000032	0.082561	0.275204	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999713	0.000023	0.002603	0.008678	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999864	0.000017	0.000416	0.001388	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999949	0.000352	0.042828	0.142761	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999984	0.000002	0.001097	0.003656	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999882	0.000012	0.007201	0.024003	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999507	0.000006	0.003261	0.010871	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999514	0.000006	0.004512	0.015041	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999986	0.000000	0.006432	0.021441	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999954	0.000010	0.002570	0.008565	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999972	0.000003	0.000815	0.002718	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999899	0.000210	0.000654	0.002179	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999852	0.000013	0.007801	0.026003	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999933	0.000001	0.002907	0.009691	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999958	0.000005	0.000865	0.002884	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999958	0.000025	0.000174	0.000581	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.427814	0.000109	0.297951	0.993169	OK.	1.000000	0.000000	1	0

Approved: March 30, 2017

Sample Name: S0 Acquired: 3/29/2017 9:52:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

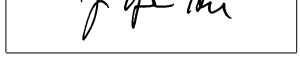
Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00093**	**.00003**	**-.00028**	**.01134**	**.00043**	**.00452**
Stddev	.00011	.00000	.00001	.00004	.00085	.00003	.00311
%RSD	382.18	.42656	35.711	12.922	7.5067	6.5564	68.969
#1	-.00014	.00093	.00003	-.00028	.01228	.00042	.00806
#2	-.00003	.00093	.00004	-.00024	.01061	.00046	.00222
#3	.00008	.00093	.00002	-.00031	.01114	.00040	.00327

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**-.00023**	**.00021**	**.00001**	**-.00027**	**-.01637**	**-.02932**
Stddev	.00013	.00002	.00003	.00002	.00062	.00475	.00373
%RSD	265.62	10.706	13.299	314.80	231.58	29.007	12.730
#1	-.00000	-.00021	.00024	-.00002	-.00040	-.01333	-.02969
#2	-.00020	-.00025	.00020	.00001	-.00080	-.02184	-.03286
#3	.00005	-.00022	.00019	.00002	.00041	-.01393	-.02542

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**-.00040**	**.00001**	**-.00758**	**-.00095**	**-.00017**	**-.00042**
Stddev	.00052	.00040	.00002	.00411	.00007	.00006	.00015
%RSD	778.56	101.01	238.49	54.270	6.9823	35.531	35.119
#1	.00016	-.00021	-.00001	-.00449	-.00095	-.00010	-.00054
#2	-.00066	-.00086	.00002	-.01224	-.00089	-.00019	-.00026
#3	.00030	-.00012	.00001	-.00599	-.00102	-.00021	-.00046

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00078**	**-.00020**	**.00047**	**.00005**	**.00226**	**-.00264**	**-.00028**
Stddev	.00004	.00005	.00007	.00003	.00083	.00050	.00001
%RSD	5.1342	23.586	15.742	56.399	36.594	18.789	4.3584
#1	.00082	-.00024	.00041	.00007	.00254	-.00226	-.00027
#2	.00074	-.00015	.00055	.00003	.00133	-.00246	-.00028
#3	.00078	-.00021	.00044	.00004	.00291	-.00320	-.00029

Approved: March 30, 2017

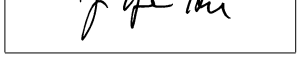


Sample Name: S0 Acquired: 3/29/2017 9:52:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00002**	**-.00856**
Stddev	.00002	.00001	.00049
%RSD	16.307	49.897	5.7471
#1	.00012	.00003	-.00913
#2	.00009	.00002	-.00833
#3	.00013	.00001	-.00823

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14351.**	**96686.**	**3560.7**
Stddev	147.	140.	29.8
%RSD	1.0271	.14498	.83736
#1	14396.	96549.	3582.7
#2	14471.	96680.	3526.8
#3	14186.	96830.	3572.7

Approved: March 30, 2017



Sample Name: S1 Acquired: 3/29/2017 9:55:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00013**	**.00200**	**.02267**	**.00085**	**.00673**	**.00001**	**.00027**
Stddev	.00005	.00004	.00056	.00004	.00164	.00008	.00008
%RSD	35.289	2.0766	2.4793	5.2051	24.344	607.33	29.871
#1	.00018	.00205	.02291	.00080	.00500	.00009	.00024
#2	.00011	.00198	.02307	.00088	.00826	.00002	.00036
#3	.00010	.00197	.02203	.00087	.00695	-.00007	.00021

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00043**	**.00047**	**.00002**	**.00198**	**.00111**	**.00117**	**.03287**
Stddev	.00007	.00008	.00044	.00343	.00084	.00006	.00361
%RSD	15.033	17.883	2034.5	173.42	75.938	4.7877	10.967
#1	.00049	.00056	.00017	-.00142	.00177	.00120	.03686
#2	.00046	.00043	-.00047	.00192	.00140	.00121	.03192
#3	.00036	.00041	.00036	.00544	.00016	.00111	.02984

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00042**	**.00069**	**-.00002**	**.00103**	**.00163**	**.00055**	**.01917**
Stddev	.00010	.00004	.00006	.00006	.00003	.00002	.00119
%RSD	22.904	5.2173	332.43	6.0862	1.7978	2.8084	6.1903
#1	-.00052	.00065	.00004	.00107	.00166	.00056	.01792
#2	-.00038	.00071	-.00008	.00106	.00162	.00056	.02029
#3	-.00034	.00072	-.00002	.00096	.00160	.00053	.01931

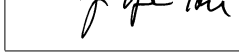
Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00179**	**.00078**	**.00311**	**-.01094**
Stddev	.00035	.00002	.00005	.00254
%RSD	19.306	2.5511	1.6698	23.225
#1	-.00209	.00076	.00311	-.00826
#2	-.00189	.00078	.00305	-.01331
#3	-.00141	.00080	.00316	-.01126

Approved: March 30, 2017

Sample Name: S1 Acquired: 3/29/2017 9:55:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14532.**	**96615.**	**3516.4**
Stddev	79.	254.	28.0
%RSD	.54187	.26239	.79558
#1	14605.	96322.	3528.0
#2	14542.	96770.	3484.5
#3	14448.	96752.	3536.7

Approved: March 30, 2017



Sample Name: S2 Acquired: 3/29/2017 9:59:29 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00038**	**.00283**	**.00014**	**-.00013**	**.03392**	**.00132**	**.00952**
Stddev	.00010	.00003	.00007	.00003	.00179	.00002	.00052
%RSD	26.069	1.1508	47.981	24.664	5.2889	1.1812	5.4834
#1	.00038	.00281	.00012	-.00016	.03599	.00131	.00892
#2	.00048	.00287	.00021	-.00011	.03290	.00134	.00984
#3	.00028	.00281	.00008	-.00011	.03287	.00131	.00980

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00072**	**.00064**	**.00089**	**.00096**	**.01896**	**-.01753**
Stddev	.00009	.00004	.00004	.00012	.00068	.00294	.00201
%RSD	27.637	5.1210	6.4989	13.607	70.986	15.517	11.448
#1	.00023	.00069	.00062	.00095	.00022	.02185	-.01883
#2	.00038	.00076	.00062	.00097	.00109	.01907	-.01522
#3	.00039	.00072	.00069	.00075	.00157	.01597	-.01854

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00062**	**.00146**	**.00242**	**.07223**	**.00010**	**.00147**	**.00004**
Stddev	.00066	.00054	.00004	.00366	.00011	.00002	.00017
%RSD	105.91	37.025	1.8331	5.0630	116.21	1.3237	372.22
#1	.00117	.00155	.00237	.07618	-.00003	.00148	.00022
#2	-.00011	.00195	.00244	.07157	.00018	.00148	.00003
#3	.00079	.00088	.00246	.06896	.00013	.00145	-.00011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00108**	**-.00010**	**.00274**	**.00102**	**.03676**	**-.00070**	**-.00012**
Stddev	.00011	.00003	.00005	.00003	.00115	.00078	.00002
%RSD	10.206	25.484	1.8370	2.5716	3.1331	111.56	15.218
#1	.00100	-.00008	.00272	.00101	.03554	-.00145	-.00013
#2	.00103	-.00013	.00280	.00105	.03692	-.00078	-.00010
#3	.00120	-.00009	.00271	.00100	.03783	.00012	-.00013

Approved: March 30, 2017

Sample Name: S2 Acquired: 3/29/2017 9:59:29 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00139**	**.00619**	**-.00922**
Stddev	.00003	.00012	.00040
%RSD	1.9016	1.9614	4.2978
#1	.00139	.00624	-.00961
#2	.00136	.00628	-.00922
#3	.00141	.00605	-.00882

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14740.**	**99107.**	**3474.6**
Stddev	193.	1214.	51.9
%RSD	1.3083	1.2249	1.4937
#1	14962.	97900.	3431.0
#2	14611.	99092.	3460.8
#3	14648.	100330.	3532.0

Approved: March 30, 2017

Sample Name: S3 Acquired: 3/29/2017 10:03:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02578**	**.12346**	**.00878**	**.01158**	**1.4650**	**.06249**	**.30689**
Stddev	.00009	.00034	.00005	.00013	.0469	.00021	.01009
%RSD	.34351	.27576	.62134	1.1203	3.1977	.34208	3.2883
#1	.02580	.12328	.00877	.01165	1.4131	.06251	.29528
#2	.02568	.12326	.00873	.01143	1.4775	.06227	.31186
#3	.02585	.12386	.00884	.01166	1.5043	.06270	.31353

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02534**	**.06329**	**.03674**	**.07032**	**.10218**	**2.0414**	**.86972**
Stddev	.00029	.00059	.00008	.00052	.00449	.0711	.03272
%RSD	1.1516	.93801	.21432	.74132	4.3920	3.4847	3.7626
#1	.02528	.06299	.03676	.06988	.09725	1.9637	.83235
#2	.02508	.06291	.03665	.07017	.10325	2.0572	.88359
#3	.02566	.06398	.03680	.07090	.10603	2.1033	.89323

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.08213**	**.14583**	**.16149**	**5.4566**	**.06138**	**.11795**	**.03055**
Stddev	.00238	.00491	.00134	.1845	.00060	.00080	.00020
%RSD	2.8979	3.3689	.82797	3.3811	.98054	.67535	.66134
#1	.07941	.14084	.16118	5.2573	.06104	.11761	.03045
#2	.08316	.14597	.16033	5.4913	.06103	.11738	.03043
#3	.08383	.15066	.16295	5.6213	.06208	.11886	.03079

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03081**	**.00581**	**.15604**	**.06672**	**2.2906**	**.11466**	**.01195**
Stddev	.00033	.00008	.00116	.00057	.0803	.00448	.00011
%RSD	1.0763	1.2915	.74284	.85854	3.5038	3.9100	.92839
#1	.03048	.00578	.15570	.06653	2.2026	.11016	.01188
#2	.03079	.00575	.15510	.06625	2.3097	.11469	.01189
#3	.03114	.00589	.15734	.06736	2.3596	.11912	.01208

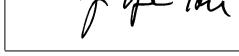
Approved: March 30, 2017

Sample Name: S3 Acquired: 3/29/2017 10:03:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.08565**	**.42551**	**-.00739**
Stddev	.00037	.00332	.00019
%RSD	.43390	.77983	2.6189
#1	.08594	.42358	-.00761
#2	.08523	.42361	-.00734
#3	.08577	.42934	-.00723

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13580.**	**89483.**	**3257.6**
Stddev	101.	2525.	90.4
%RSD	.74348	2.8215	2.7748
#1	13696.	92398.	3335.7
#2	13515.	88098.	3278.4
#3	13528.	87955.	3158.6

Approved: March 30, 2017



Sample Name: S4 Acquired: 3/29/2017 10:06:50 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05304**	**.24768**	**.01780**	**.02426**	**2.9846**	**.12504**	**.61722**	**.05063**
Stddev	.00015	.00066	.00005	.00012	.0138	.00021	.00405	.00007
%RSD	.28827	.26577	.28934	.49406	.46408	.16427	.65595	.13134
#1	.05299	.24806	.01785	.02426	3.0002	.12500	.62174	.05069
#2	.05291	.24692	.01775	.02414	2.9799	.12485	.61601	.05063
#3	.05321	.24806	.01781	.02438	2.9737	.12526	.61392	.05056

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12601**	**.07506**	**.14027**	**.21194**	**4.1196**	**1.8152**	**.16956**	**.29934**
Stddev	.00016	.00014	.00037	.00027	.0077	.0092	.00059	.00169
%RSD	.13019	.18537	.26079	.12634	.18610	.50947	.34803	.56537
#1	.12607	.07492	.14066	.21174	4.1263	1.8250	.17019	.30128
#2	.12614	.07506	.14023	.21184	4.1112	1.8140	.16946	.29859
#3	.12583	.07519	.13993	.21224	4.1213	1.8066	.16902	.29815

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.33291**	**11.062**	**.12432**	**.24107**	**.06176**	**.06242**	**.01195**	**.31536**
Stddev	.00082	.041	.00044	.00070	.00036	.00018	.00009	.00086
%RSD	.24734	.37180	.35203	.29201	.58841	.29300	.79155	.27413
#1	.33375	11.109	.12478	.24183	.06217	.06259	.01201	.31621
#2	.33287	11.046	.12429	.24092	.06163	.06246	.01184	.31538
#3	.33211	11.032	.12390	.24045	.06147	.06223	.01200	.31449

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.13402**	**4.7011**	**.24018**	**.02405**	**.17374**	**.85666**	**.01779**
Stddev	.00057	.0288	.00110	.00010	.00040	.00218	.00176
%RSD	.42560	.61349	.45610	.40073	.22775	.25481	9.8846
#1	.13468	4.7336	.24144	.02415	.17395	.85903	.01968
#2	.13378	4.6913	.23965	.02404	.17329	.85622	.01620
#3	.13362	4.6785	.23945	.02395	.17399	.85473	.01750

Approved: March 30, 2017

Sample Name: S4 Acquired: 3/29/2017 10:06:50 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13529.**	**87016.**	**3347.1**
Stddev	19.	497.	44.8
%RSD	.14016	.57116	1.3388
#1	13516.	86902.	3298.0
#2	13551.	87560.	3357.7
#3	13520.	86586.	3385.7

Approved: March 30, 2017

Sample Name: ICV Acquired: 3/29/2017 10:10:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38545**	**9.7756**	**.38934**	**.48556**	**.98855**	**.04903**	**10.050**
Stddev	.00653	.0899	.00295	.00726	.00489	.00054	.039
%RSD	1.6944	.91990	.75858	1.4956	.49512	1.1040	.38956
#1	.38166	9.7275	.38851	.47955	.99333	.04865	10.050
#2	.39299	9.8793	.39262	.49363	.98878	.04965	10.011
#3	.38171	9.7199	.38689	.48349	.98355	.04880	10.089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04892**	**.19470**	**.48785**	**.48948**	**3.9535**	**49.271**	**.98826**
Stddev	.00025	.00077	.00490	.00313	.0116	.237	.00468
%RSD	.52021	.39769	1.0045	.63936	.29235	.48092	.47327
#1	.04896	.19556	.48391	.49201	3.9597	49.320	.99194
#2	.04915	.19447	.49334	.49044	3.9607	49.480	.98984
#3	.04865	.19406	.48630	.48598	3.9402	49.014	.98300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8636**	**.49253**	F **.92197**	**49.357**	**.48634**	**9.6281**	**.48808**
Stddev	.0690	.00167	.00303	.254	.00350	.0412	.00176
%RSD	.69983	.33855	.32882	.51439	.71972	.42826	.36115
#1	9.9345	.49208	.92503	49.428	.48963	9.6744	.48912
#2	9.8598	.49438	.92190	49.568	.48672	9.6146	.48907
#3	9.7966	.49114	.91897	49.075	.48266	9.5953	.48605
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			1.0000				
Range			-5.0000%				

Approved: March 30, 2017

Sample Name: ICV Acquired: 3/29/2017 10:10:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1750**	**.38996**	**4.8337**	**.97078**	**.99028**	**.96604**	**.48932**
Stddev	.0109	.00835	.0199	.00398	.00232	.00983	.00153
%RSD	.92630	2.1412	.41256	.40988	.23453	1.0179	.31263
#1	1.1857	.39672	4.8486	.97523	.99296	.97739	.49002
#2	1.1755	.38062	4.8414	.96955	.98892	.96023	.49037
#3	1.1639	.39253	4.8110	.96756	.98896	.96049	.48756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96756**	**.97258**	F **.30086**
Stddev	.01107	.00247	.31510
%RSD	1.1445	.25382	104.73
#1	.96019	.97511	.53133
#2	.98029	.97246	.42946
#3	.96218	.97018	-.05820
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14152.**	**90626.**	**3378.8**
Stddev	178.	1205.	83.1
%RSD	1.2581	1.3291	2.4586
#1	14279.	89290.	3342.7
#2	14228.	90957.	3319.9
#3	13948.	91630.	3473.8

Approved: March 30, 2017

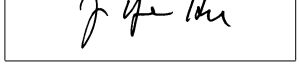
Sample Name: ICB Acquired: 3/29/2017 10:13:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00521**	**.00126**	**.00201**	**.00004**	**.00005**	**.00311**
Stddev	.00106	.00293	.00202	.00112	.00201	.00004	.03971
%RSD	618.99	56.138	159.89	55.455	5368.0	86.233	1277.9
#1	.00087	.00190	.00229	.00126	-.00047	.00010	.04318
#2	-.00014	.00744	.00257	.00329	-.00167	.00005	-.03623
#3	-.00124	.00629	-.00106	.00148	.00225	.00001	.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**-.00013**	**-.00067**	**-.00024**	**-.00169**	**.16374**	**-.00132**
Stddev	.00030	.00005	.00118	.00044	.01906	.06713	.00125
%RSD	122.19	36.163	177.37	180.02	1127.0	41.001	94.216
#1	-.00002	-.00018	-.00138	-.00021	-.02366	.23503	-.00189
#2	-.00058	-.00009	.00070	-.00070	.01057	.10173	.00011
#3	-.00013	-.00012	-.00131	.00018	.00801	.15445	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01909**	**.00029**	**-.00000**	**.01922**	**-.00042**	**.00164**	**.00125**
Stddev	.10808	.00206	.00033	.03452	.00025	.00634	.00489
%RSD	566.05	710.63	10646.	179.63	58.412	386.97	391.00
#1	.14098	-.00147	.00006	.05908	-.00057	.00021	-.00328
#2	-.06506	-.00022	.00029	-.00102	-.00014	.00857	.00060
#3	-.01864	.00256	-.00036	-.00040	-.00057	-.00386	.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: ICB Acquired: 3/29/2017 10:13:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00300**	**.00514**	**.00262**	**.00023**	**-.00029**	**-.00181**	**-.00004**
Stddev	.00428	.00263	.00058	.00050	.00049	.00358	.00271
%RSD	142.60	51.308	22.177	215.28	171.19	197.59	7156.7
#1	-.00092	.00275	.00287	.00051	.00000	-.00497	-.00234
#2	-.00016	.00797	.00196	.00054	-.00085	-.00256	.00295
#3	-.00793	.00469	.00304	-.00035	-.00001	.00208	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00016**	**.00133**	F **.05018**
Stddev	.00058	.00011	.35657
%RSD	359.18	8.0655	710.65
#1	-.00026	.00140	-.24884
#2	-.00068	.00138	-.04544
#3	.00046	.00120	.44481
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14542.**	**96194.**	**3420.7**
Stddev	95.	903.	95.1
%RSD	.65363	.93886	2.7800
#1	14522.	95276.	3314.5
#2	14459.	96223.	3449.7
#3	14646.	97082.	3497.9

Approved: March 30, 2017

Sample Name: LLICV Acquired: 3/29/2017 10:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00739**	**.16905**	**.00617**	**.07472**	**.00801**	**.00146**	**.40234**	**.00084**
Stddev	.00087	.00374	.00294	.00330	.00111	.00011	.04586	.00022
%RSD	11.837	2.2135	47.654	4.4214	13.815	7.5091	11.397	26.375
#1	.00675	.17039	.00804	.07395	.00758	.00149	.45396	.00059
#2	.00703	.17194	.00768	.07187	.00719	.00135	.36631	.00100
#3	.00838	.16482	.00278	.07834	.00927	.00156	.38676	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00395**	**.00309**	**.00368**	**.09153**	**.87749**	**.07800**	**.34529**	**.00738**
Stddev	.00016	.00082	.00019	.00331	.17237	.00145	.09313	.00160
%RSD	4.1221	26.580	5.1993	3.6150	19.644	1.8541	26.971	21.729
#1	.00408	.00241	.00388	.09313	1.0626	.07896	.23802	.00699
#2	.00377	.00400	.00349	.08772	.72151	.07634	.39231	.00914
#3	.00401	.00286	.00368	.09373	.84840	.07870	.40553	.00600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00765**	**.38917**	**.01591**	**.75714**	**.00905**	**.07606**	**.01887**	**.75802**
Stddev	.00032	.05753	.00052	.00261	.00205	.00386	.00268	.00141
%RSD	4.1806	14.784	3.2480	.34465	22.610	5.0713	14.191	.18555
#1	.00795	.45550	.01607	.75863	.01108	.07208	.01585	.75710
#2	.00731	.35925	.01533	.75413	.00699	.07978	.02098	.75964
#3	.00770	.35276	.01633	.75866	.00908	.07633	.01976	.75731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLICV Acquired: 3/29/2017 10:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39015**	**.03864**	**.02529**	**.15496**	**.00745**	**.01679**	**24.340**
Stddev	.00101	.00030	.00118	.00150	.00051	.00015	.407
%RSD	.25770	.78299	4.6818	.96920	6.8911	.90231	1.6711
#1	.38900	.03852	.02555	.15559	.00803	.01667	24.083
#2	.39067	.03842	.02633	.15324	.00708	.01696	24.128
#3	.39080	.03899	.02400	.15604	.00723	.01675	24.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14447.**	**95831.**	**3492.6**
Stddev	116.	1853.	57.1
%RSD	.80276	1.9333	1.6355
#1	14577.	97299.	3551.8
#2	14409.	93749.	3437.8
#3	14355.	96444.	3488.3

Approved: March 30, 2017

Sample Name: ICSA Acquired: 3/29/2017 10:21:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00227**	**249.63**	**.00269**	**.00082**	**.00045**	**.00003**	**232.77**
Stddev	.00089	.65	.00268	.00211	.00083	.00004	.17
%RSD	39.435	.25855	99.849	258.42	186.53	102.85	.07156
#1	.00169	249.00	.00573	.00271	.00138	.00000	232.58
#2	.00329	249.59	.00065	-.00146	-.00020	.00007	232.83
#3	.00181	250.29	.00169	.00120	.00015	.00003	232.90
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**-.00143**	**-.00229**	**.00191**	**93.939**	**.14662**	**-.00403**
Stddev	.00009	.00008	.00092	.00109	.421	.16029	.00419
%RSD	11.935	5.3263	40.443	57.068	.44855	109.32	103.89
#1	.00084	-.00147	-.00235	.00229	93.513	.25417	-.00717
#2	.00068	-.00147	-.00317	.00068	93.949	-.03761	-.00564
#3	.00070	-.00134	-.00133	.00275	94.356	.22329	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**241.54**	**-.00278**	**-.00091**	**-.01380**	**-.00053**	**.01316**	**-.00171**
Stddev	.86	.00102	.00054	.06369	.00089	.00636	.00414
%RSD	.35677	36.679	59.442	461.40	168.73	48.376	241.66
#1	241.77	-.00192	-.00029	-.04390	-.00098	.00582	-.00620
#2	240.58	-.00390	-.00129	-.05687	-.00109	.01725	-.00088
#3	242.26	-.00252	-.00116	.05936	.00050	.01640	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: ICSA Acquired: 3/29/2017 10:21:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00785**	**-.00228**	**.01028**	**-.00034**	**-.00017**	**.00598**	**-.00014**
Stddev	.00400	.00330	.00222	.00038	.00051	.00160	.00088
%RSD	50.981	145.09	21.624	113.34	295.65	26.857	648.90
#1	.00697	.00153	.00882	.00010	.00038	.00446	.00018
#2	.00436	-.00400	.00918	-.00059	-.00063	.00580	.00054
#3	.01221	-.00436	.01284	-.00053	-.00027	.00766	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00219**	**.00053**	F **-3.6813**
Stddev	.00031	.00023	.1528
%RSD	14.126	42.529	4.1512
#1	-.00187	.00029	-3.8550
#2	-.00249	.00057	-3.6213
#3	-.00220	.00074	-3.5675
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13472.**	**86413.**	**3371.0**
Stddev	61.	120.	67.6
%RSD	.45107	.13886	2.0040
#1	13433.	86276.	3321.0
#2	13442.	86502.	3344.2
#3	13542.	86460.	3447.9

Approved: March 30, 2017

Sample Name: ICSAB Acquired: 3/29/2017 10:24:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49854**	**248.14**	**.24171**	F **.49388**	**.24499**	**.24254**	**230.45**
Stddev	.00269	1.97	.00135	.00107	.00059	.00024	.39
%RSD	.53991	.79338	.55694	.21616	.24240	.09921	.17069
#1	.50076	250.15	.24025	.49279	.24430	.24255	230.00
#2	.49555	246.21	.24197	.49393	.24535	.24277	230.65
#3	.49932	248.06	.24291	.49492	.24532	.24229	230.71
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.10000			
Low Limit				-.10000			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46570**	**.22870**	**.23896**	**.23958**	**92.634**	**5.0900**	**.00134**
Stddev	.00084	.00065	.00031	.00073	.289	.1149	.00349
%RSD	.18097	.28552	.12768	.30536	.31248	2.2573	260.89
#1	.46503	.22875	.23923	.23915	92.306	4.9597	.00221
#2	.46664	.22933	.23901	.24043	92.854	5.1771	-.00250
#3	.46542	.22803	.23863	.23917	92.742	5.1330	.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**236.67**	**.23635**	**-.00061**	**5.0450**	**.46089**	**-.01298**	**.46584**
Stddev	.43	.00214	.00016	.0733	.00104	.00555	.00468
%RSD	.18102	.90400	25.313	1.4528	.22650	42.737	1.0039
#1	236.28	.23518	-.00056	5.0082	.46041	-.01936	.46044
#2	237.13	.23506	-.00049	4.9974	.46209	-.00923	.46863
#3	236.60	.23882	-.00079	5.1294	.46018	-.01036	.46844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: ICSAB Acquired: 3/29/2017 10:24:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49170**	**.24749**	**.01525**	**.47439**	**.00028**	**.00648**	**.44245**
Stddev	.00811	.00152	.00077	.00068	.00039	.00205	.00090
%RSD	1.6491	.61299	5.0661	.14400	138.29	31.644	.20413
#1	.48381	.24720	.01477	.47388	.00034	.00820	.44249
#2	.49126	.24615	.01483	.47412	.00065	.00421	.44153
#3	.50001	.24914	.01614	.47517	-.00013	.00704	.44334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24098**	**.46216**	F **-3.7668**
Stddev	.00064	.00052	.1250
%RSD	.26707	.11318	3.3181
#1	.24169	.46160	-3.7861
#2	.24044	.46263	-3.8810
#3	.24081	.46224	-3.6333
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13553.**	**87836.**	**3425.5**
Stddev	12.	786.	55.3
%RSD	.08509	.89516	1.6152
#1	13552.	87115.	3361.7
#2	13542.	88674.	3460.6
#3	13565.	87719.	3454.1

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 10:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37510**	**9.5070**	**.38023**	**.46926**	**.95810**	**.04748**	**9.5040**
Stddev	.00143	.0457	.00099	.00721	.00796	.00024	.0974
%RSD	.38157	.48098	.25929	1.5357	.83044	.50063	1.0252
#1	.37539	9.4926	.37922	.46256	.95024	.04738	9.4291
#2	.37637	9.5582	.38119	.47689	.96615	.04775	9.4688
#3	.37355	9.4702	.38028	.46835	.95792	.04731	9.6142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04900**	**.19471**	**.47073**	**.48456**	**3.8240**	**48.602**	**.97017**
Stddev	.00018	.00068	.00207	.00016	.0445	.223	.00888
%RSD	.36766	.34952	.43974	.03385	1.1645	.45962	.91484
#1	.04885	.19397	.47172	.48467	3.7790	48.496	.96414
#2	.04920	.19531	.47211	.48437	3.8680	48.858	.98036
#3	.04894	.19487	.46835	.48464	3.8250	48.451	.96600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5258**	**.47996**	**.96714**	**48.479**	**.48450**	**9.5544**	**.47957**
Stddev	.1319	.00107	.00097	.350	.00030	.0139	.00195
%RSD	1.3849	.22256	.10009	.72216	.06125	.14535	.40561
#1	9.3970	.47872	.96719	48.152	.48453	9.5494	.47853
#2	9.6606	.48061	.96809	48.848	.48418	9.5437	.48181
#3	9.5199	.48054	.96615	48.437	.48477	9.5701	.47836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 10:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1324**	**.38475**	**4.8261**	**.96290**	**.95348**	**.95950**	**.48692**
Stddev	.0045	.00474	.0052	.00122	.00542	.00746	.00118
%RSD	.39976	1.2324	.10677	.12715	.56872	.77725	.24136
#1	1.1284	.38368	4.8216	.96403	.94767	.95239	.48688
#2	1.1315	.38994	4.8248	.96309	.95841	.96726	.48811
#3	1.1373	.38064	4.8317	.96160	.95435	.95885	.48576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95116**	**.96026**	F **.37855**
Stddev	.00355	.00050	.36755
%RSD	.37332	.05189	97.093
#1	.94896	.95972	.43922
#2	.95525	.96070	-.01555
#3	.94925	.96037	.71200
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14184.**	**93670.**	**3486.1**
Stddev	84.	1553.	2.0
%RSD	.58876	1.6582	.05654
#1	14280.	94596.	3488.1
#2	14128.	91877.	3484.1
#3	14143.	94537.	3486.2

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 10:31:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**.00256**	**-.00050**	**.00125**	**-.00059**	**.00002**	**.00789**
Stddev	.00149	.00634	.00063	.00192	.00087	.00007	.02664
%RSD	155.54	247.08	125.68	153.37	147.41	420.88	337.70
#1	-.00003	-.00057	-.00112	.00053	-.00105	-.00001	.03598
#2	-.00267	-.00159	-.00052	.00343	-.00113	-.00004	.00472
#3	-.00016	.00986	.00014	-.00021	.00041	.00009	-.01703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00001**	**.00032**	**-.00124**	**-.00551**	**-.05373**	**-.00332**
Stddev	.00030	.00022	.00057	.00012	.02505	.08204	.00611
%RSD	402.10	3450.2	174.83	9.3932	454.21	152.68	183.93
#1	.00008	-.00019	.00005	-.00112	-.00821	-.14761	.00007
#2	.00037	.00023	.00098	-.00136	.02077	-.01778	-.01038
#3	-.00023	-.00007	-.00005	-.00124	-.02911	.00419	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00103**	**.00009**	**.00004**	**-.00753**	**.00025**	**-.00203**	**-.00054**
Stddev	.08236	.00146	.00042	.00475	.00054	.00786	.00175
%RSD	8008.8	1701.3	1068.1	63.019	219.28	386.78	322.11
#1	-.09366	.00163	.00040	-.00575	.00055	-.00691	.00147
#2	.05600	-.00128	.00013	-.01291	.00057	.00704	-.00138
#3	.04075	-.00009	-.00042	-.00393	-.00038	-.00622	-.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 10:31:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00130**	**-.00274**	**.00469**	**.00062**	**.00026**	**.00074**	**.00038**
Stddev	.00149	.00246	.00209	.00044	.00046	.00363	.00092
%RSD	114.83	89.879	44.598	71.850	179.22	487.69	241.55
#1	.00231	-.00093	.00287	.00028	-.00020	-.00279	.00090
#2	-.00041	-.00554	.00422	.00112	.00025	.00056	.00092
#3	.00200	-.00174	.00697	.00046	.00072	.00446	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00003**	**.00008**	F **.11861**
Stddev	.00010	.00009	.14978
%RSD	384.78	108.66	126.28
#1	-.00012	.00016	.28297
#2	-.00004	-.00002	-.01020
#3	.00008	.00010	.08306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14498.**	**95990.**	**3537.2**
Stddev	295.	1255.	19.9
%RSD	2.0369	1.3075	.56323
#1	14645.	95410.	3533.2
#2	14692.	97430.	3558.8
#3	14158.	95130.	3519.6

Approved: March 30, 2017

Sample Name: PBW A Acquired: 3/29/2017 10:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00522**	**.00024**	**.00251**	**-.00137**	**-.00004**	**-.01186**
Stddev	.00107	.00315	.00300	.00162	.00105	.00007	.00806
%RSD	485.24	60.382	1261.0	64.634	76.768	161.30	67.947
#1	.00144	.00853	.00370	.00107	-.00238	.00004	-.00294
#2	-.00060	.00226	-.00136	.00427	-.00028	-.00007	-.01862
#3	-.00017	.00487	-.00162	.00220	-.00146	-.00010	-.01401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**-.00110**	**-.00074**	**-.00723**	**-.11344**	**-.00168**
Stddev	.00019	.00017	.00021	.00041	.02429	.05780	.00320
%RSD	1354.2	206.42	18.850	54.944	335.90	50.953	189.87
#1	-.00017	.00011	-.00128	-.00027	-.02830	-.04804	-.00317
#2	.00020	-.00022	-.00087	-.00093	.01934	-.13459	.00199
#3	-.00007	-.00014	-.00116	-.00102	-.01274	-.15769	-.00387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00526**	**.00143**	**.00007**	**.01134**	**.00091**	**-.00160**	**.00037**
Stddev	.09389	.00240	.00017	.00335	.00034	.00396	.00171
%RSD	1784.3	168.57	258.37	29.561	37.572	247.47	465.23
#1	.10916	.00394	.00003	.01061	.00074	-.00237	.00231
#2	-.01986	-.00085	.00026	.01500	.00069	-.00512	-.00088
#3	-.07351	.00118	-.00008	.00841	.00131	.00269	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: PBW A Acquired: 3/29/2017 10:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**-.00035**	**.00683**	**-.00006**	**-.00038**	**-.00026**	**-.00024**
Stddev	.00104	.00412	.00100	.00015	.00104	.00268	.00287
%RSD	115.45	1172.2	14.572	237.67	270.20	1045.4	1211.2
#1	.00103	.00304	.00630	.00008	-.00116	-.00329	.00307
#2	.00188	-.00493	.00798	-.00022	.00079	.00073	-.00166
#3	-.00020	.00084	.00621	-.00005	-.00079	.00179	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00021**	**.00113**	F **-.15844**
Stddev	.00026	.00005	.14120
%RSD	124.83	4.4360	89.117
#1	-.00000	.00110	-.30542
#2	-.00050	.00110	-.02385
#3	-.00012	.00119	-.14605
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14475.**	**96485.**	**3503.8**
Stddev	34.	124.	23.1
%RSD	.23510	.12867	.65949
#1	14482.	96539.	3494.3
#2	14438.	96573.	3486.9
#3	14505.	96343.	3530.1

Approved: March 30, 2017

Sample Name: LCSW A Acquired: 3/29/2017 10:39:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19239**	**4.8511**	**.19000**	**.93321**	**.49877**	**.02376**	**4.8640**	**.02450**
Stddev	.00262	.0149	.00204	.00165	.00540	.00007	.0438	.00034
%RSD	1.3634	.30650	1.0755	.17697	1.0821	.30378	.90007	1.3736
#1	.19335	4.8645	.18998	.93145	.50441	.02369	4.9099	.02442
#2	.18942	4.8537	.18796	.93473	.49827	.02377	4.8227	.02420
#3	.19440	4.8351	.19205	.93346	.49365	.02383	4.8596	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09976**	**.24296**	**.24629**	**1.9796**	**24.619**	**.50320**	**4.9376**	**.25121**
Stddev	.00035	.00026	.00088	.0222	.101	.00940	.1131	.00261
%RSD	.34677	.10835	.35798	1.1207	.41170	1.8680	2.2912	1.0406
#1	.10004	.24316	.24683	1.9752	24.713	.51364	5.0355	.24938
#2	.09987	.24305	.24527	2.0036	24.512	.49539	4.9637	.25420
#3	.09937	.24266	.24677	1.9599	24.631	.50058	4.8137	.25005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48436**	**24.980**	**.24995**	**4.7568**	**.24904**	**.58324**	**.18952**	**2.4865**
Stddev	.00093	.287	.00101	.0212	.00313	.00231	.00093	.0073
%RSD	.19106	1.1490	.40307	.44617	1.2555	.39578	.49228	.29276
#1	.48449	25.302	.24879	4.7597	.25105	.58390	.19059	2.4938
#2	.48337	24.889	.25044	4.7343	.25063	.58514	.18905	2.4792
#3	.48521	24.750	.25061	4.7764	.24543	.58067	.18891	2.4865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LCSW A Acquired: 3/29/2017 10:39:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49432**	**.50113**	**.49895**	**.25049**	**.48668**	**.48468**	**.08409**
Stddev	.00073	.00361	.00383	.00270	.00056	.00082	.18401
%RSD	.14696	.72097	.76797	1.0797	.11510	.16872	218.83
#1	.49379	.50508	.49525	.24883	.48733	.48477	-.11281
#2	.49403	.50033	.49869	.24903	.48634	.48382	.11338
#3	.49515	.49799	.50290	.25361	.48637	.48545	.25170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14722.**	**97598.**	**3679.0**
Stddev	67.	321.	58.0
%RSD	.45729	.32841	1.5762
#1	14767.	97701.	3660.0
#2	14644.	97239.	3632.9
#3	14753.	97855.	3744.1

Approved: March 30, 2017

Sample Name: L1703116101 Acquired: 3/29/2017 10:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.50155**	**.00460**	**.01040**	**.05483**	**.00016**	**3.9699**	**.00018**
Stddev	.00162	.00157	.00250	.00326	.00047	.00004	.0184	.00026
%RSD	4818.9	.31344	54.230	31.296	.85543	25.742	.46351	139.65
#1	-.00053	.50263	.00487	.01373	.05503	.00011	3.9817	-.00004
#2	-.00135	.49975	.00199	.01026	.05515	.00018	3.9793	.00046
#3	.00178	.50228	.00696	.00722	.05429	.00018	3.9487	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00391**	**.03756**	**.00118**	**3.9600**	**.68942**	**.00197**	**4.9647**	**.13749**
Stddev	.00028	.00096	.00117	.0532	.03656	.00389	.0710	.00144
%RSD	7.2803	2.5594	99.598	1.3431	5.3032	197.92	1.4304	1.0448
#1	.00370	.03866	.00179	3.9219	.69859	.00189	4.8923	.13915
#2	.00381	.03687	.00192	3.9374	.64914	-.00189	4.9676	.13658
#3	.00424	.03716	-.00017	4.0208	.72052	.00590	5.0343	.13676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00373**	**118.17**	**.00797**	**.09781**	**.00132**	**-.00121**	**.00369**	**13.273**
Stddev	.00023	.20	.00127	.00055	.00146	.00256	.00357	.021
%RSD	6.2537	.16603	15.888	.56013	110.39	211.41	96.664	.16149
#1	.00399	118.38	.00651	.09844	.00205	.00063	.00749	13.295
#2	.00355	118.15	.00860	.09744	.00228	-.00012	.00318	13.271
#3	.00364	117.99	.00880	.09754	-.00036	-.00414	.00041	13.252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116101 Acquired: 3/29/2017 10:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.10302**	**.00882**	**.00041**	**.00428**	**.00905**	**.22729**
Stddev	.00054	.00087	.00266	.00251	.00027	.00022	.24041
%RSD	130.06	.84263	30.184	608.59	6.2063	2.3762	105.77
#1	-.00001	.10202	.00662	.00317	.00399	.00920	-.01372
#2	.00024	.10363	.01178	-.00020	.00432	.00915	.46709
#3	.00102	.10340	.00806	-.00173	.00451	.00880	.22850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14335.**	**95551.**	**3623.4**
Stddev	114.	152.	66.3
%RSD	.79469	.15868	1.8284
#1	14446.	95427.	3578.6
#2	14342.	95507.	3592.1
#3	14218.	95720.	3699.5

Approved: March 30, 2017

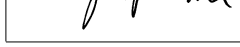
Sample Name: L1703116102 Acquired: 3/29/2017 10:46:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19620**	**5.7414**	**.19923**	**.98651**	**.55867**	**.02487**	**8.9216**	**.02499**
Stddev	.00041	.0299	.00372	.00347	.00113	.00011	.0453	.00005
%RSD	.20754	.52044	1.8662	.35150	.20228	.44088	.50739	.20427
#1	.19636	5.7319	.19522	.98358	.55981	.02493	8.8809	.02494
#2	.19650	5.7175	.19992	.98561	.55865	.02475	8.9135	.02500
#3	.19573	5.7749	.20256	.99034	.55756	.02495	8.9704	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10384**	**.28937**	**.25035**	**6.2249**	**25.007**	**.50099**	**10.031**	**.39616**
Stddev	.00048	.00149	.00208	.0336	.142	.00741	.190	.00165
%RSD	.46638	.51456	.83199	.53951	.56747	1.4797	1.8915	.41642
#1	.10391	.28821	.24997	6.1891	24.857	.49652	9.8773	.39496
#2	.10332	.28886	.24847	6.2301	25.025	.50955	10.243	.39548
#3	.10428	.29105	.25259	6.2557	25.139	.49691	9.9723	.39804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49442**	**141.26**	**.25683**	**5.0424**	**.24667**	**.59400**	**.19409**	**16.610**
Stddev	.00153	.16	.00083	.0080	.00072	.00292	.00555	.035
%RSD	.30877	.11113	.32357	.15855	.29205	.49224	2.8609	.20974
#1	.49414	141.35	.25623	5.0415	.24646	.59073	.18865	16.600
#2	.49305	141.35	.25778	5.0348	.24607	.59491	.19386	16.582
#3	.49606	141.08	.25647	5.0508	.24747	.59636	.19975	16.649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017



Sample Name: L1703116102 Acquired: 3/29/2017 10:46:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50168**	**.60698**	**.49819**	**.24659**	**.50432**	**.51124**	**.14446**
Stddev	.00090	.00128	.00966	.00263	.00321	.00148	.23649
%RSD	.17966	.21089	1.9386	1.0679	.63613	.28883	163.71
#1	.50076	.60560	.48740	.24709	.50167	.51044	.40241
#2	.50173	.60813	.50604	.24375	.50340	.51035	-.06212
#3	.50256	.60719	.50112	.24894	.50789	.51295	.09307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14198.**	**93053.**	**3600.5**
Stddev	82.	550.	17.3
%RSD	.57995	.59064	.47941
#1	14174.	93332.	3604.4
#2	14290.	93407.	3581.6
#3	14131.	92420.	3615.5

Approved: March 30, 2017

Sample Name: L1703116103 Acquired: 3/29/2017 10:50:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19444**	**5.8785**	**.19545**	**.99013**	**.55546**	**.02469**	**9.0093**	**.02469**
Stddev	.00069	.0126	.00105	.00031	.00470	.00007	.0891	.00006
%RSD	.35711	.21443	.53928	.03082	.84694	.26571	.98948	.23684
#1	.19365	5.8666	.19551	.99011	.55004	.02463	8.9129	.02473
#2	.19471	5.8773	.19648	.98983	.55848	.02476	9.0260	.02462
#3	.19496	5.8917	.19437	.99044	.55787	.02469	9.0888	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10272**	**.29444**	**.24582**	**6.3272**	**24.936**	**.49854**	**10.079**	**.40213**
Stddev	.00022	.00061	.00133	.0397	.125	.00226	.084	.00372
%RSD	.21165	.20849	.54077	.62810	.49976	.45423	.83581	.92487
#1	.10291	.29417	.24666	6.2815	24.809	.49901	9.9908	.39813
#2	.10248	.29401	.24652	6.3534	24.941	.49608	10.086	.40277
#3	.10278	.29515	.24429	6.3468	25.058	.50053	10.159	.40549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48825**	**143.38**	**.25533**	**4.9649**	**.24808**	**.58558**	**.19224**	**16.943**
Stddev	.00017	.80	.00127	.0047	.00173	.00294	.00550	.012
%RSD	.03388	.55535	.49827	.09554	.69778	.50264	2.8585	.06886
#1	.48830	142.46	.25629	4.9703	.24821	.58611	.18670	16.956
#2	.48807	143.76	.25389	4.9621	.24974	.58241	.19769	16.934
#3	.48839	143.91	.25580	4.9621	.24628	.58822	.19232	16.939
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116103 Acquired: 3/29/2017 10:50:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49393**	**.60519**	**.48535**	**.24288**	**.50073**	**.50509**	**.18013**
Stddev	.00090	.00439	.00280	.00379	.00168	.00044	.29688
%RSD	.18210	.72570	.57590	1.5609	.33581	.08785	164.81
#1	.49301	.60029	.48213	.24232	.49878	.50462	.48894
#2	.49481	.60876	.48707	.23941	.50168	.50550	-.10317
#3	.49397	.60652	.48686	.24693	.50171	.50514	.15463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14414.**	**93475.**	**3615.8**
Stddev	95.	766.	102.0
%RSD	.65649	.81989	2.8203
#1	14497.	92607.	3697.8
#2	14434.	93757.	3648.0
#3	14311.	94060.	3501.6

Approved: March 30, 2017

Sample Name: L1703116104 Acquired: 3/29/2017 10:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.12565**	**.00106**	**.04445**	**.23737**	**-.00000**	**18.667**
Stddev	.00099	.00140	.00069	.00111	.00549	.00007	.358
%RSD	815.33	1.1156	64.814	2.4982	2.3117	2017.3	1.9175
#1	-.00101	.12460	.00065	.04375	.24371	-.00005	19.073
#2	.00063	.12510	.00068	.04388	.23430	.00007	18.532
#3	.00075	.12724	.00186	.04573	.23411	-.00003	18.397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.00001**	**-.00042**	**.00142**	**43.916**	**2.1977**	**.02479**
Stddev	.00004	.00036	.00040	.00210	.618	.1623	.00094
%RSD	10.285	2488.6	96.810	147.66	1.4066	7.3833	3.8012
#1	.00040	-.00036	-.00085	.00095	44.623	2.3447	.02544
#2	.00039	-.00005	-.00033	.00372	43.648	2.0236	.02523
#3	.00033	.00037	-.00006	-.00040	43.478	2.2248	.02371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.0520**	**.63096**	**.00036**	**64.705**	**.00085**	**.40024**	**.00301**
Stddev	.1708	.00841	.00019	1.111	.00074	.00810	.00091
%RSD	1.8864	1.3326	53.413	1.7168	87.319	2.0243	30.221
#1	9.2472	.64057	.00025	65.952	.00137	.40507	.00383
#2	8.9784	.62734	.00057	64.341	-.00000	.40475	.00203
#3	8.9303	.62496	.00024	63.822	.00119	.39088	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116104 Acquired: 3/29/2017 10:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**-.00332**	**15.606**	**.00141**	**.41790**	**.01757**	**-.00161**
Stddev	.00290	.00555	.285	.00033	.00603	.00397	.00321
%RSD	365.30	167.03	1.8283	23.211	1.4424	22.590	199.74
#1	.00222	-.00693	15.656	.00103	.42483	.02150	.00207
#2	-.00104	-.00611	15.863	.00162	.41495	.01767	-.00303
#3	-.00357	.00307	15.299	.00157	.41390	.01356	-.00386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00068**	**.00359**	F **-1.2953**
Stddev	.00040	.00009	.1337
%RSD	59.417	2.5015	10.321
#1	.00113	.00350	-1.2705
#2	.00057	.00368	-1.1757
#3	.00034	.00357	-1.4396
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14421.**	**95610.**	**3681.0**
Stddev	147.	1944.	60.6
%RSD	1.0181	2.0336	1.6451
#1	14341.	95346.	3617.2
#2	14331.	93811.	3688.1
#3	14590.	97673.	3737.7

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 10:57:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.16102**	**.00080**	**.00602**	**.06603**	**.00030**	**24.334**
Stddev	.00054	.00120	.00099	.00103	.00133	.00008	.116
%RSD	241.31	.74596	124.60	17.080	2.0176	26.421	.47559
#1	.00027	.16021	-.00005	.00599	.06481	.00035	24.229
#2	-.00014	.16240	.00055	.00706	.06582	.00021	24.316
#3	-.00080	.16044	.00190	.00501	.06745	.00035	24.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00300**	**.00053**	**.00025**	**.16138**	**.77310**	**.08102**
Stddev	.00019	.00006	.00060	.00139	.01649	.06762	.00333
%RSD	436.63	2.1443	111.85	560.47	10.218	8.7462	4.1141
#1	-.00012	.00299	.00052	.00012	.16128	.75540	.07725
#2	.00017	.00293	-.00006	.00170	.17792	.84781	.08227
#3	-.00019	.00306	.00113	-.00107	.14494	.71609	.08355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**21.503**	**.22152**	**.00019**	F **461.62**	**.00995**	**.05539**	**.00347**
Stddev	.120	.00188	.00042	2.12	.00101	.00232	.00177
%RSD	.55619	.84727	220.44	.45871	10.116	4.1804	51.010
#1	21.370	.21938	.00062	460.01	.01105	.05299	.00312
#2	21.534	.22288	-.00021	460.83	.00972	.05557	.00539
#3	21.603	.22230	.00016	464.02	.00907	.05762	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 10:57:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**-.00546**	**23.702**	**-.00017**	**.53526**	**-.00196**	**.00143**
Stddev	.00564	.00302	.141	.00045	.00392	.00677	.00053
%RSD	490.21	55.325	.59603	258.45	.73172	345.18	37.373
#1	.00515	-.00304	23.859	-.00038	.53075	-.00392	.00196
#2	-.00286	-.00884	23.663	-.00048	.53777	.00557	.00142
#3	-.00574	-.00450	23.584	.00034	.53726	-.00753	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00059**	**.01570**	F **-.31660**
Stddev	.00079	.00010	.21804
%RSD	133.54	.65191	68.871
#1	.00008	.01574	-.11904
#2	-.00146	.01577	-.28020
#3	-.00039	.01558	-.55055
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13800.**	**89188.**	**3419.0**
Stddev	91.	1589.	14.0
%RSD	.66149	1.7821	.41080
#1	13838.	90694.	3416.9
#2	13696.	89342.	3434.0
#3	13867.	87527.	3406.1

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 11:00:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**4.8615**	**.19975**	**.96131**	**.55350**	**.02521**	**26.609**
Stddev	.00253	.0151	.00138	.00304	.00186	.00003	.183
%RSD	1.3010	.31044	.69078	.31670	.33638	.13318	.68810
#1	.19208	4.8445	.20130	.96156	.55164	.02518	26.401
#2	.19358	4.8734	.19930	.95815	.55537	.02521	26.682
#3	.19701	4.8665	.19866	.96422	.55350	.02525	26.744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**.10135**	**.24423**	**.24575**	**2.1259**	**26.165**	**.57245**
Stddev	.00012	.00021	.00055	.00102	.0221	.121	.00506
%RSD	.49576	.21090	.22633	.41381	1.0408	.46052	.88386
#1	.02488	.10156	.24446	.24687	2.1086	26.201	.57013
#2	.02465	.10114	.24464	.24548	2.1182	26.031	.57825
#3	.02483	.10135	.24361	.24489	2.1508	26.264	.56897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.096**	**.44355**	**.49022**	F **439.24**	**.25351**	**5.0507**	**.24259**
Stddev	.066	.00545	.00185	1.36	.00177	.0065	.00274
%RSD	.27559	1.2284	.37670	.31073	.69956	.12780	1.1309
#1	24.053	.43771	.49231	439.94	.25540	5.0481	.24575
#2	24.063	.44443	.48955	440.10	.25189	5.0459	.24082
#3	24.173	.44850	.48880	437.66	.25323	5.0580	.24121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.50000			

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 11:00:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59524**	**.19097**	**24.188**	**.50175**	**.96456**	**.50216**	**.24135**
Stddev	.00179	.00156	.016	.00182	.00289	.00429	.00143
%RSD	.30091	.81532	.06473	.36228	.30003	.85502	.59310
#1	.59527	.19158	24.205	.50378	.96122	.49791	.24053
#2	.59702	.18920	24.174	.50029	.96619	.50650	.24051
#3	.59343	.19214	24.184	.50117	.96626	.50209	.24300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50398**	**.52488**	**.19108**
Stddev	.00132	.00066	.29453
%RSD	.26277	.12641	154.14
#1	.50525	.52564	-.02137
#2	.50407	.52456	.52730
#3	.50261	.52443	.06732
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13709.**	**88773.**	**3442.5**
Stddev	137.	331.	78.2
%RSD	.99994	.37321	2.2729
#1	13553.	89152.	3532.4
#2	13810.	88542.	3405.0
#3	13765.	88623.	3390.0

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 11:04:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03137**	**.00177**	**.00300**	**.01253**	**.00009**	**4.5108**
Stddev	.00067	.00097	.00066	.00104	.00121	.00001	.0585
%RSD	207.24	3.1058	37.476	34.867	9.6437	11.122	1.2971
#1	-.00060	.03145	.00236	.00324	.01276	.00010	4.5248
#2	-.00080	.03231	.00105	.00390	.01122	.00009	4.4466
#3	.00044	.03036	.00190	.00185	.01360	.00008	4.5611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00079**	**.00022**	**-.00080**	**.02828**	**.12481**	**.00837**
Stddev	.00029	.00024	.00103	.00103	.02223	.07628	.00767
%RSD	76.335	30.404	476.01	128.10	78.589	61.122	91.650
#1	-.00023	.00107	.00110	-.00166	.05288	.20891	.01569
#2	-.00020	.00062	-.00092	.00034	.02233	.10544	.00904
#3	-.00071	.00069	.00047	-.00108	.00964	.06007	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.0651**	**.04055**	**.00000**	**87.269**	**.00217**	**.01176**	**.00136**
Stddev	.0545	.00306	.00029	.809	.00011	.00739	.00358
%RSD	1.3416	7.5561	7405.1	.92686	5.2782	62.876	264.04
#1	4.0029	.04392	-.00028	86.736	.00210	.01196	-.00207
#2	4.0879	.03979	.00030	86.870	.00231	.01905	.00507
#3	4.1046	.03794	-.00000	88.199	.00212	.00427	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 11:04:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00143**	**4.6078**	**.00008**	**.09963**	**.00082**	**.00204**
Stddev	.00634	.00382	.0576	.00055	.00065	.00784	.00244
%RSD	1128.2	267.87	1.2493	679.42	.64872	950.45	119.92
#1	.00664	.00243	4.5472	.00051	.09932	.00985	.00486
#2	-.00304	-.00521	4.6144	-.00054	.09919	-.00429	.00068
#3	-.00529	-.00150	4.6618	.00027	.10037	-.00309	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00044**	**.00342**	F **-.11317**
Stddev	.00046	.00012	.07404
%RSD	105.87	3.6044	65.418
#1	.00085	.00344	-.06141
#2	-.00006	.00352	-.08013
#3	.00052	.00328	-.19798
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14068.**	**92019.**	**3414.6**
Stddev	99.	1256.	15.7
%RSD	.70218	1.3645	.46002
#1	14182.	93063.	3431.2
#2	14005.	90626.	3412.6
#3	14019.	92367.	3400.0

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:08:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41054**	**10.444**	**.41479**	**.52073**	**1.0401**	**.05158**	**10.349**
Stddev	.00283	.050	.00346	.00379	.0060	.00016	.134
%RSD	.68866	.48347	.83358	.72693	.58214	.31089	1.2994
#1	.40734	10.387	.41159	.51636	1.0428	.05146	10.496
#2	.41271	10.483	.41434	.52301	1.0331	.05151	10.232
#3	.41157	10.461	.41846	.52282	1.0443	.05176	10.318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05224**	**.20991**	**.51733**	**.52238**	**4.1459**	**51.408**	**1.0332**
Stddev	.00041	.00054	.00318	.00164	.0508	.310	.0058
%RSD	.78920	.25599	.61516	.31340	1.2264	.60218	.56369
#1	.05266	.20929	.51368	.52058	4.1917	51.360	1.0275
#2	.05222	.21015	.51883	.52280	4.0912	51.125	1.0328
#3	.05183	.21028	.51949	.52377	4.1549	51.738	1.0392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.410**	**.51831**	**1.0416**	**51.682**	**.52208**	**10.372**	**.52549**
Stddev	.040	.00267	.0022	.107	.00060	.034	.00419
%RSD	.38759	.51587	.21095	.20632	.11540	.32560	.79652
#1	10.439	.52079	1.0391	51.728	.52140	10.333	.52162
#2	10.364	.51548	1.0423	51.560	.52229	10.386	.52493
#3	10.427	.51868	1.0433	51.758	.52255	10.396	.52993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:08:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2311**	**.41638**	**5.2113**	**1.0368**	**1.0371**	**1.0203**	**.52412**
Stddev	.0076	.00494	.0087	.0014	.0054	.0056	.00638
%RSD	.62152	1.1872	.16646	.13115	.52009	.54829	1.2177
#1	1.2223	.41086	5.2013	1.0353	1.0425	1.0138	.51675
#2	1.2349	.42040	5.2164	1.0371	1.0317	1.0234	.52765
#3	1.2362	.41788	5.2163	1.0379	1.0369	1.0235	.52795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0294**	**1.0377**	F **-.03399**
Stddev	.0058	.0030	.18038
%RSD	.56764	.29230	530.63
#1	1.0230	1.0347	.13286
#2	1.0307	1.0375	-.00944
#3	1.0345	1.0408	-.22539
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13569.**	**87346.**	**3310.7**
Stddev	84.	714.	39.8
%RSD	.61577	.81773	1.2023
#1	13576.	88166.	3329.7
#2	13649.	87013.	3337.5
#3	13482.	86859.	3265.0

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 11:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**.00882**	**.00057**	**.00266**	**.00042**	**.00003**	**.02567**
Stddev	.00058	.00529	.00051	.00209	.00077	.00010	.04408
%RSD	65.276	59.955	88.968	78.561	183.20	326.14	171.73
#1	-.00030	.01077	.00067	.00425	.00081	-.00008	-.01706
#2	-.00090	.00283	.00103	.00342	.00092	.00006	.07098
#3	-.00146	.01285	.00002	.00030	-.00047	.00010	.02308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00025**	**.00069**	**-.00073**	**-.01505**	**.10066**	**-.00570**
Stddev	.00033	.00007	.00119	.00073	.03950	.05495	.00209
%RSD	97.134	29.550	172.27	99.739	262.40	54.584	36.652
#1	.00004	.00021	.00040	-.00074	-.00736	.12569	-.00329
#2	-.00057	.00033	.00201	.00000	.02003	.03766	-.00678
#3	-.00048	.00020	-.00033	-.00145	-.05783	.13864	-.00702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01004**	**-.00258**	**.00004**	**.04287**	**-.00002**	**.00131**	**-.00045**
Stddev	.07847	.00316	.00030	.01317	.00060	.00152	.00162
%RSD	781.18	122.47	843.89	30.713	2553.7	116.04	356.95
#1	.03736	-.00565	-.00031	.03595	.00038	.00082	-.00223
#2	-.10062	-.00276	.00024	.05806	-.00071	.00010	-.00009
#3	.03313	.00067	.00017	.03461	.00026	.00302	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 11:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00431**	**-.00098**	**.00542**	**.00043**	**-.00043**	**.00152**	**-.00036**
Stddev	.00663	.00377	.00364	.00067	.00051	.00918	.00099
%RSD	153.78	383.61	67.121	154.10	120.07	604.25	276.76
#1	.00894	-.00425	.00124	.00077	-.00006	.00102	-.00106
#2	.00728	.00314	.00787	-.00034	-.00020	-.00740	-.00079
#3	-.00328	-.00184	.00714	.00087	-.00101	.01094	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00044**	**.00026**	F **-.41829**
Stddev	.00015	.00008	.16160
%RSD	32.738	30.897	38.633
#1	.00030	.00034	-.46265
#2	.00059	.00018	-.23915
#3	.00043	.00027	-.55308
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13637.**	**91588.**	**3361.5**
Stddev	32.	137.	76.9
%RSD	.23272	.15001	2.2865
#1	13668.	91570.	3449.6
#2	13639.	91733.	3308.0
#3	13604.	91460.	3327.0

Approved: March 30, 2017

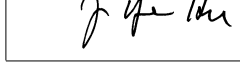
Sample Name: L1703116107 Acquired: 3/29/2017 11:15:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.02008**	**.00018**	**.01584**	**.25269**	**.00001**	**18.449**
Stddev	.00252	.00800	.00156	.00263	.00136	.00010	.043
%RSD	10275.	39.838	881.21	16.597	.53802	1207.6	.23540
#1	-.00016	.02154	-.00035	.01358	.25112	-.00001	18.398
#2	.00263	.02725	-.00105	.01523	.25344	.00012	18.473
#3	-.00239	.01145	.00193	.01873	.25351	-.00008	18.474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00318**	**-.00063**	**-.00006**	**11.245**	**1.1852**	**-.00068**
Stddev	.00011	.00029	.00018	.00060	.090	.0699	.00371
%RSD	6178.8	9.2409	28.987	979.99	.80224	5.8958	548.09
#1	-.00008	.00292	-.00081	.00063	11.142	1.2621	.00226
#2	-.00005	.00312	-.00045	-.00033	11.285	1.1257	.00055
#3	.00013	.00350	-.00063	-.00048	11.309	1.1677	-.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.818**	**2.5453**	**-.00002**	**34.046**	**.00122**	**.04696**	**.00118**
Stddev	.171	.0208	.00019	.183	.00082	.00357	.00208
%RSD	1.5820	.81778	1194.6	.53630	67.139	7.6071	176.26
#1	10.691	2.5215	-.00017	33.855	.00052	.04529	-.00083
#2	10.752	2.5548	.00020	34.218	.00213	.05107	.00105
#3	11.013	2.5597	-.00007	34.065	.00103	.04453	.00332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703116107 Acquired: 3/29/2017 11:15:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00289**	**.00125**	**14.222**	**.00012**	**.35804**	**.00420**	**.00048**
Stddev	.00468	.00412	.048	.00037	.00198	.00571	.00170
%RSD	161.74	331.08	.33965	317.03	.55222	136.12	353.61
#1	-.00828	-.00270	14.277	-.00020	.35584	.00185	-.00059
#2	-.00060	.00553	14.202	.00002	.35967	.00003	-.00041
#3	.00020	.00090	14.187	.00053	.35860	.01071	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00066**	**.00321**	F **-.54339**
Stddev	.00035	.00002	.11442
%RSD	52.611	.77152	21.057
#1	-.00093	.00318	-.64658
#2	-.00027	.00323	-.56327
#3	-.00078	.00321	-.42033
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14265.**	**94292.**	**3488.9**
Stddev	65.	307.	8.4
%RSD	.45221	.32538	.24171
#1	14214.	94158.	3490.7
#2	14242.	94076.	3479.7
#3	14337.	94644.	3496.3

Approved: March 30, 2017

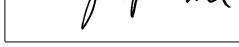
Sample Name: L1703116109 Acquired: 3/29/2017 11:18:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.01305**	**-.00013**	**.02147**	**.36424**	**-.00007**	**11.228**
Stddev	.00120	.00541	.00033	.00193	.00225	.00006	.141
%RSD	79.036	41.464	252.27	8.9769	.61761	77.639	1.2578
#1	-.00277	.00718	-.00010	.02270	.36164	-.00007	11.065
#2	-.00142	.01412	.00018	.02247	.36545	-.00002	11.302
#3	-.00037	.01784	-.00047	.01925	.36562	-.00013	11.316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00190**	**-.00041**	**.00078**	**20.396**	**2.4185**	**.00727**
Stddev	.00014	.00005	.00014	.00029	.145	.2010	.00823
%RSD	59.345	2.8455	34.434	36.605	.71220	8.3103	113.12
#1	.00030	.00184	-.00050	.00066	20.297	2.3069	.00536
#2	.00034	.00191	-.00025	.00058	20.329	2.2981	.01629
#3	.00008	.00195	-.00048	.00111	20.563	2.6505	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.4959**	**.44443**	**.00004**	**44.332**	**.01237**	**.01319**	**.00042**
Stddev	.0402	.00775	.00016	.312	.00142	.00318	.00165
%RSD	.73222	1.7434	456.99	.70366	11.478	24.104	392.51
#1	5.5398	.43833	-.00004	43.991	.01100	.01356	.00233
#2	5.4608	.44180	-.00007	44.404	.01383	.00984	-.00057
#3	5.4870	.45315	.00022	44.602	.01227	.01617	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703116109 Acquired: 3/29/2017 11:18:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00064**	**-.00056**	**10.857**	**.00015**	**.23547**	**.00474**	**.00263**
Stddev	.00267	.00290	.021	.00055	.00119	.00591	.00361
%RSD	420.48	518.82	.19422	361.88	.50740	124.68	137.05
#1	-.00239	.00279	10.834	-.00024	.23412	.00461	.00281
#2	-.00196	-.00220	10.876	.00078	.23593	.01071	-.00106
#3	.00244	-.00226	10.859	-.00008	.23637	-.00110	.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00033**	**.01455**	F **-1.0361**
Stddev	.00022	.00029	.3516
%RSD	65.990	2.0050	33.936
#1	-.00013	.01445	-.66674
#2	-.00030	.01488	-1.3668
#3	-.00057	.01432	-1.0747
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14257.**	**92010.**	**3460.9**
Stddev	73.	336.	36.7
%RSD	.51083	.36567	1.0599
#1	14315.	91653.	3468.0
#2	14175.	92321.	3493.6
#3	14281.	92057.	3421.2

Approved: March 30, 2017

Sample Name: L1703118801 Acquired: 3/29/2017 11:22:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00127**	**.27494**	**.00061**	**.01445**	**.00282**	**.00001**	**.73562**	**.00000**
Stddev	.00228	.00488	.00141	.00104	.00185	.00004	.04648	.00013
%RSD	179.75	1.7750	228.94	7.1674	65.643	596.85	6.3189	5174.9
#1	-.00385	.27326	-.00096	.01520	.00096	.00001	.78925	-.00015
#2	-.00044	.28044	.00105	.01327	.00283	-.00004	.71060	.00011
#3	.00048	.27113	.00175	.01488	.00466	.00004	.70700	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00072**	**.08676**	**.22230**	**.18347**	**.00029**	**.12494**	**.00475**
Stddev	.00041	.00071	.00084	.02094	.15825	.00711	.03166	.00091
%RSD	245.29	98.402	.96983	9.4193	86.254	2488.7	25.337	19.201
#1	.00049	.00103	.08771	.23038	.20209	-.00534	.14200	.00579
#2	.00031	.00121	.08647	.19852	.01674	-.00208	.14441	.00438
#3	-.00030	-.00009	.08610	.23799	.33160	.00827	.08842	.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.91746**	**.00127**	**.00076**	**.00886**	**-.00114**	**.00259**	**.51690**
Stddev	.00014	.05174	.00083	.00120	.00338	.00181	.00248	.00413
%RSD	279.83	5.6398	65.079	158.11	38.138	158.71	95.616	.79960
#1	.00018	.90993	.00108	.00063	.00496	-.00320	-.00027	.52094
#2	-.00010	.86990	.00055	.00202	.01095	-.00042	.00414	.51268
#3	.00007	.97256	.00217	-.00037	.01067	.00020	.00391	.51708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703118801 Acquired: 3/29/2017 11:22:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00509**	**.00097**	**.00920**	**-.00083**	**.00065**	**.02270**	**.31084**
Stddev	.00026	.00047	.00133	.00267	.00007	.00009	.44381
%RSD	5.1852	48.515	14.402	323.39	11.423	.38605	142.78
#1	.00502	.00142	.00774	-.00095	.00056	.02280	.53565
#2	.00538	.00102	.01032	-.00343	.00071	.02268	-.20039
#3	.00487	.00048	.00955	.00191	.00067	.02263	.59725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14957.**	**97431.**	**3731.2**
Stddev	47.	557.	3.9
%RSD	.31486	.57173	.10561
#1	14925.	98000.	3735.3
#2	15011.	96886.	3727.4
#3	14935.	97407.	3730.9

Approved: March 30, 2017

Sample Name: L1703118802 Acquired: 3/29/2017 11:26:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.26557**	**.00291**	**.00728**	**.00171**	**-.00003**	**.69964**
Stddev	.00186	.00233	.00154	.00329	.00116	.00010	.06902
%RSD	458.72	.87642	53.028	45.216	67.723	340.82	9.8646
#1	-.00255	.26795	.00161	.00441	.00045	.00006	.64116
#2	.00054	.26330	.00251	.00656	.00273	-.00002	.68198
#3	.00080	.26546	.00462	.01087	.00194	-.00013	.77577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00037**	**.00194**	**.03458**	**.38515**	**-.03250**	**-.00887**
Stddev	.00013	.00015	.00048	.00057	.03885	.06547	.00262
%RSD	1418.7	40.680	24.978	1.6551	10.087	201.48	29.524
#1	.00002	.00042	.00231	.03398	.34358	.00592	-.01072
#2	.00014	.00020	.00139	.03462	.42053	-.10810	-.01002
#3	-.00013	.00049	.00212	.03512	.39135	.00468	-.00587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10637**	**.00553**	**.00025**	**.10692**	**.00177**	**.00718**	**.00521**
Stddev	.04541	.00244	.00023	.04089	.00028	.00246	.00215
%RSD	42.689	44.056	91.077	38.238	15.966	34.289	41.169
#1	.13159	.00309	.00011	.12894	.00162	.00988	.00628
#2	.05395	.00554	.00013	.13208	.00160	.00661	.00661
#3	.13358	.00797	.00051	.05975	.00210	.00505	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703118802 Acquired: 3/29/2017 11:26:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00124**	**.53153**	**.00069**	**.00169**	**.01331**	**.00040**
Stddev	.00338	.00175	.00576	.00077	.00048	.00886	.00216
%RSD	175.07	140.95	1.0842	111.58	28.230	66.573	533.89
#1	-.00351	-.00168	.53516	-.00003	.00193	.01669	.00021
#2	-.00423	-.00274	.53455	.00150	.00201	.02000	-.00165
#3	.00195	.00069	.52488	.00059	.00114	.00326	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**.01260**	F **-.11632**
Stddev	.00069	.00008	.26750
%RSD	2026.7	.60521	229.98
#1	-.00075	.01269	-.01122
#2	.00057	.01257	.08268
#3	.00028	.01255	-.42041
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14574.**	**97388.**	**3630.9**
Stddev	88.	766.	22.0
%RSD	.60381	.78619	.60473
#1	14522.	96652.	3648.9
#2	14676.	97332.	3637.4
#3	14524.	98180.	3606.4

Approved: March 30, 2017

Sample Name: L1703118803 Acquired: 3/29/2017 11:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.04256**	**-.00061**	**.01343**	**-.00039**	**.00003**	**.15280**	**-.00007**
Stddev	.00054	.00512	.00313	.00189	.00045	.00003	.03874	.00003
%RSD	31.406	12.038	514.67	14.084	115.78	98.670	25.355	42.575
#1	-.00113	.04746	-.00385	.01212	-.00085	.00002	.16056	-.00010
#2	-.00185	.03724	-.00037	.01257	.00006	.00001	.18707	-.00007
#3	-.00219	.04297	.00239	.01560	-.00039	.00007	.11076	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00020**	**.01470**	**.03345**	**.09628**	**-.00386**	**-.07853**	**.00114**
Stddev	.00027	.00074	.00025	.03658	.05707	.00234	.05217	.00221
%RSD	173.62	364.88	1.7132	109.38	59.270	60.487	66.432	193.01
#1	.00026	-.00097	.01496	.04440	.05664	-.00438	-.13796	.00338
#2	.00037	.00051	.01446	-.00736	.07052	-.00589	-.04031	-.00103
#3	-.00015	-.00015	.01468	.06330	.16169	-.00131	-.05732	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.11020**	**.00032**	**.00149**	**-.00055**	**.00008**	**.00651**	**.09022**
Stddev	.00025	.03208	.00110	.00755	.00179	.00367	.00476	.00289
%RSD	190.24	29.111	342.17	505.90	328.10	4781.7	73.107	3.2003
#1	.00005	.12345	-.00031	-.00687	-.00018	-.00364	.00840	.09043
#2	.00042	.13353	.00159	.00353	-.00249	.00370	.00109	.09299
#3	-.00007	.07362	-.00032	.00781	.00104	.00017	.01002	.08723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703118803 Acquired: 3/29/2017 11:29:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.00005**	**.00222**	**-.00023**	**.00020**	**.00660**	**.01759**
Stddev	.00061	.00058	.00552	.00179	.00109	.00010	.05362
%RSD	76.019	1114.2	249.04	786.60	542.73	1.5644	304.84
#1	.00075	-.00027	.00616	-.00214	-.00073	.00663	.05717
#2	.00022	.00072	.00459	.00004	-.00008	.00649	.03904
#3	.00143	-.00029	-.00409	.00141	.00141	.00669	-.04344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14473.**	**96416.**	**3469.8**
Stddev	65.	1164.	22.9
%RSD	.44899	1.2075	.66044
#1	14418.	95978.	3466.8
#2	14455.	97735.	3448.6
#3	14545.	95534.	3494.1

Approved: March 30, 2017

Sample Name: L1703118804 Acquired: 3/29/2017 11:33:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.03404**	**.00034**	**.01240**	**.00092**	**-.00002**	**.15636**
Stddev	.00066	.00294	.00248	.00133	.00112	.00005	.04733
%RSD	62.593	8.6421	722.79	10.727	121.95	230.37	30.269
#1	.00029	.03552	.00098	.01394	.00199	.00003	.15228
#2	.00146	.03065	-.00239	.01166	-.00025	-.00005	.11121
#3	.00141	.03594	.00244	.01161	.00104	-.00005	.20560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00010**	**.00036**	**.00814**	**.05273**	**.00854**	**.00146**
Stddev	.00031	.00014	.00049	.00079	.02090	.08492	.00355
%RSD	2630.4	141.76	136.66	9.6496	39.633	994.80	242.93
#1	.00013	-.00002	.00091	.00792	.03861	.09589	-.00106
#2	.00020	.00025	.00015	.00901	.04284	.00343	.00552
#3	-.00037	.00006	.00000	.00749	.07673	-.07371	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00228**	**.00110**	**-.00043**	**.19470**	**.00042**	**.00255**	**-.00056**
Stddev	.08611	.00136	.00024	.02501	.00092	.00626	.00358
%RSD	3772.1	123.25	56.495	12.844	218.47	245.67	635.85
#1	.05745	-.00042	-.00054	.18775	.00125	.00585	.00321
#2	.04634	.00155	-.00015	.17390	.00058	.00647	-.00391
#3	-.09694	.00218	-.00060	.22245	-.00057	-.00467	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703118804 Acquired: 3/29/2017 11:33:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00183**	**.07943**	**.00040**	**.00050**	**.00012**	**-.00021**
Stddev	.00310	.00446	.00179	.00074	.00024	.00118	.00150
%RSD	281.26	243.85	2.2477	187.88	48.742	996.09	716.11
#1	.00333	.00004	.07737	-.00040	.00030	.00148	-.00181
#2	-.00244	-.00146	.08056	.00107	.00043	-.00044	.00001
#3	.00242	.00690	.08036	.00052	.00077	-.00068	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00045**	**.00311**	F **-.07588**
Stddev	.00023	.00004	.16485
%RSD	50.331	1.4065	217.25
#1	.00049	.00306	.11445
#2	.00066	.00313	-.16860
#3	.00021	.00314	-.17349
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14674.**	**98645.**	**3719.5**
Stddev	159.	1340.	101.9
%RSD	1.0846	1.3583	2.7393
#1	14762.	99065.	3815.4
#2	14770.	97146.	3730.5
#3	14490.	99725.	3612.5

Approved: March 30, 2017

Sample Name: L1703121502 Acquired: 3/29/2017 11:37:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.45935**	**.01802**	**.09044**	**.02537**	**-.00003**	**67.131**	**.00010**
Stddev	.00049	.00471	.00342	.00077	.00173	.00005	.520	.00001
%RSD	42.432	1.0254	18.951	.84866	6.8383	194.93	.77426	14.906
#1	-.00063	.46465	.01670	.09021	.02506	-.00001	66.530	.00009
#2	-.00123	.45776	.02190	.08981	.02724	-.00009	67.426	.00009
#3	-.00159	.45564	.01547	.09129	.02381	.00001	67.435	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.00278**	**.00810**	**.66224**	**12.150**	**.00459**	**16.754**	**.06243**
Stddev	.00076	.00068	.00108	.03465	.034	.00223	.112	.00245
%RSD	71.443	24.582	13.343	5.2323	.27680	48.618	.66791	3.9236
#1	.00033	.00325	.00920	.65967	12.114	.00303	16.628	.05961
#2	.00102	.00200	.00805	.69810	12.153	.00715	16.793	.06404
#3	.00184	.00308	.00704	.62895	12.181	.00359	16.841	.06363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00254**	**156.56**	**.00247**	**.09166**	**.00190**	**.00227**	**.00585**	**9.8408**
Stddev	.00034	.57	.00088	.00950	.00236	.00064	.00582	.0255
%RSD	13.353	.36365	35.740	10.369	124.21	28.305	99.361	.25948
#1	.00290	156.51	.00252	.09546	.00022	.00198	-.00060	9.8675
#2	.00251	157.16	.00156	.09868	.00460	.00182	.00746	9.8167
#3	.00222	156.02	.00332	.08085	.00088	.00301	.01070	9.8383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703121502 Acquired: 3/29/2017 11:37:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39689**	**.31208**	**.00217**	**.00134**	**.00134**	**.03146**	**.07143**
Stddev	.00128	.00170	.00900	.00031	.00071	.00004	.24795
%RSD	.32207	.54440	414.23	23.332	53.046	.11354	347.13
#1	.39834	.31012	-.00080	.00126	.00081	.03142	-.21474
#2	.39594	.31311	-.00496	.00108	.00215	.03147	.20674
#3	.39637	.31302	.01228	.00169	.00106	.03148	.22228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14185.**	**92449.**	**3600.0**
Stddev	40.	1109.	63.6
%RSD	.28393	1.1996	1.7666
#1	14183.	93711.	3531.1
#2	14227.	92006.	3612.4
#3	14146.	91629.	3656.5

Approved: March 30, 2017

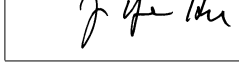
Sample Name: L1703117601 Acquired: 3/29/2017 11:40:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.01169**	**.00153**	**.00560**	**.02055**	**.00009**	**5.9599**
Stddev	.00068	.00206	.00167	.00120	.00049	.00004	.0497
%RSD	114.12	17.640	109.20	21.364	2.3816	47.770	.83463
#1	.00002	.01399	.00270	.00663	.02065	.00007	5.9122
#2	-.00049	.01001	-.00039	.00429	.02098	.00014	5.9561
#3	-.00132	.01106	.00228	.00587	.02002	.00006	6.0114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00039**	**.00014**	**.00078**	**.15209**	**.37297**	**-.00721**
Stddev	.00021	.00026	.00051	.00020	.00847	.12341	.00562
%RSD	183.54	66.893	363.22	25.730	5.5681	33.090	78.034
#1	-.00012	.00021	.00032	.00093	.15890	.39270	-.01302
#2	-.00033	.00068	-.00044	.00055	.14260	.24087	-.00180
#3	.00010	.00027	.00054	.00086	.15476	.48533	-.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94722**	**.01718**	**-.00037**	**22.999**	**-.00083**	**.00343**	**-.00042**
Stddev	.07749	.00273	.00041	.234	.00064	.00861	.00105
%RSD	8.1806	15.914	110.86	1.0163	76.724	250.82	250.18
#1	.92616	.01533	.00010	22.772	-.00157	-.00583	-.00078
#2	.88244	.02032	-.00065	22.986	-.00056	.00494	.00076
#3	1.0331	.01589	-.00058	23.239	-.00038	.01118	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703117601 Acquired: 3/29/2017 11:40:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.00127**	**.09170**	**.00034**	**.03068**	**-.00249**	**-.00140**
Stddev	.00234	.00550	.00180	.00076	.00080	.00717	.00146
%RSD	287.15	434.40	1.9592	221.69	2.5923	287.52	104.20
#1	.00242	.00099	.08963	.00082	.03016	-.00487	-.00307
#2	-.00187	.00275	.09277	.00074	.03029	-.00817	-.00077
#3	.00190	-.00754	.09271	-.00053	.03160	.00556	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00024**	**.00106**	F **-.12746**
Stddev	.00023	.00005	.10199
%RSD	98.775	4.4376	80.013
#1	.00042	.00102	-.16292
#2	.00031	.00111	-.20699
#3	-.00003	.00105	-.01248
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13791.**	**90266.**	**3213.9**
Stddev	123.	1978.	48.2
%RSD	.88938	2.1916	1.4998
#1	13877.	88278.	3257.7
#2	13650.	90285.	3221.7
#3	13845.	92235.	3162.3

Approved: March 30, 2017

Sample Name: L1703117602 Acquired: 3/29/2017 11:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.03408**	**.00134**	**.00367**	**.02402**	**.00008**	**2.7492**
Stddev	.00063	.00559	.00074	.00066	.00151	.00006	.0053
%RSD	97.745	16.401	55.456	18.035	6.2711	83.746	.19366
#1	.00006	.03704	.00218	.00328	.02371	.00002	2.7450
#2	-.00083	.02763	.00082	.00330	.02270	.00006	2.7551
#3	-.00116	.03757	.00101	.00444	.02566	.00015	2.7474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00123**	**.00021**	**-.00119**	**.00231**	**.48992**	**-.01064**
Stddev	.00017	.00052	.00046	.00030	.01259	.02144	.00120
%RSD	74.678	42.133	219.40	25.097	546.09	4.3764	11.244
#1	-.00043	.00177	.00074	-.00127	.01281	.46643	-.01186
#2	-.00011	.00074	-.00006	-.00144	.00575	.50843	-.01060
#3	-.00015	.00118	-.00005	-.00086	-.01165	.49489	-.00947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1255**	**.02360**	**-.00009**	**7.0221**	**.00055**	**.00006**	**-.00081**
Stddev	.0493	.00323	.00022	.0813	.00063	.00249	.00112
%RSD	4.3843	13.703	240.36	1.1580	114.34	4133.3	138.58
#1	1.1087	.02123	-.00029	6.9823	.00070	-.00207	-.00068
#2	1.0867	.02229	-.00013	6.9684	-.00014	-.00055	.00024
#3	1.1810	.02728	.00014	7.1157	.00109	.00280	-.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703117602 Acquired: 3/29/2017 11:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00473**	**.26710**	**-.00013**	**.01913**	**-.00129**	**-.00147**
Stddev	.00266	.00551	.00531	.00034	.00039	.00909	.00177
%RSD	304.10	116.62	1.9878	264.32	2.0225	702.14	120.01
#1	.00331	-.00354	.26098	-.00027	.01941	.00880	-.00350
#2	.00128	-.01074	.27050	.00026	.01929	-.00884	-.00028
#3	-.00196	.00009	.26981	-.00037	.01869	-.00384	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00045**	**.00150**	F **-.13030**
Stddev	.00030	.00006	.10753
%RSD	67.567	3.7954	82.520
#1	.00064	.00150	-.22398
#2	.00010	.00156	-.15404
#3	.00060	.00145	-.01289
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13904.**	**89855.**	**3247.0**
Stddev	46.	456.	64.4
%RSD	.32952	.50796	1.9838
#1	13852.	89863.	3174.6
#2	13923.	90308.	3298.1
#3	13938.	89395.	3268.3

Approved: March 30, 2017

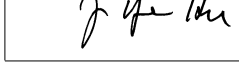
Sample Name: L1703117603 Acquired: 3/29/2017 11:48:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**.02765**	**.00254**	**.00353**	**.01163**	**.00013**	**1.1922**
Stddev	.00117	.00350	.00292	.00241	.00048	.00001	.0328
%RSD	87.588	12.642	115.03	68.340	4.1332	9.9129	2.7474
#1	-.00248	.02397	.00015	.00175	.01145	.00015	1.1586
#2	-.00140	.02806	.00167	.00256	.01217	.00012	1.1939
#3	-.00014	.03093	.00580	.00627	.01125	.00012	1.2241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00082**	**-.00051**	**.00047**	**2.1062**	**.34278**	**-.00662**
Stddev	.00026	.00044	.00065	.00054	.0237	.02021	.00361
%RSD	131.86	53.292	127.98	114.08	1.1256	5.8966	54.536
#1	-.00018	.00102	.00006	.00109	2.0810	.32563	-.01067
#2	.00005	.00113	-.00123	.00020	2.1095	.33764	-.00376
#3	-.00046	.00032	-.00036	.00013	2.1281	.36506	-.00542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58323**	**.06289**	**.00003**	**5.4070**	**.00016**	**.00435**	**-.00012**
Stddev	.07788	.00085	.00009	.1087	.00067	.00548	.00280
%RSD	13.354	1.3454	259.96	2.0101	434.45	125.91	2391.3
#1	.67133	.06279	.00013	5.3032	-.00053	.00978	-.00030
#2	.52355	.06210	-.00002	5.3977	.00018	.00446	.00277
#3	.55479	.06378	-.00002	5.5200	.00081	-.00118	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703117603 Acquired: 3/29/2017 11:48:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00216**	**.37284**	**.00056**	**.00885**	**.00513**	**.00208**
Stddev	.00444	.00587	.00590	.00150	.00091	.00938	.00174
%RSD	759.39	271.85	1.5823	268.74	10.270	183.06	83.518
#1	-.00096	.00856	.36709	-.00038	.00797	.00089	.00259
#2	-.00288	.00087	.37255	-.00023	.00879	-.00139	.00351
#3	.00559	-.00296	.37888	.00228	.00979	.01588	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00070**	**.05534**	F **-.07191**
Stddev	.00005	.00740	.44194
%RSD	7.6456	13.379	614.55
#1	.00074	.04704	-.50914
#2	.00071	.05774	.37459
#3	.00064	.06125	-.08119
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13832.**	**92253.**	**3424.4**
Stddev	72.	327.	100.4
%RSD	.51845	.35468	2.9326
#1	13803.	92425.	3317.1
#2	13914.	92458.	3440.0
#3	13781.	91875.	3516.1

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39043**	**9.9476**	**.39229**	**.48952**	**.99727**	**.04945**	**9.9332**
Stddev	.00141	.0128	.00599	.00593	.00154	.00018	.0741
%RSD	.36237	.12845	1.5258	1.2124	.15488	.36091	.74641
#1	.38965	9.9563	.39920	.49362	.99564	.04952	9.9998
#2	.38958	9.9535	.38876	.48272	.99871	.04958	9.9466
#3	.39206	9.9329	.38891	.49224	.99745	.04924	9.8533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04957**	**.19874**	**.49182**	**.49547**	**4.0069**	**50.193**	**.99720**
Stddev	.00047	.00185	.00030	.00508	.0367	.240	.00847
%RSD	.95366	.93328	.06077	1.0261	.91547	.47810	.84947
#1	.05011	.20080	.49217	.50132	3.9858	50.088	.98848
#2	.04923	.19819	.49162	.49217	4.0493	50.468	1.0054
#3	.04936	.19722	.49168	.49291	3.9857	50.024	.99774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9855**	**.49864**	**.98354**	**50.082**	**.49321**	**9.7861**	**.49351**
Stddev	.0669	.00447	.01060	.246	.00546	.0947	.00415
%RSD	.66944	.89638	1.0773	.49142	1.1071	.96754	.84024
#1	10.049	.49495	.99565	49.850	.49948	9.8941	.49827
#2	9.9912	.50361	.97902	50.340	.49063	9.7468	.49069
#3	9.9160	.49735	.97596	50.055	.48952	9.7174	.49156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 11:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1609**	**.39098**	**4.9307**	**.98432**	**.99427**	**.98791**	**.50302**
Stddev	.0091	.00218	.0613	.01095	.00045	.01711	.00367
%RSD	.77993	.55642	1.2429	1.1123	.04519	1.7317	.73018
#1	1.1714	.38937	4.9981	.99651	.99425	.97880	.50656
#2	1.1560	.39346	4.9157	.98115	.99383	1.0076	.50327
#3	1.1554	.39012	4.8783	.97531	.99473	.97728	.49923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99238**	**.98043**	F **.48945**
Stddev	.00167	.00961	.09551
%RSD	.16820	.97972	19.514
#1	.99344	.99147	.46617
#2	.99324	.97577	.59445
#3	.99046	.97403	.40774
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13853.**	**90353.**	**3389.2**
Stddev	71.	200.	72.5
%RSD	.51296	.22120	2.1401
#1	13794.	90322.	3356.1
#2	13932.	90171.	3472.4
#3	13834.	90567.	3339.2

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 11:55:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**.00645**	**.00037**	**.00074**	**-.00077**	**-.00001**	**-.00971**	**-.00017**
Stddev	.00177	.00215	.00225	.00130	.00083	.00001	.04968	.00026
%RSD	143.35	33.273	607.08	174.84	107.45	96.617	511.46	152.87
#1	-.00026	.00860	.00230	.00185	-.00055	-.00001	.04147	.00005
#2	-.00327	.00645	.00092	.00106	-.00169	-.00003	-.05774	-.00010
#3	-.00017	.00431	-.00210	-.00068	-.00008	-.00000	-.01287	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00001**	**.00001**	**.00967**	**-.06110**	**-.00610**	**-.02215**	**-.00240**
Stddev	.00016	.00126	.00050	.00310	.13005	.00535	.04647	.00305
%RSD	48.306	11158.	3796.2	32.055	212.86	87.700	209.82	126.68
#1	.00050	-.00137	-.00056	.00668	-.14623	-.01187	-.01851	-.00469
#2	.00022	.00111	.00020	.00947	.08860	-.00130	-.07034	.00105
#3	.00025	.00029	.00039	.01287	-.12567	-.00514	.02240	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.02975**	**-.00015**	**-.00567**	**-.00070**	**.00113**	**-.00132**	**.00624**
Stddev	.00026	.03942	.00139	.00645	.00126	.00043	.00019	.00109
%RSD	197.97	132.52	919.01	113.77	181.05	38.572	14.581	17.495
#1	.00011	.00731	.00145	.00171	.00073	.00156	-.00110	.00498
#2	-.00012	.00667	-.00084	-.00847	-.00165	.00069	-.00145	.00682
#3	.00041	.07527	-.00106	-.01023	-.00117	.00114	-.00141	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 11:55:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00021**	**-.00226**	**.00221**	**.00013**	**.00006**	**.02439**
Stddev	.00097	.00037	.00950	.00081	.00006	.00010	.25679
%RSD	321.47	176.38	419.67	36.739	44.584	174.00	1052.7
#1	.00021	.00021	.00844	.00258	.00012	.00010	.02307
#2	-.00062	-.00038	-.00552	.00128	.00007	-.00006	.28184
#3	.00132	-.00047	-.00971	.00277	.00018	.00012	-.23173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14225.**	**94186.**	**3507.1**
Stddev	30.	420.	73.4
%RSD	.21288	.44575	2.0919
#1	14192.	94665.	3439.6
#2	14251.	93883.	3496.6
#3	14232.	94009.	3585.2

Approved: March 30, 2017

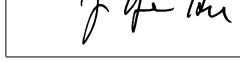
Sample Name: L1703117601 Acquired: 3/29/2017 11:58:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.08625**	**.00202**	**.05325**	**.19325**	**-.00006**	**57.058**
Stddev	.00227	.00607	.00207	.00120	.00282	.00008	.354
%RSD	286.26	7.0422	102.36	2.2623	1.4607	134.64	.62069
#1	.00154	.07984	-.00014	.05186	.18999	-.00010	56.653
#2	-.00093	.08698	.00399	.05395	.19500	-.00011	57.312
#3	-.00299	.09193	.00222	.05395	.19475	.00003	57.208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00128**	**.00109**	**.00110**	**1.5654**	**5.9022**	**-.00417**
Stddev	.00013	.00004	.00065	.00038	.0397	.0792	.00848
%RSD	96.426	3.1786	59.307	34.796	2.5351	1.3413	203.28
#1	.00002	.00125	.00145	.00067	1.5633	5.8484	.00556
#2	-.00021	.00126	.00149	.00126	1.6062	5.9931	-.00994
#3	-.00022	.00132	.00034	.00138	1.5269	5.8650	-.00812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.8946**	**.15999**	**.00012**	**219.68**	**.00122**	**.00906**	**.00044**
Stddev	.1045	.00115	.00014	.19	.00059	.00572	.00135
%RSD	1.1752	.71835	120.17	.08767	48.484	63.084	308.48
#1	8.9339	.16104	.00002	219.52	.00109	.01072	-.00107
#2	8.9739	.16017	.00028	219.63	.00070	.00270	.00084
#3	8.7762	.15877	.00006	219.89	.00186	.01377	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703117601 Acquired: 3/29/2017 11:58:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.00014**	**.78967**	**.00034**	**.30136**	**-.00589**	**-.00022**
Stddev	.00463	.00179	.00024	.00049	.00095	.00514	.00233
%RSD	457.68	1249.2	.03023	142.91	.31386	87.212	1046.0
#1	-.00586	-.00033	.78974	.00009	.30048	-.01155	-.00049
#2	.00337	-.00137	.78987	.00091	.30123	-.00152	-.00240
#3	-.00055	.00212	.78940	.00003	.30236	-.00460	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00127**	**.00288**	F **-.18913**
Stddev	.00057	.00010	.26854
%RSD	44.998	3.3612	141.99
#1	.00064	.00277	-.28229
#2	.00142	.00295	-.39868
#3	.00175	.00292	.11359
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14183.**	**93066.**	**3532.6**
Stddev	225.	607.	40.2
%RSD	1.5837	.65243	1.1380
#1	14364.	93647.	3539.2
#2	13932.	93115.	3489.5
#3	14255.	92436.	3569.1

Approved: March 30, 2017

Sample Name: L1703117602 Acquired: 3/29/2017 12:02:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.21434**	**.00276**	**.04029**	**.21002**	**.00030**	**26.009**	**.00045**
Stddev	.00217	.00201	.00163	.00047	.00057	.00007	.285	.00020
%RSD	447.86	.93761	59.216	1.1714	.27043	21.825	1.0964	44.913
#1	.00078	.21641	.00446	.04065	.20993	.00038	25.860	.00054
#2	-.00298	.21239	.00262	.04048	.21063	.00028	25.830	.00022
#3	.00076	.21422	.00120	.03976	.20950	.00025	26.338	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01235**	**-.00008**	**.00076**	**.07310**	**6.4157**	**-.00200**	**10.975**	**.24890**
Stddev	.00018	.00003	.00116	.02186	.0293	.00660	.073	.00280
%RSD	1.4894	40.783	152.93	29.905	.45590	329.75	.66259	1.1231
#1	.01247	-.00011	.00003	.06876	6.4103	-.00778	10.936	.24568
#2	.01244	-.00007	.00209	.05374	6.3895	.00519	10.930	.25074
#3	.01214	-.00005	.00015	.09681	6.4472	-.00342	11.059	.25027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**66.380**	**.00336**	**.00295**	**-.00016**	**-.00078**	**-.00258**	**2.4002**
Stddev	.00031	.538	.00062	.00230	.00225	.00076	.00636	.0185
%RSD	146.88	.81109	18.444	78.120	1390.9	97.381	246.83	.76883
#1	-.00008	66.453	.00293	.00035	-.00132	-.00116	.00442	2.4063
#2	.00002	65.809	.00308	.00376	-.00160	.00009	-.00416	2.4149
#3	-.00056	66.879	.00407	.00473	.00244	-.00127	-.00799	2.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703117602 Acquired: 3/29/2017 12:02:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.18226**	**-.00580**	**.00040**	**.00059**	**.00767**	**-.01189**
Stddev	.00019	.00097	.00825	.00301	.00023	.00003	.42683
%RSD	40.886	.53243	142.25	755.13	39.905	.45503	3588.9
#1	.00066	.18114	-.00032	-.00048	.00044	.00765	.47506
#2	.00045	.18278	-.00180	.00375	.00085	.00765	-.32128
#3	.00028	.18285	-.01529	-.00208	.00047	.00771	-.18946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14395.**	**95824.**	**3538.4**
Stddev	115.	208.	26.1
%RSD	.79953	.21693	.73664
#1	14528.	95940.	3551.6
#2	14330.	95584.	3555.2
#3	14328.	95949.	3508.4

Approved: March 30, 2017

Sample Name: L1703117603 Acquired: 3/29/2017 12:06:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.21641**	**.00099**	**.04128**	**.11420**	**.00013**	**12.124**
Stddev	.00042	.00167	.00180	.00169	.00223	.00001	.073
%RSD	417.47	.77316	182.72	4.1061	1.9570	8.3162	.60594
#1	-.00053	.21480	.00219	.04105	.11591	.00014	12.181
#2	-.00007	.21629	-.00109	.04307	.11502	.00012	12.151
#3	.00030	.21814	.00186	.03970	.11167	.00013	12.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00551**	**-.00137**	**.00069**	**20.157**	**4.3254**	**-.00436**
Stddev	.00013	.00014	.00080	.00015	.186	.0912	.00753
%RSD	90.596	2.5268	58.222	21.326	.92284	2.1086	172.62
#1	-.00016	.00562	-.00077	.00069	20.281	4.3148	-.01292
#2	-.00001	.00554	-.00106	.00083	20.247	4.4215	-.00142
#3	-.00026	.00535	-.00228	.00054	19.943	4.2400	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.8574**	**.60022**	**.00006**	**51.915**	**.00158**	**.03018**	**.00026**
Stddev	.0521	.00551	.00023	.331	.00064	.00395	.00242
%RSD	.88990	.91740	389.02	.63775	40.557	13.081	946.14
#1	5.8369	.60575	.00033	52.027	.00184	.03057	.00190
#2	5.8187	.60018	-.00006	52.176	.00205	.02605	.00139
#3	5.9167	.59474	-.00009	51.542	.00085	.03391	-.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703117603 Acquired: 3/29/2017 12:06:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00495**	**3.2037**	**.00007**	**.08895**	**.00614**	**.00073**
Stddev	.00215	.00461	.0073	.00057	.00116	.01159	.00287
%RSD	956.87	93.036	.22682	790.71	1.3085	188.82	394.09
#1	.00109	.00424	3.2121	-.00045	.09024	-.00706	-.00100
#2	.00094	.00988	3.1991	-.00001	.08862	.01466	.00404
#3	-.00271	.00074	3.1998	.00068	.08799	.01081	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00071**	**.00375**	F **-.64253**
Stddev	.00068	.00003	.25328
%RSD	95.048	.76561	39.419
#1	.00112	.00373	-.35115
#2	-.00007	.00378	-.76648
#3	.00108	.00375	-.80995
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14540.**	**96124.**	**3606.9**
Stddev	66.	814.	52.4
%RSD	.45541	.84663	1.4524
#1	14611.	96026.	3656.3
#2	14531.	96983.	3612.5
#3	14479.	95364.	3552.0

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:09:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**.22774**	**.00073**	**.04168**	**.20729**	**.00030**	**25.463**	**.00043**
Stddev	.00076	.00934	.00071	.00158	.00129	.00008	.429	.00021
%RSD	70.791	4.1014	97.294	3.7890	.62272	27.089	1.6851	47.953
#1	-.00169	.21827	.00145	.04119	.20605	.00035	24.968	.00023
#2	-.00129	.22803	.00003	.04345	.20863	.00035	25.713	.00043
#3	-.00023	.23694	.00071	.04041	.20718	.00021	25.708	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01238**	**-.00020**	**.00082**	**.08737**	**6.3064**	**-.00397**	**10.808**	**.24716**
Stddev	.00019	.00037	.00039	.01788	.1885	.00238	.111	.00659
%RSD	1.5450	180.13	47.258	20.469	2.9885	59.885	1.0282	2.6649
#1	.01222	-.00063	.00115	.07624	6.2380	-.00567	10.688	.23993
#2	.01259	.00003	.00040	.10800	6.5195	-.00499	10.907	.25282
#3	.01232	-.00002	.00090	.07787	6.1617	-.00125	10.829	.24873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**64.128**	**.00378**	**.00100**	**-.00037**	**-.00073**	**-.00075**	**2.4394**
Stddev	.00008	.933	.00043	.00718	.00196	.00186	.00122	.0145
%RSD	215.92	1.4555	11.444	720.10	531.03	255.63	162.22	.59285
#1	.00004	63.178	.00426	.00488	.00126	.00128	-.00089	2.4509
#2	-.00003	65.044	.00342	.00539	-.00254	-.00106	.00053	2.4440
#3	-.00012	64.161	.00367	-.00728	.00017	-.00241	-.00189	2.4231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:09:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.17935**	**.00250**	**-.00154**	**-.00014**	**.00812**	**.15279**
Stddev	.00049	.00210	.00326	.00137	.00039	.00015	.30732
%RSD	1023.7	1.1717	130.34	89.434	270.87	1.8667	201.14
#1	.00019	.17695	.00609	-.00096	.00024	.00796	.18707
#2	.00046	.18087	.00170	-.00310	-.00053	.00826	-.17024
#3	-.00050	.18022	-.00029	-.00054	-.00014	.00813	.44153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14315.**	**93364.**	**3572.9**
Stddev	111.	1382.	37.3
%RSD	.77539	1.4804	1.0434
#1	14187.	94088.	3611.5
#2	14373.	91770.	3537.1
#3	14386.	94233.	3570.3

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:13:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.03127**	**.00290**	**.00317**	**.02243**	**.00008**	**2.6074**
Stddev	.00102	.00228	.00304	.00204	.00173	.00005	.0142
%RSD	138.55	7.2953	104.76	64.198	7.6915	58.364	.54626
#1	-.00002	.03168	.00557	.00179	.02441	.00006	2.6233
#2	.00033	.03332	-.00041	.00551	.02165	.00013	2.6031
#3	.00190	.02881	.00355	.00222	.02124	.00005	2.5959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00190**	**.00023**	**-.00087**	**.01142**	**.37816**	**-.00648**
Stddev	.00010	.00046	.00051	.00116	.02565	.08019	.00264
%RSD	85.411	24.358	218.87	132.92	224.62	21.205	40.703
#1	-.00018	.00184	.00006	-.00156	.02291	.29382	-.00346
#2	-.00000	.00147	.00081	.00047	-.01797	.45342	-.00766
#3	-.00016	.00238	-.00017	-.00152	.02931	.38725	-.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2039**	**.02587**	**-.00036**	**6.7321**	**.00060**	**.00321**	**-.00050**
Stddev	.0936	.00076	.00014	.1319	.00103	.00547	.00045
%RSD	7.7786	2.9236	39.488	1.9598	172.52	170.46	89.957
#1	1.1032	.02505	-.00027	6.7245	.00012	-.00023	-.00011
#2	1.2883	.02601	-.00028	6.6042	-.00010	.00952	-.00040
#3	1.2203	.02654	-.00052	6.8677	.00178	.00034	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703117605 Acquired: 3/29/2017 12:13:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**-.00551**	**.30364**	**.00005**	**.01803**	**-.00224**	**-.00059**
Stddev	.00151	.00119	.01085	.00056	.00051	.00042	.00266
%RSD	124.12	21.542	3.5740	1172.9	2.8402	18.541	449.61
#1	.00264	-.00548	.29274	-.00059	.01765	-.00186	-.00029
#2	.00137	-.00671	.30374	.00038	.01782	-.00268	.00190
#3	-.00036	-.00434	.31444	.00035	.01861	-.00219	-.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00069**	**.00177**	F **-.04315**
Stddev	.00029	.00016	.31870
%RSD	41.561	9.0902	738.54
#1	.00096	.00159	.18723
#2	.00070	.00180	-.40686
#3	.00039	.00191	.09017
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13648.**	**88081.**	**3206.6**
Stddev	37.	1985.	47.2
%RSD	.27302	2.2533	1.4720
#1	13647.	90318.	3259.5
#2	13686.	86533.	3191.3
#3	13611.	87391.	3168.9

Approved: March 30, 2017

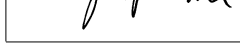
Sample Name: L1703116101 Acquired: 3/29/2017 12:17:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.05869**	**.00098**	**.00017**	**.00798**	**.00008**	**.38967**
Stddev	.00031	.00191	.00241	.00167	.00248	.00004	.03185
%RSD	43.385	3.2578	244.95	961.77	31.102	51.812	8.1745
#1	-.00061	.06067	.00219	.00207	.01074	.00007	.37148
#2	-.00045	.05854	.00255	-.00043	.00591	.00013	.37109
#3	-.00104	.05686	-.00179	-.00111	.00730	.00005	.42645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00058**	**.00376**	**-.00090**	**.37861**	**-.09561**	**-.00548**
Stddev	.00026	.00016	.00064	.00090	.00498	.18391	.00120
%RSD	150.78	27.811	17.116	100.15	1.3149	192.35	21.947
#1	-.00043	.00076	.00320	-.00184	.38426	.10069	-.00686
#2	.00010	.00054	.00363	-.00080	.37486	-.12361	-.00478
#3	-.00019	.00044	.00447	-.00005	.37672	-.26393	-.00479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49866**	**.01202**	**.00024**	**11.753**	**.00083**	**.00883**	**-.00182**
Stddev	.14531	.00290	.00025	.397	.00122	.00680	.00258
%RSD	29.140	24.119	101.98	3.3762	146.53	77.001	141.90
#1	.66327	.01533	.00024	12.191	.00009	.01650	-.00435
#2	.44448	.01082	-.00000	11.419	.00017	.00640	-.00190
#3	.38823	.00991	.00049	11.648	.00225	.00357	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703116101 Acquired: 3/29/2017 12:17:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00280**	**.00017**	**1.3214**	**-.00046**	**.00956**	**-.00840**	**.00056**
Stddev	.00444	.00079	.0136	.00023	.00018	.00876	.00064
%RSD	158.64	452.05	1.0296	50.529	1.8963	104.20	114.37
#1	-.00037	.00104	1.3082	-.00022	.00966	-.00159	-.00012
#2	.00090	-.00003	1.3206	-.00068	.00968	-.00534	.00115
#3	.00787	-.00049	1.3353	-.00048	.00936	-.01828	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00060**	**.00150**	F **-.35729**
Stddev	.00037	.00008	.37509
%RSD	62.007	5.3347	104.98
#1	.00052	.00157	-.78900
#2	.00028	.00141	-.17156
#3	.00101	.00151	-.11130
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14174.**	**91675.**	**3234.9**
Stddev	94.	855.	68.6
%RSD	.66112	.93264	2.1193
#1	14165.	92624.	3170.3
#2	14272.	90966.	3306.8
#3	14085.	91433.	3227.5

Approved: March 30, 2017

Sample Name: L1703116102S Acquired: 3/29/2017 12:20:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01980**	**.61109**	**.02074**	**.09337**	**.05509**	**.00246**	**.86619**
Stddev	.00075	.01143	.00052	.00354	.00248	.00006	.04204
%RSD	3.8072	1.8709	2.4878	3.7897	4.4956	2.3202	4.8530
#1	.02000	.60678	.02121	.09203	.05350	.00240	.87110
#2	.02043	.60245	.02018	.09069	.05383	.00247	.90556
#3	.01896	.62406	.02082	.09738	.05795	.00251	.82192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00265**	**.01097**	**.02764**	**.02558**	**.59855**	**2.3370**	**.04047**
Stddev	.00032	.00047	.00075	.00145	.01466	.0424	.00243
%RSD	12.186	4.2581	2.7085	5.6856	2.4493	1.8153	5.9930
#1	.00273	.01106	.02677	.02499	.60638	2.3583	.03876
#2	.00230	.01046	.02807	.02452	.60763	2.2881	.03940
#3	.00293	.01138	.02807	.02724	.58163	2.3645	.04325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93202**	**.03772**	**.04901**	**14.058**	**.02640**	**.50725**	**.02556**
Stddev	.04952	.00322	.00087	.295	.00115	.01138	.00288
%RSD	5.3127	8.5497	1.7706	2.0989	4.3643	2.2428	11.269
#1	.88781	.03883	.04830	13.751	.02529	.49612	.02440
#2	.98552	.03409	.04874	14.084	.02632	.50676	.02344
#3	.92273	.04024	.04998	14.340	.02759	.51886	.02884
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116102S Acquired: 3/29/2017 12:20:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06706**	**.02405**	**1.6936**	**.05187**	**.05796**	**.04436**	**.02693**
Stddev	.00443	.00640	.0341	.00132	.00159	.00388	.00166
%RSD	6.6000	26.595	2.0159	2.5537	2.7420	8.7524	6.1536
#1	.06202	.02415	1.6640	.05083	.05618	.04527	.02735
#2	.06881	.01761	1.6860	.05142	.05843	.04771	.02510
#3	.07034	.03040	1.7309	.05336	.05926	.04010	.02833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04981**	**.05440**	F **-.30506**
Stddev	.00033	.00091	.29523
%RSD	.66044	1.6720	96.775
#1	.04969	.05345	.03359
#2	.05018	.05450	-.44057
#3	.04955	.05526	-.50821
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13704.**	**92017.**	**3325.7**
Stddev	90.	1054.	63.3
%RSD	.65978	1.1452	1.9038
#1	13610.	90949.	3341.8
#2	13713.	93056.	3379.4
#3	13790.	92047.	3255.9

Approved: March 30, 2017

Sample Name: L1703116103SD Acquired: 3/29/2017 12:24:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02117**	**.70450**	**.02144**	**.10170**	**.06145**	**.00279**	**.95186**
Stddev	.00061	.00796	.00015	.00253	.00169	.00007	.06410
%RSD	2.8674	1.1305	.70673	2.4840	2.7497	2.6088	6.7341
#1	.02084	.69550	.02140	.10279	.06011	.00272	.92646
#2	.02187	.70737	.02160	.09881	.06089	.00278	.90434
#3	.02080	.71063	.02131	.10350	.06335	.00287	1.0248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00278**	**.01214**	**.03291**	**.02821**	**.67923**	**2.4963**	**.04419**
Stddev	.00013	.00063	.00050	.00138	.03629	.1417	.00475
%RSD	4.4994	5.1597	1.5220	4.8906	5.3431	5.6777	10.745
#1	.00281	.01236	.03323	.02763	.63907	2.3887	.04966
#2	.00264	.01143	.03317	.02721	.70967	2.4434	.04181
#3	.00289	.01262	.03233	.02978	.68895	2.6569	.04110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0659**	**.04204**	**.05478**	**15.684**	**.02848**	**.56432**	**.02769**
Stddev	.0709	.00163	.00050	.309	.00143	.00882	.00239
%RSD	6.6524	3.8795	.91370	1.9709	5.0085	1.5636	8.6323
#1	1.0872	.04043	.05427	15.340	.02744	.55803	.02506
#2	.98683	.04201	.05481	15.773	.02789	.56052	.02974
#3	1.1238	.04369	.05527	15.938	.03011	.57441	.02827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116103SD Acquired: 3/29/2017 12:24:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607345-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07099**	**.01920**	**1.9500**	**.05765**	**.06345**	**.04556**	**.02761**
Stddev	.00412	.00431	.0392	.00118	.00058	.00178	.00214
%RSD	5.8032	22.473	2.0095	2.0524	.90730	3.9067	7.7621
#1	.06680	.01751	1.9218	.05652	.06291	.04524	.02858
#2	.07503	.01599	1.9334	.05756	.06337	.04748	.02910
#3	.07113	.02410	1.9947	.05888	.06406	.04397	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.05488**	**.06060**	F **-.14634**
Stddev	.00157	.00104	.11335
%RSD	2.8523	1.7154	77.459
#1	.05355	.06004	-.22182
#2	.05661	.05997	-.01599
#3	.05449	.06180	-.20120
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13013.**	**85690.**	**3128.6**
Stddev	119.	661.	55.6
%RSD	.91628	.77107	1.7766
#1	12994.	86425.	3168.1
#2	12904.	85146.	3065.1
#3	13140.	85498.	3152.7

Approved: March 30, 2017

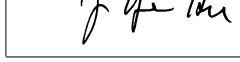
Sample Name: L1703116104 Acquired: 3/29/2017 12:28:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00136**	**.02459**	**.00014**	**.00382**	**.02450**	**.00007**	**1.9611**
Stddev	.00094	.00735	.00306	.00238	.00075	.00003	.0902
%RSD	69.230	29.899	2146.0	62.228	3.0573	50.630	4.6004
#1	-.00206	.02961	-.00310	.00137	.02525	.00007	1.9243
#2	-.00029	.02802	.00299	.00398	.02376	.00003	1.8950
#3	-.00172	.01615	.00054	.00612	.02448	.00010	2.0639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00017**	**-.00011**	**-.00031**	**4.5215**	**.15766**	**-.00665**
Stddev	.00034	.00021	.00066	.00056	.0857	.14414	.00164
%RSD	649.19	123.56	614.20	180.69	1.8959	91.426	24.700
#1	-.00042	.00012	.00064	.00014	4.4236	.18125	-.00852
#2	.00003	.00040	-.00062	-.00094	4.5580	.28855	-.00602
#3	.00024	-.00001	-.00034	-.00013	4.5830	.00318	-.00542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91386**	**.06459**	**.00028**	**6.7216**	**-.00067**	**.03826**	**.00051**
Stddev	.09710	.00165	.00031	.0452	.00007	.00316	.00078
%RSD	10.626	2.5468	109.29	.67319	10.217	8.2657	151.94
#1	.81761	.06293	.00017	6.6723	-.00068	.04065	.00114
#2	.91219	.06622	.00005	6.7612	-.00059	.03467	.00076
#3	1.0118	.06463	.00064	6.7314	-.00073	.03946	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703116104 Acquired: 3/29/2017 12:28:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00187**	**.00138**	**1.7406**	**.00008**	**.04228**	**.00754**	**-.00302**
Stddev	.00276	.00319	.0297	.00067	.00107	.00642	.00075
%RSD	147.54	230.78	1.7082	791.45	2.5261	85.157	24.864
#1	.00466	.00496	1.7087	.00084	.04164	.01474	-.00241
#2	-.00087	-.00116	1.7456	-.00043	.04169	.00243	-.00386
#3	.00183	.00034	1.7675	-.00016	.04351	.00544	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00072**	**.00118**	F **-.85884**
Stddev	.00054	.00007	.17515
%RSD	75.521	5.9746	20.394
#1	-.00009	.00123	-.80168
#2	-.00107	.00121	-.71941
#3	-.00099	.00110	-1.0554
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13386.**	**87457.**	**3254.7**
Stddev	56.	842.	38.7
%RSD	.41645	.96298	1.1881
#1	13326.	87631.	3213.2
#2	13436.	88198.	3261.2
#3	13395.	86541.	3289.7

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:31:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39506**	**10.046**	**.40051**	**.49669**	**1.0051**	**.04954**	**10.033**
Stddev	.00265	.073	.00199	.00184	.0061	.00024	.084
%RSD	.66980	.72384	.49611	.36986	.61133	.48283	.84096
#1	.39663	10.087	.39850	.49469	1.0107	.04962	10.129
#2	.39654	10.089	.40247	.49709	1.0061	.04974	9.9970
#3	.39200	9.9621	.40055	.49830	.99853	.04928	9.9724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05088**	**.20399**	**.49494**	**.50680**	**4.0024**	**49.777**	**1.0021**
Stddev	.00029	.00096	.00326	.00147	.0297	.117	.0064
%RSD	.56195	.47130	.65783	.29101	.74130	.23429	.63575
#1	.05056	.20303	.49627	.50742	4.0244	49.912	1.0025
#2	.05111	.20397	.49732	.50512	3.9687	49.716	1.0084
#3	.05097	.20496	.49123	.50787	4.0141	49.704	.99563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.011**	**.50331**	**1.0098**	**49.944**	**.50526**	**9.9712**	**.50397**
Stddev	.067	.00018	.0053	.059	.00186	.0470	.00154
%RSD	.66444	.03656	.52596	.11832	.36783	.47147	.30622
#1	10.074	.50325	1.0058	50.000	.50440	9.9301	.50382
#2	9.9414	.50316	1.0079	49.949	.50398	9.9610	.50558
#3	10.016	.50351	1.0159	49.882	.50739	10.022	.50250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:31:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1857**	**.39471**	**5.0465**	**1.0071**	**1.0012**	**.97959**	**.50841**
Stddev	.0076	.00370	.0353	.0049	.0047	.00826	.00320
%RSD	.63868	.93683	.69942	.48225	.47301	.84337	.62904
#1	1.1836	.39356	5.0083	1.0036	1.0033	.97512	.50842
#2	1.1794	.39172	5.0532	1.0051	1.0045	.98913	.50521
#3	1.1941	.39885	5.0779	1.0127	.99579	.97453	.51161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99537**	**1.0023**	F **.04648**
Stddev	.00389	.0046	.46679
%RSD	.39065	.45780	1004.3
#1	.99582	.99808	-.44619
#2	.99901	1.0017	.10346
#3	.99127	1.0072	.48217
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13706.**	**89239.**	**3293.0**
Stddev	56.	2568.	31.7
%RSD	.40630	2.8778	.96120
#1	13768.	87523.	3321.0
#2	13660.	88004.	3258.6
#3	13690.	92192.	3299.4

Approved: March 30, 2017

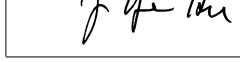
Sample Name: CCB Acquired: 3/29/2017 12:35:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.00382**	**-.00068**	**.00293**	**.00220**	**.00010**	**.00942**
Stddev	.00101	.00566	.00148	.00243	.00221	.00005	.03421
%RSD	140.22	148.06	219.19	82.774	100.68	53.229	363.33
#1	-.00123	.00510	-.00007	.00357	.00159	.00013	-.00446
#2	.00044	-.00237	.00040	.00025	.00465	.00013	.04838
#3	-.00137	.00873	-.00237	.00497	.00035	.00004	-.01568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00006**	**-.00047**	**-.00069**	**.00502**	**-.20292**	**-.00205**
Stddev	.00029	.00021	.00092	.00085	.02409	.06511	.00532
%RSD	148.24	343.54	194.04	122.32	479.63	32.086	259.41
#1	.00004	-.00029	-.00146	-.00018	.03268	-.13946	-.00194
#2	-.00052	-.00002	-.00032	-.00168	-.00625	-.19973	-.00743
#3	-.00010	.00012	.00036	-.00023	-.01136	-.26956	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.09915**	**.00134**	**.00028**	**.01321**	**-.00027**	**.00240**	**-.00029**
Stddev	.01215	.00285	.00019	.04772	.00120	.00728	.00024
%RSD	12.257	212.25	68.181	361.29	447.61	303.74	81.305
#1	-.10682	.00212	.00047	.02092	.00011	.00502	-.00027
#2	-.10549	-.00182	.00028	.05661	.00070	-.00583	-.00054
#3	-.08514	.00373	.00009	-.03790	-.00161	.00800	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: CCB Acquired: 3/29/2017 12:35:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00240**	**-.00200**	**.00627**	**.00035**	**-.00051**	**-.00026**	**.00154**
Stddev	.00038	.00682	.00125	.00049	.00051	.00198	.00192
%RSD	15.693	341.64	19.882	140.30	101.01	757.91	124.39
#1	.00234	-.00779	.00491	.00027	-.00013	.00137	.00065
#2	.00206	-.00373	.00653	.00088	-.00110	-.00246	.00023
#3	.00280	.00552	.00736	-.00009	-.00030	.00031	.00374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**.00009**	F **-.24176**
Stddev	.00045	.00012	.15506
%RSD	1040.3	130.08	64.137
#1	.00029	.00014	-.41000
#2	.00031	-.00004	-.10458
#3	-.00048	.00018	-.21070
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14101.**	**93118.**	**3386.2**
Stddev	116.	1554.	59.8
%RSD	.82478	1.6691	1.7656
#1	14064.	91489.	3318.1
#2	14008.	94585.	3410.4
#3	14232.	93279.	3430.1

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 12:39:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.02150**	**.00076**	**.00238**	**.00800**	**.00009**	**2.3943**
Stddev	.00064	.00739	.00284	.00117	.00096	.00007	.0940
%RSD	37.183	34.382	375.49	49.168	11.947	78.152	3.9271
#1	-.00224	.01297	.00262	.00316	.00892	.00017	2.4996
#2	-.00101	.02604	.00216	.00103	.00701	.00003	2.3649
#3	-.00191	.02550	-.00251	.00294	.00806	.00007	2.3186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00018**	**-.00015**	**-.00126**	**.01498**	**-.15180**	**.00001**
Stddev	.00017	.00033	.00116	.00098	.00381	.11899	.00875
%RSD	85.256	181.77	775.52	78.044	25.397	78.390	72261.
#1	-.00030	-.00019	-.00096	-.00223	.01735	-.22429	.00691
#2	-.00000	.00029	.00118	-.00027	.01700	-.21663	-.00983
#3	-.00030	.00044	-.00067	-.00127	.01059	-.01447	.00296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1333**	**.02287**	**.00010**	**46.003**	**-.00008**	**.00401**	**-.00000**
Stddev	.0410	.00153	.00012	.091	.00119	.00035	.00446
%RSD	1.9196	6.6944	126.30	.19711	1419.6	8.7883	111340.
#1	2.1591	.02413	-.00004	45.995	.00129	.00406	.00498
#2	2.1548	.02117	.00014	45.917	-.00078	.00363	-.00135
#3	2.0861	.02332	.00019	46.098	-.00077	.00433	-.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116105 Acquired: 3/29/2017 12:39:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00173**	**.00100**	**2.2860**	**-.00019**	**.05262**	**-.00408**	**-.00100**
Stddev	.00345	.00338	.0081	.00032	.00031	.00199	.00222
%RSD	199.47	336.74	.35275	174.20	.58564	48.797	222.14
#1	.00408	.00328	2.2941	-.00035	.05253	-.00189	-.00287
#2	.00334	-.00288	2.2860	-.00039	.05296	-.00578	-.00159
#3	-.00223	.00261	2.2779	.00019	.05236	-.00456	.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00057**	**.00261**	F **-.20713**
Stddev	.00024	.00022	.11283
%RSD	42.112	8.4644	54.473
#1	.00083	.00260	-.18496
#2	.00036	.00240	-.10703
#3	.00052	.00284	-.32939
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13708.**	**91134.**	**3169.3**
Stddev	94.	1317.	58.2
%RSD	.68633	1.4446	1.8355
#1	13614.	89615.	3107.4
#2	13802.	91858.	3177.7
#3	13707.	91930.	3222.9

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 12:42:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19357**	**4.9841**	**.20061**	**.98498**	**.48880**	**.02447**	**7.1608**	**.02537**
Stddev	.00114	.0468	.00443	.01015	.00767	.00019	.1151	.00038
%RSD	.58699	.93805	2.2074	1.0304	1.5681	.76842	1.6075	1.5068
#1	.19232	4.9322	.19687	.97348	.48064	.02426	7.1184	.02502
#2	.19454	4.9972	.20550	.98877	.48992	.02456	7.0728	.02532
#3	.19385	5.0230	.19945	.99268	.49585	.02460	7.2911	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10268**	**.24235**	**.25574**	**1.9388**	**23.898**	**.48151**	**7.0361**	**.26590**
Stddev	.00120	.00274	.00432	.0346	.388	.00506	.1181	.00468
%RSD	1.1722	1.1297	1.6892	1.7850	1.6224	1.0513	1.6786	1.7586
#1	.10137	.23924	.25076	1.9043	23.507	.47577	6.9412	.26508
#2	.10292	.24338	.25812	1.9387	23.903	.48535	6.9987	.26168
#3	.10374	.24442	.25835	1.9735	24.283	.48340	7.1683	.27093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49249**	**69.190**	**.25563**	**5.0766**	**.25609**	**.61070**	**.20714**	**5.0269**
Stddev	.00565	1.025	.00411	.0575	.00383	.00805	.00074	.0653
%RSD	1.1470	1.4817	1.6097	1.1327	1.4960	1.3189	.35568	1.2983
#1	.48607	68.188	.25155	5.0122	.25183	.60143	.20694	4.9532
#2	.49473	69.145	.25557	5.0946	.25719	.61467	.20796	5.0498
#3	.49669	70.237	.25978	5.1228	.25926	.61599	.20653	5.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116105PS Acquired: 3/29/2017 12:42:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607769-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51290**	**.53937**	**.47506**	**.25691**	**.48995**	**.51885**	**.11245**
Stddev	.00616	.00756	.00837	.00252	.00480	.00586	.47401
%RSD	1.2012	1.4016	1.7622	.98193	.97997	1.1298	421.53
#1	.50659	.53204	.46922	.25978	.48444	.51226	-.28448
#2	.51322	.53894	.47131	.25505	.49216	.52080	-.01546
#3	.51890	.54714	.48465	.25590	.49325	.52348	.63728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13771.**	**90249.**	**3436.3**
Stddev	77.	212.	151.6
%RSD	.55683	.23523	4.4130
#1	13859.	90142.	3561.4
#2	13722.	90112.	3479.8
#3	13731.	90494.	3267.6

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 12:46:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00405**	**.00212**	**.00412**	**.00203**	**-.00001**	**.42657**
Stddev	.00131	.00555	.00214	.00223	.00121	.00004	.03138
%RSD	11303.	137.01	100.83	54.099	59.864	438.74	7.3567
#1	-.00061	.01037	.00399	.00444	.00156	-.00004	.44605
#2	.00151	.00181	.00258	.00175	.00341	-.00002	.39037
#3	-.00087	-.00003	-.00021	.00617	.00112	.00004	.44328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00010**	**.00025**	**-.00113**	F **-.02466**	**-.04996**	**-.00596**
Stddev	.00025	.00009	.00116	.00031	.02617	.07549	.00257
%RSD	68.725	98.133	469.66	27.743	106.12	151.08	43.220
#1	-.00038	-.00000	.00156	-.00110	.00379	-.10261	-.00490
#2	-.00062	-.00009	-.00060	-.00146	-.03007	-.08380	-.00408
#3	-.00011	-.00019	-.00022	-.00083	-.04769	.03652	-.00889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40643**	**.00923**	**.00009**	**8.8142**	**-.00037**	**.00482**	**.00313**
Stddev	.01760	.00246	.00025	.1234	.00030	.00661	.00205
%RSD	4.3313	26.645	285.71	1.3996	81.232	137.12	65.378
#1	.42528	.00913	.00026	8.7136	-.00002	-.00039	.00549
#2	.40362	.01174	.00019	8.9519	-.00058	.00259	.00184
#3	.39041	.00682	-.00020	8.7772	-.00052	.01226	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116105SDL Acquired: 3/29/2017 12:46:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG607769-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**-.00031**	**.43823**	**.00002**	**.01026**	**-.00062**	**.00406**
Stddev	.00282	.00128	.00172	.00057	.00033	.00618	.00091
%RSD	324.51	418.91	.39287	2820.2	3.2159	990.32	22.515
#1	.00237	-.00165	.43940	-.00017	.01056	-.00745	.00378
#2	-.00274	-.00015	.43903	-.00043	.01032	.00099	.00508
#3	-.00224	.00089	.43625	.00066	.00991	.00458	.00332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**.00148**	F **-.39243**
Stddev	.00110	.00010	.04841
%RSD	1968.9	6.5315	12.337
#1	.00013	.00149	-.43466
#2	-.00108	.00157	-.40305
#3	.00112	.00138	-.33959
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14346.**	**94310.**	**3407.9**
Stddev	182.	2443.	39.2
%RSD	1.2716	2.5907	1.1503
#1	14510.	92177.	3382.9
#2	14150.	93778.	3387.7
#3	14379.	96976.	3453.1

Approved: March 30, 2017

Sample Name: L1703116107 Acquired: 3/29/2017 12:49:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00191**	**-.00136**	**-.00066**	**.00281**	**.02374**	**.00013**	**1.7031**	**-.00009**
Stddev	.00119	.00945	.00086	.00103	.00142	.00003	.0288	.00018
%RSD	62.591	697.20	130.90	36.771	6.0006	22.648	1.6925	205.60
#1	-.00056	-.01219	.00033	.00195	.02513	.00013	1.6782	-.00003
#2	-.00233	.00295	-.00126	.00396	.02382	.00015	1.6965	-.00029
#3	-.00283	.00517	-.00105	.00253	.02228	.00009	1.7347	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00003**	**.00017**	**1.0590**	**.02681**	**-.00517**	**.97420**	**.24216**
Stddev	.00009	.00059	.00153	.0143	.03939	.00532	.07465	.00285
%RSD	28.635	1837.3	904.42	1.3474	146.91	102.90	7.6622	1.1773
#1	.00033	-.00036	-.00040	1.0429	.03154	.00096	.98327	.24541
#2	.00023	-.00026	-.00099	1.0641	.06363	-.00790	.89544	.24006
#3	.00041	.00072	.00190	1.0701	-.01473	-.00858	1.0439	.24102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**3.2298**	**-.00033**	**.00196**	**.00123**	**.00209**	**.00491**	**1.4037**
Stddev	.00017	.0618	.00043	.00283	.00058	.00214	.00292	.0261
%RSD	182.51	1.9136	131.47	144.79	47.623	102.23	59.453	1.8599
#1	-.00029	3.2404	.00004	.00446	.00127	.00029	.00225	1.3826
#2	.00004	3.1633	-.00081	.00253	.00062	.00153	.00804	1.3955
#3	-.00003	3.2856	-.00022	-.00112	.00179	.00446	.00445	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703116107 Acquired: 3/29/2017 12:49:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.03391**	**.00408**	**-.00072**	**.00084**	**.00097**	**.02885**
Stddev	.00036	.00045	.00667	.00285	.00012	.00017	.10068
%RSD	73.393	1.3306	163.49	395.84	14.639	17.144	349.00
#1	.00010	.03368	.00067	-.00321	.00070	.00081	.13587
#2	.00058	.03443	.01177	.00239	.00091	.00095	.01463
#3	.00080	.03362	-.00020	-.00134	.00092	.00115	-.06397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14431.**	**96742.**	**3427.0**
Stddev	81.	1343.	77.3
%RSD	.56118	1.3884	2.2551
#1	14374.	95468.	3479.3
#2	14524.	98145.	3338.3
#3	14396.	96613.	3463.5

Approved: March 30, 2017

Sample Name: L1703116109 Acquired: 3/29/2017 12:53:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.00054**	**.00179**	**.00097**	**.03494**	**.00009**	**1.0266**
Stddev	.00196	.00884	.00438	.00161	.00222	.00007	.0699
%RSD	155.21	1633.4	244.96	166.19	6.3619	83.069	6.8133
#1	.00012	-.00236	.00003	-.00084	.03666	.00006	.96588
#2	-.00350	-.00649	.00678	.00151	.03243	.00018	1.1031
#3	-.00041	.01047	-.00144	.00224	.03574	.00004	1.0109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00033**	**-.00041**	**-.00090**	**1.8592**	**.06651**	**-.00954**
Stddev	.00003	.00020	.00055	.00072	.0152	.09603	.00670
%RSD	12.218	61.745	136.43	79.387	.81783	144.39	70.290
#1	-.00024	.00010	.00019	-.00098	1.8564	.02918	-.01689
#2	-.00019	.00048	-.00051	-.00015	1.8756	-.00526	-.00795
#3	-.00023	.00042	-.00090	-.00157	1.8455	.17559	-.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51584**	**.03975**	**-.00003**	**4.1578**	**.00111**	**.00087**	**-.00225**
Stddev	.04657	.00328	.00026	.0124	.00078	.00321	.00162
%RSD	9.0278	8.2438	742.22	.29838	70.173	370.43	71.722
#1	.56195	.04099	.00026	4.1437	.00057	.00369	-.00408
#2	.46883	.04222	-.00016	4.1630	.00076	.00154	-.00099
#3	.51675	.03603	-.00020	4.1668	.00201	-.00263	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703116109 Acquired: 3/29/2017 12:53:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00264**	**1.0596**	**.00035**	**.02105**	**.00263**	**-.00055**
Stddev	.00204	.00664	.0180	.00026	.00031	.01382	.00191
%RSD	487.58	251.37	1.6945	74.530	1.4749	525.32	350.40
#1	.00029	.00346	1.0431	.00005	.02102	.01844	-.00274
#2	-.00155	-.00437	1.0570	.00055	.02076	-.00341	.00032
#3	.00252	.00884	1.0787	.00046	.02138	-.00714	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.00207**	F **-.04705**
Stddev	.00035	.00021	.18234
%RSD	232.41	10.269	387.56
#1	-.00019	.00195	.09968
#2	.00052	.00195	.01037
#3	.00013	.00232	-.25119
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14271.**	**93903.**	**3356.3**
Stddev	129.	949.	67.8
%RSD	.90148	1.0102	2.0206
#1	14417.	94998.	3316.2
#2	14175.	93359.	3318.1
#3	14220.	93352.	3434.6

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:57:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42049**	**10.767**	**.39978**	**.52702**	**1.0448**	**.05292**	**10.438**
Stddev	.00789	.196	.00167	.01151	.0055	.00091	.086
%RSD	1.8774	1.8210	.41734	2.1849	.52885	1.7128	.82829
#1	.41566	10.657	.39790	.51970	1.0445	.05232	10.396
#2	.41620	10.651	.40109	.52106	1.0394	.05247	10.380
#3	.42960	10.994	.40035	.54029	1.0504	.05396	10.537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05040**	**.20223**	**.53181**	**.50458**	**4.1836**	**51.754**	**1.0361**
Stddev	.00047	.00083	.00955	.00150	.0202	.312	.0089
%RSD	.93440	.41245	1.7953	.29826	.48357	.60264	.85933
#1	.05072	.20262	.52688	.50458	4.2043	51.592	1.0438
#2	.04986	.20127	.52574	.50307	4.1638	51.556	1.0263
#3	.05062	.20279	.54282	.50608	4.1828	52.114	1.0382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.492**	**.52416**	**1.0026**	**52.041**	**.50290**	**10.002**	**.50265**
Stddev	.039	.00637	.0032	.195	.00160	.030	.00422
%RSD	.37198	1.2156	.32432	.37438	.31826	.29845	.83945
#1	10.447	.51700	1.0048	52.080	.50225	10.024	.50701
#2	10.520	.52921	.99891	51.829	.50172	9.9677	.50235
#3	10.508	.52626	1.0042	52.213	.50472	10.013	.49859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 12:57:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1790**	**.40534**	**5.0144**	**1.0007**	**1.0442**	**1.0308**	**.50945**
Stddev	.0033	.00286	.0006	.0034	.0037	.0078	.00311
%RSD	.28106	.70496	.01214	.33758	.35060	.76064	.60971
#1	1.1754	.40477	5.0142	1.0040	1.0422	1.0226	.50798
#2	1.1795	.40845	5.0151	.99722	1.0421	1.0315	.50734
#3	1.1820	.40282	5.0139	1.0008	1.0485	1.0382	.51301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0616**	**.99884**	F **.41794**
Stddev	.0196	.00353	.37970
%RSD	1.8437	.35346	90.851
#1	1.0494	1.0016	.83986
#2	1.0512	.99486	.10372
#3	1.0842	1.0001	.31024
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13674.**	**84131.**	**3219.4**
Stddev	95.	955.	59.2
%RSD	.69675	1.1357	1.8382
#1	13564.	83582.	3151.1
#2	13737.	85234.	3253.5
#3	13721.	83576.	3253.6

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:00:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01131**	**.00163**	**.00025**	**-.00022**	**.00008**	**-.01834**
Stddev	.00134	.00203	.00184	.00419	.00106	.00002	.04944
%RSD	808.99	17.958	112.82	1708.7	489.78	30.772	269.60
#1	.00120	.00915	.00050	-.00038	-.00131	.00005	-.01189
#2	-.00148	.01318	.00376	.00472	-.00016	.00009	.02756
#3	-.00022	.01161	.00064	-.00360	.00081	.00010	-.07068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00014**	**.00038**	**-.00036**	**.00829**	**-.04420**	**-.00518**
Stddev	.00046	.00015	.00092	.00129	.01659	.06711	.00623
%RSD	103.04	101.74	239.51	353.83	200.11	151.84	120.31
#1	.00009	.00027	.00051	.00111	-.01086	-.11965	-.00973
#2	-.00071	-.00002	.00123	-.00126	.01812	-.02175	.00192
#3	-.00073	.00018	-.00059	-.00094	.01761	.00881	-.00772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07621**	**-.00155**	**-.00017**	**.00890**	**-.00055**	**-.00076**	**-.00085**
Stddev	.05509	.00349	.00014	.01527	.00182	.00270	.00264
%RSD	72.281	224.80	81.525	171.59	330.98	357.89	309.92
#1	-.11465	.00137	-.00002	.02516	.00118	-.00372	.00197
#2	-.01310	-.00062	-.00021	-.00515	-.00038	-.00014	-.00128
#3	-.10088	-.00541	-.00029	.00669	-.00245	.00159	-.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:00:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**-.00224**	**.00540**	**.00043**	**-.00008**	**.00242**	**.00148**
Stddev	.00400	.00493	.00267	.00055	.00035	.00092	.00186
%RSD	215.83	220.70	49.454	126.86	415.10	38.062	125.76
#1	-.00196	-.00308	.00356	-.00019	-.00004	.00148	.00352
#2	.00151	-.00670	.00417	.00062	-.00046	.00245	-.00011
#3	.00602	.00306	.00846	.00086	.00024	.00332	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**-.00002**	F **-.44621**
Stddev	.00023	.00013	.02540
%RSD	111.78	595.09	5.6933
#1	.00008	.00009	-.46998
#2	.00047	-.00016	-.41944
#3	.00007	.00000	-.44921
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13720.**	**90741.**	**3415.9**
Stddev	83.	1938.	83.8
%RSD	.60728	2.1358	2.4527
#1	13812.	92876.	3511.3
#2	13701.	89093.	3382.1
#3	13648.	90254.	3354.3

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 13:04:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00705**	**.17723**	**.00832**	**.07677**	**.00829**	**.00159**	**.47364**	**.00058**
Stddev	.00114	.00252	.00172	.00142	.00128	.00007	.05698	.00030
%RSD	16.161	1.4226	20.729	1.8441	15.394	4.4029	12.031	52.127
#1	.00575	.17926	.00942	.07688	.00808	.00160	.41276	.00056
#2	.00788	.17802	.00921	.07530	.00713	.00165	.52570	.00029
#3	.00750	.17441	.00633	.07812	.00965	.00151	.48246	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00442**	**.00349**	**.00402**	**.08893**	**.73754**	**.07710**	**.37099**	**.01028**
Stddev	.00017	.00113	.00027	.01341	.19956	.00685	.08474	.00057
%RSD	3.8295	32.531	6.8048	15.075	27.058	8.8784	22.841	5.5609
#1	.00430	.00446	.00434	.08900	.58809	.06934	.45513	.01045
#2	.00461	.00376	.00383	.07549	.66036	.07966	.28566	.01075
#3	.00434	.00224	.00390	.10230	.96416	.08229	.37218	.00964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00771**	**.43952**	**.01613**	**.78425**	**.00850**	**.08310**	**.01947**	**.79428**
Stddev	.00029	.03715	.00060	.00683	.00096	.00219	.00668	.00194
%RSD	3.8237	8.4533	3.7034	.87031	11.346	2.6301	34.321	.24384
#1	.00767	.39899	.01641	.78883	.00961	.08214	.01208	.79336
#2	.00744	.47198	.01545	.77640	.00783	.08560	.02508	.79651
#3	.00803	.44759	.01654	.78751	.00807	.08156	.02124	.79298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 13:04:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40882**	**.03999**	**.02332**	**.16051**	**.00862**	**.01743**	**25.968**
Stddev	.00187	.00066	.00525	.00123	.00061	.00012	.381
%RSD	.45718	1.6568	22.506	.76927	7.0885	.70970	1.4660
#1	.41046	.04013	.01874	.16065	.00808	.01750	26.331
#2	.40922	.03927	.02217	.16167	.00850	.01750	25.572
#3	.40679	.04057	.02905	.15922	.00928	.01729	26.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13859.**	**92682.**	**3340.8**
Stddev	119.	219.	15.6
%RSD	.86102	.23578	.46602
#1	13753.	92538.	3349.9
#2	13836.	92574.	3349.6
#3	13989.	92933.	3322.8

Approved: March 30, 2017

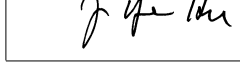
Sample Name: PBW A1 Acquired: 3/29/2017 13:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00217**	**.00925**	**.00115**	**.00165**	**.00087**	**-.00001**	**.01554**
Stddev	.00093	.00227	.00270	.00156	.00060	.00006	.03035
%RSD	42.783	24.572	235.59	94.296	69.407	482.53	195.36
#1	-.00124	.01131	.00379	.00336	.00062	-.00007	.02001
#2	-.00216	.00964	.00125	.00030	.00042	.00004	-.01680
#3	-.00310	.00681	-.00161	.00130	.00155	-.00001	.04340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00014**	**-.00012**	**-.00074**	**.00527**	**-.00117**	**-.00639**
Stddev	.00024	.00014	.00064	.00133	.01823	.08173	.00360
%RSD	344.67	98.634	511.81	179.87	345.85	6969.9	56.348
#1	-.00026	.00030	-.00086	.00075	.01357	.04294	-.00916
#2	-.00015	.00010	.00019	-.00116	-.01563	.04903	-.00232
#3	.00020	.00003	.00029	-.00180	.01788	-.09549	-.00768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02501**	**.00021**	**-.00019**	**.01150**	**-.00012**	**.00195**	**-.00007**
Stddev	.02833	.00256	.00034	.01943	.00087	.00363	.00092
%RSD	113.27	1229.4	174.38	168.94	730.35	186.29	1263.7
#1	.00393	.00111	-.00058	.02498	-.00044	.00611	-.00063
#2	.05722	-.00268	.00006	-.01077	.00086	.00034	-.00058
#3	.01389	.00220	-.00006	.02028	-.00078	-.00060	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: PBW A1 Acquired: 3/29/2017 13:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00150**	**.00206**	**.00692**	**.00023**	**-.00039**	**.00314**	**-.00270**
Stddev	.00178	.00416	.00138	.00072	.00074	.00430	.00082
%RSD	118.29	201.95	19.987	316.71	190.86	137.24	30.400
#1	.00000	.00605	.00626	.00012	-.00124	.00009	-.00227
#2	.00104	.00239	.00851	-.00043	-.00009	.00126	-.00365
#3	.00347	-.00226	.00599	.00100	.00016	.00806	-.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00137**	F **-.21867**
Stddev	.00068	.00003	.30731
%RSD	716.06	2.4162	140.54
#1	-.00065	.00134	-.22174
#2	.00067	.00140	.09017
#3	.00027	.00135	-.52443
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14323.**	**96204.**	**3412.0**
Stddev	103.	1344.	16.0
%RSD	.71640	1.3966	.46808
#1	14309.	96817.	3400.8
#2	14432.	97131.	3430.3
#3	14228.	94663.	3404.9

Approved: March 30, 2017

Sample Name: LCSW A1 Acquired: 3/29/2017 13:11:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18908**	**4.8220**	**.18892**	**.91293**	**.49407**	**.02371**	**4.8045**	**.02465**
Stddev	.00162	.0182	.00080	.00405	.00240	.00005	.0459	.00024
%RSD	.85874	.37751	.42246	.44310	.48507	.19679	.95495	.97952
#1	.18967	4.8361	.18973	.91757	.49211	.02365	4.7746	.02471
#2	.19033	4.8015	.18813	.91010	.49336	.02373	4.7816	.02438
#3	.18725	4.8284	.18889	.91113	.49674	.02374	4.8574	.02485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09975**	**.23970**	**.24796**	**1.9579**	**24.707**	**.49886**	**4.8495**	**.24595**
Stddev	.00033	.00066	.00057	.0233	.207	.00307	.0141	.00230
%RSD	.33388	.27348	.22847	1.1875	.83761	.61569	.29170	.93376
#1	.09948	.24040	.24795	1.9818	24.897	.50138	4.8389	.24531
#2	.10012	.23957	.24740	1.9564	24.487	.49544	4.8440	.24405
#3	.09965	.23911	.24854	1.9354	24.737	.49975	4.8656	.24850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48421**	**24.784**	**.24747**	**4.7082**	**.24776**	**.58011**	**.18892**	**2.4749**
Stddev	.00014	.141	.00124	.0009	.00250	.00575	.00315	.0043
%RSD	.02876	.56784	.49934	.01931	1.0077	.99085	1.6648	.17561
#1	.48436	24.811	.24818	4.7072	.24838	.57815	.18574	2.4760
#2	.48421	24.632	.24604	4.7083	.24989	.57559	.19203	2.4785
#3	.48408	24.910	.24817	4.7090	.24501	.58658	.18899	2.4701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LCSW A1 Acquired: 3/29/2017 13:11:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49858**	**.49439**	**.49173**	**.25582**	**.48985**	**.48366**	**.41093**
Stddev	.00094	.00151	.00190	.00035	.00293	.00024	.29426
%RSD	.18847	.30575	.38629	.13843	.59911	.04986	71.609
#1	.49750	.49478	.48965	.25622	.49323	.48341	.54719
#2	.49903	.49273	.49337	.25556	.48843	.48389	.07324
#3	.49922	.49567	.49218	.25568	.48790	.48369	.61237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14456.**	**96008.**	**3581.3**
Stddev	43.	134.	10.5
%RSD	.29432	.13943	.29418
#1	14414.	96025.	3570.3
#2	14499.	95866.	3591.3
#3	14455.	96132.	3582.2

Approved: March 30, 2017

Sample Name: L1703138301 Acquired: 3/29/2017 13:15:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.01215**	**.00256**	**.02128**	**.07257**	**-.00001**	**52.631**
Stddev	.00155	.00238	.00078	.00276	.00044	.00008	.111
%RSD	498.13	19.620	30.283	12.981	.60580	1493.7	.21147
#1	.00061	.01222	.00325	.02325	.07307	-.00007	52.749
#2	.00056	.01449	.00272	.02247	.07223	.00008	52.527
#3	-.00210	.00973	.00172	.01812	.07241	-.00003	52.617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00026**	**.00088**	**.04796**	**.01365**	**.97495**	**-.00113**
Stddev	.00017	.00019	.00098	.00112	.02729	.02756	.00273
%RSD	292.44	71.774	112.10	2.3286	199.88	2.8265	242.08
#1	.00014	-.00045	.00171	.04683	.02466	.99491	-.00094
#2	-.00019	-.00007	.00113	.04799	-.01742	.94351	.00151
#3	-.00013	-.00027	-.00021	.04906	.03372	.98644	-.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.1969**	**.00643**	**.00063**	**5.1989**	**-.00002**	**-.00349**	**.00086**
Stddev	.0425	.00128	.00039	.0259	.00054	.00066	.00070
%RSD	.46158	19.866	62.930	.49885	2968.8	18.958	80.846
#1	9.2028	.00590	.00018	5.2225	.00004	-.00302	.00159
#2	9.2361	.00789	.00076	5.1711	-.00059	-.00425	.00020
#3	9.1518	.00550	.00094	5.2030	.00049	-.00321	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138301 Acquired: 3/29/2017 13:15:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.00401**	**4.0351**	**.00032**	**.20735**	**-.00279**	**-.00138**
Stddev	.00179	.00372	.0160	.00048	.00061	.00337	.00088
%RSD	423.00	92.700	.39599	152.15	.29505	120.46	63.922
#1	.00104	.00770	4.0256	.00030	.20723	-.00643	-.00060
#2	-.00241	.00027	4.0262	-.00015	.20802	.00022	-.00120
#3	.00010	.00406	4.0535	.00081	.20681	-.00217	-.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**.00472**	F **-.16969**
Stddev	.00026	.00004	.20492
%RSD	43.104	.95077	120.76
#1	-.00030	.00477	-.25797
#2	-.00069	.00472	.06457
#3	-.00079	.00468	-.31568
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14199.**	**94473.**	**3490.8**
Stddev	38.	796.	44.2
%RSD	.26987	.84255	1.2655
#1	14223.	94299.	3440.5
#2	14155.	93777.	3508.5
#3	14219.	95341.	3523.3

Approved: March 30, 2017

Sample Name: L1703138301S Acquired: 3/29/2017 13:18:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19008**	**4.7308**	**.18912**	**.94056**	**.55412**	**.02341**	**55.972**
Stddev	.00213	.0299	.00272	.00842	.00755	.00013	.577
%RSD	1.1218	.63212	1.4364	.89525	1.3623	.54522	1.0312
#1	.19254	4.7638	.19226	.94529	.54858	.02353	55.589
#2	.18892	4.7054	.18751	.93084	.55106	.02328	55.690
#3	.18878	4.7232	.18759	.94556	.56271	.02344	56.635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02390**	**.09583**	**.23721**	**.28161**	**1.9095**	**24.972**	**.48109**
Stddev	.00025	.00039	.00114	.00054	.0274	.127	.00111
%RSD	1.0385	.40741	.48050	.19307	1.4351	.50888	.23047
#1	.02362	.09595	.23843	.28209	1.9219	24.936	.48002
#2	.02406	.09540	.23618	.28102	1.8781	24.866	.48223
#3	.02403	.09615	.23702	.28172	1.9286	25.113	.48103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.601**	**.25039**	**.47488**	**28.899**	**.23707**	**4.7519**	**.24204**
Stddev	.085	.00260	.00106	.206	.00177	.0172	.00120
%RSD	.62772	1.0384	.22258	.71197	.74676	.36193	.49468
#1	13.572	.25319	.47583	28.779	.23892	4.7548	.24175
#2	13.535	.24806	.47374	28.781	.23539	4.7335	.24101
#3	13.698	.24991	.47508	29.136	.23690	4.7675	.24336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138301S Acquired: 3/29/2017 13:18:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1273) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57619**	**.18771**	**6.3662**	**.48784**	**.68958**	**.47478**	**.24232**
Stddev	.00544	.00246	.0185	.00157	.00635	.01155	.00192
%RSD	.94329	1.3112	.29029	.32243	.92129	2.4322	.79097
#1	.58176	.18902	6.3771	.48832	.68490	.46487	.24451
#2	.57091	.18923	6.3449	.48609	.68704	.47201	.24099
#3	.57590	.18487	6.3767	.48912	.69681	.48746	.24145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48065**	**.47232**	F **-.20365**
Stddev	.00244	.00062	.16533
%RSD	.50681	.13057	81.182
#1	.48340	.47263	-.03934
#2	.47875	.47161	-.20163
#3	.47981	.47273	-.36998
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14186.**	**93709.**	**3486.5**
Stddev	92.	500.	23.5
%RSD	.64632	.53318	.67455
#1	14280.	93138.	3510.4
#2	14096.	93921.	3463.4
#3	14182.	94067.	3485.7

Approved: March 30, 2017

Sample Name: L1703138301SD Acquired: 3/29/2017 13:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18900**	**4.7430**	**.19015**	**.93715**	**.54815**	**.02351**	**56.118**	**.02357**
Stddev	.00153	.0388	.00534	.00699	.00407	.00006	.494	.00013
%RSD	.80763	.81811	2.8078	.74595	.74275	.26022	.87968	.56766
#1	.18743	4.7163	.18964	.93069	.54587	.02346	55.773	.02342
#2	.18908	4.7252	.19573	.93620	.55285	.02349	56.683	.02364
#3	.19048	4.7876	.18509	.94457	.54573	.02358	55.897	.02365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09587**	**.23760**	**.28305**	**1.9517**	**24.938**	**.48545**	**13.544**	**.24674**
Stddev	.00084	.00149	.00444	.0186	.147	.00087	.236	.00211
%RSD	.87561	.62632	1.5669	.95224	.59069	.17945	1.7398	.85676
#1	.09491	.23621	.27865	1.9698	24.832	.48636	13.362	.24549
#2	.09625	.23741	.28752	1.9326	25.106	.48462	13.810	.24918
#3	.09646	.23917	.28298	1.9526	24.875	.48537	13.459	.24555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47950**	**29.233**	**.23860**	**4.7660**	**.24801**	**.58006**	**.18756**	**6.4994**
Stddev	.00691	.205	.00329	.0606	.00540	.00880	.00567	.1006
%RSD	1.4403	.70137	1.3785	1.2718	2.1785	1.5170	3.0209	1.5482
#1	.47232	29.116	.23529	4.7025	.24233	.57107	.18811	6.3971
#2	.48609	29.470	.24186	4.8233	.25309	.58865	.19294	6.5983
#3	.48008	29.113	.23865	4.7723	.24861	.58046	.18164	6.5029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703138301SD Acquired: 3/29/2017 13:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607726-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48976**	**.68467**	**.47754**	**.24562**	**.48123**	**.47778**	**.03413**
Stddev	.00631	.00468	.00917	.00498	.00097	.00781	.19252
%RSD	1.2875	.68367	1.9192	2.0260	.20219	1.6337	564.12
#1	.48366	.68052	.46699	.24045	.48110	.46980	.24485
#2	.49625	.68974	.48207	.25038	.48033	.48539	-.13256
#3	.48938	.68374	.48355	.24603	.48226	.47817	-.00991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14034.**	**93678.**	**3459.0**
Stddev	264.	941.	86.4
%RSD	1.8818	1.0048	2.4973
#1	14250.	93634.	3468.4
#2	13739.	94641.	3368.4
#3	14112.	92760.	3540.4

Approved: March 30, 2017

Sample Name: L1703126601 Acquired: 3/29/2017 13:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.02818**	**-.00019**	**.03739**	**.01600**	**.00004**	**1.1020**	**-.00020**
Stddev	.00027	.00698	.00178	.00193	.00140	.00011	.0591	.00024
%RSD	17.787	24.767	931.85	5.1689	8.7676	298.99	5.3609	120.78
#1	-.00126	.02015	-.00068	.03555	.01537	-.00008	1.0421	-.00023
#2	-.00149	.03283	-.00168	.03721	.01503	.00013	1.1036	-.00043
#3	-.00180	.03155	.00179	.03940	.01761	.00007	1.1602	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00147**	**-.00000**	**.00069**	**.20156**	**2.0567**	**-.00721**	**.56221**	**.02092**
Stddev	.00031	.00108	.00034	.01491	.0344	.00554	.10959	.00122
%RSD	21.118	54559.	48.811	7.3999	1.6723	76.852	19.493	5.8364
#1	.00126	.00043	.00075	.21641	2.0172	-.01279	.63700	.02220
#2	.00182	.00079	.00033	.20168	2.0798	-.00170	.61323	.02079
#3	.00132	-.00123	.00100	.18658	2.0731	-.00714	.43642	.01976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**42.074**	**.00016**	**.00284**	**.00268**	**-.00197**	**.00088**	**4.1765**
Stddev	.00037	.176	.00125	.00227	.00119	.00382	.00377	.0259
%RSD	348.91	.41923	792.79	79.742	44.442	193.84	427.55	.61932
#1	-.00026	42.219	-.00055	.00303	.00252	.00191	.00492	4.1845
#2	.00009	42.126	.00160	.00049	.00395	-.00573	.00028	4.1475
#3	.00048	41.878	-.00058	.00501	.00158	-.00209	-.00255	4.1974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703126601 Acquired: 3/29/2017 13:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.00736**	**-.00085**	**.00102**	**-.00002**	**.00312**	**-.01220**
Stddev	.00053	.00025	.00978	.00222	.00049	.00009	.17514
%RSD	58.606	3.4354	1153.8	217.96	2289.9	2.8163	1435.7
#1	.00108	.00765	.00158	.00279	-.00028	.00322	-.00891
#2	.00030	.00722	.00749	-.00147	-.00033	.00306	-.18896
#3	.00131	.00720	-.01162	.00174	.00054	.00308	.16127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14100.**	**94284.**	**3564.2**
Stddev	143.	1374.	44.5
%RSD	1.0152	1.4571	1.2486
#1	14222.	95760.	3608.5
#2	14135.	93043.	3564.4
#3	13942.	94048.	3519.5

Approved: March 30, 2017

Sample Name: L1703126601PS Acquired: 3/29/2017 13:40:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607804-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19119**	**4.8405**	**.19151**	**.96830**	**.49122**	**.02406**	**5.6027**	**.02422**
Stddev	.00617	.1125	.00269	.02140	.01259	.00052	.2071	.00016
%RSD	3.2250	2.3241	1.4046	2.2103	2.5633	2.1570	3.6966	.64448
#1	.18469	4.7483	.19321	.94715	.49659	.02358	5.6798	.02429
#2	.19696	4.9658	.18841	.98995	.50024	.02461	5.7601	.02432
#3	.19192	4.8073	.19291	.96781	.47684	.02398	5.3680	.02404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10062**	**.24292**	**.24812**	**2.0798**	**25.528**	**.48352**	**5.2755**	**.25571**
Stddev	.00034	.00548	.00079	.0466	.668	.01505	.1012	.00944
%RSD	.34267	2.2578	.31742	2.2428	2.6164	3.1121	1.9175	3.6912
#1	.10090	.23798	.24869	2.0943	25.758	.48857	5.2847	.26286
#2	.10024	.24882	.24722	2.1174	26.050	.49539	5.3717	.25927
#3	.10071	.24195	.24845	2.0276	24.776	.46660	5.1700	.24501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48273**	**60.148**	**.24846**	**4.7687**	**.24847**	**.57697**	**.18765**	**6.3132**
Stddev	.00061	1.665	.00164	.0097	.00369	.00221	.00043	.0212
%RSD	.12613	2.7678	.65842	.20314	1.4847	.38368	.23163	.33538
#1	.48330	61.035	.25033	4.7797	.24681	.57603	.18800	6.3377
#2	.48209	61.182	.24726	4.7614	.24590	.57538	.18717	6.3000
#3	.48281	58.228	.24780	4.7650	.25270	.57950	.18780	6.3021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703126601PS Acquired: 3/29/2017 13:40:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607804-03

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49772**	**.48493**	**.47316**	**.24895**	**.48963**	**.49300**	**.09858**
Stddev	.00343	.01328	.00771	.00193	.01209	.00106	.06254
%RSD	.68823	2.7391	1.6300	.77326	2.4698	.21448	63.439
#1	.50168	.49009	.47568	.25109	.47887	.49422	.02749
#2	.49570	.49486	.47930	.24838	.50272	.49231	.14512
#3	.49580	.46984	.46451	.24737	.48731	.49247	.12314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14238.**	**94479.**	**3534.3**
Stddev	186.	2139.	108.2
%RSD	1.3074	2.2634	3.0602
#1	14414.	95708.	3419.1
#2	14044.	92010.	3550.1
#3	14257.	95719.	3633.7

Approved: March 30, 2017

Sample Name: L1703126601SDL Acquired: 3/29/2017 13:43:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607804-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00059**	**.00382**	**.00780**	**.00352**	**.00011**	**.15103**
Stddev	.00101	.00254	.00094	.00102	.00160	.00005	.02567
%RSD	301.47	429.08	24.584	13.026	45.550	47.666	16.996
#1	-.00081	-.00003	.00459	.00663	.00536	.00017	.17762
#2	.00082	-.00158	.00277	.00848	.00238	.00010	.12639
#3	-.00102	.00338	.00409	.00829	.00283	.00007	.14909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00037**	**-.00049**	**.00008**	**.02104**	**.36449**	**-.00469**
Stddev	.00007	.00016	.00065	.00115	.02525	.04659	.00393
%RSD	81.550	42.930	132.40	1368.0	119.99	12.783	83.694
#1	-.00016	.00042	-.00113	.00065	-.00752	.32334	-.00078
#2	-.00006	.00049	-.00052	.00084	.03027	.41508	-.00863
#3	-.00003	.00019	.00017	-.00124	.04037	.35507	-.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07599**	**.00363**	**-.00025**	**7.9535**	**.00016**	**-.00006**	**.00165**
Stddev	.05537	.00147	.00026	.0317	.00073	.00169	.00345
%RSD	72.872	40.418	103.26	.39876	463.07	2756.1	209.44
#1	.08760	.00525	-.00001	7.9370	.00026	.00166	-.00231
#2	.12463	.00323	-.00052	7.9900	-.00062	-.00011	.00324
#3	.01573	.00240	-.00022	7.9334	.00083	-.00173	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126601SDL Acquired: 3/29/2017 13:43:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607804-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**-.00166**	**.79214**	**.00016**	**.00116**	**-.00177**	**.00188**
Stddev	.00627	.00130	.02078	.00056	.00099	.00394	.00425
%RSD	437.01	78.485	2.6238	353.05	85.132	222.79	225.89
#1	.00578	-.00308	.76931	-.00038	.00230	-.00557	-.00290
#2	-.00553	-.00053	.79712	.00073	.00062	-.00202	.00524
#3	-.00455	-.00137	.80997	.00013	.00056	.00229	.00330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00041**	**.00453**	F **-.07491**
Stddev	.00047	.00023	.14903
%RSD	116.41	5.0751	198.94
#1	.00031	.00427	-.18014
#2	-.00001	.00464	-.14022
#3	.00092	.00469	.09563
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14559.**	**96091.**	**3529.8**
Stddev	257.	1379.	100.9
%RSD	1.7625	1.4354	2.8578
#1	14835.	94525.	3417.8
#2	14515.	97125.	3558.0
#3	14327.	96624.	3613.6

Approved: March 30, 2017

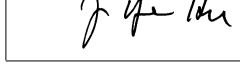
Sample Name: L1703126602 Acquired: 3/29/2017 13:47:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.03249**	**-.00020**	**.03335**	**.10374**	**.00016**	**25.506**
Stddev	.00090	.00305	.00293	.00304	.00099	.00005	.226
%RSD	607.39	9.3963	1428.7	9.1072	.95821	33.089	.88425
#1	.00082	.02989	-.00108	.03674	.10431	.00017	25.507
#2	-.00095	.03174	.00306	.03086	.10431	.00010	25.731
#3	-.00031	.03585	-.00260	.03246	.10259	.00020	25.279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00659**	**-.00023**	**.00067**	**2.6961**	**4.7787**	**-.00093**
Stddev	.00018	.00035	.00060	.00018	.0364	.1927	.00335
%RSD	113.99	5.3052	257.78	26.203	1.3502	4.0319	360.89
#1	.00014	.00628	-.00002	.00048	2.7162	4.6313	-.00208
#2	.00036	.00697	-.00091	.00083	2.7180	4.9967	-.00355
#3	-.00001	.00653	.00023	.00070	2.6541	4.7080	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.043**	**.65691**	**-.00015**	**60.335**	**.01099**	**-.00416**	**-.00009**
Stddev	.200	.00332	.00035	.420	.00122	.00597	.00266
%RSD	1.9917	.50502	235.34	.69548	11.111	143.53	3113.8
#1	10.076	.65489	-.00050	60.551	.01008	.00081	.00293
#2	10.224	.66074	.00020	60.602	.01237	-.01077	-.00206
#3	9.8285	.65510	-.00015	59.851	.01050	-.00251	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703126602 Acquired: 3/29/2017 13:47:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00255**	**1.8385**	**.00016**	**.14829**	**.00272**	**-.00089**
Stddev	.00139	.00358	.0033	.00028	.00122	.00704	.00085
%RSD	485.53	140.27	.17972	179.18	.81936	258.61	95.342
#1	.00189	.00668	1.8413	.00026	.14913	.00956	-.00002
#2	-.00051	.00070	1.8348	-.00016	.14884	.00312	-.00093
#3	-.00052	.00027	1.8393	.00037	.14690	-.00451	-.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.01654**	F **-.14626**
Stddev	.00058	.00012	.33550
%RSD	140.22	.72098	229.39
#1	.00012	.01661	-.23262
#2	-.00104	.01640	.22398
#3	-.00032	.01661	-.43015
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14063.**	**93886.**	**3458.4**
Stddev	120.	1451.	65.1
%RSD	.85646	1.5454	1.8816
#1	14191.	93642.	3483.1
#2	13952.	92572.	3384.6
#3	14045.	95443.	3507.6

Approved: March 30, 2017

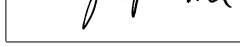
Sample Name: L1703133902 Acquired: 3/29/2017 13:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00226**	**.00339**	**-.00152**	**.08014**	**.00007**	**2.4925**
Stddev	.00244	.00455	.00087	.00053	.00197	.00003	.0548
%RSD	1243.5	200.83	25.756	34.776	2.4619	43.095	2.1980
#1	.00116	-.00114	.00384	-.00092	.08194	.00007	2.4878
#2	.00126	.00743	.00239	-.00192	.07803	.00004	2.4402
#3	-.00302	.00050	.00396	-.00172	.08045	.00009	2.5494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00032**	**.00001**	**-.00101**	**-.00507**	**-.01537**	**-.00440**
Stddev	.00014	.00022	.00094	.00059	.01495	.09364	.00731
%RSD	52.443	68.782	15148.	57.693	294.77	609.39	166.19
#1	-.00044	.00047	-.00013	-.00037	-.00088	.08739	-.01284
#2	-.00022	.00043	.00101	-.00152	-.02166	-.09588	-.00003
#3	-.00016	.00007	-.00086	-.00115	.00734	-.03760	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.9490**	**.00619**	**.00006**	**7.3057**	**-.00015**	**.00582**	**.00008**
Stddev	.0405	.00308	.00018	.0831	.00011	.00801	.00221
%RSD	2.0771	49.761	287.40	1.1374	68.266	137.69	2751.6
#1	1.9079	.00899	.00022	7.4010	-.00006	.00119	.00252
#2	1.9889	.00289	.00010	7.2486	-.00014	.01506	-.00179
#3	1.9503	.00670	-.00013	7.2675	-.00026	.00119	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703133902 Acquired: 3/29/2017 13:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**-.00143**	**.15419**	**-.00040**	**.06013**	**.00055**	**-.00095**
Stddev	.00125	.00875	.00180	.00040	.00068	.00388	.00196
%RSD	91.281	613.89	1.1701	99.042	1.1297	701.72	207.43
#1	-.00188	.00745	.15566	-.00083	.05936	.00126	.00131
#2	-.00229	-.00168	.15473	-.00036	.06040	-.00363	-.00228
#3	.00005	-.01005	.15218	-.00003	.06063	.00403	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00160**	F **-.28265**
Stddev	.00020	.00002	.23592
%RSD	59.593	.93923	83.464
#1	.00048	.00160	-.27236
#2	.00043	.00161	-.05206
#3	.00011	.00158	-.52355
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13794.**	**91893.**	**3287.7**
Stddev	131.	2556.	60.6
%RSD	.95054	2.7819	1.8425
#1	13920.	94714.	3221.5
#2	13805.	91237.	3301.3
#3	13659.	89729.	3340.3

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 13:55:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.35870**	**9.0972**	**.36446**	F **.44570**	**.94614**	**.04543**	**9.3631**
Stddev	.00414	.0308	.00900	.00280	.01402	.00018	.1592
%RSD	1.1551	.33844	2.4698	.62747	1.4821	.39497	1.6999
#1	.35405	9.0643	.35965	.44414	.93807	.04526	9.2920
#2	.36008	9.1020	.35888	.44404	.96233	.04541	9.5455
#3	.36199	9.1253	.37484	.44893	.93801	.04562	9.2519
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value	.40000			.50000			
Range	-10.000%			-10.000%			

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04711**	**.19000**	F **.44711**	**.47199**	**3.7310**	**48.151**	**.94995**
Stddev	.00026	.00220	.00185	.00539	.0413	.620	.01479
%RSD	.55766	1.1583	.41297	1.1419	1.1066	1.2868	1.5570
#1	.04705	.18971	.44569	.47003	3.7163	47.785	.94458
#2	.04689	.18795	.44644	.46786	3.7776	48.866	.96667
#3	.04740	.19232	.44920	.47809	3.6991	47.800	.93859
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			.50000				
Range			-10.000%				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4107**	**.47016**	**.93186**	**47.490**	**.46253**	**9.0965**	**.46245**
Stddev	.0813	.00886	.00912	.672	.00597	.1001	.00196
%RSD	.86419	1.8840	.97876	1.4145	1.2907	1.1003	.42304
#1	9.4215	.47074	.92731	47.282	.45907	9.0522	.46124
#2	9.4860	.47872	.92592	48.241	.45910	9.0262	.46140
#3	9.3245	.46103	.94237	46.947	.46943	9.2111	.46471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 13:55:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0886**	**.36276**	**4.6208**	**.93626**	**.93873**	**.93812**	**.47834**
Stddev	.0124	.00106	.0508	.00885	.01370	.01142	.00320
%RSD	1.1400	.29223	1.0997	.94504	1.4589	1.2176	.66865
#1	1.0805	.36158	4.5924	.93335	.93538	.93277	.47789
#2	1.0824	.36363	4.5906	.92924	.95379	.95123	.47538
#3	1.1029	.36307	4.6795	.94620	.92702	.93035	.48173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.91995**	**.91854**	F **.19407**
Stddev	.00472	.00966	.32085
%RSD	.51276	1.0521	165.33
#1	.91450	.91276	.17066
#2	.92250	.91316	-.11444
#3	.92284	.92969	.52599
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14058.**	**95112.**	**3461.3**
Stddev	119.	395.	128.8
%RSD	.84907	.41551	3.7198
#1	14145.	95500.	3569.4
#2	14107.	95126.	3318.8
#3	13922.	94710.	3495.7

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:58:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00136**	**.00410**	**-.00058**	**.00118**	**.00192**	**.00008**	**-.03886**
Stddev	.00108	.00637	.00558	.00090	.00106	.00007	.12452
%RSD	79.829	155.29	958.42	75.763	55.006	90.601	320.45
#1	-.00191	-.00139	.00479	.00123	.00147	.00016	-.12948
#2	-.00205	.00260	-.00634	.00205	.00313	.00005	-.09023
#3	-.00011	.01109	-.00020	.00026	.00117	.00003	.10313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.00014**	**-.00086**	**-.00098**	**-.01231**	**-.01541**	**.00041**
Stddev	.00025	.00013	.00041	.00013	.00515	.04372	.00467
%RSD	100.53	91.098	47.200	13.617	41.806	283.72	1133.2
#1	-.00022	.00005	-.00116	-.00098	-.01345	.02463	.00556
#2	-.00051	.00009	-.00102	-.00085	-.01679	-.00880	-.00356
#3	-.00002	.00029	-.00040	-.00112	-.00669	-.06206	-.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01197**	**.00083**	**.00015**	**-.00987**	**-.00039**	**-.00449**	**.00087**
Stddev	.15502	.00231	.00016	.05350	.00024	.00560	.00336
%RSD	1295.2	277.04	105.89	542.03	62.514	124.69	383.80
#1	-.08830	.00347	.00017	-.04545	-.00014	-.00936	-.00284
#2	-.11403	-.00084	-.00001	.05165	-.00040	.00163	.00178
#3	.16642	-.00013	.00031	-.03581	-.00063	-.00575	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 13:58:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00088**	**.00402**	**.00015**	**.00011**	**.00026**	**.00079**
Stddev	.00233	.00245	.00081	.00086	.00058	.00942	.00241
%RSD	371.54	277.17	20.129	582.49	539.31	3640.9	306.11
#1	-.00272	.00167	.00417	-.00024	-.00044	-.00799	-.00120
#2	-.00104	-.00186	.00473	.00113	.00004	-.00175	.00347
#3	.00188	.00285	.00314	-.00045	.00072	.01052	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00083**	**.00016**	F **-.04379**
Stddev	.00149	.00021	.42371
%RSD	180.64	135.64	967.68
#1	-.00016	.00030	-.25008
#2	.00009	.00026	-.32485
#3	.00254	-.00009	.44357
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14240.**	**96326.**	**3489.9**
Stddev	96.	1276.	83.7
%RSD	.67597	1.3250	2.3984
#1	14322.	97307.	3586.2
#2	14134.	96788.	3448.4
#3	14264.	94883.	3435.0

Approved: March 30, 2017

Sample Name: L1703133904 Acquired: 3/29/2017 14:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00333**	**.00207**	**.00316**	**.08014**	**.00009**	**2.5160**
Stddev	.00152	.00117	.00164	.00189	.00238	.00007	.0255
%RSD	559.02	35.093	79.386	59.751	2.9725	72.712	1.0121
#1	-.00119	.00457	.00317	.00218	.08254	.00012	2.4954
#2	.00185	.00226	.00285	.00534	.07778	.00002	2.5080
#3	.00016	.00314	.00018	.00197	.08009	.00014	2.5445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.00003**	**-.00103**	**.00004**	**.01879**	**-.00964**	**-.00929**
Stddev	.00022	.00025	.00032	.00100	.01146	.10982	.00520
%RSD	61.325	913.47	31.472	2781.7	60.983	1138.8	55.983
#1	-.00056	-.00025	-.00069	.00118	.01649	-.00848	-.00736
#2	-.00013	.00013	-.00106	-.00039	.00865	-.12004	-.00533
#3	-.00037	.00020	-.00134	-.00068	.03121	.09959	-.01518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.9605**	**.00659**	**-.00015**	**7.2759**	**-.00133**	**.00297**	**.00047**
Stddev	.0030	.00198	.00007	.0343	.00101	.00199	.00164
%RSD	.15238	30.093	47.804	.47205	75.914	67.176	349.75
#1	1.9572	.00447	-.00008	7.2825	-.00018	.00499	-.00112
#2	1.9610	.00688	-.00022	7.2388	-.00174	.00292	.00216
#3	1.9631	.00841	-.00014	7.3065	-.00207	.00100	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133904 Acquired: 3/29/2017 14:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00192**	**.00222**	**.15610**	**.00028**	**.06049**	**.00078**	**-.00020**
Stddev	.00455	.00081	.00171	.00057	.00047	.00568	.00173
%RSD	236.62	36.655	1.0942	205.47	.77006	725.82	873.68
#1	.00527	.00181	.15668	.00093	.06101	-.00119	-.00196
#2	.00374	.00168	.15418	-.00012	.06011	-.00365	-.00013
#3	-.00325	.00315	.15745	.00003	.06035	.00719	.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00101**	**.00100**	F **-.34997**
Stddev	.00040	.00006	.10596
%RSD	39.777	5.9649	30.276
#1	.00071	.00102	-.34905
#2	.00087	.00093	-.24448
#3	.00147	.00104	-.45638
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13690.**	**89814.**	**3240.9**
Stddev	81.	651.	54.6
%RSD	.58876	.72482	1.6838
#1	13662.	90547.	3242.8
#2	13627.	89305.	3294.4
#3	13781.	89588.	3185.4

Approved: March 30, 2017

Sample Name: L1703133905 Acquired: 3/29/2017 14:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00961**	**.00395**	**.00058**	**.23733**	**.00014**	**6.1842**
Stddev	.00067	.00709	.00162	.00146	.00075	.00008	.0468
%RSD	336.52	73.793	40.987	252.29	.31550	56.073	.75658
#1	-.00042	.01127	.00283	.00045	.23647	.00020	6.1698
#2	.00055	.00183	.00320	.00210	.23774	.00016	6.1462
#3	-.00073	.01572	.00580	-.00081	.23779	.00005	6.2364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00466**	**.00040**	**-.00018**	**1.0598**	**.24426**	**.00261**
Stddev	.00026	.00064	.00087	.00055	.0148	.09696	.00380
%RSD	145.87	13.714	216.03	309.90	1.3970	39.695	145.50
#1	-.00038	.00477	.00103	-.00036	1.0762	.16235	.00501
#2	.00011	.00398	.00078	.00044	1.0557	.35132	-.00177
#3	-.00026	.00524	-.00059	-.00061	1.0475	.21911	.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7281**	**.26947**	**.00028**	**19.129**	**.00331**	**.00625**	**-.00199**
Stddev	.1114	.00126	.00026	.065	.00045	.00503	.00161
%RSD	2.3563	.46673	91.902	.33750	13.484	80.531	80.586
#1	4.6911	.26820	.00007	19.167	.00374	.00741	-.00014
#2	4.8533	.27071	.00056	19.054	.00285	.01061	-.00279
#3	4.6399	.26949	.00020	19.165	.00333	.00074	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133905 Acquired: 3/29/2017 14:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00160**	**.00133**	**2.7248**	**.00032**	**.14132**	**-.00299**	**.00075**
Stddev	.00047	.00648	.0022	.00032	.00172	.00750	.00272
%RSD	29.381	487.90	.08018	101.27	1.2157	251.16	364.22
#1	-.00213	.00820	2.7239	.00011	.14302	-.00581	.00264
#2	-.00144	.00048	2.7233	.00015	.14135	.00552	-.00237
#3	-.00123	-.00469	2.7273	.00069	.13958	-.00867	.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**.00973**	F **-.22547**
Stddev	.00052	.00019	.32240
%RSD	260.01	1.9730	142.99
#1	-.00039	.00981	-.29737
#2	.00039	.00987	-.50585
#3	.00060	.00951	.12680
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13821.**	**90726.**	**3279.5**
Stddev	134.	920.	83.1
%RSD	.96903	1.0139	2.5349
#1	13975.	91315.	3362.6
#2	13731.	91196.	3196.4
#3	13758.	89666.	3279.4

Approved: March 30, 2017

Sample Name: L1703133906 Acquired: 3/29/2017 14:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.01201**	**.00164**	**.03910**	**.01973**	**.00010**	**1.6058**
Stddev	.00140	.00831	.00221	.00268	.00159	.00017	.0616
%RSD	151.70	69.198	134.52	6.8497	8.0552	166.37	3.8352
#1	-.00127	.00246	.00390	.04024	.01789	-.00005	1.5347
#2	.00062	.01764	.00153	.03604	.02064	.00028	1.6438
#3	-.00211	.01593	-.00051	.04101	.02065	.00007	1.6388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00049**	**.00026**	**-.00068**	**.08246**	**5.0060**	**.01763**
Stddev	.00013	.00014	.00087	.00060	.02421	.0340	.00094
%RSD	97.015	28.079	336.14	87.732	29.357	.67904	5.3254
#1	-.00022	.00064	-.00074	-.00110	.09356	5.0384	.01674
#2	.00002	.00046	.00080	.00000	.09912	5.0091	.01754
#3	-.00021	.00037	.00072	-.00096	.05469	4.9706	.01861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57704**	**.00711**	**.00004**	**21.190**	**-.00068**	**.00092**	**-.00051**
Stddev	.03487	.00081	.00038	.066	.00054	.00829	.00229
%RSD	6.0434	11.451	858.23	.31164	80.554	901.37	446.42
#1	.55915	.00733	-.00014	21.148	-.00046	.01041	-.00164
#2	.55474	.00621	-.00021	21.157	-.00130	-.00487	-.00202
#3	.61723	.00779	.00048	21.266	-.00027	-.00279	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133906 Acquired: 3/29/2017 14:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00550**	**.72185**	**.00044**	**.09116**	**-.00696**	**-.00053**
Stddev	.00200	.00544	.01190	.00099	.00136	.00004	.00040
%RSD	168.58	99.057	1.6481	223.55	1.4943	.54423	76.432
#1	.00075	-.00585	.70818	.00014	.08960	-.00693	-.00020
#2	-.00106	.00011	.72751	.00155	.09212	-.00700	-.00098
#3	-.00324	-.01076	.72987	-.00036	.09175	-.00695	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**.00146**	F **-.04395**
Stddev	.00036	.00003	.23515
%RSD	108.87	2.3867	535.03
#1	.00074	.00142	-.11419
#2	.00023	.00149	.21832
#3	.00003	.00148	-.23598
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13811.**	**90887.**	**3353.3**
Stddev	144.	475.	22.7
%RSD	1.0420	.52221	.67693
#1	13874.	90474.	3338.6
#2	13913.	90780.	3379.5
#3	13647.	91405.	3341.9

Approved: March 30, 2017

Sample Name: L1703133907 Acquired: 3/29/2017 14:13:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00075**	**-.00149**	**.00317**	**.00239**	**.03879**	**.00012**	**1.1202**
Stddev	.00155	.00723	.00334	.00177	.00158	.00005	.0989
%RSD	206.51	485.56	105.42	74.044	4.0691	40.069	8.8287
#1	-.00121	.00118	-.00049	.00365	.03988	.00017	1.0952
#2	.00098	-.00967	.00607	.00037	.03698	.00010	1.2291
#3	-.00202	.00403	.00394	.00314	.03952	.00008	1.0361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00003**	**-.00042**	**-.00023**	**2.0310**	**.09433**	**-.00386**
Stddev	.00014	.00052	.00036	.00055	.0096	.19294	.00733
%RSD	89.916	1905.1	83.925	239.15	.47326	204.54	190.05
#1	-.00026	.00052	-.00018	.00033	2.0414	.31704	-.00551
#2	.00000	-.00009	-.00083	-.00076	2.0290	-.01196	.00416
#3	-.00022	-.00051	-.00026	-.00025	2.0225	-.02209	-.01023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.79167**	**.02354**	**-.00011**	**3.8906**	**-.00010**	**.00591**	**.00069**
Stddev	.04516	.00231	.00016	.0274	.00077	.00224	.00380
%RSD	5.7044	9.8301	138.05	.70438	791.76	37.803	546.96
#1	.76128	.02193	.00006	3.8702	-.00066	.00335	.00252
#2	.77016	.02619	-.00024	3.8798	-.00041	.00693	-.00367
#3	.84356	.02250	-.00016	3.9217	.00078	.00746	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133907 Acquired: 3/29/2017 14:13:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00035**	**.76854**	**-.00058**	**.02488**	**.00342**	**.00190**
Stddev	.00500	.00326	.01160	.00040	.00027	.00718	.00121
%RSD	977.70	926.32	1.5096	69.708	1.0905	209.84	63.797
#1	-.00613	.00406	.76141	-.00034	.02458	.00735	.00060
#2	.00346	-.00097	.76230	-.00035	.02511	.00778	.00299
#3	.00113	-.00204	.78193	-.00104	.02494	-.00487	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00021**	**.00139**	F **-.19732**
Stddev	.00063	.00012	.34597
%RSD	296.53	8.5297	175.33
#1	.00012	.00142	-.31503
#2	-.00037	.00148	-.46908
#3	.00088	.00125	.19214
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13977.**	**93235.**	**3362.3**
Stddev	174.	1236.	24.3
%RSD	1.2451	1.3255	.72162
#1	13986.	93801.	3334.3
#2	14146.	94086.	3376.2
#3	13798.	91817.	3376.5

Approved: March 30, 2017

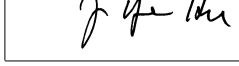
Sample Name: L1703133908 Acquired: 3/29/2017 14:17:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**.01562**	**.00027**	**.00208**	**.02164**	**.00012**	**1.0939**
Stddev	.00131	.00492	.00322	.00271	.00155	.00008	.0369
%RSD	90.752	31.499	1208.5	130.17	7.1571	68.763	3.3728
#1	.00007	.02117	.00018	-.00033	.02092	.00020	1.0517
#2	-.00226	.01178	-.00291	.00156	.02342	.00014	1.1200
#3	-.00214	.01392	.00353	.00501	.02058	.00003	1.1099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00032**	**.00090**	**-.00041**	**3.5933**	**.16920**	**-.00485**
Stddev	.00019	.00017	.00046	.00078	.0134	.05849	.00633
%RSD	59.238	52.200	50.754	190.25	.37401	34.566	130.62
#1	-.00029	.00021	.00114	-.00080	3.5928	.14729	.00054
#2	-.00015	.00052	.00119	-.00091	3.5801	.12483	-.00326
#3	-.00052	.00024	.00037	.00049	3.6070	.23547	-.01182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60471**	**.05387**	**-.00011**	**3.6647**	**.00147**	**.00549**	**-.00087**
Stddev	.12269	.00175	.00011	.0789	.00094	.00350	.00250
%RSD	20.288	3.2429	95.601	2.1519	64.000	63.845	286.48
#1	.61443	.05358	-.00012	3.5871	.00109	.00237	-.00020
#2	.47746	.05228	-.00000	3.7448	.00078	.00928	.00122
#3	.72225	.05574	-.00022	3.6622	.00253	.00481	-.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703133908 Acquired: 3/29/2017 14:17:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**-.00223**	**.75728**	**.00016**	**.02159**	**.00110**	**.00050**
Stddev	.00270	.00456	.00289	.00069	.00030	.00044	.00139
%RSD	145.86	204.97	.38136	423.30	1.3678	39.545	279.24
#1	.00418	-.00510	.75668	.00067	.02165	.00158	.00204
#2	.00248	-.00461	.76042	-.00062	.02185	.00074	.00009
#3	-.00111	.00304	.75473	.00044	.02127	.00098	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00087**	**.00278**	F **-.26601**
Stddev	.00033	.00011	.04791
%RSD	38.051	3.9747	18.010
#1	.00124	.00283	-.28730
#2	.00077	.00286	-.21115
#3	.00060	.00265	-.29958
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13656.**	**89521.**	**3228.0**
Stddev	112.	1664.	27.0
%RSD	.82373	1.8585	.83730
#1	13526.	87675.	3218.9
#2	13730.	89983.	3206.6
#3	13711.	90905.	3258.3

Approved: March 30, 2017

Sample Name: L1703133909 Acquired: 3/29/2017 14:21:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.01431**	**.00283**	**-.00091**	**.02373**	**.00013**	**1.1367**
Stddev	.00049	.00279	.00185	.00167	.00107	.00009	.0289
%RSD	133.75	19.473	65.387	182.55	4.5216	72.548	2.5388
#1	-.00092	.01389	.00077	-.00011	.02389	.00016	1.1355
#2	-.00001	.01176	.00435	-.00283	.02259	.00002	1.1662
#3	-.00016	.01729	.00338	.00020	.02472	.00020	1.1085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00013**	**.00137**	**-.00015**	**3.3972**	**.11461**	**-.00446**
Stddev	.00019	.00033	.00087	.00063	.0335	.13589	.00679
%RSD	438.08	249.14	63.676	422.33	.98559	118.56	152.41
#1	-.00004	-.00051	.00038	-.00087	3.4342	.25011	-.00648
#2	.00014	.00003	.00173	.00032	3.3689	-.02167	.00312
#3	-.00023	.00009	.00200	.00010	3.3885	.11540	-.01001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53899**	**.05186**	**-.00010**	**3.5428**	**.00193**	**.00756**	**-.00267**
Stddev	.05289	.00222	.00037	.0351	.00125	.00193	.00376
%RSD	9.8130	4.2733	369.76	.98979	64.769	25.483	140.91
#1	.52368	.05432	-.00030	3.5542	.00205	.00978	-.00542
#2	.49544	.05123	-.00032	3.5034	.00311	.00633	.00162
#3	.59784	.05002	.00032	3.5707	.00062	.00657	-.00421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133909 Acquired: 3/29/2017 14:21:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.00607**	**.72962**	**.00048**	**.02158**	**-.00443**	**.00077**
Stddev	.00131	.00036	.00448	.00056	.00055	.00864	.00174
%RSD	186.60	6.0015	.61343	116.77	2.5466	195.19	226.54
#1	-.00054	.00648	.73194	.00110	.02220	-.01251	-.00034
#2	.00058	.00591	.73246	.00029	.02138	.00468	-.00013
#3	.00207	.00581	.72446	.00004	.02115	-.00545	.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00270**	F **-.33701**
Stddev	.00050	.00010	.43772
%RSD	136.05	3.7238	129.88
#1	.00017	.00280	-.75274
#2	.00093	.00260	-.37811
#3	-.00001	.00270	.11981
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13725.**	**89023.**	**3089.1**
Stddev	179.	763.	76.2
%RSD	1.3009	.85670	2.4662
#1	13586.	89420.	3096.0
#2	13663.	88144.	3161.6
#3	13926.	89506.	3009.7

Approved: March 30, 2017

Sample Name: L1703133911 Acquired: 3/29/2017 14:25:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00466**	**.00102**	**.00050**	**.05940**	**.00007**	**1.3717**
Stddev	.00048	.00803	.00233	.00259	.00231	.00012	.0894
%RSD	479.90	172.50	228.36	513.66	3.8950	165.48	6.5184
#1	-.00040	-.00229	.00039	-.00043	.05786	.00003	1.3592
#2	.00054	.00281	-.00093	-.00149	.06206	-.00002	1.2892
#3	.00016	.01345	.00359	.00344	.05828	.00021	1.4667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00034**	**-.00047**	**.00015**	**.55075**	**.00265**	**-.00506**
Stddev	.00004	.00026	.00040	.00098	.01541	.06920	.00465
%RSD	17.538	74.837	84.840	667.18	2.7979	2611.4	91.739
#1	-.00023	.00013	-.00001	-.00026	.55823	.07659	-.00809
#2	-.00026	.00062	-.00071	.00126	.53303	-.00806	-.00739
#3	-.00019	.00028	-.00068	-.00056	.56099	-.06057	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.84432**	**.09813**	**.00022**	**5.2361**	**-.00020**	**.00489**	**.00019**
Stddev	.06045	.00420	.00023	.0517	.00064	.00497	.00256
%RSD	7.1591	4.2836	106.01	.98670	321.91	101.60	1317.4
#1	.91101	.09548	.00020	5.1851	.00041	-.00064	-.00054
#2	.79314	.09593	-.00000	5.2884	-.00015	.00897	-.00192
#3	.82880	.10298	.00045	5.2348	-.00086	.00635	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133911 Acquired: 3/29/2017 14:25:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00089**	**.00386**	**1.0397**	**.00079**	**.03213**	**-.00230**	**.00060**
Stddev	.00168	.00671	.0113	.00063	.00023	.01332	.00076
%RSD	188.27	174.05	1.0833	80.395	.72946	579.48	126.79
#1	.00222	.00627	1.0267	.00147	.03191	-.01630	.00146
#2	.00146	-.00373	1.0467	.00023	.03237	.01021	.00031
#3	-.00100	.00903	1.0457	.00065	.03210	-.00080	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00062**	**.00129**	F **-.24737**
Stddev	.00029	.00009	.07339
%RSD	47.548	6.5920	29.666
#1	.00029	.00136	-.21362
#2	.00071	.00120	-.19694
#3	.00086	.00132	-.33156
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13989.**	**93452.**	**3354.4**
Stddev	85.	2049.	41.4
%RSD	.60739	2.1926	1.2332
#1	13894.	94438.	3327.2
#2	14015.	94821.	3333.9
#3	14057.	91096.	3402.0

Approved: March 30, 2017

Sample Name: L1703133913 Acquired: 3/29/2017 14:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00173**	**.00953**	**.00142**	**.00046**	**.03757**	**.00014**	**1.7717**
Stddev	.00229	.00292	.00162	.00262	.00365	.00010	.0510
%RSD	132.87	30.661	113.66	569.86	9.7252	70.368	2.8802
#1	-.00018	.00882	-.00012	.00148	.03488	.00024	1.7811
#2	-.00436	.01274	.00311	-.00251	.04173	.00010	1.7167
#3	-.00064	.00703	.00128	.00241	.03609	.00006	1.8174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00072**	**-.00030**	**-.00071**	**2.2686**	**.22905**	**-.00519**
Stddev	.00026	.00005	.00058	.00094	.0338	.13791	.00546
%RSD	118.51	6.3618	192.55	133.60	1.4913	60.209	105.24
#1	-.00017	.00077	-.00093	-.00030	2.2350	.38770	.00061
#2	-.00050	.00070	.00022	-.00004	2.3027	.16158	-.01024
#3	.00002	.00069	-.00019	-.00179	2.2682	.13786	-.00593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99104**	**.04082**	**-.00012**	**8.6813**	**.00316**	**-.00256**	**.00212**
Stddev	.04752	.00104	.00033	.0670	.00050	.00514	.00101
%RSD	4.7947	2.5370	285.97	.77221	15.865	200.95	47.504
#1	.97764	.04170	-.00008	8.6201	.00357	.00077	.00127
#2	1.0438	.04107	.00020	8.6707	.00260	-.00847	.00186
#3	.95166	.03968	-.00047	8.7530	.00332	.00004	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133913 Acquired: 3/29/2017 14:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00201**	**.99036**	**.00012**	**.03845**	**.00172**	**-.00031**
Stddev	.00130	.00235	.02503	.00026	.00042	.00668	.00057
%RSD	270.90	117.13	2.5272	206.79	1.0928	388.77	184.17
#1	.00179	-.00071	.96569	.00039	.03797	.00034	-.00021
#2	.00045	.00334	.98966	-.00012	.03873	-.00417	-.00093
#3	-.00080	.00339	1.0157	.00010	.03866	.00899	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00021**	**.00244**	F **-.41220**
Stddev	.00113	.00020	.20038
%RSD	540.73	8.0580	48.614
#1	.00145	.00224	-.18118
#2	-.00007	.00263	-.51638
#3	-.00075	.00246	-.53903
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13914.**	**94110.**	**3290.3**
Stddev	72.	1278.	66.0
%RSD	.52056	1.3575	2.0048
#1	13860.	92637.	3290.6
#2	13885.	94779.	3224.1
#3	13996.	94915.	3356.0

Approved: March 30, 2017

Sample Name: L1703133915 Acquired: 3/29/2017 14:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**1.3768**	**.00234**	**.00072**	**.02356**	**.00020**	**.96773**
Stddev	.00111	.0227	.00194	.00132	.00077	.00002	.05419
%RSD	308.09	1.6453	82.854	183.47	3.2620	10.709	5.5995
#1	-.00029	1.3609	.00304	-.00057	.02313	.00021	.92308
#2	-.00027	1.3667	.00384	.00066	.02310	.00018	1.0280
#3	.00164	1.4027	.00015	.00207	.02444	.00022	.95209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00082**	**.00308**	**.00275**	**2.2473**	**.06470**	**-.00748**
Stddev	.00008	.00009	.00121	.00083	.0302	.23936	.00570
%RSD	117.57	10.429	39.460	30.297	1.3439	369.95	76.234
#1	-.00004	.00086	.00287	.00366	2.2230	.13657	-.00927
#2	-.00015	.00072	.00198	.00203	2.2378	-.20236	-.00110
#3	-.00000	.00088	.00438	.00255	2.2811	.25989	-.01207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42505**	**.06209**	**-.00008**	**3.8550**	**.00320**	**.02508**	**.00178**
Stddev	.02386	.00222	.00031	.0436	.00037	.00655	.00160
%RSD	5.6125	3.5788	405.94	1.1308	11.645	26.126	90.030
#1	.42834	.06251	-.00018	3.8395	.00337	.02616	.00001
#2	.39972	.05969	.00027	3.9042	.00277	.01806	.00313
#3	.44709	.06408	-.00032	3.8212	.00345	.03103	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703133915 Acquired: 3/29/2017 14:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00096**	**2.2156**	**.00052**	**.01463**	**.00493**	**-.00094**
Stddev	.00490	.00277	.0233	.00065	.00079	.00612	.00125
%RSD	1423.3	288.72	1.0530	125.06	5.4208	124.15	133.10
#1	-.00593	.00019	2.1888	-.00006	.01372	-.00203	-.00235
#2	.00163	-.00135	2.2274	.00040	.01516	.00948	.00006
#3	.00326	.00404	2.2308	.00121	.01501	.00734	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00263**	**.00866**	F **-.35385**
Stddev	.00137	.00009	.23338
%RSD	52.010	1.0940	65.954
#1	.00210	.00861	-.19531
#2	.00418	.00859	-.24439
#3	.00160	.00876	-.62184
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14004.**	**94297.**	**3294.2**
Stddev	266.	1094.	62.4
%RSD	1.9024	1.1596	1.8938
#1	14291.	95544.	3354.8
#2	13764.	93503.	3230.2
#3	13956.	93843.	3297.6

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 14:36:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38497**	**9.7919**	**.38724**	**.47675**	**.97619**	**.04886**	**9.5704**
Stddev	.00177	.0568	.00230	.00343	.00697	.00017	.1153
%RSD	.45911	.58011	.59399	.72031	.71397	.34048	1.2046
#1	.38442	9.8043	.38923	.47283	.96818	.04875	9.4830
#2	.38694	9.8414	.38776	.47819	.97953	.04905	9.7011
#3	.38353	9.7299	.38472	.47923	.98086	.04878	9.5273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05005**	**.20206**	**.48052**	**.50016**	**3.8256**	**49.327**	**.97507**
Stddev	.00024	.00094	.00249	.00331	.0265	.596	.00686
%RSD	.47443	.46456	.51817	.66256	.69373	1.2083	.70332
#1	.05030	.20311	.48032	.50385	3.8322	48.711	.96868
#2	.04983	.20177	.48311	.49922	3.7964	49.370	.98231
#3	.05002	.20130	.47814	.49742	3.8482	49.901	.97420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6541**	**.48612**	**.98581**	**48.567**	**.49024**	**9.6762**	**.48958**
Stddev	.0649	.00669	.00561	.510	.00352	.0339	.00098
%RSD	.67190	1.3767	.56913	1.0504	.71776	.35029	.19999
#1	9.6553	.47843	.99221	48.004	.49428	9.7146	.49064
#2	9.5887	.48924	.98172	48.701	.48784	9.6505	.48871
#3	9.7184	.49067	.98351	48.998	.48860	9.6635	.48941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 14:36:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1509**	**.38371**	**4.8710**	**.99650**	**.96721**	**.96829**	**.50155**
Stddev	.0036	.00614	.0191	.00628	.00875	.01828	.00314
%RSD	.31500	1.6005	.39238	.63017	.90484	1.8876	.62686
#1	1.1545	.39057	4.8775	1.0035	.95849	.94749	.50190
#2	1.1473	.38184	4.8859	.99447	.96715	.98182	.49825
#3	1.1509	.37872	4.8494	.99148	.97599	.97555	.50451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98807**	**.97392**	F **.25576**
Stddev	.00433	.00464	.16706
%RSD	.43782	.47645	65.318
#1	.98705	.97923	.15612
#2	.99282	.97190	.44863
#3	.98435	.97064	.16254
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13624.**	**89199.**	**3307.9**
Stddev	235.	869.	75.7
%RSD	1.7274	.97372	2.2874
#1	13356.	88723.	3220.5
#2	13796.	88673.	3350.9
#3	13720.	90202.	3352.2

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 14:40:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.01067**	**.00049**	**.00081**	**.00250**	**.00012**	**-.00555**
Stddev	.00118	.00199	.00168	.00345	.00167	.00003	.05214
%RSD	135.75	18.614	342.96	425.28	66.646	22.047	939.00
#1	.00005	.00852	.00081	.00412	.00429	.00012	-.04935
#2	-.00046	.01105	.00199	-.00277	.00221	.00009	-.01943
#3	-.00221	.01243	-.00133	.00108	.00100	.00014	.05213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00012**	**-.00057**	**-.00059**	**-.01271**	**.00402**	**-.00506**
Stddev	.00026	.00012	.00009	.00077	.01596	.18458	.00133
%RSD	86.312	97.133	15.905	131.59	125.62	4595.6	26.274
#1	-.00033	-.00001	-.00051	.00015	.00283	-.18910	-.00439
#2	-.00054	.00020	-.00067	-.00052	-.02906	.17868	-.00419
#3	-.00003	.00018	-.00052	-.00139	-.01189	.02247	-.00659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.09422**	**.00101**	**.00001**	**-.02265**	**-.00063**	**-.00668**	**.00010**
Stddev	.00355	.00150	.00036	.03347	.00071	.00594	.00094
%RSD	3.7695	148.23	3287.4	147.77	112.02	89.002	929.58
#1	-.09822	.00185	.00010	.01580	-.00092	-.00880	.00115
#2	-.09143	.00190	-.00038	-.03845	-.00116	-.01126	-.00017
#3	-.09303	-.00072	.00032	-.04530	.00017	.00004	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 14:40:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00218**	**.00272**	**.00467**	**.00020**	**.00011**	**-.00029**	**.00101**
Stddev	.00351	.00120	.00160	.00070	.00049	.00691	.00225
%RSD	161.41	44.114	34.295	351.59	440.13	2411.3	222.68
#1	.00182	.00290	.00650	-.00061	.00032	.00062	.00288
#2	-.00115	.00144	.00398	.00067	-.00045	-.00761	-.00149
#3	.00585	.00382	.00352	.00053	.00047	.00612	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00080**	**.00012**	F **-.05181**
Stddev	.00107	.00015	.51576
%RSD	134.58	122.06	995.45
#1	.00163	-.00001	-.58816
#2	-.00041	.00009	-.00783
#3	.00117	.00029	.44055
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14152.**	**92610.**	**3333.9**
Stddev	25.	771.	54.5
%RSD	.17734	.83285	1.6352
#1	14181.	93327.	3288.2
#2	14139.	92709.	3394.3
#3	14137.	91794.	3319.3

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 14:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00704**	**.16778**	**.01047**	**.07358**	**.00930**	**.00158**	**.38332**	**.00043**
Stddev	.00019	.00646	.00123	.00113	.00122	.00004	.02425	.00005
%RSD	2.7454	3.8500	11.713	1.5379	13.068	2.7508	6.3251	10.635
#1	.00702	.16269	.00906	.07244	.01032	.00156	.40336	.00042
#2	.00724	.17504	.01128	.07359	.00964	.00163	.39022	.00048
#3	.00685	.16560	.01107	.07471	.00796	.00156	.35637	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00406**	**.00289**	**.00378**	**.10495**	**.68245**	**.07436**	**.30254**	**.00884**
Stddev	.00014	.00032	.00026	.00462	.06482	.00441	.07975	.00037
%RSD	3.3623	10.999	7.0017	4.3994	9.4983	5.9267	26.359	4.2237
#1	.00401	.00298	.00383	.10771	.65945	.06928	.38616	.00917
#2	.00421	.00254	.00402	.10752	.63226	.07678	.22733	.00891
#3	.00395	.00316	.00350	.09962	.75563	.07704	.29413	.00843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00711**	**.38886**	**.01509**	**.74510**	**.00719**	**.07874**	**.01314**	**.75411**
Stddev	.00043	.00269	.00017	.00512	.00191	.00391	.00641	.00722
%RSD	6.0750	.69201	1.1356	.68728	26.533	4.9626	48.777	.95751
#1	.00740	.38668	.01528	.74514	.00537	.07637	.01490	.76128
#2	.00661	.38803	.01507	.75020	.00918	.07659	.00603	.75422
#3	.00730	.39187	.01494	.73996	.00702	.08325	.01848	.74684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 14:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39309**	**.03858**	**.01935**	**.15407**	**.00724**	**.01778**	**24.325**
Stddev	.00487	.00018	.00592	.00040	.00051	.00014	.382
%RSD	1.2397	.46440	30.602	.25898	7.0467	.76410	1.5722
#1	.39549	.03840	.01316	.15449	.00715	.01793	24.766
#2	.39630	.03859	.01993	.15370	.00779	.01773	24.095
#3	.38748	.03876	.02497	.15401	.00678	.01767	24.113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14092.**	**93026.**	**3433.2**
Stddev	87.	521.	58.6
%RSD	.62043	.56000	1.7061
#1	14073.	93462.	3367.4
#2	14015.	92449.	3452.6
#3	14187.	93168.	3479.6

Approved: March 30, 2017

Sample Name: PBW 1B Acquired: 3/29/2017 15:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.01829**	**-.00045**	**-.00117**	**.00070**	**-.00001**	**.01935**
Stddev	.00080	.00396	.00058	.00269	.00060	.00005	.09369
%RSD	276.77	21.653	128.73	229.08	85.414	474.94	484.24
#1	-.00105	.02180	-.00088	-.00082	.00052	.00002	.09794
#2	.00055	.01400	.00021	-.00402	.00022	.00002	-.08433
#3	-.00037	.01907	-.00069	.00132	.00137	-.00007	.04444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00029**	**-.00060**	**-.00121**	F **-.03102**	**-.20362**	**-.00620**
Stddev	.00014	.00032	.00086	.00123	.00595	.10467	.00242
%RSD	102.13	109.33	144.34	101.87	19.174	51.404	38.967
#1	-.00015	.00011	.00030	.00021	-.03411	-.27743	-.00604
#2	-.00027	.00066	-.00068	-.00181	-.03478	-.08383	-.00387
#3	.00001	.00011	-.00141	-.00202	-.02416	-.24960	-.00869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					810.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00585**	**-.00096**	**.00006**	**.04869**	**.00085**	**-.00028**	**-.00056**
Stddev	.10505	.00180	.00011	.06213	.00005	.00073	.00337
%RSD	1795.9	187.41	188.83	127.59	5.4786	258.51	602.73
#1	-.11544	-.00165	.00018	.11021	.00087	.00047	-.00438
#2	.06459	.00108	.00003	-.01403	.00080	-.00100	.00203
#3	.06839	-.00231	-.00004	.04990	.00089	-.00032	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: PBW 1B Acquired: 3/29/2017 15:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.00180**	**.01701**	**.00020**	**.00029**	**-.00835**	**-.00195**
Stddev	.00096	.00120	.00230	.00019	.00032	.00749	.00009
%RSD	136.79	66.690	13.498	96.116	108.14	89.738	4.5628
#1	.00040	.00087	.01500	-.00002	.00064	-.01177	-.00204
#2	-.00134	.00316	.01951	.00026	.00021	-.01353	-.00187
#3	-.00117	.00138	.01651	.00035	.00002	.00024	-.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.00128**	**.31680**
Stddev	.00068	.00015	.18140
%RSD	119.72	11.638	57.259
#1	-.00013	.00144	.50797
#2	-.00136	.00126	.14708
#3	-.00022	.00114	.29536
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14113.**	**94360.**	**3401.1**
Stddev	26.	279.	76.0
%RSD	.18297	.29617	2.2340
#1	14118.	94106.	3409.8
#2	14085.	94315.	3472.4
#3	14136.	94660.	3321.2

Approved: March 30, 2017



Sample Name: LCSW 1B Acquired: 3/29/2017 15:19:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19348**	**4.9232**	**.19314**	**.93304**	**.50487**	**.02400**	**4.9137**
Stddev	.00042	.0267	.00308	.00420	.00265	.00018	.0573
%RSD	.21837	.54318	1.5931	.45030	.52407	.75106	1.1659
#1	.19304	4.9490	.19668	.93462	.50377	.02416	4.8872
#2	.19349	4.9252	.19113	.93622	.50789	.02404	4.9794
#3	.19389	4.8956	.19160	.92827	.50296	.02381	4.8744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02446**	**.10072**	**.24400**	**.25010**	**1.9953**	**25.072**	**.51038**
Stddev	.00034	.00022	.00180	.00159	.0092	.221	.00211
%RSD	1.3841	.21462	.73650	.63379	.46051	.87963	.41401
#1	.02409	.10068	.24592	.24938	1.9998	24.848	.50866
#2	.02456	.10052	.24372	.24900	2.0013	25.289	.51274
#3	.02474	.10095	.24236	.25191	1.9847	25.078	.50974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.9754**	**.25128**	**.48882**	**25.385**	**.25104**	**4.8033**	**.25050**
Stddev	.0819	.00567	.00139	.092	.00146	.0195	.00291
%RSD	1.6456	2.2584	.28405	.36293	.58234	.40628	1.1618
#1	4.8884	.24953	.48798	25.336	.25166	4.7970	.25384
#2	4.9870	.25762	.48805	25.491	.24937	4.7877	.24849
#3	5.0509	.24668	.49042	25.327	.25208	4.8252	.24918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: LCSW 1B Acquired: 3/29/2017 15:19:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58825**	**.18870**	**2.5140**	**.50305**	**.50683**	**.49904**	**.25222**
Stddev	.00574	.00169	.0037	.00159	.00205	.00516	.00170
%RSD	.97587	.89822	.14811	.31667	.40449	1.0346	.67568
#1	.59083	.18839	2.5104	.50186	.50488	.50473	.25086
#2	.59225	.19053	2.5139	.50243	.50897	.49774	.25166
#3	.58167	.18718	2.5178	.50486	.50664	.49465	.25413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49341**	**.49302**	F **-.19748**
Stddev	.00210	.00053	.20638
%RSD	.42585	.10834	104.51
#1	.49528	.49288	-.43465
#2	.49380	.49257	-.09891
#3	.49114	.49361	-.05886
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14073.**	**92859.**	**3450.5**
Stddev	22.	1335.	65.5
%RSD	.15868	1.4373	1.8976
#1	14053.	91530.	3389.8
#2	14097.	92849.	3442.0
#3	14069.	94199.	3519.9

Approved: March 30, 2017

Sample Name: L1703123701 Acquired: 3/29/2017 15:22:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00090**	**.26551**	**.00089**	**.01694**	**.05085**	**.00004**	**41.221**
Stddev	.00127	.00597	.00255	.00174	.00094	.00005	.284
%RSD	141.77	2.2495	287.09	10.270	1.8548	120.79	.69002
#1	-.00157	.25862	.00368	.01773	.05163	.00010	40.963
#2	-.00170	.26925	-.00130	.01815	.05111	.00001	41.526
#3	.00057	.26865	.00028	.01495	.04980	.00002	41.174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00027**	**.00034**	**.00080**	**.67359**	**.38388**	**-.00505**
Stddev	.00042	.00018	.00087	.00045	.01571	.12392	.00524
%RSD	446.30	66.868	253.73	56.080	2.3328	32.281	103.79
#1	.00021	.00046	.00133	.00132	.66541	.52056	-.00954
#2	-.00057	.00025	-.00002	.00058	.66365	.27885	-.00633
#3	.00008	.00010	-.00028	.00051	.69170	.35224	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6071**	**.26624**	**.00026**	**6.3974**	**.00034**	**.02398**	**.00148**
Stddev	.0681	.00283	.00024	.0058	.00059	.00348	.00212
%RSD	1.4783	1.0615	92.603	.09060	172.74	14.506	142.98
#1	4.5580	.26352	.00033	6.3923	.00100	.02027	.00268
#2	4.6849	.26916	.00045	6.3961	.00013	.02448	.00273
#3	4.5785	.26605	-.00001	6.4037	-.00011	.02718	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703123701 Acquired: 3/29/2017 15:22:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00170**	**2.1983**	**-.00032**	**.10934**	**.00500**	**.00006**
Stddev	.00557	.00123	.0117	.00036	.00066	.00475	.00242
%RSD	23107.	72.146	.53225	112.23	.59950	94.890	4347.0
#1	.00621	.00084	2.2075	-.00073	.10859	.00170	.00014
#2	-.00450	.00115	2.2023	-.00020	.10961	.00286	.00243
#3	-.00178	.00311	2.1852	-.00004	.10982	.01044	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00272**	F **-.06305**
Stddev	.00030	.00006	.09364
%RSD	129.18	2.1091	148.51
#1	.00043	.00267	-.15673
#2	.00037	.00270	.03055
#3	-.00011	.00278	-.06299
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14092.**	**93780.**	**3453.9**
Stddev	123.	678.	66.0
%RSD	.87550	.72332	1.9113
#1	14111.	93611.	3514.7
#2	14205.	94526.	3383.7
#3	13961.	93202.	3463.3

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 15:26:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.18680**	**.00297**	**.02847**	**.06077**	**.00044**	**20.592**
Stddev	.00132	.00767	.00269	.00237	.00213	.00006	.170
%RSD	353.09	4.1065	90.695	8.3178	3.5090	14.229	.82548
#1	.00106	.18858	.00223	.02763	.06227	.00046	20.711
#2	-.00154	.17840	.00595	.03114	.06172	.00050	20.667
#3	-.00065	.19343	.00072	.02664	.05833	.00037	20.397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.02392**	**-.00009**	**.00247**	**.26299**	**4.7276**	**-.00870**
Stddev	.00004	.00008	.00051	.00028	.02538	.2453	.00445
%RSD	14.170	.34020	542.70	11.302	9.6518	5.1887	51.086
#1	.00031	.02389	.00030	.00278	.28350	4.5320	-.00434
#2	.00026	.02402	.00008	.00223	.27087	5.0029	-.01323
#3	.00023	.02386	-.00066	.00241	.23460	4.6481	-.00855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8750**	**.24538**	**-.00015**	**57.498**	**.01759**	**-.00361**	**.00127**
Stddev	.0900	.00226	.00018	.479	.00069	.00393	.00178
%RSD	.91087	.92091	116.72	.83264	3.8949	108.67	140.03
#1	9.9285	.24280	-.00029	57.689	.01732	-.00784	-.00061
#2	9.9254	.24702	.00005	57.851	.01707	-.00292	.00292
#3	9.7712	.24632	-.00022	56.953	.01837	-.00008	.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 15:26:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00135**	**3.5774**	**.00036**	**.13055**	**.00001**	**.00028**
Stddev	.00439	.00562	.0151	.00035	.00135	.00340	.00169
%RSD	797.69	417.20	.42093	97.629	1.0355	42955.	595.10
#1	.00192	.00146	3.5944	.00033	.13121	-.00095	.00116
#2	.00410	.00232	3.5718	.00073	.13145	.00378	.00136
#3	-.00436	-.00782	3.5659	.00002	.12900	-.00281	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00093**	**.03691**	F **-.07003**
Stddev	.00068	.00016	.22820
%RSD	73.035	.42476	325.87
#1	.00018	.03699	.12355
#2	.00113	.03702	-.01199
#3	.00150	.03673	-.32164
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14024.**	**91097.**	**3432.5**
Stddev	21.	1342.	82.5
%RSD	.14649	1.4735	2.4025
#1	14047.	89607.	3472.9
#2	14019.	92213.	3337.6
#3	14007.	91471.	3487.0

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 15:30:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.04754**	**.00200**	**.05341**	**.16851**	**.00013**	**21.968**
Stddev	.00096	.00562	.00292	.00080	.00155	.00004	.144
%RSD	1721.1	11.824	146.20	1.4961	.91946	34.397	.65584
#1	-.00102	.05395	-.00076	.05419	.16954	.00010	21.910
#2	.00090	.04345	.00169	.05344	.16672	.00010	21.863
#3	-.00004	.04521	.00506	.05260	.16926	.00018	22.132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.03234**	**.00003**	**.00158**	**23.023**	**5.5036**	**.00001**
Stddev	.00031	.00022	.00016	.00043	.029	.1209	.00571
%RSD	193.00	.68809	609.83	27.349	.12529	2.1962	45278.
#1	-.00003	.03260	.00005	.00142	23.003	5.6413	-.00653
#2	.00006	.03222	-.00014	.00125	23.009	5.4547	.00259
#3	-.00052	.03220	.00017	.00207	23.056	5.4149	.00398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.808**	**1.1335**	**.00035**	**86.834**	**.00479**	**.00422**	**.00076**
Stddev	.029	.0027	.00026	.271	.00107	.00357	.00196
%RSD	.22896	.23535	75.506	.31177	22.320	84.629	259.41
#1	12.811	1.1307	.00050	87.131	.00602	.00265	-.00141
#2	12.777	1.1337	.00004	86.771	.00421	.00832	.00125
#3	12.835	1.1361	.00049	86.600	.00414	.00171	.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 15:30:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00054**	**2.8486**	**.00084**	**.15321**	**.00473**	**-.00088**
Stddev	.00320	.00220	.0182	.00057	.00058	.00502	.00324
%RSD	222.08	407.63	.63945	67.727	.37664	106.08	367.99
#1	-.00221	-.00125	2.8585	.00111	.15381	-.00095	.00028
#2	.00378	.00193	2.8596	.00019	.15318	.00857	-.00454
#3	.00276	-.00229	2.8275	.00124	.15265	.00657	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00728**	F **-.77585**
Stddev	.00012	.00007	.16991
%RSD	57.089	.94445	21.900
#1	-.00031	.00733	-.92451
#2	-.00008	.00731	-.59064
#3	-.00022	.00720	-.81240
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13847.**	**91046.**	**3406.3**
Stddev	105.	871.	50.5
%RSD	.75780	.95632	1.4815
#1	13738.	90167.	3354.4
#2	13857.	91909.	3455.2
#3	13948.	91062.	3409.2

Approved: March 30, 2017

Sample Name: L1703126803S Acquired: 3/29/2017 15:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19214**	**5.0893**	**.19375**	**.97190**	**.55742**	**.02466**	**24.732**	**.02487**
Stddev	.00059	.0301	.00167	.00565	.00768	.00023	.298	.00011
%RSD	.30861	.59219	.86219	.58141	1.3782	.92499	1.2059	.44379
#1	.19268	5.1082	.19466	.96687	.55025	.02476	24.476	.02499
#2	.19150	5.1052	.19182	.97802	.56553	.02482	25.059	.02479
#3	.19224	5.0546	.19476	.97082	.55647	.02440	24.661	.02482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12124**	**.24411**	**.24741**	**2.3989**	**29.523**	**.49413**	**14.492**	**.48701**
Stddev	.00078	.00029	.00223	.0607	.396	.00833	.215	.00661
%RSD	.64707	.11719	.90246	2.5311	1.3408	1.6857	1.4867	1.3563
#1	.12194	.24404	.24970	2.3395	29.301	.48636	14.259	.48257
#2	.12039	.24443	.24524	2.4609	29.980	.50293	14.684	.49460
#3	.12138	.24387	.24727	2.3963	29.288	.49311	14.534	.48385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48665**	**80.611**	**.26251**	**4.8642**	**.24668**	**.58883**	**.19173**	**6.2079**
Stddev	.00151	1.000	.00075	.0132	.00303	.00092	.00174	.0109
%RSD	.31067	1.2399	.28444	.27093	1.2263	.15660	.90592	.17630
#1	.48837	79.638	.26274	4.8792	.25018	.58958	.18979	6.2203
#2	.48556	81.635	.26312	4.8544	.24486	.58911	.19314	6.2038
#3	.48601	80.561	.26168	4.8589	.24502	.58780	.19227	6.1997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703126803S Acquired: 3/29/2017 15:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49903**	**.62747**	**.50468**	**.24815**	**.49702**	**.52192**	**.42579**
Stddev	.00117	.00743	.00173	.00176	.00257	.00125	.30142
%RSD	.23416	1.1844	.34239	.70870	.51782	.23908	70.790
#1	.50037	.62185	.50319	.24916	.49804	.52336	.09222
#2	.49853	.63589	.50427	.24918	.49893	.52112	.67859
#3	.49820	.62465	.50657	.24612	.49409	.52129	.50655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14008.**	**91645.**	**3468.6**
Stddev	65.	827.	81.6
%RSD	.46206	.90231	2.3513
#1	13945.	90700.	3495.0
#2	14075.	92004.	3377.1
#3	14003.	92233.	3533.7

Approved: March 30, 2017

Sample Name: L1703126804SD Acquired: 3/29/2017 15:37:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18964**	**5.0050**	**.19160**	**.96698**	**.54747**	**.02439**	**25.323**	**.02434**
Stddev	.00080	.0475	.00422	.00341	.00172	.00020	.049	.00014
%RSD	.42354	.94935	2.2037	.35298	.31381	.80019	.19282	.57873
#1	.19035	5.0557	.19639	.96884	.54605	.02461	25.267	.02431
#2	.18979	4.9615	.18842	.96304	.54938	.02423	25.348	.02449
#3	.18877	4.9979	.18998	.96905	.54698	.02434	25.355	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12125**	**.24076**	**.24500**	**2.2760**	**28.976**	**.48867**	**14.651**	**.48689**
Stddev	.00053	.00147	.00040	.0359	.078	.00477	.213	.00244
%RSD	.43684	.61174	.16230	1.5763	.26750	.97647	1.4569	.50213
#1	.12074	.24233	.24467	2.2464	29.035	.49417	14.865	.48866
#2	.12121	.23940	.24544	2.2657	28.888	.48594	14.650	.48790
#3	.12180	.24054	.24489	2.3159	29.005	.48589	14.438	.48410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48141**	**81.142**	**.25918**	**4.8178**	**.24105**	**.57979**	**.18455**	**6.2488**
Stddev	.00045	.148	.00036	.0041	.00231	.00737	.00400	.0142
%RSD	.09436	.18268	.13846	.08453	.96016	1.2713	2.1658	.22779
#1	.48118	81.249	.25923	4.8218	.24282	.58074	.18102	6.2412
#2	.48112	80.973	.25880	4.8179	.24191	.57199	.18374	6.2400
#3	.48193	81.204	.25952	4.8136	.23843	.58664	.18889	6.2652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703126804SD Acquired: 3/29/2017 15:37:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49337**	**.62234**	**.49412**	**.24162**	**.48921**	**.51731**	**.32648**
Stddev	.00201	.00048	.00474	.00218	.00364	.00123	.33856
%RSD	.40729	.07708	.95902	.90036	.74401	.23780	103.70
#1	.49172	.62285	.49566	.23913	.49339	.51632	.25575
#2	.49278	.62190	.49789	.24319	.48671	.51693	.69481
#3	.49561	.62227	.48880	.24252	.48754	.51869	.02887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13879.**	**91528.**	**3497.2**
Stddev	88.	465.	22.0
%RSD	.63175	.50785	.62995
#1	13981.	90991.	3482.6
#2	13828.	91776.	3486.4
#3	13829.	91816.	3522.5

Approved: March 30, 2017

Sample Name: L1703126805 Acquired: 3/29/2017 15:41:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.01974**	**.00227**	**.04021**	**.01514**	**.00003**	**1.0209**
Stddev	.00110	.00516	.00292	.00164	.00233	.00005	.0348
%RSD	238.33	26.130	128.25	4.0828	15.405	173.78	3.4133
#1	.00167	.02421	.00075	.03832	.01552	.00005	.98607
#2	.00022	.02092	.00564	.04100	.01265	.00006	1.0208
#3	-.00050	.01409	.00043	.04130	.01727	-.00003	1.0558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00155**	**.00028**	**.00033**	**.21176**	**2.0308**	**.00087**
Stddev	.00019	.00026	.00035	.00094	.02431	.1566	.00379
%RSD	655.71	16.890	127.60	284.42	11.479	7.7120	438.23
#1	-.00025	.00177	.00053	.00067	.18929	2.0642	.00301
#2	.00009	.00126	.00043	.00106	.20843	2.1680	-.00351
#3	.00007	.00163	-.00013	-.00073	.23756	1.8602	.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56870**	**.02153**	**-.00004**	**43.491**	**.00006**	**-.00135**	**-.00034**
Stddev	.05402	.00268	.00030	.277	.00061	.00683	.00015
%RSD	9.4982	12.436	700.68	.63704	1035.5	506.63	43.918
#1	.59232	.02330	-.00035	43.194	-.00038	-.00833	-.00043
#2	.60689	.02284	-.00004	43.742	-.00019	-.00104	-.00041
#3	.50690	.01845	.00026	43.537	.00075	.00532	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126805 Acquired: 3/29/2017 15:41:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**-.00162**	**4.3497**	**.00124**	**.00738**	**-.00766**	**-.00084**
Stddev	.00291	.00426	.0174	.00029	.00022	.00792	.00050
%RSD	765.46	262.48	.40030	23.250	2.9221	103.51	59.956
#1	.00080	-.00374	4.3373	.00151	.00758	-.00022	-.00141
#2	.00175	-.00442	4.3422	.00127	.00715	-.01600	-.00062
#3	-.00370	.00328	4.3696	.00094	.00740	-.00675	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.00230**	F **-.23689**
Stddev	.00041	.00013	.04368
%RSD	107.31	5.5772	18.440
#1	.00060	.00244	-.23700
#2	-.00009	.00228	-.19315
#3	.00062	.00219	-.28052
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14075.**	**93497.**	**3392.4**
Stddev	82.	1514.	91.2
%RSD	.58242	1.6195	2.6885
#1	14038.	92153.	3497.5
#2	14169.	95138.	3333.6
#3	14019.	93202.	3346.2

Approved: March 30, 2017

Sample Name: L1703126805PS Acquired: 3/29/2017 15:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607776-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18833**	**4.7756**	**.19310**	**.95929**	**.50132**	**.02377**	**5.6863**
Stddev	.00258	.0072	.00191	.00772	.00176	.00010	.0217
%RSD	1.3718	.14984	.99006	.80527	.35090	.41959	.38137
#1	.19026	4.7685	.19530	.95123	.50072	.02366	5.6703
#2	.18935	4.7756	.19207	.96000	.50330	.02384	5.7110
#3	.18540	4.7828	.19192	.96663	.49995	.02382	5.6777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02401**	**.09998**	**.24035**	**.24506**	**2.1123**	**26.124**	**.48620**
Stddev	.00026	.00020	.00138	.00059	.0317	.158	.00256
%RSD	1.0890	.19512	.57246	.24236	1.5023	.60606	.52632
#1	.02397	.09988	.24150	.24508	2.0763	25.994	.48503
#2	.02377	.09986	.24072	.24564	2.1241	26.078	.48444
#3	.02429	.10021	.23882	.24446	2.1363	26.301	.48914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.3523**	**.26054**	**.47985**	**62.556**	**.24564**	**4.7615**	**.24658**
Stddev	.0902	.00375	.00088	.126	.00149	.0249	.00154
%RSD	1.6852	1.4379	.18326	.20078	.60548	.52350	.62272
#1	5.2481	.25639	.47920	62.414	.24501	4.7517	.24735
#2	5.4039	.26368	.47949	62.598	.24458	4.7429	.24482
#3	5.4048	.26154	.48085	62.655	.24734	4.7898	.24759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126805PS Acquired: 3/29/2017 15:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607776-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58398**	**.19106**	**6.3982**	**.49348**	**.49450**	**.48484**	**.24717**
Stddev	.00328	.00309	.0191	.00097	.00045	.00776	.00169
%RSD	.56114	1.6158	.29878	.19757	.09096	1.6003	.68199
#1	.58022	.19009	6.3906	.49459	.49414	.48323	.24551
#2	.58617	.18857	6.3841	.49303	.49435	.49328	.24888
#3	.58557	.19451	6.4200	.49280	.49500	.47801	.24712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48335**	**.49180**	F **-.16442**
Stddev	.00082	.00143	.17875
%RSD	.16953	.29064	108.72
#1	.48257	.49039	.04074
#2	.48421	.49176	-.24737
#3	.48327	.49324	-.28662
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14059.**	**93702.**	**3518.8**
Stddev	78.	1129.	37.3
%RSD	.55626	1.2051	1.0612
#1	14075.	92646.	3476.3
#2	13974.	93568.	3533.7
#3	14128.	94893.	3546.4

Approved: March 30, 2017

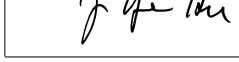
Sample Name: L1703126805SDL Acquired: 3/29/2017 15:48:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607776-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00118**	**.00939**	**.00074**	**.01074**	**.00435**	**.00008**	**.23397**
Stddev	.00217	.00083	.00076	.00359	.00138	.00001	.03989
%RSD	183.24	8.7999	101.62	33.461	31.617	15.707	17.050
#1	-.00266	.00955	.00158	.00867	.00440	.00009	.23263
#2	.00131	.00850	.00056	.01489	.00570	.00007	.19476
#3	-.00220	.01013	.00010	.00866	.00295	.00007	.27451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00031**	**-.00013**	**-.00058**	**.03688**	**.33541**	**-.01718**
Stddev	.00033	.00010	.00028	.00065	.01633	.06675	.00474
%RSD	714.83	31.064	218.30	111.90	44.282	19.901	27.566
#1	.00016	.00030	-.00014	-.00125	.01908	.38667	-.02139
#2	.00013	.00023	.00016	.00005	.05118	.35964	-.01205
#3	-.00043	.00042	-.00040	-.00054	.04038	.25993	-.01812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11311**	**.00435**	**.00002**	**8.8174**	**.00026**	**-.00188**	**-.00091**
Stddev	.12943	.00178	.00030	.0981	.00130	.00632	.00092
%RSD	114.43	40.994	1697.9	1.1121	491.73	336.62	101.97
#1	.04368	.00551	-.00013	8.8399	-.00101	.00022	.00015
#2	.03320	.00523	-.00019	8.7101	.00159	.00313	-.00154
#3	.26243	.00230	.00037	8.9023	.00021	-.00898	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703126805SDL Acquired: 3/29/2017 15:48:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607776-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.00158**	**.87619**	**.00055**	**.00095**	**-.00169**	**.00017**
Stddev	.00357	.00213	.00345	.00105	.00025	.00288	.00145
%RSD	293.51	134.72	.39407	191.95	26.581	170.85	826.81
#1	.00282	-.00078	.87984	.00060	.00067	-.00300	.00182
#2	-.00393	.00216	.87298	.00157	.00117	.00162	-.00089
#3	-.00254	.00336	.87576	-.00053	.00100	-.00368	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00005**	**.00089**	F **-.05890**
Stddev	.00063	.00018	.25932
%RSD	1234.1	20.634	440.27
#1	-.00054	.00084	-.28466
#2	.00071	.00110	-.11638
#3	-.00001	.00074	.22434
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13786.**	**90685.**	**3237.2**
Stddev	194.	1799.	73.1
%RSD	1.4077	1.9839	2.2584
#1	13733.	92315.	3229.7
#2	14001.	88754.	3313.8
#3	13623.	90985.	3168.2

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 15:52:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39011**	**9.9234**	**.40114**	**.49035**	**.98477**	**.04925**	**9.9303**
Stddev	.00202	.0369	.00195	.00100	.00452	.00009	.0430
%RSD	.51833	.37230	.48597	.20491	.45880	.18328	.43348
#1	.39049	9.9643	.40303	.49142	.97975	.04928	9.9165
#2	.39192	9.9136	.39913	.49020	.98606	.04933	9.9785
#3	.38793	9.8924	.40126	.48943	.98850	.04915	9.8957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05022**	**.20082**	**.49334**	**.50382**	**3.9639**	**49.128**	**.99258**
Stddev	.00033	.00063	.00142	.00185	.0456	.212	.00945
%RSD	.66181	.31491	.28845	.36638	1.1504	.43241	.95207
#1	.04984	.20068	.49439	.50358	3.9130	48.980	.99882
#2	.05036	.20027	.49390	.50210	4.0009	49.372	.99723
#3	.05046	.20152	.49172	.50577	3.9778	49.033	.98171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8874**	**.49449**	**.98255**	**49.537**	**.50171**	**9.9384**	**.50045**
Stddev	.0821	.00632	.00319	.161	.00152	.0283	.00180
%RSD	.83007	1.2776	.32512	.32460	.30388	.28429	.36045
#1	9.8257	.48721	.98184	49.387	.50273	9.9411	.49917
#2	9.8560	.49855	.97977	49.707	.49996	9.9088	.49966
#3	9.9805	.49770	.98604	49.517	.50246	9.9652	.50251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 15:52:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1915**	**.40419**	**4.9819**	**.99798**	**.98173**	**.97499**	**.50639**
Stddev	.0019	.00134	.0073	.00213	.00658	.00821	.00216
%RSD	.15645	.33243	.14726	.21339	.67071	.84227	.42716
#1	1.1923	.40264	4.9770	.99852	.97507	.96651	.50633
#2	1.1928	.40497	4.9783	.99563	.98189	.98291	.50426
#3	1.1894	.40497	4.9903	.99978	.98824	.97555	.50858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97755**	**.99907**	F **.16024**
Stddev	.00190	.00277	.15604
%RSD	.19468	.27756	97.378
#1	.97975	.99896	.32388
#2	.97647	.99635	.01312
#3	.97644	1.0019	.14372
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13587.**	**88276.**	**3270.5**
Stddev	27.	666.	130.8
%RSD	.19613	.75484	3.9996
#1	13570.	87984.	3259.1
#2	13574.	89039.	3145.7
#3	13618.	87806.	3406.6

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 15:55:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00900**	**.00061**	**.00217**	**.00113**	**.00003**	**.02865**
Stddev	.00213	.00255	.00123	.00216	.00171	.00003	.02814
%RSD	274.24	28.347	201.27	99.572	150.70	86.720	98.216
#1	.00074	.00663	.00107	.00069	-.00051	.00001	.04651
#2	-.00321	.00866	.00155	.00464	.00101	.00006	-.00379
#3	.00014	.01170	-.00078	.00117	.00289	.00002	.04323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00006**	**.00015**	**-.00025**	**-.02341**	**-.08959**	**-.00730**
Stddev	.00031	.00047	.00100	.00099	.00675	.02638	.00664
%RSD	202.23	819.36	687.61	391.35	28.853	29.443	90.961
#1	-.00009	-.00036	-.00085	.00006	-.03064	-.05947	-.00977
#2	-.00049	.00056	.00014	-.00136	-.02232	-.10077	.00022
#3	.00012	-.00003	.00115	.00054	-.01726	-.10855	-.01234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06516**	**-.00013**	**.00025**	**.03715**	**-.00019**	**.00139**	**.00119**
Stddev	.05455	.00282	.00010	.05759	.00025	.00421	.00128
%RSD	83.718	2102.7	41.261	155.02	131.38	302.43	107.38
#1	-.00463	.00311	.00023	.08341	-.00047	-.00144	.00010
#2	-.11052	-.00192	.00035	-.02735	-.00009	-.00061	.00261
#3	-.08033	-.00159	.00015	.05538	-.00000	.00623	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 15:55:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**-.00098**	**.00775**	**-.00003**	**-.00009**	**-.00343**	**-.00190**
Stddev	.00323	.00336	.00079	.00071	.00032	.00647	.00162
%RSD	263.10	341.89	10.174	2067.2	351.21	188.95	85.169
#1	-.00014	-.00162	.00724	.00022	.00004	-.00623	-.00105
#2	.00132	-.00399	.00734	-.00084	.00014	-.00802	-.00088
#3	-.00486	.00265	.00865	.00052	-.00045	.00398	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.00022**	F **-.09809**
Stddev	.00063	.00020	.16346
%RSD	165.59	89.950	166.65
#1	-.00027	.00007	.02495
#2	.00098	.00045	-.28357
#3	.00042	.00015	-.03565
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13708.**	**90859.**	**3369.8**
Stddev	41.	1741.	99.3
%RSD	.30066	1.9158	2.9454
#1	13661.	92349.	3294.2
#2	13734.	91282.	3333.0
#3	13730.	88946.	3482.2

Approved: March 30, 2017

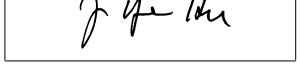
Sample Name: L1703126807 Acquired: 3/29/2017 15:59:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00481**	**.00049**	**.00274**	**.00043**	**.00002**	**.01373**
Stddev	.00185	.00308	.00101	.00067	.00092	.00003	.06756
%RSD	11418.	64.062	205.13	24.336	212.57	177.87	492.05
#1	-.00024	.00608	.00166	.00283	-.00057	.00003	.06222
#2	.00198	.00705	-.00011	.00204	.00063	.00003	.04240
#3	-.00169	.00130	-.00007	.00337	.00124	-.00002	-.06343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00004**	**.00048**	**.00091**	**.00138**	**-.19949**	**-.00473**
Stddev	.00012	.00025	.00081	.00060	.01810	.08640	.00211
%RSD	144.33	636.95	167.48	65.754	1315.3	43.308	44.540
#1	.00022	-.00033	.00104	.00036	-.00475	-.11228	-.00501
#2	.00002	.00012	-.00044	.00083	-.01286	-.28505	-.00250
#3	.00001	.00009	.00085	.00155	.02174	-.20116	-.00668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06293**	**.00021**	**-.00000**	**.13976**	**.00083**	**-.00463**	**-.00126**
Stddev	.07298	.00157	.00019	.02708	.00041	.00806	.00232
%RSD	115.96	752.40	7507.6	19.375	49.477	174.19	183.84
#1	-.01902	.00186	-.00021	.15394	.00067	-.01271	.00040
#2	-.14718	-.00128	.00006	.15681	.00129	.00341	-.00390
#3	-.02260	.00004	.00015	.10854	.00052	-.00458	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703126807 Acquired: 3/29/2017 15:59:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**-.00089**	**.01903**	**.00069**	**-.00005**	**-.00692**	**-.00088**
Stddev	.00192	.00294	.00285	.00040	.00039	.00494	.00142
%RSD	105.22	329.10	15.002	57.870	804.16	71.360	161.50
#1	.00188	.00045	.01804	.00090	.00025	-.01103	-.00189
#2	-.00012	.00113	.02225	.00023	-.00049	-.00828	-.00150
#3	.00373	-.00426	.01680	.00094	.00010	-.00144	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00030**	**.00150**	F **-.05891**
Stddev	.00057	.00007	.15758
%RSD	191.62	4.5489	267.48
#1	-.00083	.00144	-.19445
#2	.00030	.00157	-.09627
#3	-.00036	.00149	.11399
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14321.**	**94470.**	**3417.5**
Stddev	82.	312.	42.6
%RSD	.57418	.33058	1.2469
#1	14245.	94772.	3453.5
#2	14310.	94491.	3428.5
#3	14409.	94148.	3370.4

Approved: March 30, 2017

Sample Name: L1703131701 Acquired: 3/29/2017 16:03:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.23682**	**.00354**	**.01052**	**.05261**	**-.00003**	**17.312**
Stddev	.00089	.00422	.00075	.00112	.00208	.00004	.147
%RSD	496.21	1.7835	21.089	10.677	3.9490	129.28	.84701
#1	-.00083	.23208	.00300	.01179	.05058	.00000	17.201
#2	-.00054	.23819	.00322	.01011	.05250	-.00008	17.257
#3	.00083	.24019	.00439	.00966	.05473	-.00002	17.478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00059**	**.00961**	**.02064**	**45.464**	**.75733**	**-.00656**
Stddev	.00017	.00058	.00044	.00064	.261	.12454	.00410
%RSD	43.795	97.070	4.5337	3.0872	.57342	16.445	62.455
#1	.00047	-.00000	.01011	.01996	45.471	.79996	-.01055
#2	.00019	.00114	.00943	.02122	45.200	.85496	-.00677
#3	.00049	.00064	.00929	.02073	45.721	.61707	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.5658**	**.06921**	**.00015**	**4.9539**	**.00395**	**.25336**	**.00514**
Stddev	.1083	.00194	.00005	.0643	.00068	.00499	.00034
%RSD	4.2194	2.8093	35.036	1.2977	17.198	1.9702	6.6320
#1	2.6906	.06941	.00010	4.8897	.00349	.24886	.00515
#2	2.5103	.06718	.00021	4.9536	.00362	.25248	.00480
#3	2.4966	.07105	.00015	5.0183	.00473	.25873	.00548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703131701 Acquired: 3/29/2017 16:03:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**-.00309**	**6.7507**	**.00309**	**.07742**	**.01440**	**-.00066**
Stddev	.00365	.00175	.0219	.00023	.00128	.00412	.00052
%RSD	1165.4	56.519	.32454	7.4105	1.6533	28.607	78.993
#1	-.00453	-.00502	6.7434	.00335	.07618	.01873	-.00055
#2	.00172	-.00265	6.7754	.00298	.07735	.01393	-.00122
#3	.00187	-.00161	6.7335	.00293	.07874	.01054	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00055**	**.06189**	F **-1.8050**
Stddev	.00126	.00034	.5379
%RSD	229.86	.55429	29.801
#1	-.00091	.06187	-1.8289
#2	.00132	.06224	-1.2555
#3	.00125	.06156	-2.3306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14248.**	**95225.**	**3497.0**
Stddev	66.	886.	62.0
%RSD	.46667	.93073	1.7741
#1	14227.	96139.	3485.1
#2	14323.	95165.	3564.1
#3	14195.	94370.	3441.7

Approved: March 30, 2017

Sample Name: L1703131702 Acquired: 3/29/2017 16:07:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.29594**	**.00240**	**.01681**	**.05119**	**-.00001**	**20.363**	**-.00018**
Stddev	.00076	.00789	.00199	.00204	.00067	.00006	.072	.00022
%RSD	336.70	2.6648	82.983	12.125	1.3047	383.82	.35221	121.78
#1	-.00041	.29668	.00278	.01713	.05042	-.00008	20.311	-.00019
#2	.00002	.28770	.00416	.01867	.05166	-.00000	20.333	-.00039
#3	.00106	.30342	.00024	.01463	.05147	.00004	20.445	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00085**	**.00139**	**.80646**	**2.1667**	**-.00123**	**2.2106**	**.07995**
Stddev	.00022	.00092	.00068	.00728	.0687	.00285	.0175	.00344
%RSD	103.17	108.03	49.013	.90239	3.1686	231.53	.79210	4.2972
#1	.00002	.00141	.00124	.80257	2.2451	-.00452	2.1955	.08267
#2	.00046	-.00021	.00214	.81486	2.1376	.00046	2.2065	.07609
#3	.00017	.00135	.00080	.80196	2.1174	.00037	2.2298	.08110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**1.0934**	**.00089**	**.10284**	**.00074**	**.00095**	**.00540**	**.88956**
Stddev	.00032	.0293	.00052	.00391	.00369	.00185	.00159	.01230
%RSD	1328.5	2.6806	58.200	3.8044	499.31	194.12	29.462	1.3829
#1	.00015	1.1115	.00139	.10691	.00069	-.00070	.00689	.89505
#2	.00026	1.1091	.00036	.09910	-.00292	.00060	.00373	.89817
#3	-.00034	1.0596	.00091	.10251	.00445	.00295	.00559	.87547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131702 Acquired: 3/29/2017 16:07:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.05990**	**.00202**	**-.00062**	**.00061**	**.00718**	**.04633**
Stddev	.00022	.00038	.00615	.00080	.00031	.00004	.49798
%RSD	67.240	.63621	303.65	128.49	50.996	.52801	1074.9
#1	.00007	.05970	-.00396	-.00115	.00091	.00715	.61823
#2	.00044	.05966	.00171	.00030	.00063	.00717	-.29142
#3	.00047	.06034	.00832	-.00101	.00029	.00722	-.18783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14161.**	**94245.**	**3468.4**
Stddev	34.	1512.	29.9
%RSD	.23766	1.6041	.86348
#1	14198.	94993.	3474.4
#2	14149.	95237.	3495.0
#3	14134.	92505.	3436.0

Approved: March 30, 2017

Sample Name: L1703131703 Acquired: 3/29/2017 16:11:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**.34230**	**.00111**	**.00707**	**.02831**	**.00004**	**17.112**	**-.00017**
Stddev	.00163	.00409	.00121	.00069	.00081	.00009	.150	.00021
%RSD	100.43	1.1948	108.87	9.7747	2.8628	216.19	.87637	124.45
#1	.00020	.34697	.00116	.00786	.02762	-.00005	16.960	.00007
#2	-.00294	.33938	.00230	.00658	.02809	.00005	17.260	-.00024
#3	-.00213	.34053	-.00012	.00677	.02920	.00013	17.115	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.00069**	**-.00005**	**.48415**	**.19119**	**-.00576**	**1.3708**	**.03285**
Stddev	.00065	.00046	.00047	.02103	.08579	.00415	.0911	.00254
%RSD	123.48	67.152	861.80	4.3441	44.870	72.100	6.6420	7.7369
#1	.00121	.00090	-.00034	.46005	.13654	-.00266	1.3319	.03373
#2	.00043	.00016	-.00031	.49880	.29007	-.00414	1.3055	.02998
#3	-.00007	.00101	.00048	.49361	.14696	-.01048	1.4748	.03483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**1.5507**	**.00130**	**.01846**	**.00136**	**.00220**	**.00154**	**3.2769**
Stddev	.00020	.0364	.00047	.00022	.00200	.00200	.00378	.0033
%RSD	186.31	2.3496	36.482	1.1976	146.79	90.893	245.09	.10083
#1	.00010	1.5346	.00092	.01839	.00317	.00386	-.00025	3.2775
#2	-.00009	1.5251	.00183	.01828	-.00079	.00277	.00589	3.2798
#3	.00032	1.5924	.00114	.01871	.00171	-.00002	-.00101	3.2733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131703 Acquired: 3/29/2017 16:11:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.04242**	**.00273**	**.00048**	**.00035**	**.00234**	**.10530**
Stddev	.00024	.00034	.00961	.00252	.00077	.00010	.37203
%RSD	124.42	.79413	352.50	523.52	220.89	4.1937	353.32
#1	-.00039	.04203	-.00670	.00305	.00103	.00235	-.26507
#2	.00008	.04266	.01251	.00038	-.00048	.00224	.10201
#3	-.00028	.04255	.00237	-.00198	.00049	.00244	.47896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14148.**	**94157.**	**3446.2**
Stddev	56.	877.	90.1
%RSD	.39252	.93091	2.6135
#1	14093.	93145.	3356.1
#2	14145.	94652.	3536.2
#3	14204.	94675.	3446.2

Approved: March 30, 2017

Sample Name: L1703131801 Acquired: 3/29/2017 16:14:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.04829**	**.00232**	**.01547**	**.05231**	**.00001**	**48.604**	**-.00014**
Stddev	.00119	.00199	.00300	.00098	.00226	.00003	.157	.00022
%RSD	271.19	4.1141	129.34	6.3186	4.3208	311.38	.32272	153.33
#1	-.00173	.04627	-.00109	.01581	.05005	.00004	48.643	.00008
#2	-.00020	.04836	.00350	.01624	.05457	-.00002	48.738	-.00016
#3	.00061	.05024	.00455	.01437	.05233	.00002	48.432	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00023**	**.00011**	**.03492**	**.77324**	**-.00356**	**5.4567**	**.00301**
Stddev	.00011	.00129	.00019	.02839	.05428	.00183	.0850	.00050
%RSD	113.50	555.46	180.00	81.304	7.0195	51.540	1.5573	16.639
#1	.00012	-.00125	.00032	.06673	.71333	-.00341	5.4236	.00244
#2	-.00002	.00108	.00001	.02589	.81915	-.00180	5.5532	.00337
#3	.00020	.00087	-.00002	.01214	.78722	-.00546	5.3931	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**5.8503**	**.00091**	**.00769**	**-.00078**	**-.00365**	**.00075**	**3.6039**
Stddev	.00034	.0695	.00036	.00484	.00177	.00405	.00120	.0061
%RSD	30.981	1.1880	39.328	62.896	228.07	111.12	160.80	.16892
#1	.00143	5.7736	.00050	.01325	-.00256	-.00768	.00213	3.6082
#2	.00075	5.9091	.00108	.00543	-.00074	-.00368	-.00003	3.6065
#3	.00109	5.8681	.00115	.00440	.00098	.00042	.00014	3.5969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131801 Acquired: 3/29/2017 16:14:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.15255**	**-.00507**	**-.00079**	**.00030**	**.00158**	**.16631**
Stddev	.00017	.00027	.00559	.00142	.00022	.00006	.49029
%RSD	25.974	.17584	110.25	180.72	72.633	3.6556	294.81
#1	.00047	.15225	-.01070	-.00044	.00014	.00156	-.15692
#2	.00079	.15276	-.00499	-.00235	.00021	.00165	-.07460
#3	.00075	.15264	.00048	.00043	.00055	.00155	.73045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13945.**	**92761.**	**3459.9**
Stddev	99.	1382.	139.8
%RSD	.71350	1.4894	4.0406
#1	13853.	91492.	3349.7
#2	13932.	92557.	3412.9
#3	14051.	94233.	3617.2

Approved: March 30, 2017

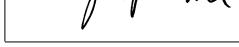
Sample Name: L1703131802 Acquired: 3/29/2017 16:18:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**.05132**	**.00008**	**.02085**	**.04445**	**.00002**	**41.732**
Stddev	.00101	.00771	.00229	.00303	.00179	.00003	.101
%RSD	102.47	15.027	2696.0	14.532	4.0267	127.52	.24194
#1	-.00151	.05809	-.00184	.02420	.04382	-.00000	41.838
#2	-.00162	.05294	.00261	.01829	.04307	.00005	41.637
#3	.00018	.04293	-.00052	.02007	.04648	.00002	41.720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00023**	**.00031**	**-.00049**	**.04038**	**.85604**	**-.00284**
Stddev	.00026	.00015	.00136	.00106	.00255	.07723	.00094
%RSD	188.71	65.980	433.60	217.94	6.3201	9.0214	32.917
#1	.00016	-.00021	-.00099	-.00170	.04330	.90569	-.00177
#2	-.00027	-.00040	.00172	.00004	.03928	.76707	-.00350
#3	-.00030	-.00009	.00020	.00021	.03857	.89537	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.6911**	**-.00000**	**.00048**	**8.8033**	**.00051**	**.00376**	**-.00055**
Stddev	.0068	.00292	.00014	.0452	.00043	.00542	.00434
%RSD	.08852	66415.	29.567	.51310	83.644	144.41	784.33
#1	7.6882	.00022	.00032	8.7550	.00087	-.00241	-.00505
#2	7.6988	-.00303	.00058	8.8445	.00062	.00587	.00360
#3	7.6862	.00279	.00054	8.8104	.00004	.00780	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703131802 Acquired: 3/29/2017 16:18:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00187**	**.00018**	**3.7436**	**.00009**	**.19882**	**.00674**	**-.00053**
Stddev	.00264	.00718	.0215	.00020	.00080	.00916	.00070
%RSD	141.04	4043.4	.57548	227.60	.40013	136.05	132.63
#1	-.00362	.00367	3.7684	.00021	.19859	.01177	-.00073
#2	.00116	.00495	3.7301	-.00015	.19818	-.00384	-.00111
#3	-.00315	-.00808	3.7323	.00021	.19971	.01228	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00024**	**.00125**	F **-.23504**
Stddev	.00089	.00010	.33074
%RSD	370.86	8.2641	140.72
#1	.00065	.00124	-.27465
#2	-.00113	.00115	-.54419
#3	-.00023	.00136	.11372
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14001.**	**93321.**	**3402.1**
Stddev	26.	1853.	75.8
%RSD	.18849	1.9851	2.2274
#1	14031.	91192.	3389.8
#2	13994.	94566.	3333.2
#3	13980.	94206.	3483.3

Approved: March 30, 2017

Sample Name: L1703131803 Acquired: 3/29/2017 16:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05534**	**.00054**	**.01109**	**.04762**	**.00005**	**35.579**
Stddev	.00170	.00594	.00093	.00220	.00123	.00003	.159
%RSD	379.68	10.730	172.73	19.866	2.5895	53.597	.44549
#1	-.00022	.04855	.00049	.01346	.04619	.00007	35.404
#2	-.00081	.05957	-.00037	.01072	.04832	.00006	35.621
#3	.00238	.05789	.00149	.00910	.04834	.00002	35.712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**-.00006**	**.00052**	**-.00015**	**.05872**	**.33907**	**-.00574**
Stddev	.00010	.00025	.00063	.00006	.01218	.12267	.01023
%RSD	50.277	413.31	120.81	41.216	20.740	36.178	178.26
#1	-.00016	-.00010	.00117	-.00022	.07274	.45462	.00125
#2	-.00033	.00021	.00047	-.00014	.05078	.21035	-.00099
#3	-.00014	-.00029	-.00008	-.00010	.05263	.35225	-.01749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.1021**	**.01423**	**.00010**	**5.0870**	**-.00006**	**.00593**	**-.00047**
Stddev	.0220	.00061	.00053	.0566	.00129	.00552	.00071
%RSD	.53683	4.2819	554.92	1.1132	2151.4	93.107	152.03
#1	4.1039	.01376	.00069	5.0754	-.00077	.00926	.00033
#2	4.1232	.01401	-.00032	5.0371	-.00084	-.00044	-.00104
#3	4.0793	.01492	-.00008	5.1485	.00143	.00898	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703131803 Acquired: 3/29/2017 16:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.00580**	**3.2540**	**.00066**	**.11795**	**-.00712**	**.00199**
Stddev	.00310	.00303	.0167	.00126	.00098	.00653	.00068
%RSD	337.19	52.274	.51195	191.01	.82755	91.732	33.914
#1	.00233	.00861	3.2597	.00095	.11687	.00034	.00121
#2	-.00385	.00621	3.2671	.00174	.11821	-.01180	.00241
#3	-.00124	.00258	3.2352	-.00072	.11877	-.00990	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**.00140**	F **-.10645**
Stddev	.00029	.00003	.34787
%RSD	893.12	2.2883	326.79
#1	.00031	.00140	.06616
#2	-.00027	.00136	-.50687
#3	.00006	.00142	.12136
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13962.**	**93155.**	**3349.2**
Stddev	86.	855.	86.0
%RSD	.61527	.91793	2.5687
#1	14044.	92172.	3415.2
#2	13873.	93567.	3251.9
#3	13970.	93726.	3380.6

Approved: March 30, 2017

Sample Name: L1703131804 Acquired: 3/29/2017 16:25:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**1.5092**	**.00285**	**.00681**	**.07504**	**.00027**	**5.7903**	**.00015**
Stddev	.00122	.0037	.00021	.00320	.00208	.00006	.1505	.00015
%RSD	91.449	.24581	7.3863	47.032	2.7701	21.070	2.5983	98.523
#1	-.00069	1.5088	.00271	.00968	.07632	.00026	5.9639	.00029
#2	-.00057	1.5057	.00275	.00738	.07616	.00033	5.7098	-.00001
#3	-.00273	1.5131	.00310	.00336	.07264	.00022	5.6972	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00164**	**.00208**	**.00330**	**2.6603**	**.83367**	**-.00509**	**2.0920**	**.15281**
Stddev	.00047	.00075	.00062	.0523	.04169	.00562	.0144	.00582
%RSD	28.402	35.817	18.728	1.9649	5.0007	110.37	.68930	3.8069
#1	.00202	.00163	.00291	2.6959	.86646	-.00042	2.0912	.15817
#2	.00179	.00168	.00401	2.6847	.78675	-.01132	2.1068	.15363
#3	.00112	.00295	.00298	2.6003	.84779	-.00352	2.0779	.14663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**2.8528**	**.00303**	**.07604**	**.01388**	**.00126**	**-.00017**	**5.4110**
Stddev	.00047	.0340	.00070	.00735	.00221	.00341	.00306	.0883
%RSD	201.76	1.1915	23.115	9.6595	15.913	271.97	1827.5	1.6316
#1	.00073	2.8893	.00354	.07623	.01155	-.00234	-.00366	5.4532
#2	-.00021	2.8220	.00223	.06860	.01594	.00166	.00112	5.4702
#3	.00018	2.8471	.00332	.08328	.01415	.00445	.00204	5.3095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131804 Acquired: 3/29/2017 16:25:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.02684**	**.02171**	**.00090**	**.00261**	**.03422**	**.01637**
Stddev	.00029	.00063	.00802	.00121	.00027	.00042	.39382
%RSD	122.84	2.3343	36.939	133.97	10.281	1.2149	2406.2
#1	-.00010	.02728	.03086	.00038	.00290	.03436	.08749
#2	.00038	.02713	.01591	.00229	.00255	.03456	-.40817
#3	.00042	.02613	.01836	.00005	.00238	.03376	.36978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14499.**	**94644.**	**3433.4**
Stddev	119.	1474.	49.8
%RSD	.82369	1.5576	1.4494
#1	14547.	93371.	3379.2
#2	14363.	96259.	3477.0
#3	14587.	94302.	3443.9

Approved: March 30, 2017

Sample Name: L1703131901 Acquired: 3/29/2017 16:29:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.01788**	**.00046**	**.01488**	**.09749**	**.00003**	**38.422**	**-.00023**
Stddev	.00035	.01206	.00139	.00210	.00204	.00001	.287	.00027
%RSD	183.90	67.444	301.31	14.133	2.0933	46.690	.74634	120.24
#1	-.00056	.02240	-.00088	.01445	.09586	.00004	38.097	.00005
#2	-.00012	.00421	.00037	.01717	.09978	.00004	38.640	-.00023
#3	.00012	.02701	.00190	.01303	.09683	.00002	38.528	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00044**	**.04708**	**.04264**	**.62855**	**-.00086**	**5.3368**	**.00177**
Stddev	.00037	.00068	.00068	.01614	.05940	.00412	.0968	.00072
%RSD	540.44	152.35	1.4382	37.846	9.4506	478.33	1.8136	40.510
#1	.00033	.00089	.04722	.05920	.62491	-.00319	5.3788	.00158
#2	-.00041	.00078	.04767	.04174	.57105	-.00329	5.2261	.00257
#3	-.00013	-.00033	.04634	.02697	.68968	.00389	5.4055	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**13.755**	**.00019**	**-.00414**	**-.00041**	**-.00121**	**.00152**	**3.3919**
Stddev	.00034	.024	.00037	.00276	.00414	.00103	.00632	.0150
%RSD	92.849	.17779	199.87	66.669	1002.4	85.413	416.42	.44233
#1	.00076	13.728	.00030	-.00295	.00114	-.00196	-.00315	3.4003
#2	.00021	13.761	-.00023	-.00218	.00273	-.00163	.00871	3.4008
#3	.00013	13.775	.00049	-.00729	-.00511	-.00003	-.00100	3.3746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703131901 Acquired: 3/29/2017 16:29:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.27658**	**-.00069**	**.00165**	**.00052**	**.08532**	**.06611**
Stddev	.00059	.00195	.00453	.00146	.00051	.00041	.19308
%RSD	93.979	.70350	661.15	88.428	97.666	.47764	292.04
#1	.00131	.27455	-.00134	.00049	.00008	.08547	.26453
#2	.00026	.27843	-.00486	.00329	.00041	.08563	-.12113
#3	.00032	.27676	.00414	.00117	.00108	.08486	.05494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13853.**	**93424.**	**3460.6**
Stddev	110.	965.	59.5
%RSD	.79594	1.0332	1.7193
#1	13857.	92729.	3526.2
#2	13740.	94526.	3445.4
#3	13961.	93017.	3410.1

Approved: March 30, 2017

Sample Name: L1703132001 Acquired: 3/29/2017 16:33:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.05056**	**.00016**	**.00783**	**.04814**	**.00005**	**37.369**
Stddev	.00078	.00605	.00232	.00243	.00189	.00004	.085
%RSD	124.60	11.959	1449.5	31.048	3.9202	81.366	.22834
#1	.00016	.04744	.00178	.00770	.05030	.00001	37.298
#2	-.00141	.04671	.00120	.01033	.04681	.00010	37.463
#3	-.00064	.05753	-.00250	.00547	.04732	.00005	37.345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00002**	**.00057**	**.00830**	**.00359**	**.25674**	**-.00630**
Stddev	.00025	.00038	.00036	.00122	.03693	.02004	.00489
%RSD	139.72	2196.2	63.360	14.752	1028.7	7.8058	77.644
#1	-.00015	.00041	.00020	.00846	.01749	.27911	-.00195
#2	-.00044	-.00002	.00058	.00944	-.03828	.24043	-.00536
#3	.00006	-.00034	.00093	.00700	.03156	.25067	-.01160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.8285**	**.00147**	**.00030**	**2.3103**	**-.00025**	**.01327**	**.00037**
Stddev	.0455	.00289	.00032	.0271	.00042	.00308	.00193
%RSD	1.1895	196.86	108.27	1.1734	167.68	23.218	525.39
#1	3.7869	.00344	-.00004	2.2816	.00015	.01182	-.00068
#2	3.8214	-.00185	.00033	2.3355	-.00022	.01119	.00259
#3	3.8772	.00282	.00061	2.3137	-.00068	.01681	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703132001 Acquired: 3/29/2017 16:33:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.00197**	**3.0459**	**-.00048**	**.10064**	**.00011**	**-.00123**
Stddev	.00246	.00393	.0048	.00025	.00052	.00979	.00220
%RSD	493.63	199.57	.15667	53.046	.51303	8613.0	178.80
#1	-.00147	-.00038	3.0409	-.00073	.10029	-.01105	-.00222
#2	.00325	.00092	3.0464	-.00022	.10123	.00725	-.00276
#3	-.00029	-.00645	3.0504	-.00049	.10040	.00414	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00850**	F **-.04136**
Stddev	.00059	.00014	.11578
%RSD	161.07	1.6128	279.93
#1	.00046	.00834	-.00780
#2	-.00027	.00855	-.17021
#3	.00090	.00860	.05394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13938.**	**92544.**	**3357.4**
Stddev	55.	252.	43.6
%RSD	.39555	.27180	1.2999
#1	13920.	92600.	3322.2
#2	13894.	92269.	3406.3
#3	14000.	92762.	3343.8

Approved: March 30, 2017

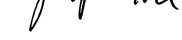
Sample Name: CCV Acquired: 3/29/2017 16:37:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39756**	**10.108**	**.40466**	**.48796**	**1.0108**	**.05047**	**10.027**
Stddev	.00134	.031	.00265	.00390	.0025	.00023	.033
%RSD	.33785	.30194	.65491	.79990	.24295	.46017	.32935
#1	.39897	10.134	.40766	.49205	1.0093	.05072	9.9890
#2	.39741	10.115	.40263	.48427	1.0096	.05042	10.042
#3	.39630	10.075	.40369	.48757	1.0137	.05026	10.050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05161**	**.20835**	**.49733**	**.51863**	**4.0080**	**50.797**	**1.0118**
Stddev	.00049	.00097	.00214	.00212	.0236	.365	.0064
%RSD	.95360	.46481	.43000	.40860	.58991	.71817	.62978
#1	.05167	.20880	.49918	.51995	3.9811	50.578	1.0161
#2	.05208	.20900	.49781	.51975	4.0171	50.595	1.0045
#3	.05110	.20724	.49499	.51618	4.0257	51.218	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.014**	**.50647**	**1.0076**	**50.456**	**.50754**	**9.9979**	**.50897**
Stddev	.055	.00562	.0025	.385	.00112	.0213	.00216
%RSD	.54518	1.1106	.25178	.76297	.22116	.21289	.42391
#1	9.9537	.50207	1.0102	50.078	.50878	10.021	.51141
#2	10.028	.50453	1.0074	50.441	.50661	9.9929	.50817
#3	10.060	.51281	1.0051	50.848	.50723	9.9795	.50732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 16:37:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2054**	**.39829**	**5.0556**	**1.0324**	**1.0076**	**1.0157**	**.51719**
Stddev	.0058	.00474	.0138	.0041	.0046	.0089	.00071
%RSD	.48448	1.1897	.27370	.39831	.45834	.87563	.13671
#1	1.2106	.39404	5.0680	1.0346	1.0023	1.0079	.51798
#2	1.2066	.40340	5.0406	1.0349	1.0093	1.0138	.51698
#3	1.1991	.39742	5.0581	1.0276	1.0110	1.0254	.51661
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0136**	**1.0123**	F **.16204**
Stddev	.0022	.0023	.13720
%RSD	.21636	.23041	84.672
#1	1.0144	1.0141	.29248
#2	1.0153	1.0132	.17469
#3	1.0111	1.0097	.01895
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13107.**	**87227.**	**3287.2**
Stddev	145.	747.	77.7
%RSD	1.1089	.85687	2.3628
#1	12954.	86494.	3346.3
#2	13123.	87199.	3316.1
#3	13244.	87988.	3199.2

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 16:40:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00116**	**.00968**	**.00079**	**-.00001**	**.00195**	**.00016**	**.03060**
Stddev	.00123	.00711	.00328	.00184	.00148	.00006	.06260
%RSD	105.91	73.457	417.23	16650.	76.187	35.437	204.58
#1	-.00216	.01712	-.00297	.00064	.00230	.00022	.10274
#2	.00021	.00897	.00224	-.00209	.00322	.00011	-.00942
#3	-.00152	.00295	.00309	.00141	.00032	.00014	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00013**	**-.00016**	**-.00044**	**.00143**	**-.08554**	**-.00642**
Stddev	.00026	.00007	.00049	.00095	.01813	.11125	.00249
%RSD	187.23	54.209	304.51	214.59	1265.3	130.05	38.763
#1	-.00035	.00018	-.00062	-.00128	-.01458	-.07861	-.00625
#2	.00015	.00005	.00035	-.00064	-.00224	.02208	-.00899
#3	-.00022	.00016	-.00021	.00059	.02112	-.20010	-.00402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00269**	**.00058**	**.00039**	**.00975**	**-.00104**	**-.00462**	**-.00060**
Stddev	.03937	.00056	.00031	.03206	.00075	.00114	.00350
%RSD	1465.5	95.159	79.925	328.92	71.675	24.630	582.86
#1	-.02319	.00093	.00004	.01700	-.00189	-.00428	.00233
#2	-.02757	.00088	.00049	-.02532	-.00050	-.00369	.00034
#3	.04270	-.00006	.00063	.03756	-.00074	-.00589	-.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 16:40:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00170**	**.00067**	**.00651**	**-.00020**	**-.00014**	**.00563**	**-.00170**
Stddev	.00249	.00280	.00107	.00037	.00032	.00507	.00056
%RSD	146.82	414.34	16.396	187.67	228.31	90.180	32.761
#1	.00288	.00247	.00649	-.00025	.00016	.00121	-.00110
#2	-.00117	.00210	.00546	.00019	-.00010	.00450	-.00181
#3	.00337	-.00255	.00759	-.00054	-.00048	.01117	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00101**	**.00011**	F **.10057**
Stddev	.00039	.00014	.51127
%RSD	38.887	133.18	508.37
#1	.00138	-.00003	.65026
#2	.00106	.00010	-.36077
#3	.00060	.00025	.01222
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13469.**	**88535.**	**3209.8**
Stddev	88.	638.	32.7
%RSD	.65203	.72069	1.0195
#1	13460.	89078.	3242.1
#2	13385.	88696.	3176.6
#3	13560.	87833.	3210.7

Approved: March 30, 2017

Sample Name: L1703135401 Acquired: 3/29/2017 16:44:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.20859**	**.00627**	**.01729**	**.03385**	**.00014**	**55.046**	**-.00035**
Stddev	.00104	.00808	.00119	.00188	.00114	.00007	.132	.00015
%RSD	5277.7	3.8758	18.956	10.849	3.3559	48.456	.23920	43.614
#1	.00064	.21352	.00626	.01930	.03408	.00007	55.137	-.00017
#2	-.00119	.19926	.00508	.01696	.03262	.00020	55.106	-.00045
#3	.00061	.21299	.00746	.01559	.03486	.00014	54.895	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00135**	**.00348**	**.00118**	**1.0710**	**21.510**	**-.00015**	**22.026**	**.15017**
Stddev	.00009	.00032	.00086	.0348	.114	.00218	.118	.00192
%RSD	7.0010	9.1889	72.775	3.2442	.53027	1408.0	.53503	1.2780
#1	.00129	.00321	.00049	1.0336	21.587	.00070	22.108	.15103
#2	.00146	.00383	.00090	1.1023	21.379	-.00264	21.891	.14797
#3	.00131	.00338	.00214	1.0770	21.564	.00147	22.080	.15151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00504**	**20.702**	**.00180**	**.04501**	**.00083**	**-.00028**	**.00246**	**3.8019**
Stddev	.00028	.180	.00041	.00388	.00220	.00143	.00490	.0102
%RSD	5.6110	.87072	22.732	8.6300	265.59	503.36	198.87	.26904
#1	.00528	20.862	.00195	.04052	.00184	-.00133	.00221	3.8112
#2	.00473	20.507	.00212	.04721	-.00169	.00135	.00748	3.8037
#3	.00510	20.737	.00134	.04729	.00233	-.00087	-.00230	3.7910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703135401 Acquired: 3/29/2017 16:44:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**.18122**	**-.00094**	**-.00019**	**.00061**	**.01096**	**.24673**
Stddev	.00107	.00084	.00531	.00283	.00071	.00002	.29760
%RSD	71.644	.46154	562.77	1513.9	116.49	.18231	120.62
#1	.00052	.18168	.00464	.00306	.00039	.01096	.36664
#2	.00264	.18173	-.00155	-.00154	.00004	.01094	-.09212
#3	.00132	.18026	-.00592	-.00208	.00141	.01098	.46568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13680.**	**92367.**	**3369.9**
Stddev	68.	643.	42.9
%RSD	.49460	.69571	1.2734
#1	13724.	92922.	3329.3
#2	13714.	91663.	3414.8
#3	13602.	92516.	3365.6

Approved: March 30, 2017

Sample Name: L1703135402 Acquired: 3/29/2017 16:47:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**1.5923**	**.00107**	**-.00038**	**.11377**	**.00003**	**111.69**
Stddev	.00203	.0060	.00154	.00230	.00133	.00006	.56
%RSD	465.85	.37407	143.49	608.55	1.1682	169.28	.50219
#1	.00043	1.5971	.00155	.00104	.11346	.00010	111.05
#2	.00102	1.5857	.00232	.00086	.11522	.00001	111.89
#3	-.00275	1.5943	-.00065	-.00304	.11262	-.00001	112.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00252**	**.35314**	**.00693**	**.45399**	**214.04**	**.00553**
Stddev	.00024	.00042	.00117	.00049	.01820	1.23	.00712
%RSD	279.88	16.730	.33197	7.1343	4.0099	.57585	128.81
#1	.00006	.00215	.35446	.00683	.43318	212.71	.00939
#2	.00035	.00298	.35274	.00650	.46697	215.15	-.00269
#3	-.00014	.00243	.35222	.00747	.46183	214.26	.00989
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21043**	**.00419**	**.07877**	**99.031**	**.00084**	**.00635**	**.00169**
Stddev	.06784	.00046	.00034	.439	.00041	.00084	.00205
%RSD	32.238	10.975	.43765	.44310	48.367	13.290	121.32
#1	.22424	.00457	.07917	98.538	.00119	.00730	.00293
#2	.13675	.00368	.07858	99.378	.00093	.00606	-.00068
#3	.27030	.00432	.07857	99.178	.00039	.00569	.00282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703135402 Acquired: 3/29/2017 16:47:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**-.00239**	**1.1425**	**.00210**	**6.1228**	**-.00091**	**-.00015**
Stddev	.00155	.00556	.0057	.00069	.0406	.00981	.00099
%RSD	632.29	232.95	.49777	32.859	.66369	1075.2	670.08
#1	-.00203	.00064	1.1487	.00287	6.0759	-.00475	-.00063
#2	.00071	.00100	1.1412	.00192	6.1453	.01024	.00099
#3	.00058	-.00880	1.1375	.00153	6.1472	-.00823	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00636**	**.00510**	F **-.14034**
Stddev	.00041	.00005	.18867
%RSD	6.4871	.91510	134.44
#1	.00621	.00515	-.10388
#2	.00683	.00510	-.34459
#3	.00605	.00506	.02743
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13566.**	**88394.**	**3364.2**
Stddev	117.	663.	55.4
%RSD	.86510	.74994	1.6472
#1	13701.	88036.	3343.3
#2	13508.	87987.	3322.3
#3	13489.	89158.	3427.0

Approved: March 30, 2017

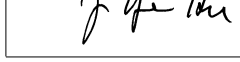
Sample Name: L1703136301 Acquired: 3/29/2017 16:51:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.08131**	**-.00012**	**.01364**	**.00256**	**.00009**	**.21537**	**-.00001**
Stddev	.00027	.00176	.00090	.00133	.00085	.00003	.03406	.00022
%RSD	37.904	2.1702	780.15	9.7138	33.347	38.023	15.813	3580.8
#1	-.00075	.07960	.00037	.01451	.00168	.00012	.24960	-.00018
#2	-.00044	.08120	.00044	.01430	.00339	.00008	.21503	-.00008
#3	-.00098	.08313	-.00116	.01212	.00262	.00006	.18149	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**-.00030**	**.01297**	**.02515**	**.44845**	**-.00135**	**-.00454**	**.00299**
Stddev	.00006	.00048	.00093	.02946	.07147	.00202	.10916	.00233
%RSD	29.081	158.73	7.2061	117.16	15.937	148.99	2402.7	77.917
#1	.00026	-.00038	.01399	.05662	.36842	-.00256	-.08856	.00134
#2	.00014	.00021	.01275	.02062	.50590	-.00248	-.04391	.00197
#3	.00022	-.00074	.01216	-.00179	.47104	.00098	.11884	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.16113**	**.00009**	**-.00145**	**.00095**	**-.00162**	**-.00251**	**.06327**
Stddev	.00005	.01794	.00034	.00044	.00113	.00229	.00236	.00247
%RSD	408.14	11.135	383.80	30.255	119.94	141.14	94.129	3.8993
#1	.00002	.16701	.00047	-.00120	.00216	-.00395	-.00138	.06538
#2	-.00007	.14099	.00000	-.00196	.00076	-.00152	-.00092	.06388
#3	.00002	.17540	-.00020	-.00120	-.00009	.00061	-.00522	.06056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017



Sample Name: L1703136301 Acquired: 3/29/2017 16:51:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00042**	**-.01065**	**.00004**	**-.00013**	**.00461**	**30.373**
Stddev	.00033	.00037	.00856	.00119	.00106	.00016	1.005
%RSD	39.701	87.336	80.440	2831.2	828.71	3.3631	3.3101
#1	.00113	.00084	-.01001	.00121	-.00134	.00467	31.369
#2	.00048	.00025	-.01951	-.00116	.00035	.00473	30.391
#3	.00089	.00017	-.00242	.00009	.00061	.00443	29.359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13983.**	**93702.**	**3332.9**
Stddev	27.	644.	92.9
%RSD	.18972	.68754	2.7870
#1	14011.	94322.	3227.9
#2	13959.	93748.	3366.7
#3	13980.	93036.	3404.2

Approved: March 30, 2017

Sample Name: L1703136302 Acquired: 3/29/2017 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**.03279**	**.00074**	**.00552**	**.00222**	**.00005**	**.22903**	**-.00018**
Stddev	.00038	.00859	.00159	.00143	.00220	.00006	.03708	.00019
%RSD	31.738	26.201	213.77	25.906	99.035	107.70	16.192	106.31
#1	-.00161	.04216	.00182	.00523	-.00027	.00001	.23417	-.00039
#2	-.00084	.03091	-.00108	.00426	.00388	.00012	.18964	-.00006
#3	-.00117	.02529	.00150	.00708	.00305	.00003	.26327	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.00025**	**.01615**	**.01803**	**.07709**	**-.00655**	**-.06119**	**.00137**
Stddev	.00047	.00037	.00027	.03614	.08771	.00524	.02888	.00169
%RSD	218.54	144.40	1.6509	200.41	113.78	79.880	47.197	123.70
#1	.00076	-.00020	.01621	.05322	.17791	-.00729	-.07871	.00309
#2	-.00003	.00008	.01639	.01987	.03507	-.00099	-.07700	-.00029
#3	-.00008	-.00065	.01586	-.01899	.01829	-.01138	-.02786	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.16776**	**.00035**	**.00009**	**.00193**	**.00188**	**.00073**	**.05843**
Stddev	.00025	.01333	.00123	.00643	.00067	.00135	.00248	.00250
%RSD	291.46	7.9455	352.52	6971.6	34.519	71.790	338.74	4.2813
#1	-.00019	.16026	.00095	-.00422	.00121	.00165	.00351	.06101
#2	.00029	.18315	.00116	-.00299	.00206	.00066	-.00007	.05602
#3	.00015	.15987	-.00106	.00749	.00252	.00332	-.00124	.05825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703136302 Acquired: 3/29/2017 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.00049**	**.00225**	**-.00155**	**.00001**	**.00485**	**.01919**
Stddev	.00029	.00008	.01297	.00260	.00077	.00019	.37335
%RSD	41.549	16.347	577.38	167.57	11632.	3.8305	1945.4
#1	.00103	.00040	.01720	-.00248	.00047	.00506	.04220
#2	.00056	.00055	-.00595	.00139	.00043	.00470	-.36513
#3	.00051	.00053	-.00451	-.00357	-.00088	.00480	.38051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14123.**	**94312.**	**3363.5**
Stddev	94.	1103.	44.2
%RSD	.66428	1.1700	1.3128
#1	14048.	94644.	3408.2
#2	14228.	93080.	3362.5
#3	14093.	95210.	3319.9

Approved: March 30, 2017

Sample Name: L1703136303 Acquired: 3/29/2017 16:59:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.08312**	**.00055**	**.01057**	**.00333**	**.00009**	**.53880**
Stddev	.00135	.00362	.00071	.00035	.00079	.00006	.09476
%RSD	226.90	4.3541	129.63	3.3427	23.661	71.468	17.587
#1	.00096	.07895	.00137	.01069	.00260	.00002	.44125
#2	-.00133	.08540	.00020	.01017	.00322	.00015	.54464
#3	-.00143	.08502	.00008	.01085	.00417	.00010	.63050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00031**	**-.00032**	**.01814**	**.05359**	**.14935**	**-.00255**
Stddev	.00021	.00011	.00104	.00083	.03555	.07793	.00388
%RSD	1781.8	35.691	327.79	4.5929	66.339	52.177	152.07
#1	-.00024	.00042	.00086	.01828	.02137	.19555	-.00597
#2	.00016	.00031	-.00109	.01889	.04767	.19312	.00166
#3	.00004	.00020	-.00073	.01724	.09173	.05938	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09979**	**-.00013**	**-.00005**	**.22667**	**-.00024**	**.00273**	**-.00118**
Stddev	.03829	.00199	.00034	.03909	.00098	.00314	.00207
%RSD	38.368	1570.3	652.51	17.244	410.15	114.87	176.31
#1	.14311	-.00046	-.00044	.26040	-.00092	.00446	-.00255
#2	.07049	-.00192	.00016	.18383	.00088	-.00089	-.00219
#3	.08577	.00201	.00013	.23577	-.00067	.00462	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703136303 Acquired: 3/29/2017 16:59:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00054**	**.18776**	**.00057**	**.00133**	**.00536**	**-.00147**
Stddev	.00191	.00266	.00301	.00034	.00083	.01125	.00330
%RSD	5349.1	491.31	1.6028	59.212	62.536	209.85	224.22
#1	-.00220	-.00270	.18473	.00084	.00076	.00676	-.00525
#2	.00070	-.00137	.19074	.00019	.00095	.01585	.00087
#3	.00140	.00244	.18780	.00070	.00229	-.00652	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00068**	**.00452**	F **-.06862**
Stddev	.00059	.00002	.17507
%RSD	87.094	.47534	255.12
#1	.00115	.00454	-.19413
#2	.00087	.00452	-.14311
#3	.00002	.00450	.13137
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14151.**	**93761.**	**3399.3**
Stddev	102.	373.	27.2
%RSD	.72380	.39828	.80021
#1	14033.	93983.	3424.4
#2	14223.	93330.	3403.2
#3	14195.	93970.	3370.4

Approved: March 30, 2017

Sample Name: L1703138201 Acquired: 3/29/2017 17:02:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.06028**	**-.00098**	**.00751**	**.05338**	**.00002**	**47.588**
Stddev	.00102	.00537	.00038	.00287	.00085	.00007	.189
%RSD	262.33	8.9046	39.022	38.272	1.5969	396.62	.39724
#1	.00117	.06404	-.00084	.00911	.05402	.00007	47.662
#2	-.00076	.06268	-.00141	.00419	.05371	-.00006	47.729
#3	.00075	.05414	-.00069	.00923	.05242	.00003	47.373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00014**	**-.00023**	**.00044**	**.02656**	**.45279**	**-.00097**
Stddev	.00013	.00024	.00083	.00018	.01142	.04572	.00276
%RSD	74.045	166.18	366.79	41.909	42.987	10.099	285.30
#1	-.00009	.00013	.00069	.00051	.02411	.49938	-.00200
#2	-.00011	-.00032	-.00091	.00058	.03901	.40798	-.00306
#3	-.00032	-.00023	-.00046	.00023	.01657	.45101	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.9829**	**-.00119**	**.00016**	**2.6445**	**-.00088**	**.01795**	**.00006**
Stddev	.1396	.00105	.00052	.0354	.00061	.00318	.00241
%RSD	2.3325	87.905	331.33	1.3393	68.864	17.721	4310.5
#1	5.8223	-.00166	.00076	2.6849	-.00139	.02121	.00012
#2	6.0522	-.00193	-.00016	2.6299	-.00021	.01776	-.00238
#3	6.0743	.00001	-.00013	2.6186	-.00106	.01486	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138201 Acquired: 3/29/2017 17:02:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00296**	**3.4520**	**.00054**	**.13629**	**-.00545**	**-.00019**
Stddev	.00387	.00215	.0020	.00039	.00102	.00606	.00057
%RSD	381.74	72.630	.05880	72.973	.74928	111.16	293.44
#1	.00537	.00289	3.4538	.00018	.13703	-.00915	.00044
#2	-.00205	.00085	3.4498	.00047	.13672	-.00874	-.00037
#3	-.00028	.00514	3.4524	.00096	.13513	.00154	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00036**	**.00440**	F **-.04410**
Stddev	.00081	.00008	.26458
%RSD	223.65	1.9237	599.97
#1	-.00051	.00450	-.23673
#2	.00110	.00438	.25758
#3	.00051	.00433	-.15314
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13890.**	**92024.**	**3341.8**
Stddev	134.	850.	64.6
%RSD	.96689	.92346	1.9335
#1	13956.	91155.	3345.1
#2	13736.	92065.	3275.6
#3	13978.	92853.	3404.7

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 17:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.01978**	**-.00078**	**.00218**	**.00898**	**.00013**	**2.0287**
Stddev	.00036	.00238	.00181	.00151	.00146	.00003	.0626
%RSD	79.044	12.019	230.80	69.076	16.233	24.219	3.0837
#1	-.00087	.01837	-.00150	.00258	.01055	.00009	1.9608
#2	-.00027	.02253	.00127	.00052	.00873	.00015	2.0841
#3	-.00023	.01845	-.00212	.00345	.00767	.00014	2.0411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00247**	**-.00046**	**-.00046**	**.03537**	**.35534**	**-.01001**
Stddev	.00021	.00026	.00024	.00113	.03846	.14530	.00196
%RSD	236.67	10.467	52.007	245.83	108.72	40.891	19.555
#1	-.00008	.00217	-.00074	.00080	-.00545	.27546	-.01223
#2	-.00031	.00260	-.00031	-.00082	.07093	.52305	-.00926
#3	.00012	.00264	-.00035	-.00136	.04063	.26750	-.00854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0497**	**.02484**	**-.00017**	**5.7436**	**.00216**	**.00087**	**-.00093**
Stddev	.0472	.00457	.00019	.0810	.00038	.00454	.00376
%RSD	4.4960	18.384	107.61	1.4109	17.479	524.16	404.35
#1	1.0956	.02543	-.00021	5.8233	.00204	-.00431	.00126
#2	1.0522	.02001	.00003	5.6613	.00186	.00415	-.00527
#3	1.0013	.02909	-.00034	5.7461	.00259	.00276	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126801 Acquired: 3/29/2017 17:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00113**	**.35502**	**.00046**	**.01241**	**-.00019**	**.00060**
Stddev	.00360	.00573	.00475	.00031	.00049	.00576	.00273
%RSD	1019.8	505.97	1.3371	66.895	3.9414	3107.3	455.71
#1	-.00090	-.00529	.35363	.00058	.01285	.00216	-.00255
#2	.00441	.00296	.36030	.00069	.01189	-.00674	.00220
#3	-.00245	.00573	.35112	.00011	.01249	.00403	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00017**	**.00436**	F **-.33887**
Stddev	.00113	.00026	.22815
%RSD	653.09	6.0438	67.326
#1	-.00074	.00432	-.51224
#2	-.00018	.00463	-.08040
#3	.00144	.00411	-.42397
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13574.**	**90215.**	**3174.6**
Stddev	47.	473.	45.9
%RSD	.34880	.52382	1.4445
#1	13583.	90716.	3138.0
#2	13523.	90153.	3159.8
#3	13616.	89777.	3226.0

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 17:10:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**.00700**	**.00252**	**.00519**	**.01957**	**.00011**	**2.1579**
Stddev	.00061	.00718	.00194	.00092	.00156	.00002	.0328
%RSD	63.377	102.62	76.855	17.786	7.9683	20.226	1.5225
#1	-.00026	-.00112	.00075	.00477	.01787	.00012	2.1563
#2	-.00130	.01254	.00459	.00455	.02094	.00008	2.1915
#3	-.00131	.00958	.00222	.00625	.01989	.00012	2.1258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00336**	**.00034**	**-.00103**	**2.2628**	**.40674**	**-.00374**
Stddev	.00029	.00020	.00045	.00059	.0167	.11370	.00536
%RSD	149.30	5.9104	134.28	57.469	.73842	27.954	143.56
#1	-.00051	.00354	.00015	-.00147	2.2490	.53513	.00136
#2	.00006	.00339	.00000	-.00127	2.2814	.36628	-.00323
#3	-.00013	.00315	.00085	-.00036	2.2580	.31880	-.00934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2971**	**.11247**	**-.00005**	**8.6496**	**-.00111**	**-.00040**	**.00061**
Stddev	.0537	.00117	.00020	.0378	.00111	.00640	.00220
%RSD	4.1408	1.0407	420.93	.43728	99.661	1609.0	358.85
#1	1.2831	.11186	-.00016	8.6640	.00015	.00698	-.00185
#2	1.3565	.11382	-.00017	8.6067	-.00154	-.00446	.00238
#3	1.2518	.11174	.00018	8.6782	-.00194	-.00371	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126802 Acquired: 3/29/2017 17:10:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00251**	**.00309**	**.27853**	**.00023**	**.01504**	**-.00050**	**-.00268**
Stddev	.00190	.00121	.00214	.00125	.00071	.00954	.00449
%RSD	75.837	39.071	.76847	541.99	4.7093	1920.5	167.44
#1	-.00288	.00393	.27995	-.00120	.01443	.01049	.00109
#2	-.00045	.00171	.27957	.00081	.01487	-.00671	-.00149
#3	-.00420	.00364	.27607	.00109	.01581	-.00527	-.00764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00063**	**.00152**	F **-.39021**
Stddev	.00094	.00008	.44220
%RSD	148.58	5.1141	113.32
#1	-.00021	.00148	-.09690
#2	.00165	.00147	-.89884
#3	.00047	.00161	-.17490
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13400.**	**88909.**	**3202.3**
Stddev	86.	1348.	39.7
%RSD	.64133	1.5161	1.2401
#1	13499.	89516.	3236.2
#2	13352.	89847.	3158.6
#3	13349.	87364.	3212.1

Approved: March 30, 2017

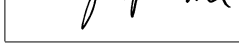
Sample Name: L1703126803S Acquired: 3/29/2017 17:14:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01994**	**.60894**	**.02534**	**.10614**	**.06034**	**.00284**	**2.5654**
Stddev	.00120	.01208	.00329	.00395	.00206	.00004	.0925
%RSD	6.0142	1.9833	12.990	3.7181	3.4098	1.4746	3.6074
#1	.01996	.59542	.02162	.10175	.05939	.00279	2.4731
#2	.02113	.61277	.02656	.10727	.05893	.00287	2.5650
#3	.01873	.61864	.02785	.10940	.06270	.00286	2.6582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00274**	**.01463**	**.02643**	**.02869**	**.26500**	**3.0556**	**.04993**
Stddev	.00036	.00034	.00114	.00050	.00833	.0493	.00399
%RSD	13.323	2.3523	4.2988	1.7317	3.1429	1.6140	7.9969
#1	.00304	.01449	.02564	.02811	.26903	2.9993	.04682
#2	.00233	.01438	.02774	.02898	.27056	3.0764	.05443
#3	.00285	.01502	.02593	.02897	.25543	3.0912	.04854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5494**	**.05271**	**.05525**	**8.5611**	**.03014**	**.56402**	**.02784**
Stddev	.0432	.00093	.00135	.1745	.00087	.01744	.00158
%RSD	2.7888	1.7705	2.4425	2.0388	2.8915	3.0929	5.6606
#1	1.5640	.05321	.05398	8.3849	.02952	.54412	.02902
#2	1.5834	.05164	.05510	8.5644	.03114	.57133	.02846
#3	1.5008	.05329	.05667	8.7340	.02977	.57663	.02605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703126803S Acquired: 3/29/2017 17:14:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07022**	**.01922**	**.71673**	**.05938**	**.06531**	**.05323**	**.03104**
Stddev	.00249	.00458	.01411	.00132	.00047	.00881	.00103
%RSD	3.5394	23.836	1.9683	2.2296	.71503	16.556	3.3114
#1	.07292	.02111	.70044	.05798	.06479	.06149	.02999
#2	.06802	.02254	.72493	.06061	.06569	.05425	.03204
#3	.06972	.01399	.72482	.05954	.06546	.04395	.03110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.05439**	**.06309**	F **-.12062**
Stddev	.00095	.00141	.48264
%RSD	1.7447	2.2315	400.12
#1	.05331	.06148	.27624
#2	.05482	.06374	.01980
#3	.05506	.06406	-.65791
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13452.**	**88654.**	**3214.5**
Stddev	59.	1362.	55.4
%RSD	.44204	1.5363	1.7243
#1	13509.	87509.	3219.8
#2	13390.	88293.	3267.0
#3	13455.	90160.	3156.6

Approved: March 30, 2017

Sample Name: L1703126804SD Acquired: 3/29/2017 17:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01905**	**.55558**	**.01864**	**.09383**	**.05739**	**.00258**	**2.5183**
Stddev	.00117	.01336	.00089	.00143	.00027	.00004	.0890
%RSD	6.1488	2.4049	4.7786	1.5274	.47848	1.6701	3.5331
#1	.01965	.54380	.01866	.09385	.05711	.00253	2.4367
#2	.01770	.55285	.01773	.09525	.05742	.00259	2.5049
#3	.01980	.57010	.01951	.09239	.05765	.00262	2.6132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00237**	**.01348**	**.02417**	**.02639**	**.23614**	**2.7917**	**.04792**
Stddev	.00009	.00026	.00054	.00124	.01522	.1045	.00479
%RSD	3.6782	1.9270	2.2310	4.7105	6.4440	3.7436	9.9917
#1	.00247	.01344	.02448	.02675	.22002	2.8321	.05332
#2	.00231	.01324	.02448	.02500	.23815	2.6730	.04626
#3	.00234	.01376	.02355	.02740	.25025	2.8700	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.4835**	**.05129**	**.05059**	**8.3047**	**.02779**	**.50711**	**.02555**
Stddev	.0757	.00111	.00110	.1076	.00111	.01418	.00193
%RSD	5.1051	2.1695	2.1725	1.2956	3.9860	2.7969	7.5667
#1	1.5702	.05208	.04944	8.1816	.02901	.49821	.02336
#2	1.4498	.05179	.05072	8.3519	.02751	.49965	.02704
#3	1.4304	.05002	.05163	8.3806	.02685	.52347	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703126804SD Acquired: 3/29/2017 17:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG607688-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06433**	**.02137**	**.67079**	**.05379**	**.06134**	**.04416**	**.02828**
Stddev	.00191	.00836	.01237	.00084	.00081	.00947	.00334
%RSD	2.9658	39.120	1.8448	1.5566	1.3154	21.437	11.815
#1	.06511	.03086	.65727	.05305	.06050	.03328	.02534
#2	.06216	.01818	.67354	.05362	.06211	.04867	.02760
#3	.06573	.01508	.68155	.05470	.06142	.05052	.03192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04934**	**.05825**	F **-.51113**
Stddev	.00080	.00099	.10726
%RSD	1.6142	1.7019	20.985
#1	.04855	.05717	-.63430
#2	.04934	.05848	-.46076
#3	.05014	.05911	-.43832
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13527.**	**88800.**	**3166.3**
Stddev	111.	2963.	74.0
%RSD	.82297	3.3362	2.3371
#1	13400.	88135.	3114.9
#2	13606.	92039.	3132.9
#3	13576.	86227.	3251.1

Approved: March 30, 2017

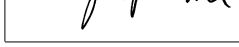
Sample Name: CCV Acquired: 3/29/2017 17:21:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37954**	**9.6267**	**.38476**	**.46902**	**.97432**	**.04829**	**9.6513**
Stddev	.00161	.0111	.00280	.00363	.00551	.00006	.0478
%RSD	.42327	.11509	.72810	.77399	.56599	.12082	.49517
#1	.37927	9.6281	.38180	.46487	.97245	.04835	9.6891
#2	.37809	9.6150	.38738	.47161	.98053	.04829	9.6671
#3	.38127	9.6370	.38509	.47058	.96999	.04824	9.5976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04957**	**.19975**	**.47415**	**.49611**	**3.8594**	**48.954**	**.97381**
Stddev	.00018	.00021	.00177	.00049	.0156	.253	.00459
%RSD	.35875	.10275	.37267	.09943	.40415	.51751	.47093
#1	.04937	.19982	.47256	.49641	3.8622	49.145	.97065
#2	.04972	.19952	.47605	.49554	3.8425	49.051	.97907
#3	.04961	.19991	.47385	.49638	3.8733	48.667	.97171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6215**	**.48560**	**.96201**	**48.464**	**.48730**	**9.5905**	**.49009**
Stddev	.0919	.00480	.00106	.142	.00065	.0027	.00412
%RSD	.95535	.98906	.11000	.29378	.13357	.02825	.84159
#1	9.5915	.48213	.96209	48.336	.48785	9.5928	.49226
#2	9.7247	.49108	.96303	48.618	.48748	9.5912	.49267
#3	9.5483	.48358	.96092	48.439	.48658	9.5875	.48533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 17:21:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1513**	**.38925**	**4.8453**	**.98906**	**.96306**	**.95747**	**.49434**
Stddev	.0042	.00712	.0277	.00154	.00463	.00649	.00366
%RSD	.36085	1.8286	.57121	.15579	.48053	.67799	.73948
#1	1.1553	.38853	4.8621	.99071	.95983	.96252	.49623
#2	1.1470	.39670	4.8604	.98767	.96836	.95015	.49666
#3	1.1517	.38252	4.8133	.98878	.96099	.95975	.49012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96794**	**.96953**	F **.53230**
Stddev	.00258	.00244	.13982
%RSD	.26700	.25194	26.267
#1	.96505	.97089	.39859
#2	.97004	.97099	.52079
#3	.96873	.96671	.67752
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13539.**	**89038.**	**3316.7**
Stddev	141.	1229.	62.3
%RSD	1.0405	1.3805	1.8782
#1	13378.	88515.	3271.8
#2	13640.	90442.	3290.5
#3	13598.	88156.	3387.8

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:25:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**.00688**	**-.00062**	**.00175**	**.00183**	**.00007**	**-.01218**
Stddev	.00046	.00257	.00208	.00146	.00176	.00005	.01303
%RSD	19.292	37.425	334.52	83.183	95.811	77.620	106.93
#1	-.00190	.00750	.00075	.00340	.00384	.00013	-.02539
#2	-.00236	.00405	-.00302	.00064	.00055	.00007	-.01181
#3	-.00282	.00909	.00041	.00121	.00111	.00002	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**-.00006**	**-.00007**	**-.00145**	**-.00171**	**-.01646**	**-.00618**
Stddev	.00010	.00025	.00011	.00150	.02410	.14485	.00517
%RSD	53.627	437.74	145.91	103.79	1406.7	880.17	83.676
#1	-.00010	-.00035	.00005	.00028	-.02738	.14323	-.00299
#2	-.00017	.00004	-.00011	-.00214	.02044	-.05321	-.01214
#3	-.00030	.00013	-.00016	-.00248	.00181	-.13939	-.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00003**	**-.00001**	**.00313**	**-.00051**	**-.00214**	**.00099**
Stddev	.04831	.00316	.00049	.00423	.00061	.00109	.00162
%RSD	373820.	11919.	6215.8	135.30	119.07	51.273	162.36
#1	.02581	.00234	.00014	.00186	.00019	-.00279	.00182
#2	-.05574	.00131	.00039	-.00033	-.00094	-.00087	.00203
#3	.02989	-.00357	-.00055	.00785	-.00078	-.00274	-.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:25:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**-.00144**	**.00559**	**-.00015**	**-.00034**	**.00258**	**-.00116**
Stddev	.00283	.00372	.00160	.00056	.00081	.01267	.00253
%RSD	305.59	257.74	28.615	371.04	240.90	491.23	217.32
#1	-.00051	-.00573	.00738	.00018	-.00069	.01525	-.00025
#2	.00418	.00084	.00430	-.00080	.00059	-.01009	-.00402
#3	-.00090	.00056	.00509	.00016	-.00090	.00258	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00007**	**.00001**	F **-.10793**
Stddev	.00078	.00016	.24579
%RSD	1173.3	1626.9	227.72
#1	.00014	.00016	.01747
#2	.00081	.00002	-.39113
#3	-.00075	-.00015	.04985
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13687.**	**91201.**	**3308.6**
Stddev	97.	1248.	46.6
%RSD	.71091	1.3689	1.4085
#1	13788.	89794.	3358.7
#2	13593.	91635.	3300.6
#3	13680.	92175.	3266.6

Approved: March 30, 2017

Sample Name: L1703136301 Acquired: 3/29/2017 17:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.00961**	**.00205**	**.00096**	**.00241**	**.00011**	**-.00005**	**-.00006**
Stddev	.00229	.00906	.00098	.00356	.00086	.00002	.07269	.00030
%RSD	145.80	94.293	47.947	369.35	35.815	16.291	154270.	480.62
#1	.00003	.00191	.00285	.00474	.00240	.00013	.07120	-.00022
#2	-.00055	.01959	.00236	-.00233	.00155	.00010	.00277	.00028
#3	-.00419	.00733	.00095	.00048	.00328	.00010	-.07411	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00017**	**.00060**	**-.00082**	**-.05883**	**-.01497**	**.00735**	**-.00081**
Stddev	.00011	.00019	.00082	.03060	.08170	.00681	.10462	.00394
%RSD	91.135	111.57	135.58	3731.5	138.88	45.460	1422.6	486.86
#1	-.00024	-.00030	.00096	-.03307	-.08725	-.00983	-.10694	.00312
#2	-.00003	-.00027	.00118	.02782	.03329	-.01239	.03061	-.00475
#3	-.00008	.00005	-.00033	.00279	-.12251	-.02269	.09839	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.04237**	**-.00026**	**-.00741**	**.00204**	**.00533**	**.00077**	**.01059**
Stddev	.00010	.04588	.00076	.00457	.00233	.00862	.00291	.00046
%RSD	705.75	108.31	287.10	61.684	114.34	161.90	377.34	4.3698
#1	-.00010	-.09534	-.00062	-.00237	.00176	-.00088	.00394	.01019
#2	.00007	-.01517	.00060	-.01129	-.00014	.00168	-.00178	.01048
#3	.00008	-.01658	-.00077	-.00857	.00450	.01517	.00015	.01109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703136301 Acquired: 3/29/2017 17:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00014**	**-.00900**	**-.00091**	**.00004**	**.00092**	**2.3493**
Stddev	.00039	.00060	.00987	.00114	.00026	.00004	.2321
%RSD	1461.7	419.68	109.66	125.57	594.31	4.4692	9.8776
#1	-.00042	-.00044	-.01122	-.00215	.00006	.00088	2.5590
#2	.00036	.00012	.00179	.00007	-.00022	.00094	2.1000
#3	-.00002	.00075	-.01757	-.00064	.00029	.00096	2.3890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13413.**	**88839.**	**3128.1**
Stddev	127.	87.	73.8
%RSD	.94540	.09811	2.3598
#1	13497.	88892.	3212.5
#2	13267.	88887.	3075.7
#3	13475.	88739.	3096.0

Approved: March 30, 2017

Sample Name: L1703136302 Acquired: 3/29/2017 17:32:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00167**	**.00827**	**.00157**	**-.00110**	**.00293**	**.00011**	**.03926**
Stddev	.00119	.00456	.00145	.00027	.00226	.00010	.07873
%RSD	70.938	55.196	92.596	24.177	77.222	93.055	200.56
#1	-.00177	.01346	-.00000	-.00140	.00392	.00016	.04604
#2	-.00044	.00647	.00184	-.00088	.00034	.00019	.11438
#3	-.00281	.00488	.00286	-.00104	.00453	-.00001	-.04265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00004**	**-.00012**	**.00176**	**-.00391**	**-.05095**	**-.00241**
Stddev	.00026	.00004	.00068	.00193	.01846	.15492	.00360
%RSD	105.74	116.61	584.08	109.73	472.35	304.06	149.34
#1	-.00055	-.00005	-.00091	.00393	.00739	.12750	-.00028
#2	-.00008	-.00007	.00030	.00105	-.02521	-.12933	-.00038
#3	-.00011	.00001	.00026	.00028	.00609	-.15102	-.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01169**	**-.00121**	**-.00009**	**-.02909**	**-.00113**	**-.00191**	**-.00093**
Stddev	.07281	.00124	.00048	.02671	.00026	.00440	.00158
%RSD	622.93	102.20	505.47	91.816	23.300	230.62	169.72
#1	-.01950	-.00134	-.00039	-.00484	-.00114	.00266	.00000
#2	.06471	.00009	.00046	-.05771	-.00086	-.00227	-.00004
#3	-.08027	-.00237	-.00036	-.02470	-.00139	-.00611	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703136302 Acquired: 3/29/2017 17:32:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00245**	**-.00048**	**.01206**	**-.00001**	**-.00020**	**-.00331**	**.00036**
Stddev	.00339	.00526	.00263	.00121	.00047	.00785	.00193
%RSD	138.35	1103.7	21.795	12071.	228.99	237.05	530.35
#1	.00181	-.00475	.01233	-.00061	-.00057	-.01222	.00144
#2	-.00057	-.00207	.01454	-.00080	-.00036	.00257	-.00186
#3	.00611	.00539	.00931	.00138	.00032	-.00028	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00061**	**.00115**	F **-.46633**
Stddev	.00098	.00009	.31093
%RSD	160.35	7.7479	66.676
#1	.00149	.00109	-.11281
#2	-.00044	.00125	-.69736
#3	.00078	.00110	-.58884
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13279.**	**88971.**	**3220.7**
Stddev	69.	467.	41.1
%RSD	.51690	.52541	1.2764
#1	13346.	89503.	3178.4
#2	13209.	88629.	3223.2
#3	13283.	88779.	3260.5

Approved: March 30, 2017

Sample Name: L1703136303 Acquired: 3/29/2017 17:36:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.01382**	**-.00002**	**-.00154**	**.00094**	**.00013**	**.08828**
Stddev	.00148	.00239	.00175	.00228	.00154	.00007	.02287
%RSD	471.79	17.281	7799.6	148.64	164.12	52.530	25.907
#1	.00049	.01196	.00183	-.00105	-.00033	.00009	.09227
#2	-.00202	.01300	-.00026	.00046	.00266	.00021	.10889
#3	.00060	.01652	-.00164	-.00402	.00049	.00009	.06367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.00020**	**-.00091**	**.00078**	**.00484**	**-.20049**	**-.00648**
Stddev	.00047	.00031	.00051	.00068	.03326	.08081	.00939
%RSD	137.68	155.59	56.356	86.938	687.36	40.308	144.94
#1	.00020	.00022	-.00120	.00020	-.01256	-.29344	-.00061
#2	-.00065	-.00012	-.00032	.00061	.04319	-.16112	-.01731
#3	-.00059	.00049	-.00121	.00152	-.01611	-.14690	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.09309**	**.00055**	**-.00004**	**.03187**	**-.00170**	**.00010**	**-.00091**
Stddev	.05430	.00326	.00033	.00445	.00039	.00761	.00359
%RSD	58.336	589.31	775.92	13.949	22.993	7871.6	392.86
#1	-.05469	.00365	.00016	.03692	-.00203	.00886	-.00135
#2	-.06935	-.00285	.00014	.02854	-.00127	-.00479	.00287
#3	-.15522	.00087	-.00043	.03015	-.00180	-.00378	-.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703136303 Acquired: 3/29/2017 17:36:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00187**	**-.00084**	**.02309**	**.00074**	**-.00036**	**-.00255**	**-.00049**
Stddev	.00389	.00525	.00269	.00092	.00063	.00239	.00264
%RSD	207.59	624.24	11.635	124.44	174.78	93.970	543.68
#1	-.00153	-.00270	.02409	-.00029	-.00097	-.00473	-.00326
#2	.00104	.00509	.02004	.00101	-.00040	-.00292	.00199
#3	.00611	-.00491	.02513	.00149	.00029	.00001	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00031**	**.00145**	F **-.06931**
Stddev	.00068	.00010	.09363
%RSD	216.36	7.0864	135.08
#1	-.00036	.00138	.01659
#2	.00031	.00141	-.16911
#3	.00099	.00157	-.05541
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13419.**	**88417.**	**3197.0**
Stddev	66.	1583.	87.1
%RSD	.49360	1.7908	2.7254
#1	13434.	88085.	3165.0
#2	13477.	87026.	3130.5
#3	13347.	90140.	3295.7

Approved: March 30, 2017

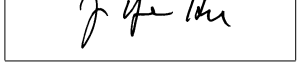
Sample Name: CCV Acquired: 3/29/2017 17:40:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38711**	**9.8498**	**.40715**	**.47420**	**1.0001**	**.04938**	**9.8701**
Stddev	.00279	.0697	.00204	.00247	.0211	.00018	.1733
%RSD	.72139	.70717	.50201	.52128	2.1063	.36549	1.7557
#1	.38976	9.8867	.40628	.47142	.98295	.04955	9.7464
#2	.38419	9.7694	.40948	.47613	1.0236	.04919	10.068
#3	.38738	9.8932	.40568	.47506	.99383	.04939	9.7957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05175**	**.20723**	**.48537**	**.51676**	**3.9699**	**50.626**	**1.0020**
Stddev	.00036	.00105	.00462	.00207	.0906	.938	.0344
%RSD	.69297	.50565	.95216	.39964	2.2830	1.8537	3.4299
#1	.05139	.20686	.48833	.51594	3.8837	49.939	.97341
#2	.05177	.20642	.48004	.51524	4.0644	51.695	1.0401
#3	.05211	.20842	.48772	.51911	3.9617	50.244	.99244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9470**	**.49976**	**1.0040**	**50.350**	**.50877**	**10.030**	**.51019**
Stddev	.1762	.00808	.0040	1.050	.00310	.022	.00169
%RSD	1.7715	1.6171	.40300	2.0857	.60908	.22379	.33116
#1	9.7958	.49218	.99990	49.458	.50577	10.004	.51006
#2	10.141	.50826	1.0041	51.507	.50857	10.038	.50857
#3	9.9047	.49884	1.0080	50.085	.51196	10.047	.51194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017



Sample Name: CCV Acquired: 3/29/2017 17:40:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2110**	**.40774**	**5.0528**	**1.0308**	**.99409**	**1.0065**	**.51469**
Stddev	.0026	.00318	.0181	.0038	.02219	.0210	.00211
%RSD	.21571	.77974	.35766	.36946	2.2326	2.0832	.40981
#1	1.2114	.41080	5.0321	1.0265	.97359	.98694	.51239
#2	1.2082	.40796	5.0605	1.0322	1.0177	1.0286	.51514
#3	1.2134	.40446	5.0656	1.0337	.99101	1.0039	.51654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98681**	**1.0144**	F **.21834**
Stddev	.00415	.0034	.24117
%RSD	.42086	.33473	110.46
#1	.99067	1.0113	.18218
#2	.98242	1.0139	.47555
#3	.98734	1.0180	-.00271
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13141.**	**87189.**	**3189.2**
Stddev	67.	774.	72.9
%RSD	.51115	.88759	2.2868
#1	13063.	86950.	3271.4
#2	13180.	88054.	3163.6
#3	13178.	86563.	3132.5

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:43:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.00986**	**-.00069**	**.00281**	**.00114**	**.00006**	**-.03772**
Stddev	.00079	.00448	.00154	.00124	.00086	.00006	.05647
%RSD	144.19	45.378	223.82	43.949	75.189	94.920	149.71
#1	.00003	.00520	-.00242	.00370	.00042	.00002	.00306
#2	-.00145	.01026	-.00018	.00333	.00090	.00013	-.10217
#3	-.00022	.01413	.00054	.00140	.00209	.00004	-.01404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00012**	**-.00121**	**-.00034**	**-.00801**	**-.11361**	**-.00322**
Stddev	.00022	.00032	.00130	.00066	.02725	.07882	.00545
%RSD	104.53	264.65	107.13	195.77	340.09	69.378	169.14
#1	-.00001	.00026	.00016	-.00093	-.01278	-.12865	-.00865
#2	-.00045	-.00025	-.00242	.00037	.02130	-.02835	.00226
#3	-.00018	.00034	-.00138	-.00045	-.03256	-.18382	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03255**	**-.00034**	**.00013**	**-.01436**	**-.00051**	**-.00300**	**-.00071**
Stddev	.03974	.00114	.00033	.05410	.00018	.00919	.00100
%RSD	122.10	340.15	261.92	376.59	35.743	306.35	140.06
#1	-.06048	-.00162	-.00002	.01652	-.00030	.00493	-.00121
#2	.01295	.00005	-.00011	.01721	-.00058	-.01308	.00044
#3	-.05011	.00056	.00050	-.07683	-.00065	-.00086	-.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 17:43:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00483**	**-.00056**	**.00525**	**-.00004**	**.00029**	**-.00766**	**.00007**
Stddev	.00262	.00088	.00407	.00063	.00039	.00134	.00276
%RSD	54.161	157.28	77.456	1464.6	133.61	17.467	3833.3
#1	.00655	-.00028	.00390	.00067	.00060	-.00866	.00312
#2	.00613	.00015	.00203	-.00031	.00041	-.00614	-.00066
#3	.00182	-.00155	.00982	-.00050	-.00014	-.00818	-.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00019**	**.00019**	F **-.34750**
Stddev	.00042	.00007	.11419
%RSD	215.03	38.933	32.861
#1	.00064	.00017	-.24907
#2	-.00019	.00012	-.47269
#3	.00013	.00026	-.32074
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13551.**	**90264.**	**3202.9**
Stddev	172.	952.	23.2
%RSD	1.2707	1.0544	.72405
#1	13603.	89574.	3218.1
#2	13691.	91350.	3214.5
#3	13359.	89868.	3176.2

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 17:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00750**	**.18560**	**.00663**	**.07727**	**.00969**	**.00166**	**.39747**	**.00060**
Stddev	.00157	.00089	.00185	.00191	.00078	.00009	.03493	.00018
%RSD	20.899	.48121	27.915	2.4690	8.0258	5.5400	8.7880	29.882
#1	.00860	.18658	.00831	.07571	.00991	.00156	.43248	.00057
#2	.00570	.18539	.00464	.07940	.01033	.00167	.36262	.00044
#3	.00820	.18483	.00694	.07671	.00883	.00174	.39730	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00423**	**.00374**	**.00450**	**.06663**	**.73275**	**.08045**	**.37330**	**.00736**
Stddev	.00012	.00126	.00072	.02148	.16163	.00489	.02274	.00207
%RSD	2.9522	33.734	16.067	32.232	22.059	6.0792	6.0906	28.157
#1	.00436	.00447	.00368	.08444	.67612	.07507	.34775	.00526
#2	.00422	.00445	.00479	.04278	.91507	.08164	.38088	.00743
#3	.00411	.00228	.00503	.07268	.60704	.08463	.39129	.00940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00789**	**.42085**	**.01645**	**.79382**	**.00851**	**.08337**	**.02182**	**.80894**
Stddev	.00003	.03729	.00120	.00266	.00254	.00095	.00112	.00495
%RSD	.44183	8.8596	7.2896	.33489	29.834	1.1442	5.1237	.61134
#1	.00791	.40598	.01780	.79081	.00643	.08432	.02059	.80599
#2	.00792	.39329	.01604	.79486	.00775	.08337	.02277	.80617
#3	.00785	.46328	.01551	.79581	.01134	.08242	.02211	.81465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LLCCV Acquired: 3/29/2017 17:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41857**	**.04150**	**.02617**	**.16278**	**.00911**	**.01881**	**26.384**
Stddev	.00141	.00051	.00576	.00080	.00040	.00016	.756
%RSD	.33676	1.2403	22.024	.48942	4.3499	.85817	2.8638
#1	.42012	.04091	.02656	.16298	.00866	.01863	25.925
#2	.41822	.04173	.02022	.16190	.00939	.01891	27.256
#3	.41737	.04186	.03172	.16345	.00930	.01890	25.970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13271.**	**87881.**	**3210.2**
Stddev	90.	232.	85.4
%RSD	.67813	.26420	2.6605
#1	13287.	87669.	3263.4
#2	13351.	87846.	3111.7
#3	13174.	88129.	3255.5

Approved: March 30, 2017

Sample Name: PBW Z1 Acquired: 3/29/2017 17:51:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**.00950**	**.00144**	**.00081**	**.00086**	**-.00001**	**.01543**
Stddev	.00094	.00526	.00101	.00149	.00158	.00000	.00416
%RSD	82.239	55.354	70.185	184.74	184.20	8.2418	26.967
#1	-.00016	.01493	.00260	.00049	.00256	-.00001	.01080
#2	-.00202	.00917	.00091	.00244	.00057	-.00001	.01885
#3	-.00124	.00442	.00080	-.00050	-.00056	-.00002	.01665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00010**	**-.00100**	**-.00071**	**.00871**	**-.12547**	**-.01066**
Stddev	.00022	.00018	.00059	.00050	.01618	.18733	.00249
%RSD	61.250	183.29	58.598	70.496	185.79	149.30	23.351
#1	-.00043	-.00000	-.00168	-.00093	-.00459	.03712	-.00882
#2	-.00011	.00031	-.00071	-.00107	.00399	-.33033	-.01349
#3	-.00053	-.00001	-.00062	-.00014	.02672	-.08321	-.00966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03170**	**-.00037**	**.00042**	**.04029**	**-.00030**	**-.00584**	**.00105**
Stddev	.05679	.00221	.00006	.01272	.00050	.00552	.00336
%RSD	179.14	601.10	14.015	31.576	166.18	94.561	321.43
#1	-.08777	.00079	.00044	.05486	-.00086	.00054	-.00223
#2	-.03311	-.00292	.00047	.03465	.00010	-.00910	.00449
#3	.02578	.00103	.00036	.03137	-.00014	-.00895	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: PBW Z1 Acquired: 3/29/2017 17:51:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**-.00256**	**.01137**	**.00050**	**-.00018**	**-.00619**	**.00054**
Stddev	.00400	.00261	.00123	.00032	.00075	.00268	.00226
%RSD	262.35	102.03	10.782	63.967	416.60	43.227	418.55
#1	.00046	-.00289	.01032	.00072	-.00092	-.00836	-.00202
#2	-.00613	.00020	.01108	.00065	.00057	-.00320	.00139
#3	.00110	-.00500	.01272	.00013	-.00019	-.00702	.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.00228**	F **-.33947**
Stddev	.00024	.00017	.24319
%RSD	159.24	7.5231	71.637
#1	-.00034	.00247	-.34857
#2	-.00022	.00218	-.57799
#3	.00012	.00218	-.09186
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13888.**	**93930.**	**3220.0**
Stddev	97.	1259.	30.3
%RSD	.69869	1.3398	.93981
#1	13889.	94381.	3233.3
#2	13985.	94901.	3185.3
#3	13790.	92508.	3241.3

Approved: March 30, 2017

Sample Name: LCSW Z1 Acquired: 3/29/2017 17:55:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19309**	**4.9126**	**.18762**	**.92915**	**.49593**	**.02406**	**4.8205**	**.02437**
Stddev	.00038	.0427	.00232	.00809	.00045	.00015	.0999	.00013
%RSD	.19480	.86941	1.2387	.87113	.09058	.62425	2.0730	.52121
#1	.19320	4.8636	.18988	.92049	.49546	.02389	4.7677	.02435
#2	.19340	4.9425	.18775	.93043	.49598	.02418	4.7580	.02426
#3	.19267	4.9316	.18524	.93653	.49635	.02411	4.9357	.02451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10055**	**.24259**	**.24859**	**1.9843**	**24.539**	**.49151**	**4.9049**	**.24610**
Stddev	.00044	.00088	.00150	.0074	.034	.00261	.0925	.00056
%RSD	.43287	.36376	.60455	.37203	.13840	.53194	1.8859	.22578
#1	.10104	.24174	.24986	1.9840	24.541	.49174	4.7996	.24559
#2	.10043	.24350	.24898	1.9771	24.572	.48879	4.9729	.24669
#3	.10019	.24251	.24693	1.9919	24.504	.49401	4.9422	.24603
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48371**	**24.582**	**.24759**	**4.7144**	**.24773**	**.58072**	**.18995**	**2.4729**
Stddev	.00051	.079	.00103	.0072	.00133	.00576	.00671	.0040
%RSD	.10505	.32311	.41679	.15306	.53491	.99270	3.5303	.16000
#1	.48343	24.630	.24731	4.7207	.24868	.58700	.19626	2.4771
#2	.48430	24.490	.24673	4.7160	.24621	.57947	.19067	2.4693
#3	.48340	24.626	.24874	4.7066	.24829	.57567	.18291	2.4721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: LCSW Z1 Acquired: 3/29/2017 17:55:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49942**	**.49732**	**.48742**	**.25171**	**.49228**	**.48509**	**.02454**
Stddev	.00215	.00171	.00685	.00206	.00213	.00049	.47764
%RSD	.43093	.34347	1.4063	.81770	.43365	.10000	1946.5
#1	.50151	.49929	.48768	.25014	.48982	.48548	-.46697
#2	.49953	.49620	.49415	.25404	.49329	.48454	.05360
#3	.49721	.49648	.48045	.25094	.49372	.48523	.48698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13844.**	**90504.**	**3351.6**
Stddev	97.	883.	69.3
%RSD	.70066	.97601	2.0672
#1	13766.	90446.	3392.3
#2	13953.	89651.	3390.8
#3	13813.	91415.	3271.6

Approved: March 30, 2017

Sample Name: L1703140901 Acquired: 3/29/2017 17:58:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00090**	**.29773**	**.00047**	**.06920**	**.05687**	**.00005**	**19.479**
Stddev	.00024	.00363	.00256	.00196	.00087	.00016	.344
%RSD	27.052	1.2187	541.05	2.8287	1.5245	333.02	1.7644
#1	-.00064	.29536	-.00237	.06876	.05587	.00018	19.089
#2	-.00094	.29591	.00122	.06750	.05733	-.00012	19.738
#3	-.00112	.30190	.00257	.07134	.05742	.00008	19.610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01966**	**.00816**	**.00323**	**.40033**	**2.1055**	**.66652**	**.00137**
Stddev	.00027	.00037	.00070	.00112	.0288	.19403	.00816
%RSD	1.3912	4.5924	21.690	.28083	1.3686	29.111	595.44
#1	.01936	.00827	.00287	.40092	2.0821	.86624	.01075
#2	.01973	.00775	.00404	.39903	2.1377	.47874	-.00405
#3	.01989	.00847	.00279	.40103	2.0967	.65457	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1055**	**.35173**	**-.00009**	**139.81**	**.03869**	**-.01501**	**.29167**
Stddev	.0390	.00493	.00027	1.64	.00055	.00424	.00435
%RSD	3.5296	1.4026	296.39	1.1753	1.4267	28.243	1.4927
#1	1.1426	.34808	-.00023	138.09	.03805	-.01045	.28677
#2	1.0648	.35734	-.00026	141.37	.03896	-.01575	.29315
#3	1.1091	.34977	.00022	139.96	.03905	-.01883	.29509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703140901 Acquired: 3/29/2017 17:58:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00284**	**.00194**	**.42060**	**.00073**	**.07627**	**-.00318**	**-.00189**
Stddev	.00458	.00178	.00197	.00087	.00078	.00248	.00223
%RSD	161.16	91.798	.46733	118.92	1.0195	78.042	118.35
#1	.00059	.00152	.41923	.00173	.07617	-.00045	-.00331
#2	-.00805	.00390	.41971	.00030	.07709	-.00530	.00069
#3	-.00107	.00041	.42285	.00016	.07554	-.00380	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00034**	**10.668**	F **-.18915**
Stddev	.00047	.023	.15421
%RSD	139.20	.21977	81.530
#1	-.00010	10.667	-.22611
#2	-.00003	10.645	-.01981
#3	-.00088	10.692	-.32152
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13734.**	**91243.**	**3415.6**
Stddev	90.	1072.	122.8
%RSD	.65380	1.1746	3.5960
#1	13785.	90119.	3496.8
#2	13787.	92254.	3274.3
#3	13630.	91356.	3475.7

Approved: March 30, 2017

Sample Name: L1703140901S Acquired: 3/29/2017 18:02:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18637**	**4.8890**	**.18811**	**.97882**	**.53136**	**.02364**	**23.783**
Stddev	.00308	.0120	.00065	.00104	.00463	.00003	.275
%RSD	1.6502	.24576	.34599	.10587	.87198	.10871	1.1563
#1	.18701	4.8817	.18740	.97985	.52604	.02364	23.529
#2	.18907	4.8824	.18823	.97881	.53448	.02366	23.744
#3	.18303	4.9028	.18869	.97778	.53357	.02361	24.075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04359**	**.10382**	**.23839**	**.63011**	**3.9043**	**24.449**	**.47423**
Stddev	.00014	.00047	.00126	.00205	.0502	.143	.00412
%RSD	.32124	.45321	.52832	.32486	1.2863	.58499	.86920
#1	.04344	.10332	.23714	.62774	3.8513	24.297	.46966
#2	.04372	.10424	.23837	.63123	3.9103	24.581	.47536
#3	.04360	.10391	.23966	.63135	3.9512	24.469	.47766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.6309**	**.57913**	**.47543**	**159.45**	**.27578**	**4.7314**	**.51975**
Stddev	.1175	.00608	.00152	1.32	.00080	.0085	.00029
%RSD	2.0873	1.0502	.32029	.82987	.28937	.18022	.05543
#1	5.7412	.57239	.47368	158.02	.27487	4.7216	.51943
#2	5.5073	.58080	.47637	159.70	.27637	4.7367	.51983
#3	5.6442	.58420	.47626	160.63	.27610	4.7360	.51998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703140901S Acquired: 3/29/2017 18:02:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56601**	**.19079**	**2.8745**	**.48530**	**.55306**	**.47667**	**.23621**
Stddev	.00424	.00659	.0136	.00185	.00645	.00515	.00147
%RSD	.74850	3.4526	.47140	.38216	1.1659	1.0814	.62115
#1	.56799	.19233	2.8589	.48317	.54657	.47074	.23679
#2	.56114	.18356	2.8837	.48657	.55315	.48012	.23731
#3	.56889	.19646	2.8809	.48616	.55946	.47915	.23455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48161**	**10.900**	F **-.12791**
Stddev	.00029	.026	.07047
%RSD	.05940	.23621	55.096
#1	.48156	10.870	-.12361
#2	.48136	10.914	-.20043
#3	.48192	10.915	-.05968
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14089.**	**93174.**	**3557.0**
Stddev	116.	1836.	34.3
%RSD	.82327	1.9702	.96314
#1	13959.	95282.	3524.4
#2	14125.	92318.	3553.8
#3	14182.	91924.	3592.7

Approved: March 30, 2017

Sample Name: L1703140901SD Acquired: 3/29/2017 18:05:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18483**	**4.8698**	**.18832**	**.97274**	**.52631**	**.02353**	**23.441**	**.04264**
Stddev	.00229	.0187	.00277	.00411	.00229	.00002	.223	.00007
%RSD	1.2406	.38506	1.4705	.42239	.43479	.10431	.95093	.15779
#1	.18717	4.8914	.18700	.97096	.52532	.02355	23.455	.04272
#2	.18258	4.8582	.19150	.97744	.52892	.02351	23.656	.04261
#3	.18474	4.8598	.18646	.96983	.52468	.02352	23.211	.04259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10355**	**.23704**	**.62430**	**3.9147**	**24.541**	**.48129**	**5.6142**	**.57414**
Stddev	.00027	.00100	.00192	.0341	.160	.00508	.0533	.00478
%RSD	.25784	.42329	.30676	.87162	.65041	1.0546	.94959	.83216
#1	.10335	.23812	.62409	3.8772	24.667	.47759	5.6754	.56942
#2	.10344	.23613	.62250	3.9438	24.362	.48708	5.5783	.57898
#3	.10385	.23687	.62631	3.9231	24.594	.47920	5.5888	.57401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47361**	**158.24**	**.27341**	**4.7007**	**.51680**	**.56019**	**.18809**	**2.8497**
Stddev	.00049	.41	.00025	.0061	.00244	.00193	.00502	.0020
%RSD	.10348	.26059	.09112	.12937	.47188	.34392	2.6695	.07026
#1	.47338	157.95	.27360	4.6942	.51821	.56010	.18247	2.8504
#2	.47328	158.71	.27350	4.7018	.51399	.55831	.18967	2.8512
#3	.47418	158.05	.27313	4.7062	.51821	.56216	.19213	2.8474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703140901SD Acquired: 3/29/2017 18:05:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607863-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48167**	**.54916**	**.48412**	**.23578**	**.47989**	**10.796**	**.01876**
Stddev	.00098	.00359	.00485	.00140	.00120	.010	.23915
%RSD	.20317	.65444	1.0026	.59186	.24943	.09077	1274.5
#1	.48065	.54577	.48953	.23581	.48117	10.803	.00677
#2	.48260	.55293	.48013	.23438	.47972	10.785	-.21416
#3	.48175	.54877	.48271	.23717	.47879	10.800	.26369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14066.**	**92523.**	**3596.8**
Stddev	42.	573.	3.4
%RSD	.29727	.61944	.09382
#1	14052.	92748.	3595.5
#2	14113.	92950.	3600.7
#3	14033.	91872.	3594.3

Approved: March 30, 2017

Sample Name: L1703138601 Acquired: 3/29/2017 18:09:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.13532**	**.00262**	**.01308**	**.02101**	**.00003**	**17.876**	**-.00009**
Stddev	.00185	.00834	.00022	.00182	.00111	.00008	.199	.00008
%RSD	294.33	6.1624	8.2289	13.945	5.2685	294.10	1.1152	81.948
#1	-.00146	.13001	.00268	.01451	.02030	-.00002	17.677	-.00010
#2	-.00192	.13103	.00280	.01371	.02044	.00011	17.877	-.00001
#3	.00149	.14493	.00238	.01103	.02228	-.00002	18.075	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00022**	**.00027**	**.29380**	**.93972**	**.00059**	**2.7579**	**.03260**
Stddev	.00035	.00022	.00077	.01359	.15266	.00429	.0820	.00293
%RSD	183.81	98.233	282.56	4.6269	16.245	729.44	2.9717	8.9863
#1	.00021	.00035	-.00060	.30905	.89254	.00200	2.6638	.03427
#2	-.00041	.00035	.00085	.28939	1.1104	.00399	2.7967	.03430
#3	-.00037	-.00003	.00057	.28295	.81623	-.00423	2.8133	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**5.2597**	**.00028**	**.01347**	**.00025**	**-.00288**	**-.00440**	**1.2757**
Stddev	.00035	.0792	.00069	.00595	.00249	.00192	.00386	.0025
%RSD	248.87	1.5059	246.16	44.133	1016.2	66.487	87.768	.19909
#1	.00021	5.1908	.00047	.01456	.00052	-.00480	-.00802	1.2728
#2	.00044	5.2420	-.00049	.01880	.00259	-.00096	-.00033	1.2775
#3	-.00024	5.3462	.00086	.00706	-.00237	-.00289	-.00485	1.2769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017

Sample Name: L1703138601 Acquired: 3/29/2017 18:09:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.05548**	**-.00184**	**.00020**	**.00041**	**.00849**	**.15370**
Stddev	.00011	.00097	.00311	.00112	.00036	.00010	.20177
%RSD	41.567	1.7470	169.42	551.18	88.874	1.1553	131.27
#1	.00028	.05477	-.00050	-.00090	.00068	.00839	-.03590
#2	.00035	.05510	.00038	.00134	.00054	.00850	.36576
#3	.00014	.05659	-.00540	.00017	-.00000	.00859	.13123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14082.**	**94385.**	**3490.6**
Stddev	85.	860.	50.4
%RSD	.60481	.91146	1.4440
#1	14167.	94036.	3547.8
#2	13996.	95365.	3452.8
#3	14084.	93753.	3471.2

Approved: March 30, 2017

Sample Name: L1703138601PS Acquired: 3/29/2017 18:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607947-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18991**	**4.9246**	**.19227**	**.93468**	**.51294**	**.02375**	**21.459**
Stddev	.00090	.0457	.00261	.00672	.00066	.00016	.104
%RSD	.47504	.92777	1.3590	.71887	.12892	.69079	.48665
#1	.19045	4.9468	.19459	.93619	.51317	.02380	21.477
#2	.19042	4.9548	.18944	.94051	.51220	.02388	21.553
#3	.18887	4.8720	.19279	.92733	.51346	.02357	21.347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02452**	**.09944**	**.23967**	**.24636**	**2.1899**	**25.676**	**.49285**
Stddev	.00007	.00012	.00186	.00149	.0459	.028	.00642
%RSD	.27717	.11722	.77455	.60352	2.0983	.10760	1.3019
#1	.02459	.09945	.24057	.24807	2.2335	25.667	.50008
#2	.02446	.09955	.24091	.24538	2.1941	25.707	.48783
#3	.02450	.09931	.23754	.24562	2.1419	25.654	.49065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.4397**	**.27636**	**.48594**	**29.579**	**.24683**	**4.8095**	**.24718**
Stddev	.0198	.00237	.00138	.162	.00201	.0119	.00170
%RSD	.26621	.85792	.28315	.54726	.81520	.24829	.68816
#1	7.4625	.27796	.48753	29.725	.24601	4.8223	.24895
#2	7.4294	.27363	.48508	29.405	.24913	4.8075	.24703
#3	7.4272	.27748	.48521	29.608	.24536	4.7987	.24556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138601PS Acquired: 3/29/2017 18:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG607947-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58062**	**.19325**	**3.6538**	**.49863**	**.54671**	**.48995**	**.24971**
Stddev	.00456	.00174	.0100	.00174	.00178	.01250	.00255
%RSD	.78466	.90288	.27444	.34907	.32539	2.5522	1.0205
#1	.58072	.19487	3.6643	.50028	.54840	.48989	.25261
#2	.57601	.19349	3.6529	.49681	.54688	.50248	.24782
#3	.58512	.19140	3.6443	.49881	.54485	.47747	.24871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48761**	**.49158**	F **-.06440**
Stddev	.00395	.00162	.31495
%RSD	.80964	.32997	489.05
#1	.48894	.49334	-.24081
#2	.49073	.49124	-.25161
#3	.48318	.49015	.29921
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13786.**	**92215.**	**3361.7**
Stddev	101.	593.	52.3
%RSD	.73009	.64299	1.5559
#1	13673.	91570.	3330.0
#2	13866.	92341.	3422.1
#3	13819.	92736.	3333.2

Approved: March 30, 2017

Sample Name: L1703138601SDL Acquired: 3/29/2017 18:16:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607947-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00200**	**.03828**	**.00106**	**.00578**	**.00365**	**.00003**	**3.7101**
Stddev	.00289	.00171	.00138	.00366	.00226	.00006	.0421
%RSD	145.04	4.4612	130.86	63.254	61.901	236.04	1.1357
#1	.00122	.03673	.00264	.00679	.00623	-.00001	3.6618
#2	-.00280	.03800	.00044	.00883	.00206	.00010	3.7296
#3	-.00440	.04011	.00009	.00173	.00266	-.00001	3.7390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00038**	**-.00076**	**-.00125**	**.05066**	**-.11297**	**-.01387**
Stddev	.00040	.00034	.00049	.00050	.02380	.07289	.00319
%RSD	225.26	90.588	64.532	40.032	46.992	64.525	23.010
#1	-.00000	-.00001	-.00132	-.00068	.02338	-.18443	-.01374
#2	-.00063	.00050	-.00039	-.00159	.06723	-.03872	-.01075
#3	.00011	.00064	-.00058	-.00149	.06136	-.11575	-.01713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55036**	**.00776**	**-.00008**	**1.0098**	**-.00056**	**-.00226**	**-.00177**
Stddev	.15845	.00154	.00035	.0457	.00114	.00284	.00201
%RSD	28.791	19.790	457.53	4.5251	204.82	125.67	113.54
#1	.68027	.00703	-.00036	.96523	-.00135	-.00003	.00032
#2	.37383	.00673	-.00020	1.0075	-.00108	-.00129	-.00369
#3	.59699	.00952	.00032	1.0565	.00075	-.00545	-.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138601SDL Acquired: 3/29/2017 18:16:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG607947-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**-.00295**	**.27360**	**.00020**	**.01147**	**.00216**	**-.00126**
Stddev	.00388	.00468	.00431	.00062	.00081	.00623	.00113
%RSD	1215.8	158.55	1.5747	301.88	7.0431	288.57	89.781
#1	-.00399	-.00421	.27435	.00089	.01094	.00096	-.00063
#2	.00355	.00223	.27748	-.00030	.01240	.00890	-.00058
#3	.00140	-.00687	.26896	.00002	.01108	-.00339	-.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00026**	**.00219**	F **-.25871**
Stddev	.00058	.00014	.13656
%RSD	219.74	6.1824	52.787
#1	.00051	.00224	-.10499
#2	.00067	.00204	-.30510
#3	-.00040	.00230	-.36603
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13586.**	**90357.**	**3181.2**
Stddev	157.	1407.	14.2
%RSD	1.1585	1.5575	.44676
#1	13454.	91978.	3192.4
#2	13760.	89643.	3186.1
#3	13542.	89449.	3165.2

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 18:20:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37784**	**9.6088**	**.38581**	**.47413**	**.98092**	**.04790**	**9.7921**
Stddev	.00201	.0392	.00356	.00226	.00972	.00008	.1024
%RSD	.53130	.40793	.92208	.47662	.99108	.15983	1.0457
#1	.37645	9.5711	.38183	.47154	.98948	.04785	9.9077
#2	.37692	9.6059	.38690	.47568	.98294	.04787	9.7561
#3	.38014	9.6494	.38870	.47517	.97035	.04799	9.7126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04855**	**.19604**	**.47531**	**.48913**	**3.8715**	**48.907**	**.97892**
Stddev	.00024	.00052	.00156	.00206	.0374	.648	.00332
%RSD	.49369	.26618	.32796	.42104	.96518	1.3244	.33879
#1	.04839	.19555	.47370	.48733	3.8721	49.381	.98267
#2	.04883	.19659	.47542	.49137	3.9085	49.172	.97640
#3	.04843	.19599	.47682	.48868	3.8338	48.169	.97768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7505**	**.49148**	**.95420**	**49.033**	**.48306**	**9.5422**	**.48445**
Stddev	.1598	.00668	.00238	.533	.00134	.0259	.00419
%RSD	1.6384	1.3601	.24953	1.0879	.27694	.27131	.86564
#1	9.8808	.49833	.95306	49.530	.48254	9.5129	.47984
#2	9.7986	.49112	.95694	49.100	.48206	9.5513	.48547
#3	9.5723	.48497	.95261	48.470	.48458	9.5622	.48803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 18:20:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1488**	**.38377**	**4.8204**	**.97038**	**.97709**	**.96448**	**.49346**
Stddev	.0043	.00446	.0264	.00152	.00863	.01054	.00324
%RSD	.37114	1.1633	.54780	.15662	.88312	1.0933	.65662
#1	1.1439	.38163	4.7900	.97094	.98358	.96520	.49206
#2	1.1513	.38079	4.8333	.97153	.98039	.97465	.49115
#3	1.1513	.38891	4.8378	.96865	.96730	.95360	.49716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95655**	**.96254**	F **.35465**
Stddev	.00158	.00184	.33913
%RSD	.16569	.19072	95.625
#1	.95583	.96101	.74610
#2	.95545	.96457	.14997
#3	.95836	.96202	.16786
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13773.**	**90091.**	**3287.9**
Stddev	123.	826.	96.0
%RSD	.89557	.91634	2.9202
#1	13633.	90373.	3178.3
#2	13866.	90738.	3328.4
#3	13820.	89161.	3357.1

Approved: March 30, 2017

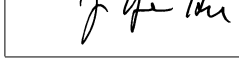
Sample Name: CCB Acquired: 3/29/2017 18:24:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00578**	**-.00012**	**.00460**	**.00218**	**.00004**	**-.03198**
Stddev	.00055	.00680	.00054	.00282	.00094	.00005	.03633
%RSD	63.055	117.51	466.58	61.339	43.171	146.99	113.61
#1	-.00139	-.00105	-.00072	.00705	.00313	-.00003	.00289
#2	-.00029	.00586	.00034	.00151	.00125	.00006	-.02921
#3	-.00096	.01254	.00003	.00524	.00216	.00007	-.06962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00008**	**.00021**	**.00068**	**-.00485**	**-.05053**	**-.00559**
Stddev	.00028	.00052	.00071	.00033	.00797	.09541	.00183
%RSD	113.81	635.13	335.21	48.793	164.44	188.81	32.803
#1	.00006	-.00067	.00019	.00078	-.01065	.05336	-.00427
#2	-.00048	.00010	-.00049	.00096	-.00813	-.13422	-.00768
#3	-.00032	.00033	.00093	.00031	.00424	-.07074	-.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05760**	**-.00099**	**.00000**	**-.04761**	**.00030**	**.00171**	**.00196**
Stddev	.13498	.00130	.00016	.03838	.00096	.00451	.00220
%RSD	234.34	132.29	7353.0	80.620	321.80	263.31	112.38
#1	-.02796	-.00159	.00013	-.03328	-.00023	.00686	-.00025
#2	-.20494	.00051	.00006	-.01845	-.00028	-.00020	.00415
#3	.06010	-.00187	-.00018	-.09109	.00140	-.00153	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: CCB Acquired: 3/29/2017 18:24:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00328**	**.00242**	**.00583**	**.00043**	**-.00045**	**.00018**	**-.00088**
Stddev	.00274	.00255	.00163	.00081	.00078	.00552	.00414
%RSD	83.346	105.25	27.945	188.75	174.36	3114.4	468.82
#1	.00507	.00002	.00724	-.00010	-.00055	.00654	.00139
#2	.00465	.00509	.00405	.00003	-.00117	-.00336	-.00566
#3	.00013	.00215	.00619	.00137	.00038	-.00265	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00014**	**.00020**	F **-.34152**
Stddev	.00049	.00011	.12545
%RSD	356.09	55.014	36.733
#1	.00052	.00028	-.46134
#2	.00030	.00008	-.35210
#3	-.00041	.00024	-.21111
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**14002.**	**93529.**	**3351.1**
Stddev	31.	2665.	31.1
%RSD	.22295	2.8489	.92856
#1	13967.	96551.	3363.0
#2	14014.	91517.	3374.5
#3	14026.	92518.	3315.8

Approved: March 30, 2017

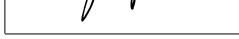
Sample Name: L1703138701 Acquired: 3/29/2017 18:27:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.11063**	**.00156**	**.02292**	**.18993**	**-.00007**	**126.95**	**.00114**
Stddev	.00165	.00557	.00126	.00464	.00204	.00007	1.10	.00019
%RSD	770.69	5.0388	80.733	20.231	1.0725	94.734	.86449	16.390
#1	-.00155	.10530	.00246	.01793	.18819	-.00003	125.82	.00130
#2	-.00071	.11642	.00209	.02374	.19217	-.00015	128.02	.00093
#3	.00163	.11017	.00012	.02710	.18944	-.00003	127.00	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00166**	**.00404**	**.13261**	**3.1414**	**.00042**	**40.454**	**.03824**
Stddev	.00031	.00044	.00090	.01696	.1466	.00202	.395	.00064
%RSD	87.496	26.541	22.357	12.788	4.6663	481.57	.97646	1.6792
#1	.00004	.00217	.00300	.14921	3.2417	-.00015	40.009	.03882
#2	.00066	.00140	.00462	.13332	3.2094	-.00126	40.592	.03755
#3	.00035	.00141	.00450	.11532	2.9732	.00267	40.762	.03833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**30.294**	**-.00019**	**.02125**	**.00209**	**-.00106**	**.00397**	**3.8453**
Stddev	.00026	.272	.00084	.00306	.00133	.00505	.00349	.0191
%RSD	46.596	.89936	444.71	14.410	63.635	477.63	87.822	.49691
#1	.00084	30.005	-.00086	.02115	.00061	-.00688	.00266	3.8499
#2	.00047	30.547	.00076	.02437	.00320	.00220	.00133	3.8616
#3	.00034	30.329	-.00047	.01825	.00247	.00150	.00793	3.8242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: March 30, 2017



Sample Name: L1703138701 Acquired: 3/29/2017 18:27:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00096**	**.57962**	**-.01622**	**-.00211**	**-.00007**	**.44069**	**.03156**
Stddev	.00067	.00514	.00632	.00120	.00056	.00235	.06893
%RSD	70.225	.88701	38.987	56.736	752.16	.53222	218.43
#1	.00035	.57518	-.02234	-.00218	.00039	.44158	-.00521
#2	.00168	.58525	-.01663	-.00328	-.00070	.44246	.11107
#3	.00084	.57843	-.00971	-.00088	.00009	.43803	-.01119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13400.**	**88348.**	**3266.5**
Stddev	169.	613.	81.2
%RSD	1.2627	.69373	2.4865
#1	13554.	88647.	3338.1
#2	13427.	88754.	3283.2
#3	13219.	87643.	3178.2

Approved: March 30, 2017

Sample Name: L1703138801 Acquired: 3/29/2017 18:31:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**.09626**	**.00002**	**.01290**	**.02947**	**-.00003**	**28.534**
Stddev	.00055	.00245	.00207	.00211	.00095	.00006	.099
%RSD	24.689	2.5478	10332.	16.340	3.2179	215.56	.34850
#1	-.00243	.09596	-.00198	.01533	.02969	.00000	28.485
#2	-.00161	.09885	.00215	.01160	.03029	-.00010	28.469
#3	-.00265	.09397	-.00010	.01177	.02843	.00001	28.649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00013**	**-.00037**	**-.00043**	**.12484**	**.99086**	**-.00292**
Stddev	.00038	.00036	.00019	.00033	.01121	.07305	.00339
%RSD	158.83	274.52	52.211	77.417	8.9826	7.3720	116.29
#1	.00013	-.00028	-.00037	-.00018	.11248	1.0738	-.00675
#2	-.00021	.00034	-.00056	-.00081	.13437	.96280	-.00168
#3	-.00063	.00033	-.00017	-.00031	.12768	.93601	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.0857**	**.01371**	**.00049**	**4.2339**	**-.00065**	**.01067**	**.00049**
Stddev	.0687	.00129	.00038	.0455	.00065	.00285	.00197
%RSD	1.6808	9.4144	77.826	1.0756	98.605	26.721	402.11
#1	4.0262	.01490	.00050	4.1822	-.00002	.01243	-.00165
#2	4.1608	.01389	.00087	4.2510	-.00131	.00738	.00090
#3	4.0701	.01233	.00011	4.2683	-.00063	.01220	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703138801 Acquired: 3/29/2017 18:31:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00418**	**.00367**	**2.0570**	**.00080**	**.10201**	**-.00773**	**-.00278**
Stddev	.00293	.00259	.0098	.00044	.00049	.00571	.00046
%RSD	70.157	70.539	.47381	55.269	.48230	73.862	16.572
#1	.00570	.00410	2.0659	.00089	.10169	-.00133	-.00319
#2	.00604	.00601	2.0584	.00032	.10257	-.01230	-.00287
#3	.00080	.00089	2.0466	.00119	.10176	-.00958	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.00181**	F **-.23154**
Stddev	.00071	.00002	.25118
%RSD	488.25	1.2241	108.48
#1	.00009	.00179	-.10405
#2	.00042	.00184	-.52090
#3	-.00095	.00181	-.06968
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13726.**	**91970.**	**3357.5**
Stddev	108.	470.	111.5
%RSD	.79006	.51050	3.3222
#1	13836.	91491.	3228.8
#2	13721.	92429.	3424.7
#3	13620.	91988.	3419.1

Approved: March 30, 2017

Sample Name: L1703138901 Acquired: 3/29/2017 18:35:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.04955**	**.00316**	**.00839**	**.03184**	**.00002**	**38.056**
Stddev	.00067	.00199	.00168	.00083	.00105	.00001	.091
%RSD	284.43	4.0144	53.053	9.8382	3.3031	24.171	.23863
#1	-.00035	.05063	.00395	.00850	.03135	.00002	38.014
#2	.00009	.05077	.00124	.00916	.03112	.00002	37.993
#3	.00097	.04726	.00430	.00752	.03305	.00003	38.160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**-.00003**	**.00147**	**.00122**	**.02919**	**.69240**	**-.00915**
Stddev	.00007	.00030	.00105	.00059	.04619	.14212	.01144
%RSD	212.25	989.70	70.917	48.207	158.26	20.526	124.94
#1	.00004	-.00028	.00125	.00059	-.01699	.80015	-.00028
#2	-.00010	-.00012	.00056	.00175	.02916	.53133	-.00512
#3	-.00004	.00031	.00261	.00131	.07539	.74571	-.02206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.4559**	**.00624**	**.00035**	**2.6415**	**.00008**	**.01710**	**-.00161**
Stddev	.1531	.00141	.00039	.0526	.00029	.00603	.00048
%RSD	2.0535	22.610	111.82	1.9904	360.44	35.287	29.654
#1	7.3131	.00652	.00073	2.6646	.00037	.02139	-.00130
#2	7.4372	.00749	.00037	2.5813	.00009	.01020	-.00137
#3	7.6175	.00471	-.00005	2.6786	-.00022	.01970	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

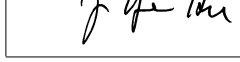
Sample Name: L1703138901 Acquired: 3/29/2017 18:35:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**-.00246**	**1.7734**	**.00004**	**.09954**	**-.00260**	**-.00034**
Stddev	.00519	.00484	.0072	.00036	.00040	.00380	.00180
%RSD	416.79	196.94	.40721	991.27	.39697	146.21	536.12
#1	.00107	-.00676	1.7816	.00018	.09924	-.00511	-.00226
#2	.00238	.00278	1.7707	-.00037	.09940	-.00447	.00131
#3	-.00718	-.00339	1.7680	.00030	.09999	.00178	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00044**	**.00209**	F **-.30997**
Stddev	.00086	.00015	.09474
%RSD	194.32	7.3032	30.563
#1	.00116	.00200	-.40810
#2	-.00051	.00201	-.30276
#3	.00067	.00227	-.21904
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13764.**	**91626.**	**3329.9**
Stddev	122.	297.	68.6
%RSD	.88960	.32364	2.0591
#1	13905.	91329.	3259.0
#2	13688.	91922.	3395.8
#3	13698.	91627.	3334.9

Approved: March 30, 2017



Sample Name: L1703139601 Acquired: 3/29/2017 18:39:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.03875**	**.00157**	**.11553**	**.03109**	**.00004**	**.75592**
Stddev	.00199	.00210	.00177	.00128	.00056	.00006	.00689
%RSD	897.08	5.4090	113.13	1.1044	1.7929	142.81	.91097
#1	-.00181	.04115	.00334	.11689	.03045	-.00002	.76190
#2	.00217	.03779	-.00021	.11533	.03136	.00011	.74839
#3	.00031	.03731	.00157	.11436	.03146	.00004	.75747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00070**	**-.00015**	**.00853**	**.00932**	**.40625**	**.00116**
Stddev	.00010	.00008	.00033	.00096	.01134	.02109	.00575
%RSD	111.48	11.572	225.20	11.311	121.72	5.1909	494.82
#1	.00021	.00070	-.00042	.00899	.00788	.42969	-.00539
#2	.00001	.00062	-.00024	.00742	.02131	.40028	.00536
#3	.00006	.00078	.00022	.00918	-.00123	.38880	.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24650**	**.00042**	**.00087**	**157.09**	**.00008**	**.01086**	**-.00043**
Stddev	.04942	.00162	.00026	.28	.00044	.00097	.00420
%RSD	20.048	388.84	29.627	.17961	524.93	8.9716	969.17
#1	.20799	.00158	.00065	157.40	-.00026	.01162	.00338
#2	.30222	.00110	.00115	156.99	-.00006	.01120	-.00494
#3	.22929	-.00143	.00080	156.86	.00057	.00976	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703139601 Acquired: 3/29/2017 18:39:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**-.00213**	**3.7651**	**.00070**	**.03914**	**.00176**	**.00227**
Stddev	.00298	.00332	.0066	.00068	.00023	.00673	.00176
%RSD	250.03	155.61	.17547	97.426	.59986	383.14	77.762
#1	.00436	-.00460	3.7576	.00021	.03933	-.00345	.00068
#2	-.00157	-.00344	3.7700	.00147	.03888	-.00064	.00196
#3	.00079	.00164	3.7677	.00041	.03922	.00936	.00417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00026**	**.01422**	F **-.16136**
Stddev	.00062	.00009	.30089
%RSD	235.63	.66424	186.47
#1	.00083	.01421	.08070
#2	.00036	.01433	-.06654
#3	-.00040	.01414	-.49824
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13445.**	**88653.**	**3334.4**
Stddev	89.	1086.	56.9
%RSD	.66329	1.2252	1.7065
#1	13352.	89207.	3284.5
#2	13454.	87402.	3322.4
#3	13529.	89351.	3396.4

Approved: March 30, 2017

Sample Name: L1703139701 Acquired: 3/29/2017 18:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.01846**	**-.00029**	**.01897**	**.05961**	**.00002**	**51.460**
Stddev	.00049	.00325	.00158	.00193	.00184	.00001	.165
%RSD	132.78	17.602	545.24	10.199	3.0867	29.957	.32118
#1	.00083	.01800	-.00052	.01940	.06108	.00003	51.549
#2	-.00014	.02191	-.00174	.01686	.06020	.00003	51.562
#3	.00041	.01546	.00139	.02066	.05754	.00002	51.269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00003**	**-.00038**	**.00060**	**.01778**	**.66911**	**.00257**
Stddev	.00018	.00040	.00089	.00224	.04370	.11798	.00187
%RSD	167.92	1345.0	230.98	375.50	245.75	17.633	72.737
#1	-.00031	-.00043	.00064	.00098	.06499	.79214	.00041
#2	-.00006	.00032	-.00095	-.00181	.00963	.55692	.00372
#3	.00004	.00020	-.00084	.00262	-.02127	.65826	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.5488**	**.33385**	**.00023**	**11.192**	**.00035**	**-.00197**	**-.00054**
Stddev	.1305	.00413	.00032	.094	.00027	.00504	.00192
%RSD	1.5260	1.2376	138.77	.84432	79.101	255.40	358.76
#1	8.4395	.33382	.00059	11.294	.00066	.00181	-.00083
#2	8.6932	.32974	.00009	11.175	.00022	-.00769	-.00229
#3	8.5136	.33800	.00001	11.107	.00016	-.00003	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: L1703139701 Acquired: 3/29/2017 18:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00963**	**4.3154**	**.00054**	**.26003**	**-.00396**	**.00026**
Stddev	.00229	.00399	.1518	.00035	.00112	.01069	.00074
%RSD	3222.3	41.424	3.5177	65.080	.42984	270.04	280.73
#1	-.00085	.01101	4.3996	.00050	.25893	-.00581	.00028
#2	-.00162	.00513	4.4064	.00091	.26117	-.01361	.00100
#3	.00268	.01274	4.1401	.00021	.25999	.00754	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00022**	**.00227**	F **-.50703**
Stddev	.00021	.00010	.18028
%RSD	94.599	4.2782	35.555
#1	.00007	.00231	-.42731
#2	.00046	.00235	-.71342
#3	.00014	.00216	-.38036
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13809.**	**90837.**	**3339.3**
Stddev	333.	614.	28.0
%RSD	2.4111	.67578	.83784
#1	13712.	90202.	3339.3
#2	13536.	90880.	3367.3
#3	14180.	91428.	3311.4

Approved: March 30, 2017

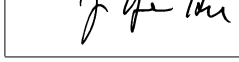
Sample Name: L1703139702 Acquired: 3/29/2017 18:46:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00168**	**.01059**	**.00123**	**.01565**	**.06091**	**-.00003**	**50.367**
Stddev	.00037	.00466	.00159	.00135	.00239	.00004	.385
%RSD	21.828	44.015	129.01	8.6108	3.9175	148.91	.76420
#1	-.00205	.01142	.00021	.01697	.06164	.00002	49.938
#2	-.00166	.00557	.00043	.01571	.05824	-.00005	50.480
#3	-.00132	.01477	.00307	.01427	.06284	-.00006	50.682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00026**	**.00061**	**.00241**	**-.00089**	**.63102**	**.00176**
Stddev	.00002	.00016	.00069	.00061	.00952	.08737	.00244
%RSD	6.5417	62.370	112.87	25.379	1070.1	13.845	138.34
#1	.00036	.00041	-.00015	.00296	.00170	.64205	.00418
#2	.00031	.00029	.00081	.00250	-.01144	.71235	.00180
#3	.00033	.00009	.00119	.00175	.00707	.53866	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.3907**	**.30708**	**.00028**	**11.324**	**.00011**	**-.00108**	**.00206**
Stddev	.0296	.00306	.00015	.121	.00049	.00387	.00329
%RSD	.35237	.99520	52.589	1.0650	449.28	357.48	159.64
#1	8.3628	.30369	.00030	11.261	-.00031	.00338	.00319
#2	8.3876	.30963	.00042	11.247	-.00001	-.00305	.00463
#3	8.4217	.30790	.00013	11.463	.00065	-.00357	-.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017



Sample Name: L1703139702 Acquired: 3/29/2017 18:46:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00201**	**.00396**	**4.2569**	**.00046**	**.26285**	**-.00288**	**.00080**
Stddev	.00358	.00352	.0179	.00048	.00347	.00480	.00021
%RSD	178.22	88.899	.42104	103.43	1.3214	166.23	26.354
#1	.00603	.00023	4.2716	-.00009	.25993	-.00812	.00088
#2	.00082	.00443	4.2622	.00074	.26193	-.00182	.00057
#3	-.00082	.00723	4.2370	.00073	.26669	.00129	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00012**	**.00425**	F **-.22142**
Stddev	.00060	.00017	.39348
%RSD	504.35	3.9310	177.70
#1	.00064	.00440	-.29153
#2	-.00053	.00429	-.57514
#3	.00024	.00407	.20240
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13995.**	**92068.**	**3401.7**
Stddev	45.	1629.	51.2
%RSD	.32158	1.7688	1.5052
#1	13952.	90580.	3362.1
#2	13990.	93808.	3383.4
#3	14042.	91815.	3459.5

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 18:50:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38673**	**9.8074**	**.38971**	**.47929**	**.98233**	**.04872**	**9.8611**
Stddev	.00164	.0253	.00194	.00303	.00134	.00009	.0684
%RSD	.42468	.25802	.49869	.63123	.13631	.18906	.69387
#1	.38858	9.8319	.38918	.48253	.98240	.04862	9.9326
#2	.38619	9.7813	.38808	.47881	.98096	.04872	9.8544
#3	.38543	9.8089	.39186	.47653	.98363	.04881	9.7962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04954**	**.19946**	**.48401**	**.49651**	**3.9005**	**49.264**	**.98809**
Stddev	.00006	.00043	.00070	.00091	.0294	.337	.01170
%RSD	.12974	.21544	.14498	.18349	.75459	.68331	1.1840
#1	.04951	.19980	.48464	.49741	3.9116	49.265	.99562
#2	.04950	.19898	.48415	.49558	3.8671	48.926	.97461
#3	.04961	.19960	.48326	.49653	3.9227	49.599	.99404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8588**	**.49122**	**.96956**	**49.215**	**.49151**	**9.6821**	**.49539**
Stddev	.1030	.00362	.00055	.297	.00149	.0146	.00135
%RSD	1.0449	.73684	.05658	.60275	.30332	.15056	.27300
#1	9.9642	.49044	.96989	49.199	.49117	9.6951	.49466
#2	9.8538	.48805	.96893	48.926	.49022	9.6664	.49457
#3	9.7584	.49516	.96987	49.519	.49314	9.6849	.49696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: March 30, 2017

Sample Name: CCV Acquired: 3/29/2017 18:50:14 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1592**	**.39272**	**4.8766**	**.98490**	**.98032**	**.97218**	**.50015**
Stddev	.0034	.00605	.0015	.00027	.00392	.00631	.00234
%RSD	.28892	1.5398	.03107	.02741	.39950	.64955	.46844
#1	1.1571	.39890	4.8764	.98465	.98211	.96797	.49757
#2	1.1630	.39244	4.8751	.98519	.97583	.96912	.50074
#3	1.1573	.38682	4.8782	.98487	.98302	.97944	.50215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97451**	**.97725**	F **.13028**
Stddev	.00218	.00188	.19745
%RSD	.22359	.19204	151.56
#1	.97468	.97757	-.01675
#2	.97225	.97524	.35470
#3	.97660	.97895	.05288
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13492.**	**88775.**	**3304.3**
Stddev	279.	359.	34.8
%RSD	2.0685	.40482	1.0536
#1	13507.	88954.	3265.3
#2	13764.	89010.	3332.2
#3	13206.	88361.	3315.4

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 18:53:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00191**	**.00792**	**.00122**	**.00197**	**.00160**	**.00005**	**-.00067**
Stddev	.00186	.00764	.00174	.00092	.00052	.00004	.06194
%RSD	97.435	96.508	142.24	46.641	32.530	77.294	9294.2
#1	-.00382	.01082	-.00075	.00125	.00120	.00009	-.06726
#2	-.00179	.01369	.00254	.00301	.00141	.00001	.05521
#3	-.00011	-.00075	.00187	.00167	.00219	.00005	.01005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00020**	**.00012**	**-.00037**	**-.01543**	**-.19721**	**-.01313**
Stddev	.00006	.00037	.00011	.00053	.02226	.09615	.00553
%RSD	29.010	185.29	92.428	142.19	144.23	48.753	42.092
#1	-.00026	.00023	.00021	-.00041	.00393	-.19983	-.01813
#2	-.00026	.00056	.00017	.00017	-.01047	-.09978	-.01407
#3	-.00015	-.00018	-.00001	-.00089	-.03975	-.29202	-.00720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03929**	**.00068**	**-.00012**	**-.00464**	**-.00104**	**.00160**	**-.00019**
Stddev	.04501	.00245	.00021	.03485	.00027	.00262	.00052
%RSD	114.57	360.22	175.68	750.92	25.396	163.80	274.39
#1	-.07865	.00010	-.00003	.02792	-.00080	.00286	.00018
#2	.00979	.00336	-.00036	-.04141	-.00100	.00335	.00004
#3	-.04900	-.00143	.00003	-.00043	-.00133	-.00141	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: March 30, 2017

Sample Name: CCB Acquired: 3/29/2017 18:53:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1274) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**-.00108**	**.00768**	**.00132**	**-.00028**	**-.00691**	**.00035**
Stddev	.00159	.00667	.00068	.00018	.00045	.00319	.00199
%RSD	162.79	619.25	8.8810	13.797	160.15	46.171	574.49
#1	.00162	-.00449	.00721	.00123	.00004	-.00383	.00060
#2	-.00083	.00660	.00736	.00152	-.00080	-.01021	.00220
#3	.00213	-.00534	.00846	.00119	-.00008	-.00671	-.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00002**	F **-.25344**
Stddev	.00063	.00012	.05807
%RSD	562.16	674.27	22.913
#1	-.00058	.00013	-.29113
#2	-.00037	-.00012	-.18657
#3	.00061	.00005	-.28263
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**13932.**	**92272.**	**3262.4**
Stddev	43.	860.	64.0
%RSD	.31181	.93190	1.9607
#1	13956.	91592.	3252.7
#2	13881.	91985.	3330.7
#3	13957.	93239.	3203.8

Approved: March 30, 2017

2.2.2 Metals ICP-MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW08-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/23/2017 14:28
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/23/2017 16:29
Collect Date:	03/20/2017 08:25	**Dilution:**	1	**File ID:**	NI.032317.162910
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.000942	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00336		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0734		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000397	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0503		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00460		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00297	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00105	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00951		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000425		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00526		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0220	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW08-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:21
Collect Date:	03/20/2017 08:25	**Dilution:**	5	**File ID:**	NI.032717.152103
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.164		0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW08MS-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/23/2017 14:28
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/23/2017 16:32
Collect Date:	03/20/2017 08:25	**Dilution:**	1	**File ID:**	NI.032317.163215
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.125		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.129		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.195		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.127		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.166		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.126		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.124		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.123		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.131		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.123		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.127		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.124		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.136		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW08MS-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:24
Collect Date:	03/20/2017 08:25	**Dilution:**	5	**File ID:**	NI.032717.152409
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.295		0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW08MSD-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/23/2017 14:28
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/23/2017 16:35
Collect Date:	03/20/2017 08:25	**Dilution:**	1	**File ID:**	NI.032317.163520
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.130		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.134		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.211		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.131		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.180		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.130		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.128		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.128		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.134		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.128		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.131		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.129		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.141		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW08MSD-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:27
Collect Date:	03/20/2017 08:25	**Dilution:**	5	**File ID:**	NI.032717.152715
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.328		0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW23SW-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/23/2017 14:28
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/23/2017 17:00
Collect Date:	03/20/2017 09:40	**Dilution:**	1	**File ID:**	NI.032317.170008
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00342		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00112	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00123	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000309	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000874	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW23SW-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:30
Collect Date:	03/20/2017 09:40	**Dilution:**	25	**File ID:**	NI.032717.153020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.302		0.150	0.0750	0.0375
Manganese, Total	7439-96-5	0.792		0.100	0.0500	0.0250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/23/2017 14:28
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/23/2017 17:03
Collect Date:	03/20/2017 10:40	**Dilution:**	1	**File ID:**	NI.032317.170314
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00362		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0844		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00226	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00287		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00276	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0135		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000179	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0256	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:33
Collect Date:	03/20/2017 10:40	**Dilution:**	5	**File ID:**	NI.032717.153325
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.276		0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/23/2017 14:28
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/23/2017 17:06
Collect Date:	03/20/2017 13:25	**Dilution:**	1	**File ID:**	NI.032317.170619
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00168	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00425		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00129	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00229	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000255	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:48
Collect Date:	03/20/2017 13:25	**Dilution:**	25	**File ID:**	NI.032717.154856
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.307		0.150	0.0750	0.0375
Manganese, Total	7439-96-5	3.02		0.100	0.0500	0.0250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/23/2017 14:28
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/23/2017 17:09
Collect Date:	03/20/2017 14:25	**Dilution:**	1	**File ID:**	NI.032317.170924
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00159	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000493	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00111	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00226		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00146	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0146		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000221	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0186	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-032017	**Prep Method:**	3015	**Prep Date:**	03/22/2017 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607276	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:52
Collect Date:	03/20/2017 14:25	**Dilution:**	50	**File ID:**	NI.032717.155202
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.457		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.534		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

2.2.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG607249
Analyst: VC
Spike Analyst: VC
Run Date: 03/22/2017 12:37
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 03/22/2017 12:40

SOP: ME407 Revison 19
Spike Solution: STD78216
Spike Witness: ERP
40 & 50 ML. DIGESTION TU: COA19487
HNO3 Lot #: COA19483
MS Filters- fisher-Lot#R: RGT38288

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG607249-02	BLANK	1	20 mL	50 mL	182.891 g	182.886 g		
2	WG607249-03	LCS	1	20 mL	50 mL	185.082 g	185.073 g	.25 mL	
3	WG607249-01	REF	1	20 mL	50 mL	181.705 g	181.7 g		
4	L17031161-01	RS01	1	20 mL	50 mL	181.705 g	181.7 g		03/31/17
5	WG607249-04	MS	1	20 mL	50 mL	182.268 g	182.264 g	.25 mL	
6	L17031161-02	MS01	1	20 mL	50 mL	182.268 g	182.264 g	.25 mL	03/31/17
7	WG607249-05	MSD	1	20 mL	50 mL	184.899 g	184.894 g	.25 mL	
8	L17031161-03	SD01	1	20 mL	50 mL	184.899 g	184.894 g	.25 mL	03/31/17
9	L17031161-04	SAMP	1	20 mL	50 mL	184.005 g	183.997 g		03/31/17
10	L17031161-05	SAMP	1	20 mL	50 mL	183.114 g	183.095 g		03/31/17
11	L17031161-07	SAMP	1	20 mL	50 mL	184.751 g	184.734 g		03/31/17
12	L17031161-09	SAMP	1	20 mL	50 mL	182.895 g	182.877 g		03/31/17
13	L17031176-01	SAMP	1	20 mL	50 mL	183.012 g	182.99 g		03/31/17
14	L17031176-02	SAMP	1	20 mL	50 mL	184.588 g	184.572 g		03/31/17
15	L17031176-03	SAMP	1	20 mL	50 mL	181.732 g	181.708 g		03/31/17
16	L17031176-05	SAMP	1	20 mL	50 mL	183.672 g	183.659 g		03/31/17
17	L17031177-01	SAMP	1	20 mL	50 mL	185.832 g	185.821 g		03/31/17
18	L17031180-01	SAMP	1	20 mL	50 mL	184.029 g	184.02 g		03/27/17
19	L17031180-02	SAMP	1	20 mL	50 mL	184.929 g	184.906 g		03/27/17
20	L17031183-01	SAMP	1	20 mL	50 mL	184.854 g	184.836 g		03/29/17
21	L17031183-02	SAMP	1	20 mL	50 mL	185.878 g	185.859 g		03/29/17
22	L17031184-01	SAMP	1	20 mL	50 mL	182.728 g	182.709 g		03/29/17
23	L17031184-02	SAMP	1	20 mL	50 mL	183.9 g	183.867 g		03/29/17

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 5211369
Report generated: 03/22/2017 13:27

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032317A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD80855 Int. Std: RGT39300
CCV: STD80850 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607137,607493,607276

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.032317.141610	Blank	Blank		1		03/23/17 14:16
2	NI.032317.141915	WG607500-01	Calibration Point		1		03/23/17 14:19
3	NI.032317.142221	WG607500-02	Calibration Point		1		03/23/17 14:22
4	NI.032317.142526	WG607500-03	Calibration Point		1		03/23/17 14:25
5	NI.032317.142831	WG607500-04	Calibration Point		1		03/23/17 14:28
6	NI.032317.143139	WG607500-05	Initial Calibration Verification		1		03/23/17 14:31
7	NI.032317.143445	WG607500-06	Initial Calib Blank		1		03/23/17 14:34
8	NI.032317.143752	WG607500-07	Low Level Initial Calibration V		1		03/23/17 14:37
9	NI.032317.144057	WG607500-08	Interference Check		1		03/23/17 14:40
10	NI.032317.144402	WG607500-09	Interference Check		1		03/23/17 14:44
11	NI.032317.144708	WG607500-10	CCV		1		03/23/17 14:47
12	NI.032317.145014	WG607500-11	CCB		1		03/23/17 14:50
13	NI.032317.145321	L17031126-04	T7C0818-04	.257/100	20		03/23/17 14:53
14	NI.032317.145626	L17031126-05	T7C0818-05	.255/100	20		03/23/17 14:56
15	NI.032317.145931	L17031126-11	T7C0818-11	.252/100	20		03/23/17 14:59
16	NI.032317.150237	L17031126-15	T7C0818-15	.252/100	20		03/23/17 15:02
17	NI.032317.150606	WG607500-12	CCV		1		03/23/17 15:06
18	NI.032317.150912	WG607500-13	CCB		1		03/23/17 15:09
19	NI.032317.151604	WG607441-01	Method/Prep Blank	.25/100	1		03/23/17 15:16
20	NI.032317.151910	WG607441-02	Laboratory Control S	.25/100	1		03/23/17 15:19
21	NI.032317.152215	WG607441-03	Laboratory Control S	.25/100	1		03/23/17 15:22
22	NI.032317.152520	L17031264-01	17B1801-01	.255/100	1		03/23/17 15:25
23	NI.032317.152826	L17031264-02	17B1801-02	.258/100	1		03/23/17 15:28
24	NI.032317.153132	L17031272-01	17C0558-04	.251/100	1		03/23/17 15:31
25	NI.032317.153436	L17031274-01	17B2205-01	.252/100	1		03/23/17 15:34
26	NI.032317.153742	WG607493-01	Post Digestion Spike		1	L17031274-01	03/23/17 15:37
27	NI.032317.154048	WG607493-02	Serial Dilution		5	L17031274-01	03/23/17 15:40
28	NI.032317.154353	WG607493-02	Serial Dilution		25	L17031274-01	03/23/17 15:43
29	NI.032317.154700	WG607500-14	CCV		1		03/23/17 15:47
30	NI.032317.155006	WG607500-15	CCB		1		03/23/17 15:50
31	NI.032317.160142	WG607500-16	CCV		1		03/23/17 16:01
32	NI.032317.160448	WG607500-17	CCB		1		03/23/17 16:04
33	NI.032317.162258	WG607249-02	Method/Prep Blank	20/50	1		03/23/17 16:22
34	NI.032317.162604	WG607249-03	Laboratory Control S	20/50	1		03/23/17 16:26

Page: 1 Approved: March 24, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032317A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD80855 Int. Std: RGT39300
CCV: STD80850 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607137,607493,607276

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.032317.162910	L17031161-01	18WW08-032017		1	WG607249-01	03/23/17 16:29
36	NI.032317.163215	L17031161-02	18WW08MS-032017	20/50	1	WG607249-04	03/23/17 16:32
37	NI.032317.163520	L17031161-03	18WW08MSD-032017	20/50	1	WG607249-05	03/23/17 16:35
38	NI.032317.163826	L17031176-01	A05-MW03D-Y2S2	20/50	1		03/23/17 16:38
39	NI.032317.164132	L17031176-02	A05-MW08D-Y2S2	20/50	1		03/23/17 16:41
40	NI.032317.164437	WG607276-01	Post Digestion Spike		1	L17031176-02	03/23/17 16:44
41	NI.032317.164743	WG607276-02	Serial Dilution		5	L17031176-02	03/23/17 16:47
42	NI.032317.165048	WG607276-02	Serial Dilution		25	L17031176-02	03/23/17 16:50
43	NI.032317.165355	WG607500-18	CCV		1		03/23/17 16:53
44	NI.032317.165701	WG607500-19	CCB		1		03/23/17 16:57
45	NI.032317.170008	L17031161-04	18CPTMW23SW-032017	20/50	1		03/23/17 17:00
46	NI.032317.170314	L17031161-05	18WW24-032017	20/50	1		03/23/17 17:03
47	NI.032317.170619	L17031161-07	18WW25F-032017	20/50	1		03/23/17 17:06
48	NI.032317.170924	L17031161-09	MW10F-032017	20/50	1		03/23/17 17:09
49	NI.032317.171231	WG607500-20	CCV		1		03/23/17 17:12
50	NI.032317.171537	WG607500-21	CCB		1		03/23/17 17:15
51	NI.032317.171844	WG607500-22	Low Level Continuing Calibra		1		03/23/17 17:18
52	NI.032317.172151	L17031176-03	A05-MW08S-Y2S2	20/50	1		03/23/17 17:21
53	NI.032317.172457	L17031176-05	A05-TM06-Y2S2	20/50	1		03/23/17 17:24
54	NI.032317.172802	L17031177-01	A05-MW10S-Y2S2	20/50	1		03/23/17 17:28
55	NI.032317.173107	L17031180-01	17C0684-01	20/50	1		03/23/17 17:31
56	NI.032317.173412	L17031180-02	17C0684-02	20/50	1		03/23/17 17:34
57	NI.032317.173718	L17031183-01	17C1136-01	20/50	1		03/23/17 17:37
58	NI.032317.174023	L17031183-02	17C1136-02	20/50	1		03/23/17 17:40
59	NI.032317.174329	L17031184-01	17C1137-01	20/50	1		03/23/17 17:43
60	NI.032317.174634	L17031184-02	17C1137-02	20/50	1		03/23/17 17:46
61	NI.032317.174941	WG607500-23	CCV		1		03/23/17 17:49
62	NI.032317.175246	WG607500-24	CCB		1		03/23/17 17:52

Page: 2 Approved: March 24, 2017

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032717A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607752,607753,607276

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.032717.112112	Blank	Blank		1		03/27/17 11:21
2	NI.032717.112417	WG607833-01	Calibration Point		1		03/27/17 11:24
3	NI.032717.112723	WG607833-02	Calibration Point		1		03/27/17 11:27
4	NI.032717.113028	WG607833-03	Calibration Point		1		03/27/17 11:30
5	NI.032717.113333	WG607833-04	Calibration Point		1		03/27/17 11:33
6	NI.032717.113640	WG607833-05	Initial Calibration Verification		1		03/27/17 11:36
7	NI.032717.113947	WG607833-06	Initial Calib Blank		1		03/27/17 11:39
8	NI.032717.114253	WG607833-07	Low Level Initial Calibration V		1		03/27/17 11:42
9	NI.032717.114558	WG607833-08	Interference Check		1		03/27/17 11:45
10	NI.032717.114904	WG607833-09	Interference Check		1		03/27/17 11:49
11	NI.032717.115529	WG607833-10	Interference Check		1		03/27/17 11:55
12	NI.032717.115836	WG607833-11	CCV		1		03/27/17 11:58
13	NI.032717.120141	WG607833-12	CCB		1		03/27/17 12:01
14	NI.032717.120528	WG607550-03	Method/Prep Blank	20/50	1		03/27/17 12:05
15	NI.032717.120834	WG607550-04	Laboratory Control S	20/50	1		03/27/17 12:08
16	NI.032717.121139	WG607550-01	Reference Sample		1	L17031147-13	03/27/17 12:11
17	NI.032717.121445	WG607550-05	Matrix Spike	20/50	1	L17031147-13	03/27/17 12:14
18	NI.032717.121750	WG607550-06	Matrix Spike Duplica	20/50	1	L17031147-13	03/27/17 12:17
19	NI.032717.122056	L17031215-01	17C0685-01	20/50	1		03/27/17 12:20
20	NI.032717.122402	L17031215-02	17C0685-02	20/50	1		03/27/17 12:24
21	NI.032717.122707	WG607752-01	Post Digestion Spike		1	L17031215-02	03/27/17 12:27
22	NI.032717.123013	WG607752-02	Serial Dilution		5	L17031215-02	03/27/17 12:30
23	NI.032717.123318	WG607752-02	Serial Dilution		25	L17031215-02	03/27/17 12:33
24	NI.032717.123625	WG607833-13	CCV		1		03/27/17 12:36
25	NI.032717.123931	WG607833-14	CCB		1		03/27/17 12:39
26	NI.032717.124237	L17031147-02	SW1A-331-14	20/50	1		03/27/17 12:42
27	NI.032717.124542	L17031147-05	SW1B-331-14	20/50	1		03/27/17 12:45
28	NI.032717.124848	L17031147-08	SW2A-331-14	20/50	1		03/27/17 12:48
29	NI.032717.125153	L17031147-20	SW4A-331-14	20/50	1		03/27/17 12:51
30	NI.032717.125459	L17031147-23	SW5A-331-14	20/50	1		03/27/17 12:54
31	NI.032717.125805	L17031266-01	A05-MW10D-Y2S2	20/50	1		03/27/17 12:58
32	NI.032717.130110	L17031266-02	A05-MW11S-Y2S2	20/50	1		03/27/17 13:01
33	NI.032717.130415	WG607550-02	Reference Sample		1	L17031268-01	03/27/17 13:04
34	NI.032717.130721	L17031268-02	A05-MW09S-Y2S2	20/50	1		03/27/17 13:07

Page: 1 Approved: March 28, 2017

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032717A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607752,607753,607276

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.032717.131026	WG607550-07	Matrix Spike	20/50	1	L17031268-01	03/27/17 13:10
36	NI.032717.131332	WG607833-15	CCV		1		03/27/17 13:13
37	NI.032717.131638	WG607833-16	CCB		1		03/27/17 13:16
38	NI.032717.131944	WG607550-08	Matrix Spike Duplica	20/50	1	L17031268-01	03/27/17 13:19
39	NI.032717.132250	L17031268-05	A05-TM07-Y2S2	20/50	1		03/27/17 13:22
40	NI.032717.132555	L17031268-07	A05-RB01-Y2S2	20/50	1		03/27/17 13:25
41	NI.032717.132900	L17031304-01	MW-1	20/50	1		03/27/17 13:29
42	NI.032717.133205	L17031304-02	WW-2A	20/50	1		03/27/17 13:32
43	NI.032717.133510	L17031304-03	MW-4	20/50	1		03/27/17 13:35
44	NI.032717.133817	WG607833-17	CCV		1		03/27/17 13:38
45	NI.032717.134123	WG607833-18	CCB		1		03/27/17 13:41
46	NI.032717.135411	WG607689-02	Method/Prep Blank	20/50	1		03/27/17 13:54
47	NI.032717.135716	WG607689-03	Laboratory Control S	20/50	1		03/27/17 13:57
48	NI.032717.140022	WG607689-04	Filter Blank		1		03/27/17 14:00
49	NI.032717.140327	WG607689-01	Reference Sample		1	L17031370-05	03/27/17 14:03
50	NI.032717.140633	WG607689-05	Matrix Spike	20/50	1	L17031370-05	03/27/17 14:06
51	NI.032717.140938	WG607689-06	Matrix Spike Duplica	20/50	1	L17031370-05	03/27/17 14:09
52	NI.032717.141243	L17031313-01	103	20/50	1		03/27/17 14:12
53	NI.032717.141549	WG607753-01	Post Digestion Spike		1	L17031313-01	03/27/17 14:15
54	NI.032717.141854	WG607753-02	Serial Dilution		5	L17031313-01	03/27/17 14:18
55	NI.032717.142159	WG607753-02	Serial Dilution		25	L17031313-01	03/27/17 14:21
56	NI.032717.142506	WG607833-19	CCV		1		03/27/17 14:25
57	NI.032717.142811	WG607833-20	CCB		1		03/27/17 14:28
58	NI.032717.143118	L17031339-02	126F-032117	20/50	1		03/27/17 14:31
59	NI.032717.143424	L17031339-04	126FDF-032117	20/50	1		03/27/17 14:34
60	NI.032717.143728	L17031339-05	MW2-032117	20/50	1		03/27/17 14:37
61	NI.032717.144034	L17031339-06	18CPTMW01DW-032117	20/50	1		03/27/17 14:40
62	NI.032717.144339	L17031339-07	18CPTMW01SW-032117	20/50	1		03/27/17 14:43
63	NI.032717.144644	L17031339-08	MW13-032117	20/50	1		03/27/17 14:46
64	NI.032717.144950	L17031339-09	MW13FD-032117	20/50	1		03/27/17 14:49
65	NI.032717.145255	L17031339-11	CO2F-032117	20/50	1		03/27/17 14:52
66	NI.032717.145600	L17031339-13	MW16F-032217	20/50	1		03/27/17 14:56
67	NI.032717.145905	L17031339-15	MW19F-032217	20/50	1		03/27/17 14:59
68	NI.032717.150212	WG607833-21	CCV		1		03/27/17 15:02

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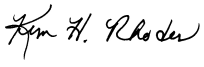

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 032717A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 3
Maintenance Log ID:

Calibration Std: STD80851 ICV Std: STD80849 Post Spike: STD79415
ICSA: STD80854 ICSAB: STD81136 Int. Std: RGT39300
CCV: STD81129 LLCCV: STD80853 Tuning Sol : STD80856
Stannous : Hydroxylamine :

Workgroups: 607752,607753,607276

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.032717.150518	WG607833-22	CCB		1		03/27/17 15:05
70	NI.032717.151452	WG607249-02	Method/Prep Blank	20/50	1		03/27/17 15:14
71	NI.032717.151758	WG607249-03	Laboratory Control S	20/50	1		03/27/17 15:17
72	NI.032717.152103	WG607249-01	Reference Sample		5	L17031161-01	03/27/17 15:21
73	NI.032717.152409	WG607249-04	Matrix Spike	20/50	5	L17031161-01	03/27/17 15:24
74	NI.032717.152715	WG607249-05	Matrix Spike Duplica	20/50	5	L17031161-01	03/27/17 15:27
75	NI.032717.153020	L17031161-04	18CPTMW23SW-032017	20/50	25		03/27/17 15:30
76	NI.032717.153325	L17031161-05	18WW24-032017	20/50	5		03/27/17 15:33
77	NI.032717.153631	WG607276-03	Post Digestion Spike		5	L17031161-05	03/27/17 15:36
78	NI.032717.153936	WG607276-04	Serial Dilution		25	L17031161-05	03/27/17 15:39
79	NI.032717.154244	WG607833-23	CCV		1		03/27/17 15:42
80	NI.032717.154549	WG607833-24	CCB		1		03/27/17 15:45
81	NI.032717.154856	L17031161-07	18WW25F-032017	20/50	25		03/27/17 15:48
82	NI.032717.155202	L17031161-09	MW10F-032017	20/50	50		03/27/17 15:52
83	NI.032717.155510	WG607833-25	CCV		1		03/27/17 15:55
84	NI.032717.155816	WG607833-26	CCB		1		03/27/17 15:58
85	NI.032717.160122	WG607833-27	Low Level Continuing Calibra		1		03/27/17 16:01
86	NI.032717.160428	L17031313-02	103	20/50	1		03/27/17 16:04
87	NI.032717.160734	L17031313-03	107	20/50	1		03/27/17 16:07
88	NI.032717.161039	L17031313-04	107	20/50	1		03/27/17 16:10
89	NI.032717.161345	L17031370-01	T7B0929-01	20/50	1		03/27/17 16:13
90	NI.032717.161650	L17031370-02	T7B0929-02	20/50	1		03/27/17 16:16
91	NI.032717.161956	L17031370-03	T7B0929-03	20/50	1		03/27/17 16:19
92	NI.032717.162301	L17031370-04	T7B0929-04	20/50	1		03/27/17 16:23
93	NI.032717.162608	WG607833-28	CCV		1		03/27/17 16:26
94	NI.032717.162913	WG607833-29	CCB		1		03/27/17 16:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10			Rerun to verify. JYH	

Page: 3 Approved: March 28, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 607500
Runlog ID: 81130
Analytical Workgroups: 607137,607493,607276

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1274,1161,1176,1177,1180,1183
	1184
Client Forms	X
Level X	
Level 3	
Level 4	1161,1176,1177
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
24-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-27-2017 08:08:07

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAR-2017
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 607833
Runlog ID: 81186
Analytical Workgroups: 607752,607753,607276

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1339
Client Forms	X
Level X	
Level 3	
Level 4	1339,1161
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
28-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-28-2017 14:56:58

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A **AAB#:** WG607276

Login Number: L17031161

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW08-032017	01	03/20/17					03/22/2017	2.2	180		03/23/17	3.3	180	
18WW08-032017	01	03/20/17					03/22/2017	2.2	180		03/27/17	7.3	180	
18WW08MS-032017	02	03/20/17					03/22/2017	2.2	180		03/23/17	3.3	180	
18WW08MS-032017	02	03/20/17					03/22/2017	2.2	180		03/27/17	7.3	180	
18WW08MSD-032017	03	03/20/17					03/22/2017	2.2	180		03/23/17	3.3	180	
18WW08MSD-032017	03	03/20/17					03/22/2017	2.2	180		03/27/17	7.3	180	
18CPTMW23SW-032017	04	03/20/17					03/22/2017	2.1	180		03/23/17	3.3	180	
18CPTMW23SW-032017	04	03/20/17					03/22/2017	2.1	180		03/27/17	7.2	180	
18WW24-032017	05	03/20/17					03/22/2017	2.1	180		03/23/17	3.3	180	
18WW24-032017	05	03/20/17					03/22/2017	2.1	180		03/27/17	7.2	180	
18WW25F-032017	07	03/20/17					03/22/2017	2	180		03/23/17	3.2	180	
18WW25F-032017	07	03/20/17					03/22/2017	2	180		03/27/17	7.1	180	
MW10F-032017	09	03/20/17					03/22/2017	1.9	180		03/23/17	3.1	180	
MW10F-032017	09	03/20/17					03/22/2017	1.9	180		03/27/17	7.1	180	

*** = SEE PROJECT QAPP REQUIREMENTS**

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5214196
Report generated 03/28/2017 14:07

METHOD BLANK SUMMARY

Login Number: L17031161
Work Group: WG607276
Blank File ID: NI.032317.162258
Blank Sample ID: WG607249-02
Prep Date: 03/22/17 12:37
Instrument ID: ICP-MS2
Analyzed Date: 03/23/17 16:22
Method: 6020A
Analyst: JYH

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607249-03	NI.032317.162604	03/23/17 16:26	01
18WW08-032017	L17031161-01	NI.032317.162910	03/23/17 16:29	01
18WW08MS-032017	L17031161-02	NI.032317.163215	03/23/17 16:32	01
18WW08MSD-032017	L17031161-03	NI.032317.163520	03/23/17 16:35	01
18CPTMW23SW-032017	L17031161-04	NI.032317.170008	03/23/17 17:00	01
18WW24-032017	L17031161-05	NI.032317.170314	03/23/17 17:03	01
18WW25F-032017	L17031161-07	NI.032317.170619	03/23/17 17:06	01
MW10F-032017	L17031161-09	NI.032317.170924	03/23/17 17:09	01
LCS	WG607249-03	NI.032717.151758	03/27/17 15:17	02
18WW08-032017	L17031161-01	NI.032717.152103	03/27/17 15:21	DL01
18WW08MS-032017	L17031161-02	NI.032717.152409	03/27/17 15:24	DL01
18WW08MSD-032017	L17031161-03	NI.032717.152715	03/27/17 15:27	DL01
18CPTMW23SW-032017	L17031161-04	NI.032717.153020	03/27/17 15:30	DL01
18WW24-032017	L17031161-05	NI.032717.153325	03/27/17 15:33	DL01
18WW25F-032017	L17031161-07	NI.032717.154856	03/27/17 15:48	DL01
MW10F-032017	L17031161-09	NI.032717.155202	03/27/17 15:52	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5214197
Report generated 03/30/2017 12:57

METHOD BLANK SUMMARY

Login Number: L17031161
Work Group: WG607276
Blank File ID: NI.032717.151452
Blank Sample ID: WG607249-02
Prep Date: 03/22/17 12:37
Instrument ID: ICP-MS2
Analyzed Date: 03/27/17 15:14
Method: 6020A
Analyst: JYH

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607249-03	NI.032317.162604	03/23/17 16:26	01
18WW08-032017	L17031161-01	NI.032317.162910	03/23/17 16:29	01
18WW08MS-032017	L17031161-02	NI.032317.163215	03/23/17 16:32	01
18WW08MSD-032017	L17031161-03	NI.032317.163520	03/23/17 16:35	01
18CPTMW23SW-032017	L17031161-04	NI.032317.170008	03/23/17 17:00	01
18WW24-032017	L17031161-05	NI.032317.170314	03/23/17 17:03	01
18WW25F-032017	L17031161-07	NI.032317.170619	03/23/17 17:06	01
MW10F-032017	L17031161-09	NI.032317.170924	03/23/17 17:09	01
LCS	WG607249-03	NI.032717.151758	03/27/17 15:17	02
18WW08-032017	L17031161-01	NI.032717.152103	03/27/17 15:21	DL01
18WW08MS-032017	L17031161-02	NI.032717.152409	03/27/17 15:24	DL01
18WW08MSD-032017	L17031161-03	NI.032717.152715	03/27/17 15:27	DL01
18CPTMW23SW-032017	L17031161-04	NI.032717.153020	03/27/17 15:30	DL01
18WW24-032017	L17031161-05	NI.032717.153325	03/27/17 15:33	DL01
18WW25F-032017	L17031161-07	NI.032717.154856	03/27/17 15:48	DL01
MW10F-032017	L17031161-09	NI.032717.155202	03/27/17 15:52	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5214197
Report generated 03/30/2017 12:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number:L17031161 Prep Date:03/22/17 12:37 Sample ID:WG607249-02
Instrument ID:ICP-MS2 Run Date:03/23/17 16:22 Prep Method:3015
File ID:NI.032317.162258 Analyst:JYH Method:6020A
Workgroup (AAB#):WG607276 Matrix:Water Units:mg/L
Contract #: Cal ID:ICP-MS-23-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5214198
30-MAR-2017 13:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031161 Prep Date: 03/22/17 12:37 Sample ID: WG607249-02
Instrument ID: ICP-MS2 Run Date: 03/27/17 15:14 Prep Method: 3015
File ID: NI.032717.151452 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG607276 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-27-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Total	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5214198
30-MAR-2017 13:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607249-03
Instrument ID: ICP-MS2 Run Time: 16:26 Prep Method: 3015
File ID: NI.032317.162604 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG607276 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD78216 Cal ID: ICP-MS-23-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.119	95.1	80 - 120	
Arsenic, Total	0.125	0.117	93.7	80 - 120	
Barium, Total	0.125	0.119	94.9	80 - 120	
Cadmium, Total	0.125	0.121	96.8	80 - 120	
Chromium, Total	0.125	0.119	95.1	80 - 120	
Cobalt, Total	0.125	0.119	95.3	80 - 120	
Copper, Total	0.125	0.121	96.6	80 - 120	
Lead, Total	0.125	0.119	94.9	80 - 120	
Nickel, Total	0.125	0.122	97.3	80 - 120	
Silver, Total	0.125	0.119	95.1	80 - 120	
Thallium, Total	0.125	0.124	99.5	80 - 120	
Vanadium, Total	0.125	0.117	93.8	80 - 120	
Zinc, Total	0.125	0.122	97.4	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5214199
Report generated: 03/30/2017 12:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031161 **Run Date:** 03/27/2017 **Sample ID:** WG607249-03
Instrument ID: ICP-MS2 **Run Time:** 15:17 **Prep Method:** 3015
File ID: NI.032717.151758 **Analyst:** JYH **Method:** 6020A
Workgroup (AAB#): WG607276 **Matrix:** Water **Units:** mg/L
QC Key: DOD4 **Lot#:** STD78216 **Cal ID:** ICP-MS-27-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Total	0.125	0.125	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5214199
Report generated: 03/30/2017 12:57

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum:L17031161 Cal ID:ICP-MS2- 23-MAR-17 Worknum:WG607276

Instrument ID:ICP-MS2 Contract #: Prep Method:3015

Parent ID:L17031161-01 File ID:NI.032317.162910 Dil:1 Method:6020

Sample ID:L17031161-02 MS File ID:NI.032317.163215 Dil:1 Matrix:Water

Sample ID:L17031161-03 MSD File ID:NI.032317.163520 Dil:1 Units:mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Total	0.000942	0.125	0.125	99	0.125	0.130	103	3.94	80 - 120	20	
Arsenic, Total	0.00336	0.125	0.129	100	0.125	0.134	104	3.96	80 - 120	20	
Barium, Total	0.0734	0.125	0.195	97.6	0.125	0.211	110	7.79	80 - 120	20	
Cadmium, Total	0.000397	0.125	0.127	101	0.125	0.131	105	3.26	80 - 120	20	
Chromium, Total	0.0503	0.125	0.166	92.3	0.125	0.180	104	8.29	80 - 120	20	
Cobalt, Total	0.00460	0.125	0.126	96.8	0.125	0.130	100	3.62	80 - 120	20	
Copper, Total	0.00297	0.125	0.124	96.8	0.125	0.128	99.9	3.02	80 - 120	20	
Lead, Total	0.00105	0.125	0.123	97.7	0.125	0.128	102	4.27	80 - 120	20	
Nickel, Total	0.00951	0.125	0.131	97	0.125	0.134	99.7	2.62	80 - 120	20	
Silver, Total	U	0.125	0.123	98.8	0.125	0.128	102	3.64	80 - 120	20	
Thallium, Total	0.000425	0.125	0.127	102	0.125	0.131	104	2.72	80 - 120	20	
Vanadium, Total	0.00526	0.125	0.124	95.4	0.125	0.129	98.8	3.38	80 - 120	20	
Zinc, Total	0.0220	0.125	0.136	91.1	0.125	0.141	95.5	3.96	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 5214200

Report generated 03/30/2017 12:57

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum:L17031161 Cal ID:ICP-MS2- 27-MAR-17 Worknum:WG607276

Instrument ID:ICP-MS2 Contract #: Prep Method:3015

Parent ID:L17031161-01 File ID:NI.032717.152103 Dil:5 Method:6020

Sample ID:L17031161-02 MS File ID:NI.032717.152409 Dil:5 Matrix:Water

Sample ID:L17031161-03 MSD File ID:NI.032717.152715 Dil:5 Units:mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese, Total	0.164	0.125	0.295	105	0.125	0.328	131	10.3	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 5214200

Report generated 03/30/2017 12:57

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031161 **Worknum:** WG607276
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG607276-04 **File ID:** NI.032717.153936 **Dil:** 25 **Units:** ug/L
Sample: L17031161-05 **File ID:** NI.032717.153325 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	7.78	F	17000.00	
Arsenic	1.75	F	ND	U		
Barium	33.5	X	32.9	F	1.66	
Cadmium	ND	U	ND	U		
Chromium	ND	U	ND	U		
Cobalt	1.04	F	ND	U		
Copper	ND	U	ND	U		
Lead	ND	U	ND	U		
Manganese	110	X	108	X	1.85	
Nickel	5.62	F	ND	U		
Silver	ND	U	ND	U		
Thallium	0.235	F	1.13	F	381.00	
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5214194
03/30/2017 12:56

Microbac Laboratories Inc.
Serial Dilution Report

Login: L17031161 **Worknum:** WG607276
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG607276-02 **File ID:** NI.032317.164743 **Dil:** 5 **Units:** ug/L
Sample: L17031176-02 **File ID:** NI.032317.164132 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.11	F	1450.00	
Arsenic	ND	U	ND	U		
Barium	102		110		8.28	
Cadmium	0.129	F	ND	U		
Chromium	0.413	F	ND	U		
Cobalt	5.86	X	6.32	X	7.83	
Copper	1.11	F	ND	U		
Lead	ND	U	ND	U		
Manganese	117		128		9.14	
Nickel	1.87	F	ND	U		
Silver	ND	U	ND	U		
Thallium	0.137	F	0.594	F	332.00	
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 5214194
03/30/2017 12:56

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031161 **Worknum:** WG607276
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG607276-01 **File ID:** NI.032317.164437 **Dil:** 1 **Units:** ug/L
Sample ID: L17031176-02 **File ID:** NI.032317.164132 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	52.3		0	U	50	104.6	75 - 125	
ARSENIC	51.6		0	U	50	103.3	75 - 125	
BARIUM	154		102		50	103.6	75 - 125	
CADMIUM	51.4		0.129	F	50	102.5	75 - 125	
CHROMIUM	49.2		0.413	F	50	97.6	75 - 125	
COBALT	54.9		5.86		50	98.0	75 - 125	
COPPER	50.7		1.11	F	50	99.2	75 - 125	
LEAD	50.2		0	U	50	100.5	75 - 125	
MANGANESE	195		117		50	155.0	75 - 125	N
NICKEL	50.6		1.87	F	50	97.5	75 - 125	
SILVER	45.0		0	U	50	90.0	75 - 125	
THALLIUM	51.1		0.137	F	50	101.9	75 - 125	
VANADIUM	48.9		0	U	50	97.8	75 - 125	
ZINC	55.1		0	U	50	110.1	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5214195
Report generated: 03/30/2017 12:56

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031161 **Worknum:** WG607276
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG607276-03 **File ID:** NI.032717.153631 **Dil:** 5 **Units:** ug/L
Sample ID: L17031161-05 **File ID:** NI.032717.153325 **Dil:** 5 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	54.6		0	U	50	109.2	75 - 125	
ARSENIC	56.5		0.350	F	50	112.3	75 - 125	
BARIUM	59.5		6.69		50	105.6	75 - 125	
CADMIUM	55.8		0	U	50	111.6	75 - 125	
CHROMIUM	51.2		0	U	50	102.3	75 - 125	
COBALT	52.4		0.208	F	50	104.4	75 - 125	
COPPER	53.6		0	U	50	107.2	75 - 125	
LEAD	52.9		0	U	50	105.7	75 - 125	
MANGANESE	72.8		22.1		50	101.5	75 - 125	
NICKEL	53.1		1.12	F	50	103.9	75 - 125	
SILVER	45.2		0	U	50	90.3	75 - 125	
THALLIUM	52.8		0.0469	F	50	105.6	75 - 125	
VANADIUM	51.3		0	U	50	102.6	75 - 125	
ZINC	59.6		0	U	50	119.2	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5214195
Report generated: 03/30/2017 12:56

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031161**	Workgroup (AAB#):	**WG607276**
Analytical Method:	**6020A**	Instrument ID:	**ICP-MS2**
ICAL Worknum:	**WG607500**	Initial Calibration Date:	**23-MAR-2017 14:28**

	WG607500-01		WG607500-02		WG607500-03		WG607500-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	153	.4	360	50	277000	100	551000	.999999	
ARSENIC	0	-54.5	.4	8.70	50	70100	100	141000	.999903	
BARIUM	0	61.3	.4	188	50	109000	100	215000	.999999	
CADMIUM	0	6.30	.4	127	50	107000	100	208000	.999949	
CHROMIUM	0	6340	.4	6830	50	405000	100	787000	.999997	
COBALT	0	736	.4	1230	50	535000	100	1040000	1	
COPPER	0	643	.4	750	50	119000	100	234000	.999973	
LEAD	0	474	.4	868	50	366000	100	723000	.999993	
MANGANESE	0	3330	.4	4010	50	683000	100	1340000	.999997	
NICKEL	0	566	.4	672	50	115000	100	225000	.999993	
SILVER	0	125	.4	512	50	370000	100	726000	.999982	
THALLIUM	0	12.3	.4	444	50	429000	100	849000	.999996	
VANADIUM	0	1410	.4	1780	50	413000	100	820000	.999956	
ZINC	0	428	.4	516	50	70400	100	140000	.999952	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5214203
Report generated: 30-MAR-2017 12:57

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L17031161**	Workgroup (AAB#):	**WG607276**
Analytical Method:	**6020A**	Instrument ID:	**ICP-MS2**
ICAL Worknum:	**WG607833**	Initial Calibration Date:	**27-MAR-2017 11:33**

	WG607833-01		WG607833-02		WG607833-03		WG607833-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	203	.4	439	50	265000	100	528000	.999992	
ARSENIC	0	-10.9	.4	2.00	50	66300	100	134000	.999987	
BARIUM	0	54.0	.4	147	50	104000	100	206000	.999998	
CADMIUM	0	6.60	.4	119	50	101000	100	196000	.999949	
CHROMIUM	0	8080	.4	8480	50	402000	100	772000	.999892	
COBALT	0	598	.4	1110	50	509000	100	998000	.99996	
COPPER	0	639	.4	814	50	112000	100	220000	.999973	
LEAD	0	475	.4	830	50	336000	100	670000	.999998	
MANGANESE	0	2630	.4	3140	50	670000	100	1320000	.999983	
NICKEL	0	247	.4	352	50	110000	100	212000	.999898	
SILVER	0	119	.4	487	50	352000	100	684000	.999978	
THALLIUM	0	223	.4	625	50	394000	100	778000	.999979	
VANADIUM	0	1800	.4	2240	50	423000	100	824000	.999935	
ZINC	0	562	.4	683	50	67400	100	134000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 5214203
Report generated: 30-MAR-2017 12:57

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-06
Instrument ID: ICP-MS2 Run Time: 14:34 Method: 6020A
File ID: NI.032317.143445 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607276 Cal ID: ICP-MS2 - 23-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5214205
Report generated 03/30/2017 12:57

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-06
Instrument ID: ICP-MS2 Run Time: 11:39 Method: 6020A
File ID: NI.032717.113947 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607276 Cal ID: ICP-MS2 - 27-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.362	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5214205
Report generated 03/30/2017 12:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-11
Instrument ID: ICP-MS2 Run Time: 14:50 Method: 6020A
File ID: NI.032317.145014 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5214208
Report generated 03/30/2017 12:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/23/2017 | Sample ID: WG607500-17
Instrument ID: ICP-MS2 | Run Time: 16:04 | Method: 6020A
File ID: NI.032317.160448 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG607276 | Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5214208
Report generated 03/30/2017 12:59

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-19
Instrument ID: ICP-MS2 Run Time: 16:57 Method: 6020A
File ID: NI.032317.165701 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5214208
Report generated 03/30/2017 12:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/23/2017 | Sample ID: WG607500-21
Instrument ID: ICP-MS2 | Run Time: 17:15 | Method: 6020A
File ID: NI.032317.171537 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG607276 | Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 5214208
Report generated 03/30/2017 12:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/27/2017 | Sample ID: WG607833-12
Instrument ID: ICP-MS2 | Run Time: 12:01 | Method: 6020A
File ID: NI.032717.120141 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG607276 | Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 5214208
Report generated 03/30/2017 12:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/27/2017 | Sample ID: WG607833-22
Instrument ID: ICP-MS2 | Run Time: 15:05 | Method: 6020A
File ID: NI.032717.150518 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG607276 | Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5214208
Report generated 03/30/2017 12:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/27/2017 | Sample ID: WG607833-24
Instrument ID: ICP-MS2 | Run Time: 15:45 | Method: 6020A
File ID: NI.032717.154549 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG607276 | Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5214208
Report generated 03/30/2017 12:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/27/2017 | Sample ID: WG607833-26
Instrument ID: ICP-MS2 | Run Time: 15:58 | Method: 6020A
File ID: NI.032717.155816 | Analyst: JYH | Units: ug/L
Workgroup (AAB#): WG607276 | Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5214208
Report generated 03/30/2017 12:59

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-05
Instrument ID: ICP-MS2 Run Time: 14:31 Method: 6020A
File ID: NI.032317.143139 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	50.0	99.9	90 - 110	
Arsenic		50	49.1	98.1	90 - 110	
Barium		50	49.6	99.2	90 - 110	
Cadmium		50	49.6	99.3	90 - 110	
Chromium		50	49.3	98.6	90 - 110	
Cobalt		50	49.4	98.8	90 - 110	
Copper		50	49.6	99.2	90 - 110	
Lead		50	49.6	99.1	90 - 110	
Manganese		50	49.7	99.4	90 - 110	
Nickel		50	49.4	98.8	90 - 110	
Silver		50	49.5	99.0	90 - 110	
Thallium		50	49.6	99.2	90 - 110	
Vanadium		50	49.3	98.6	90 - 110	
Zinc		50	49.8	99.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5214204
Report generated 03/30/2017 12:57

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-05
Instrument ID: ICP-MS2 Run Time: 11:36 Method: 6020A
File ID: NI.032717.113640 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 27-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.0	102	90 - 110	
Arsenic		50	50.6	101	90 - 110	
Barium		50	50.4	101	90 - 110	
Cadmium		50	50.6	101	90 - 110	
Chromium		50	50.0	99.9	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.4	101	90 - 110	
Lead		50	50.5	101	90 - 110	
Manganese		50	50.3	101	90 - 110	
Nickel		50	50.4	101	90 - 110	
Silver		50	50.5	101	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	49.9	99.8	90 - 110	
Zinc		50	50.6	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5214204
Report generated 03/30/2017 12:57

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-10

Instrument ID: ICP-MS2 Run Time: 14:47 Method: 6020A

File ID: NI.032317.144708 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0500	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0487	mg/L	97.3	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cobalt		0.0500	0.0489	mg/L	97.9	90 - 110		
Copper		0.0500	0.0487	mg/L	97.4	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.4	90 - 110		
Nickel		0.0500	0.0485	mg/L	97.0	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0490	mg/L	98.0	90 - 110		
Zinc		0.0500	0.0488	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5214207

Report generated 03/30/2017 12:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-16

Instrument ID: ICP-MS2 Run Time: 16:01 Method: 6020A

File ID: NI.032317.160142 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0493	mg/L	98.6	90 - 110		
Arsenic		0.0500	0.0489	mg/L	97.8	90 - 110		
Barium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cadmium		0.0500	0.0494	mg/L	98.9	90 - 110		
Chromium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cobalt		0.0500	0.0487	mg/L	97.4	90 - 110		
Copper		0.0500	0.0488	mg/L	97.6	90 - 110		
Lead		0.0500	0.0481	mg/L	96.1	90 - 110		
Manganese		0.0500	0.0489	mg/L	97.9	90 - 110		
Nickel		0.0500	0.0486	mg/L	97.2	90 - 110		
Silver		0.0500	0.0494	mg/L	98.8	90 - 110		
Thallium		0.0500	0.0487	mg/L	97.4	90 - 110		
Vanadium		0.0500	0.0478	mg/L	95.6	90 - 110		
Zinc		0.0500	0.0489	mg/L	97.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5214207

Report generated 03/30/2017 12:58

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-18
Instrument ID: ICP-MS2 Run Time: 16:53 Method: 6020A
File ID: NI.032317.165355 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0481	mg/L	96.3	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.5	90 - 110		
Chromium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cobalt		0.0500	0.0489	mg/L	97.9	90 - 110		
Copper		0.0500	0.0484	mg/L	96.8	90 - 110		
Lead		0.0500	0.0476	mg/L	95.2	90 - 110		
Manganese		0.0500	0.0490	mg/L	97.9	90 - 110		
Nickel		0.0500	0.0482	mg/L	96.4	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0487	mg/L	97.4	90 - 110		
Vanadium		0.0500	0.0480	mg/L	96.0	90 - 110		
Zinc		0.0500	0.0490	mg/L	98.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5214207
Report generated 03/30/2017 12:58

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-20
Instrument ID: ICP-MS2 Run Time: 17:12 Method: 6020A
File ID: NI.032317.171231 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.7	90 - 110		
Arsenic		0.0500	0.0490	mg/L	98.0	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0478	mg/L	95.5	90 - 110		
Cobalt		0.0500	0.0484	mg/L	96.7	90 - 110		
Copper		0.0500	0.0486	mg/L	97.1	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.3	90 - 110		
Nickel		0.0500	0.0480	mg/L	95.9	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.7	90 - 110		
Vanadium		0.0500	0.0477	mg/L	95.4	90 - 110		
Zinc		0.0500	0.0491	mg/L	98.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5214207
Report generated 03/30/2017 12:58

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-11
Instrument ID: ICP-MS2 Run Time: 11:58 Method: 6020A
File ID: NI.032717.115836 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0494	mg/L	98.8	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0508	mg/L	102	90 - 110		
Chromium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cobalt		0.0500	0.0490	mg/L	97.9	90 - 110		
Copper		0.0500	0.0490	mg/L	98.0	90 - 110		
Lead		0.0500	0.0504	mg/L	101	90 - 110		
Manganese		0.0500	0.0494	mg/L	98.8	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Silver		0.0500	0.0506	mg/L	101	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0487	mg/L	97.3	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5214207
Report generated 03/30/2017 12:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-21

Instrument ID: ICP-MS2 Run Time: 15:02 Method: 6020A

File ID: NI.032717.150212 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 27-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0497	mg/L	99.5	90 - 110		
Cadmium		0.0500	0.0519	mg/L	104	90 - 110		
Chromium		0.0500	0.0491	mg/L	98.1	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.7	90 - 110		
Copper		0.0500	0.0499	mg/L	99.8	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0494	mg/L	98.8	90 - 110		
Nickel		0.0500	0.0494	mg/L	98.8	90 - 110		
Silver		0.0500	0.0523	mg/L	105	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0490	mg/L	98.0	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5214207

Report generated 03/30/2017 12:58

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-23

Instrument ID: ICP-MS2 Run Time: 15:42 Method: 6020A

File ID: NI.032717.154244 Analyst: JYH QC Key: DOD4

Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 27-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0506	mg/L	101	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0493	mg/L	98.7	90 - 110		
Cadmium		0.0500	0.0519	mg/L	104	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cobalt		0.0500	0.0496	mg/L	99.2	90 - 110		
Copper		0.0500	0.0501	mg/L	100	90 - 110		
Lead		0.0500	0.0497	mg/L	99.4	90 - 110		
Manganese		0.0500	0.0498	mg/L	99.6	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.7	90 - 110		
Silver		0.0500	0.0520	mg/L	104	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0492	mg/L	98.3	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5214207

Report generated 03/30/2017 12:58

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-25
Instrument ID: ICP-MS2 Run Time: 15:55 Method: 6020A
File ID: NI.032717.155510 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0510	mg/L	102	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0498	mg/L	99.7	90 - 110		
Cadmium		0.0500	0.0522	mg/L	104	90 - 110		
Chromium		0.0500	0.0501	mg/L	100	90 - 110		
Cobalt		0.0500	0.0503	mg/L	101	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0498	mg/L	99.6	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0519	mg/L	104	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.5	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5214207
Report generated 03/30/2017 12:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-07
Instrument ID: ICP-MS2 Run Time: 14:37 Method: 6020A
File ID: NI.032317.143752 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.423	ug/L	106	70 - 130		
Arsenic		0.400	0.390	ug/L	97.4	70 - 130		
Barium		0.750	0.679	ug/L	90.5	70 - 130		
Cadmium		0.240	0.219	ug/L	91.1	70 - 130		
Chromium		0.800	0.871	ug/L	109	70 - 130		
Cobalt		0.400	0.357	ug/L	89.3	70 - 130		
Copper		0.800	0.856	ug/L	107	70 - 130		
Lead		0.200	0.176	ug/L	87.8	70 - 130		
Manganese		0.500	0.449	ug/L	89.8	70 - 130		
Nickel		1.60	1.49	ug/L	93.0	70 - 130		
Silver		0.400	0.370	ug/L	92.6	70 - 130		
Thallium		0.0800	0.0763	ug/L	95.4	70 - 130		
Vanadium		0.400	0.340	ug/L	85.1	70 - 130		
Zinc		6.25	6.12	ug/L	97.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5214209
Report generated 03/29/2017 07:28

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607500-22
Instrument ID: ICP-MS2 Run Time: 17:18 Method: 6020A
File ID: NI.032317.171844 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 23-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.405	ug/L	101	70 - 130		
Arsenic		0.400	0.399	ug/L	99.7	70 - 130		
Barium		0.750	0.730	ug/L	97.3	70 - 130		
Cadmium		0.240	0.241	ug/L	100	70 - 130		
Chromium		0.800	0.832	ug/L	104	70 - 130		
Cobalt		0.400	0.352	ug/L	87.9	70 - 130		
Copper		0.800	0.925	ug/L	116	70 - 130		
Lead		0.200	0.190	ug/L	94.8	70 - 130		
Manganese		0.500	0.453	ug/L	90.6	70 - 130		
Nickel		1.60	1.43	ug/L	89.7	70 - 130		
Silver		0.400	0.396	ug/L	98.9	70 - 130		
Thallium		0.0800	0.0884	ug/L	111	70 - 130		
Vanadium		0.400	0.338	ug/L	84.5	70 - 130		
Zinc		6.25	6.29	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5214209
Report generated 03/29/2017 07:28

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-07
Instrument ID: ICP-MS2 Run Time: 11:42 Method: 6020A
File ID: NI.032717.114253 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.434	ug/L	109	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.699	ug/L	93.2	70 - 130		
Cadmium		0.240	0.222	ug/L	92.5	70 - 130		
Chromium		0.800	0.722	ug/L	90.3	70 - 130		
Cobalt		0.400	0.360	ug/L	90.0	70 - 130		
Copper		0.800	0.789	ug/L	98.7	70 - 130		
Lead		0.200	0.182	ug/L	91.1	70 - 130		
Manganese		0.500	0.448	ug/L	89.7	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0790	ug/L	98.8	70 - 130		
Vanadium		0.400	0.304	ug/L	75.9	70 - 130		
Zinc		6.25	5.92	ug/L	94.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5214209
Report generated 03/29/2017 07:28

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L17031161 Run Date: 03/27/2017 Sample ID: WG607833-27
Instrument ID: ICP-MS2 Run Time: 16:01 Method: 6020A
File ID: NI.032717.160122 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG607276 Cal ID: ICP-MS - 27-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.4	70 - 130		
Arsenic		0.400	0.407	ug/L	102	70 - 130		
Barium		0.750	0.689	ug/L	91.8	70 - 130		
Cadmium		0.240	0.236	ug/L	98.4	70 - 130		
Chromium		0.800	0.841	ug/L	105	70 - 130		
Cobalt		0.400	0.359	ug/L	89.7	70 - 130		
Copper		0.800	0.788	ug/L	98.5	70 - 130		
Lead		0.200	0.187	ug/L	93.7	70 - 130		
Manganese		0.500	0.453	ug/L	90.7	70 - 130		
Nickel		1.60	1.52	ug/L	95.1	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0570	ug/L	71.3	70 - 130		
Vanadium		0.400	0.355	ug/L	88.8	70 - 130		
Zinc		6.25	6.19	ug/L	99.0	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 5214209
Report generated 03/29/2017 07:28

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031161 **Workgroup (AAB#):** WG607276
Instrument ID: ICP-MS2 **Method:** 6020A
Sol. A : WG607500-08 **File ID:** NI.032317.144057 **Units:** ug/L
Sol. AB : WG607500-09 **File ID:** NI.032317.144402 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0979	NS	100	101	101	
Arsenic	NS	0.0483	NS	100	101	101	
Barium	NS	0.0207	NS	100	100	100	
Cadmium	NS	-0.0649	NS	100	98.8	98.8	
Chromium	NS	0.286	NS	100	96.9	96.9	
Cobalt	NS	0.0565	NS	100	97.8	97.8	
Copper	NS	0.183	NS	100	99.0	99.0	
Lead	NS	0.0289	NS	100	100	100	
Manganese	NS	0.193	NS	100	97.1	97.1	
Nickel	NS	0.209	NS	100	97.4	97.4	
Silver	NS	0.0235	NS	100	94.4	94.4	
Thallium	NS	0.0234	NS	100	98.9	98.9	
Vanadium	NS	0.0225	NS	100	96.2	96.2	
Zinc	NS	0.675	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5214206
Report generated 03/30/2017 12:58

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L17031161 **Workgroup (AAB#):** WG607276
Instrument ID: ICP-MS2 **Method:** 6020A
Sol. A : WG607833-08 **File ID:** NI.032717.114558 **Units:** ug/L
Sol. AB : WG607833-10 **File ID:** NI.032717.115529 **Matrix:** Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0902	NS	100	100	100	
Arsenic	NS	0.0534	NS	100	99.7	99.7	
Barium	NS	0.0192	NS	100	97.3	97.3	
Cadmium	NS	-0.0858	NS	100	98.8	98.8	
Chromium	NS	0.103	NS	100	95.5	95.5	
Cobalt	NS	0.0633	NS	100	95.9	95.9	
Copper	NS	0.158	NS	100	97.4	97.4	
Lead	NS	0.0177	NS	100	99.1	99.1	
Manganese	NS	0.221	NS	100	96.5	96.5	
Nickel	NS	0.234	NS	100	95.9	95.9	
Silver	NS	0.0180	NS	100	98.6	98.6	
Thallium	NS	0.00290	NS	100	97.7	97.7	
Vanadium	NS	-0.0379	NS	100	94.8	94.8	
Zinc	NS	0.540	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 5214206
Report generated 03/30/2017 12:58

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L17031161 **Analytical Method:** 6020
Analytical Workgroup: WG607276 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 23-MAR-2017 14:19

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L17031161-01	SAMP	23-MAR-2017 16:29	104.069	102.194	100.181
L17031161-02	SAMP	23-MAR-2017 16:32	102.701	99.503	97.765
L17031161-03	SAMP	23-MAR-2017 16:35	104.646	102.2	99.773
L17031161-04	SAMP	23-MAR-2017 17:00	104.515	101.107	99.872
L17031161-05	SAMP	23-MAR-2017 17:03	102.411	100.53	97.922
L17031161-07	SAMP	23-MAR-2017 17:06	110.199	105.969	104.197
L17031161-09	SAMP	23-MAR-2017 17:09	109.536	103.606	102.366
L17031176-02	SAMP	23-MAR-2017 16:41	106.624	103.373	101.595
WG607249-02	BLANK	23-MAR-2017 16:22	101.784	95.341	95.739
WG607249-03	LCS	23-MAR-2017 16:26	108.27	104.113	104.233
WG607276-01	PSPK	23-MAR-2017 16:44	106.249	102.956	100.464
WG607276-02	SERIAL	23-MAR-2017 16:47	102.894	95.9	94.425
WG607500-05	ICV	23-MAR-2017 14:31	99.384	98.027	97.645
WG607500-06	ICB	23-MAR-2017 14:34	99.785	98.54	97.903
WG607500-07	LLICV	23-MAR-2017 14:37	98.935	96.784	96.039
WG607500-08	ICS	23-MAR-2017 14:40	97.736	96.903	96.615
WG607500-09	ICS	23-MAR-2017 14:44	104.659	101.252	100.602
WG607500-10	CCV	23-MAR-2017 14:47	103.66	100.799	100.212
WG607500-11	CCB	23-MAR-2017 14:50	102.809	99.282	98.948
WG607500-16	CCV	23-MAR-2017 16:01	104.899	100.821	100.722
WG607500-17	CCB	23-MAR-2017 16:04	105.875	100.16	101.149
WG607500-18	CCV	23-MAR-2017 16:53	105.927	100.811	101.127
WG607500-19	CCB	23-MAR-2017 16:57	105.181	99.146	99.588
WG607500-20	CCV	23-MAR-2017 17:12	108.192	101.477	100.822
WG607500-21	CCB	23-MAR-2017 17:15	105.976	98.883	98.716
WG607500-22	LLCCV	23-MAR-2017 17:18	104.461	98.21	97.843

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 5214202
Report generated: 03/28/2017 14:07

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L17031161 **Analytical Method:** 6020
Analytical Workgroup: WG607276 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 27-MAR-2017 11:24

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L17031161-01	SAMP	27-MAR-2017 15:21	99.859	96.617	94.428
L17031161-02	SAMP	27-MAR-2017 15:24	101.567	97.861	94.746
L17031161-03	SAMP	27-MAR-2017 15:27	101.736	97.54	95.067
L17031161-04	SAMP	27-MAR-2017 15:30	99.248	95.553	93.416
L17031161-05	SAMP	27-MAR-2017 15:33	100.05	96.905	94.477
L17031161-07	SAMP	27-MAR-2017 15:48	99.605	93.434	91.839
L17031161-09	SAMP	27-MAR-2017 15:52	98.525	91.884	90.43
WG607249-02	BLANK	27-MAR-2017 15:14	103.988	101.271	99.429
WG607249-03	LCS	27-MAR-2017 15:17	107.177	104.154	102.189
WG607276-03	PSPK	27-MAR-2017 15:36	100.759	97.621	94.568
WG607276-04	SERIAL	27-MAR-2017 15:39	101.925	96.802	93.599
WG607833-05	ICV	27-MAR-2017 11:36	99.492	96.781	96.749
WG607833-06	ICB	27-MAR-2017 11:39	101.269	97.979	98.522
WG607833-07	LLICV	27-MAR-2017 11:42	99.108	94.964	95.408
WG607833-08	ICS	27-MAR-2017 11:45	97.413	95.723	94.346
WG607833-10	ICS	27-MAR-2017 11:55	105.485	101.255	99.708
WG607833-11	CCV	27-MAR-2017 11:58	103.252	99.401	98.417
WG607833-12	CCB	27-MAR-2017 12:01	101.67	97.822	96.011
WG607833-21	CCV	27-MAR-2017 15:02	109.594	105.89	103.703
WG607833-22	CCB	27-MAR-2017 15:05	107.076	103.688	101.561
WG607833-23	CCV	27-MAR-2017 15:42	105.486	102.032	101.064
WG607833-24	CCB	27-MAR-2017 15:45	104.411	99.269	98.299
WG607833-25	CCV	27-MAR-2017 15:55	102.73	99.385	98.606
WG607833-26	CCB	27-MAR-2017 15:58	101.765	95.74	96.175
WG607833-27	LLCCV	27-MAR-2017 16:01	102.212	96.525	96.814

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 5214202
Report generated: 03/28/2017 14:07

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L17031161 **Date:** 01/24/2017
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 5214201
Report generated: 03/28/2017 14:07

2.2.2.3 Raw Data

MassCal File Name

Mass Calibration File Name default.tun
MassCal File Path C:\NexION Data\MassCal\default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, March 23, 2017 13:15:47

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1317	2026	0.702	
Mg	23.985	23.975	4503	2021	0.706	
Co	58.933	58.925	11686	2023	0.706	
In	114.904	114.925	22861	2029	0.712	
U	238.050	238.025	47448	2046	0.704	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	13.235
5.575	7.035
5.625	4.031
5.675	3.762
5.725	2.339
5.775	1.737
5.825	1.104
5.875	2.168
5.925	2.335
5.975	2.626
6.025	3.563
6.075	1.677
6.125	1.959
6.175	1.928
6.225	2.207
6.275	3.711
6.325	7.440
6.375	74.689
6.425	79.057
6.475	35.355
6.525	70.711
6.575	16.105
6.625	4.764
6.675	4.473
6.725	2.871
6.775	1.197
6.825	2.612

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6.875	1.407
6.925	1.857
6.975	2.034
7.025	2.456
7.075	1.205
7.125	0.836
7.175	2.322
7.225	1.613
7.275	1.666
7.325	1.772
7.375	3.827
7.425	92.222
7.475	20.328
7.525	108.653
7.575	68.698
7.625	59.266
7.675	58.685
7.725	72.436
7.775	15.215
7.825	61.237
7.875	149.071
7.925	58.330
7.975	108.653
8.025	95.924
8.075	74.689
8.125	37.268
8.175	136.931
8.225	46.481
8.275	35.355
8.325	104.583
8.375	129.603
8.425	71.261
8.475	69.722
22.525	162.980
22.575	63.888
22.625	34.468
22.675	40.937
22.725	17.653
22.775	33.641
22.825	45.426
22.875	20.494
22.925	33.378
22.975	35.016
23.025	17.635
23.075	28.524
23.125	42.959
23.175	31.599

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23.225	33.500
23.275	25.650
23.325	58.330
23.375	27.217
23.425	31.419
23.475	14.796
23.525	3.028
23.575	3.743
23.625	2.798
23.675	2.613
23.725	2.434
23.775	2.126
23.825	1.895
23.875	2.372
23.925	2.361
23.975	2.210
24.025	2.147
24.075	2.144
24.125	2.455
24.175	1.905
24.225	2.488
24.275	4.495
24.325	10.687
24.375	19.444
24.425	14.420
24.475	6.854
24.525	2.722
24.575	1.684
24.625	2.454
24.675	1.905
24.725	2.289
24.775	2.525
24.825	2.296
24.875	1.899
24.925	2.997
24.975	2.072
25.025	1.595
25.075	2.114
25.125	2.417
25.175	1.868
25.225	3.844
25.275	5.328
25.325	16.110
25.375	47.507
25.425	17.876
25.475	14.142
57.525	9.891

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57.575	3.354
57.625	2.651
57.675	1.708
57.725	1.808
57.775	1.737
57.825	0.940
57.875	1.726
57.925	1.726
57.975	1.744
58.025	1.931
58.075	1.587
58.125	1.657
58.175	2.889
58.225	4.325
58.275	6.924
58.325	17.029
58.375	28.853
58.425	35.937
58.475	7.900
58.525	2.535
58.575	3.350
58.625	2.899
58.675	3.252
58.725	3.062
58.775	1.327
58.825	2.258
58.875	2.046
58.925	1.900
58.975	1.905
59.025	2.746
59.075	1.304
59.125	1.070
59.175	2.268
59.225	2.124
59.275	7.512
59.325	31.111
59.375	34.233
59.425	26.307
59.475	13.847
59.525	3.885
59.575	2.927
59.625	6.167
59.675	3.422
59.725	3.653
59.775	3.525
59.825	3.002
59.875	2.299

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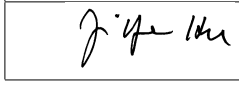

59.925	2.052
59.975	2.813
60.025	3.174
60.075	2.303
60.125	3.470
60.175	2.222
60.225	7.679
60.275	17.440
60.325	54.772
60.375	58.685
60.425	51.349
60.475	99.845
113.525	6.680
113.575	4.944
113.625	3.481
113.675	3.008
113.725	2.573
113.775	1.444
113.825	1.584
113.875	2.286
113.925	1.626
113.975	2.931
114.025	2.388
114.075	2.064
114.125	2.834
114.175	3.890
114.225	5.405
114.275	11.138
114.325	18.147
114.375	19.174
114.425	12.702
114.475	3.830
114.525	3.996
114.575	2.793
114.625	1.729
114.675	1.942
114.725	0.896
114.775	1.794
114.825	1.658
114.875	2.183
114.925	2.176
114.975	1.096
115.025	1.920
115.075	1.647
115.125	2.424
115.175	1.760
115.225	4.615

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115.275	6.539
115.325	14.987
115.375	43.651
115.425	28.671
115.475	14.680
115.525	17.645
115.575	7.225
115.625	4.470
115.675	5.157
115.725	2.976
115.775	3.655
115.825	2.737
115.875	3.740
115.925	3.070
115.975	4.394
116.025	4.109
116.075	3.548
116.125	3.732
116.175	3.150
116.225	4.111
116.275	10.824
116.325	30.101
116.375	35.355
116.425	38.030
116.475	58.630
236.525	
236.575	21.066
236.625	20.074
236.675	24.112
236.725	31.126
236.775	16.134
236.825	33.086
236.875	16.122
236.925	10.206
236.975	16.564
237.025	19.628
237.075	21.213
237.125	10.000
237.175	27.386
237.225	31.944
237.275	21.601
237.325	31.417
237.375	27.432
237.425	13.734
237.475	23.951
237.525	13.041
237.575	10.789

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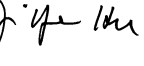

237.625	3.795
237.675	1.768
237.725	2.351
237.775	3.124
237.825	1.926
237.875	1.458
237.925	1.674
237.975	0.871
238.025	1.680
238.075	2.123
238.125	0.720
238.175	1.521
238.225	1.843
238.275	1.574
238.325	1.371
238.375	4.413
238.425	0.742
238.475	5.968
238.525	6.858
238.575	21.969
238.625	20.337
238.675	15.689
238.725	19.100
238.775	18.956
238.825	22.569
238.875	32.050
238.925	15.152
238.975	14.432
239.025	25.788
239.075	21.520
239.125	37.731
239.175	9.182
239.225	27.802
239.275	22.427
239.325	25.246
239.375	22.138
239.425	26.679
239.475	21.936

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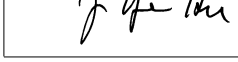

NextION Instrument Control Service - [Report Viewer]

File Edit Analysis Options Automation Window Help

Method Sample Dataset Realtime Interactive CalibView RptOption RptView SmartTune Conditions MassCal DSC MD Instrument Devices Scheduler Quantion

Current Sample Intensities Concentrations Ratiometric Graphs Ratios Internal Standards QC

Daily Performance Report

Sample ID: Daily Performance Check

Sample Description:
Sample Date/Time: Thursday, March 23 2017 14:02:12

Method File: C:\NextION\Data\Methods\ESI Daily Performance.mth

Dataset File: C:\NextION\Data\Data\5840303\12\Daily Performance Check.549

MassCal File: C:\NextION\Data\MassCal\Default.tun

Conditions File: C:\NextION\Data\Conditions\Default.dac

Dual Detector Mode: Pulse

Acq. Dead Time (ns): 33

Current Dead Time (ns): 33

Torch Z position (mm): 1.50

Summary

Analyte	Mass	Meas. Intens.	Mean Net Intens.	Mean Net Intens. SD	Net Intens. RSD	Mode
Be	9.0	14523.9	14512.234	128.549	0.9	Standard
Mg	24.0	243461.0	248489.976	1689.200	0.7	Standard
In	114.9	1043363.6	-588063.448	672.960	0.1	Standard
U	238.1	1402123	1402090.659	812.206	0.6	Standard
CeO	155.9	4577.9	0.015	0.000	0.8	Standard
Ce	139.9	2794113	279411.306	2083.442	0.7	Standard
Ce++	70.0	1874.8	0.007	0.000	1.0	Standard
Bkgd	220.0	0.1	0.133	0.183	138.9	Standard

Current Conditions File Data

Current Value	Description
0.93	Nebulizer Gas Flow STD/KED (NEB)
0.80	Auxiliary Gas Flow
18.00	Plasma Gas Flow
-7.00	Deflector Voltage
1600.00	ICP RF Power
-1712.00	Analog Stage Voltage
800.00	Pulse Stage Voltage
0.00	Quadrupole Rod Offset STD (QRG)
-7.00	Cell Rod Offset STD (CRO)
5.00	Discriminator Threshold
-2.00	Cell Entrance/Exit Voltage STD
0.00	RPa
0.45	RPq
0.97	DRC Mode NEB
-7.00	DRC Mode QRO
-1.50	DRC Mode CRO
-5.00	DRC Mode Cell Entrance/Exit Voltage
0.70	Cell Gas A
200.00	Axial Field Voltage
-5.00	KED Mode CRO
-16.00	KED Mode QRO
-2.00	KED Mode Cell Entrance Voltage
-22.00	KED Mode Cell Exit Voltage
1.00	KED Cell Gas A
0.00	KED RPa
0.25	KED RPq
475.00	KED Mode Axial Field Voltage

Approved: March 24, 2017

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, March 23, 2017 14:16:10
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269762.2	1.4				ug/L		Standard
	Be	9	21.7	53.3				ug/L		Standard
	Al	27	1526.7	1.0				ug/L		Standard
	Sc	45	40360.4	1.1				ug/L		Standard
	Ti	47	47.3	10.8				ug/L		Standard
	V	51	1401.5	2.7				ug/L		Standard
	Cr	52	6348.0	1.6				ug/L		Standard
	Cr	53	505.0	10.3				ug/L		Standard
	Mn	55	3410.7	2.6				ug/L		Standard
	Co	59	825.0	8.4				ug/L		Standard
	Ni	60	575.7	5.5				ug/L		Standard
	Cu	65	632.0	3.9				ug/L		Standard
	Zn	66	430.0	4.9				ug/L		Standard
>	Ge	72	823185.1	1.8				ug/L		Standard
	As	75	-12.8	211.0				ug/L		Standard
	Se	82	19.7	32.7				ug/L		Standard
	Se-1	77	105.7	24.7				ug/L		Standard
>	Ga	71	236.7	14.1				mg/L		Standard
	Rb	85	51.7	47.7				ug/L		Standard
	Y	89	565679.2	2.1				ug/L		Standard
>	Rh	103	18.3	78.7				ug/L		Standard
	Mo	98	56.0	28.7				ug/L		Standard
	Ag	107	128.0	7.2				ug/L		Standard
	Cd	111	7.6	30.4				mg/L		Standard
	Cd	114	49.5	47.5				ug/L		Standard
>	In	115	692408.1	1.4				ug/L		Standard
	Sn	118	268.7	4.8				ug/L		Standard
	Sb	123	358.3	28.4				ug/L		Standard
	Ba	135	64.0	14.9				ug/L		Standard
	Ce	140	41.7	6.9				ug/L		Standard
>	Tb	159	1021298.3	0.9				ug/L		Standard
	Ho	165	11.7	49.5				ug/L		Standard
	Tl	203	17.0	42.4				ug/L		Standard
	Tl	205	41.7	6.9				ug/L		Standard
	Pb	206	452.3	4.1				ug/L		Standard
	Pb	207	398.7	4.3				ug/L		Standard
	Pb	208	467.3	3.5				ug/L		Standard
	U	238	7.7	49.4				ug/L		Standard
>	Bi	209	599664.9	0.8				ug/L		Standard

Sample ID: Blank
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	Na	23	0.0		mg/L	Standard
	Mg	24	30.0	72.6	mg/L	Standard
	K	39	18.3	15.7	mg/L	Standard
	Ca	43	65.0	35.3	mg/L	Standard
	Fe	54	39.6	50.5	mg/L	Standard
	Fe	57	341.7	5.9	mg/L	Standard
>	**Sc-1**	45	40360.4	1.1	mg/L	Standard
	Cl	35	2.7	43.3	ug/L	Standard
	Kr	83	6.7	8.7	ug/L	Standard
	Br	81	2586.9	10.5	ug/L	Standard
	P	31	95.0	22.9	ug/L	Standard
	S	34	28.3	36.7	ug/L	Standard
	Sr	88	206.7	13.3	ug/L	Standard
	C	12	23.3	65.5	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	5.7	216.8	mg/L	Standard
	Ho-1	165	11.7	49.5	mg/L	Standard
	Er	166	20.0	86.6	mg/L	Standard
	I	127	5339.3	4.4	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Thursday, March 23, 2017 14:18:20
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, March 23, 2017 14:19:15
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	263191.7	1.7				ug/L	269762	Standard
	Be	9	16.7	17.3				ug/L	22	Standard
	Al	27	1633.4	8.2				ug/L	1527	Standard
	Sc	45	40225.0	3.0				ug/L	40360	Standard
	Ti	47	44.3	23.2				ug/L	47	Standard
	V	51	1406.9	1.1				ug/L	1402	Standard
	Cr	52	6341.3	1.2				ug/L	6348	Standard
	Cr	53	506.7	12.9				ug/L	505	Standard
	Mn	55	3331.0	1.1				ug/L	3411	Standard
	Co	59	735.7	0.6				ug/L	825	Standard
	Ni	60	565.7	2.8				ug/L	576	Standard
	Cu	65	643.3	2.1				ug/L	632	Standard
	Zn	66	428.0	8.7				ug/L	430	Standard
>	Ge	72	822379.0	2.4				ug/L	823185	Standard
	As	75	-54.5	24.1				ug/L	-13	Standard
	Se	82	14.7	40.6				ug/L	20	Standard
	Se-1	77	98.0	2.7				ug/L	106	Standard
>	Ga	71	233.3	23.5				mg/L	237	Standard
	Rb	85	48.3	26.0				ug/L	52	Standard
	Y	89	557947.4	0.3				ug/L	565679	Standard
>	Rh	103	30.0	44.1				ug/L	18	Standard
	Mo	98	39.5	11.6				ug/L	56	Standard
	Ag	107	125.0	6.2				ug/L	128	Standard
	Cd	111	6.3	40.1				mg/L	8	Standard
	Cd	114	43.2	50.9				ug/L	49	Standard
>	In	115	693709.0	1.4				ug/L	692408	Standard
	Sn	118	254.0	2.8				ug/L	269	Standard
	Sb	123	152.9	32.1				ug/L	358	Standard
	Ba	135	61.3	6.2				ug/L	64	Standard
	Ce	140	30.0	16.7				ug/L	42	Standard
>	Tb	159	1030503.2	0.2				ug/L	1021298	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	12.3	52.1				ug/L	17	Standard
	Tl	205	23.3	44.6				ug/L	42	Standard
	Pb	206	462.0	6.8				ug/L	452	Standard
	Pb	207	399.3	1.9				ug/L	399	Standard
	Pb	208	474.3	0.5				ug/L	467	Standard
	U	238	5.0	69.3				ug/L	8	Standard
>	Bi	209	593994.9	0.7				ug/L	599665	Standard

Sample ID: Standard 1
Report Date/Time: Thursday, March 23, 2017 14:21:26
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Na	23	0.0		mg/L	0	Standard
Mg	24	50.0	17.3	mg/L	30	Standard
K	39	23.3	44.6	mg/L	18	Standard
Ca	43	61.7	12.4	mg/L	65	Standard
Fe	54	39.6	38.0	mg/L	40	Standard
Fe	57	326.7	2.3	mg/L	342	Standard
Sc-1	45	40225.0	3.0	mg/L	40360	Standard
Cl	35	2.0	100.0	ug/L	3	Standard
Kr	83	3.3	45.8	ug/L	7	Standard
Br	81	2543.5	8.7	ug/L	2587	Standard
P	31	73.3	7.9	ug/L	95	Standard
S	34	33.3	60.6	ug/L	28	Standard
Sr	88	180.0	30.0	ug/L	207	Standard
C	12	26.7	57.3	mg/L	23	Standard
N	14	6.7	173.2	mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	-0.8	69.3	mg/L	6	Standard
Ho-1	165	8.3	69.3	mg/L	12	Standard
Er	166	16.7	69.3	mg/L	20	Standard
I	127	5527.7	2.0	mg/L	5339	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, March 23, 2017 14:22:21
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	260191.7	0.2				ug/L	269762	Standard
	Be	9	151.7	18.7				ug/L	22	Standard
	Al	27	9352.9	2.7				ug/L	1527	Standard
	Sc	45	39504.8	2.5				ug/L	40360	Standard
	Ti	47	68.0	10.6				ug/L	47	Standard
	V	51	1779.2	1.8				ug/L	1402	Standard
	Cr	52	6828.9	1.1				ug/L	6348	Standard
	Cr	53	591.7	9.3				ug/L	505	Standard
	Mn	55	4010.5	1.6				ug/L	3411	Standard
	Co	59	1231.4	2.2				ug/L	825	Standard
	Ni	60	672.0	1.4				ug/L	576	Standard
	Cu	65	750.4	0.6				ug/L	632	Standard
	Zn	66	516.0	5.0				ug/L	430	Standard
>	Ge	72	829315.1	1.3				ug/L	823185	Standard
	As	75	8.7	317.4				ug/L	-13	Standard
	Se	82	26.4	40.8				ug/L	20	Standard
	Se-1	77	106.3	16.4				ug/L	106	Standard
>	Ga	71	228.3	14.2				mg/L	237	Standard
	Rb	85	35.0	28.6				ug/L	52	Standard
	Y	89	557995.7	0.1				ug/L	565679	Standard
>	Rh	103	18.3	63.0				ug/L	18	Standard
	Mo	98	523.7	0.4				ug/L	56	Standard
	Ag	107	511.7	1.6				ug/L	128	Standard
	Cd	111	126.7	11.0				mg/L	8	Standard
	Cd	114	346.3	20.0				ug/L	49	Standard
>	In	115	681268.7	1.7				ug/L	692408	Standard
	Sn	118	323.7	2.8				ug/L	269	Standard
	Sb	123	359.5	12.3				ug/L	358	Standard
	Ba	135	188.0	6.8				ug/L	64	Standard
	Ce	140	28.3	40.8				ug/L	42	Standard
>	Tb	159	1035112.6	1.6				ug/L	1021298	Standard
	Ho	165	18.3	41.7				ug/L	12	Standard
	Tl	203	444.3	1.4				ug/L	17	Standard
	Tl	205	1090.0	4.0				ug/L	42	Standard
	Pb	206	846.0	1.9				ug/L	452	Standard
	Pb	207	704.7	3.5				ug/L	399	Standard
	Pb	208	868.3	3.4				ug/L	467	Standard
	U	238	291.0	11.9				ug/L	8	Standard
>	Bi	209	589762.4	0.4				ug/L	599665	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	33.3	37.7	mg/L	30	Standard
K	39	26.7	10.8	mg/L	18	Standard
Ca	43	51.7	43.6	mg/L	65	Standard
Fe	54	42.6	41.0	mg/L	40	Standard
Fe	57	326.7	14.2	mg/L	342	Standard
Sc-1	45	39504.8	2.5	mg/L	40360	Standard
Cl	35	1.3	173.2	ug/L	3	Standard
Kr	83	3.3	17.3	ug/L	7	Standard
Br	81	2430.2	9.1	ug/L	2587	Standard
P	31	75.0	17.6	ug/L	95	Standard
S	34	30.0	16.7	ug/L	28	Standard
Sr	88	151.7	13.3	ug/L	207	Standard
C	12	10.0	100.0	mg/L	23	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	3	Standard
Dy	164	6.2	93.6	mg/L	6	Standard
Ho-1	165	18.3	41.7	mg/L	12	Standard
Er	166	10.0	100.0	mg/L	20	Standard
I	127	5459.3	2.3	mg/L	5339	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, March 23, 2017 14:25:26
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255200.4	2.4				ug/L	269762	Standard
	Be	9	121885.0	1.3	50.0000	0.668	1.3	ug/L	22	Standard
	Al	27	8704545.4	1.0	50.0000	0.961	1.9	ug/L	1527	Standard
	Sc	45	38764.5	1.1				ug/L	40360	Standard
	Ti	47	22530.1	0.5	100.0000	0.467	0.5	ug/L	47	Standard
	V	51	413293.5	0.4	50.0000	0.311	0.6	ug/L	1402	Standard
	Cr	52	404668.8	0.5	50.0000	0.325	0.6	ug/L	6348	Standard
	Cr	53	50040.9	3.5	50.0000	1.667	3.3	ug/L	505	Standard
	Mn	55	683281.1	0.8	50.0000	0.132	0.3	ug/L	3411	Standard
	Co	59	534691.5	1.6	50.0000	0.389	0.8	ug/L	825	Standard
	Ni	60	114531.7	1.7	50.0000	0.435	0.9	ug/L	576	Standard
	Cu	65	118527.8	1.1	50.0000	0.130	0.3	ug/L	632	Standard
	Zn	66	70422.6	1.1	50.0000	0.590	1.2	ug/L	430	Standard
>	Ge	72	821064.6	0.8				ug/L	823185	Standard
	As	75	70107.4	1.4	50.0000	0.289	0.6	ug/L	-13	Standard
	Se	82	6377.6	1.7	50.0000	0.574	1.1	ug/L	20	Standard
	Se-1	77	4666.7	0.9	50.0000	0.132	0.3	ug/L	106	Standard
>	Ga	71	300.0	5.0				mg/L	237	Standard
	Rb	85	420.0	15.7				ug/L	52	Standard
	Y	89	550376.7	0.9				ug/L	565679	Standard
>	Rh	103	35.0	28.6				ug/L	18	Standard
	Mo	98	451437.3	0.8	100.0000	0.282	0.3	ug/L	56	Standard
	Ag	107	370176.0	1.4	50.0000	0.766	1.5	ug/L	128	Standard
	Cd	111	107039.5	1.1	50.0000	0.367	0.7	mg/L	8	Standard
	Cd	114	274786.0	2.2	50.0000	0.574	1.1	ug/L	49	Standard
>	In	115	679909.0	1.0				ug/L	692408	Standard
	Sn	118	61268.6	1.4	50.0000	0.255	0.5	ug/L	269	Standard
	Sb	123	276626.4	1.1	50.0000	0.163	0.3	ug/L	358	Standard
	Ba	135	108865.7	0.6	50.0000	0.281	0.6	ug/L	64	Standard
	Ce	140	290.0	17.0				ug/L	42	Standard
>	Tb	159	1021668.9	0.1				ug/L	1021298	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	428867.2	1.0	50.0000	0.331	0.7	ug/L	17	Standard
	Tl	205	1022447.9	1.7	50.0000	0.674	1.3	ug/L	42	Standard
	Pb	206	346276.1	0.8	50.0000	0.256	0.5	ug/L	452	Standard
	Pb	207	312673.0	0.6	50.0000	0.138	0.3	ug/L	399	Standard
	Pb	208	366125.9	0.8	50.0000	0.241	0.5	ug/L	467	Standard
	U	238	283680.1	0.7	50.0000	0.190	0.4	ug/L	8	Standard
>	Bi	209	591326.9	0.4				ug/L	599665	Standard

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	Na	23	16.7	17.3	**5.0000**	1.021	20.4	mg/L	0	Standard
	Mg	24	501.7	6.4	**5.0000**	0.361	7.2	mg/L	30	Standard
	K	39	1023.4	6.8	**5.0000**	0.326	6.5	mg/L	18	Standard
	Ca	43	78.3	14.7	**5.0000**	2.219	44.4	mg/L	65	Standard
	Fe	54	1003.2	1.3	**5.0000**	0.066	1.3	mg/L	40	Standard
	Fe	57	595.0	10.2	**5.0000**	1.134	22.7	mg/L	342	Standard
>	**Sc-1**	45	38764.5	1.1				mg/L	40360	Standard
	Cl	35	3.3	34.6				ug/L	3	Standard
	Kr	83	3.7	41.7				ug/L	7	Standard
	Br	81	2500.2	5.2				ug/L	2587	Standard
	P	31	63.3	9.1				ug/L	95	Standard
	S	34	35.0	37.8				ug/L	28	Standard
	Sr	88	161.7	1.8				ug/L	207	Standard
	C	12	16.7	91.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	12.4	120.9				mg/L	6	Standard
	Ho-1	165	11.7	65.5				mg/L	12	Standard
	Er	166	20.0	50.0				mg/L	20	Standard
	I	127	3387.0	2.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, March 23, 2017 14:28:31
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	254465.8	0.6				ug/L	269762	Standard
	Be	9	238592.5	1.5	**99.0660**	1.227	1.2	ug/L	22	Standard
	Al	27	17312462.0	1.3	**99.8532**	1.205	1.2	ug/L	1527	Standard
	Sc	45	38659.3	2.8				ug/L	40360	Standard
	Ti	47	44318.1	0.3	**200.9582**	3.596	1.8	ug/L	47	Standard
	V	51	819913.0	0.1	**100.9356**	1.678	1.7	ug/L	1402	Standard
	Cr	52	787119.8	0.2	**100.2627**	1.613	1.6	ug/L	6348	Standard
	Cr	53	97234.5	2.5	**100.0890**	3.163	3.2	ug/L	505	Standard
	Mn	55	1335534.2	0.7	**100.2318**	1.701	1.7	ug/L	3411	Standard
	Co	59	1043165.5	0.7	**100.0501**	1.257	1.3	ug/L	825	Standard
	Ni	60	224555.8	0.6	**100.3863**	1.023	1.0	ug/L	576	Standard
	Cu	65	233960.3	1.2	**100.7317**	0.983	1.0	ug/L	632	Standard
	Zn	66	139639.9	1.2	**100.9811**	0.380	0.4	ug/L	430	Standard
>	Ge	72	800777.7	1.6				ug/L	823185	Standard
	As	75	140650.4	0.7	**101.3901**	1.248	1.2	ug/L	-13	Standard
	Se	82	12859.8	0.7	**101.7511**	2.152	2.1	ug/L	20	Standard
	Se-1	77	9272.5	1.4	**101.4850**	1.551	1.5	ug/L	106	Standard
>	Ga	71	328.3	24.1				mg/L	237	Standard
	Rb	85	770.0	15.3				ug/L	52	Standard
	Y	89	544905.1	2.2				ug/L	565679	Standard
>	Rh	103	75.0	41.6				ug/L	18	Standard
	Mo	98	882133.9	0.5	**198.4409**	2.815	1.4	ug/L	56	Standard
	Ag	107	725890.8	0.0	**99.3985**	0.923	0.9	ug/L	128	Standard
	Cd	111	208227.4	0.7	**98.9939**	0.416	0.4	mg/L	8	Standard
	Cd	114	531121.9	1.2	**98.6786**	0.977	1.0	ug/L	49	Standard
>	In	115	674836.5	1.0				ug/L	692408	Standard
	Sn	118	117055.8	1.4	**98.1902**	0.636	0.6	ug/L	269	Standard
	Sb	123	550636.8	0.4	**100.1469**	0.559	0.6	ug/L	358	Standard
	Ba	135	215359.1	0.5	**99.8475**	1.376	1.4	ug/L	64	Standard
	Ce	140	630.0	2.1				ug/L	42	Standard
>	Tb	159	1009773.5	0.4				ug/L	1021298	Standard
	Ho	165	41.7	48.5				ug/L	12	Standard
	Tl	203	848691.0	0.7	**99.7286**	1.286	1.3	ug/L	17	Standard
	Tl	205	2295391.5	11.8	**106.0414**	12.905	12.2	ug/L	42	Standard
	Pb	206	680916.0	0.5	**99.4454**	0.933	0.9	ug/L	452	Standard
	Pb	207	616913.1	0.4	**99.6091**	0.959	1.0	ug/L	399	Standard
	Pb	208	722553.3	0.2	**99.6239**	0.641	0.6	ug/L	467	Standard
	U	238	557429.1	1.0	**99.3742**	1.206	1.2	ug/L	8	Standard
>	Bi	209	588324.9	0.6				ug/L	599665	Standard

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	Na	23	23.3	24.7	**8.5708**	2.230	26.0	mg/L	0	Standard
	Mg	24	955.0	6.8	**9.9342**	0.931	9.4	mg/L	30	Standard
	K	39	1796.8	1.0	**9.4221**	0.363	3.9	mg/L	18	Standard
	Ca	43	65.0	15.4	**4.1411**	3.089	74.6	mg/L	65	Standard
	Fe	54	1679.1	9.5	**9.2128**	0.913	9.9	mg/L	40	Standard
	Fe	57	760.0	0.7	**8.9174**	0.504	5.7	mg/L	342	Standard
>	**Sc-1**	45	38659.3	2.8				mg/L	40360	Standard
	Cl	35	0.0					ug/L	3	Standard
	Kr	83	2.3	24.7				ug/L	7	Standard
	Br	81	2200.2	5.9				ug/L	2587	Standard
	P	31	58.3	9.9				ug/L	95	Standard
	S	34	45.0	29.4				ug/L	28	Standard
	Sr	88	143.3	8.8				ug/L	207	Standard
	C	12	16.7	91.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	38.2	0.7				mg/L	6	Standard
	Ho-1	165	41.7	48.5				mg/L	12	Standard
	Er	166	36.7	15.7				mg/L	20	Standard
	I	127	4902.5	2.2				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998
Corr. Coef.	Fe	54	Correlation coefficient < 0.998

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Corr. Coef.	Fe	57	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, March 23, 2017 14:31:39
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255488.0	1.4				ug/L	269762	Standard
	Be	9	116907.7	1.3	**48.3456**	0.729	1.5	ug/L	22	Standard
	Al	27	8582393.0	1.9	**49.3110**	1.385	2.8	ug/L	1527	Standard
	Sc	45	38315.1	0.8				ug/L	40360	Standard
	Ti	47	22191.6	0.9	**99.7377**	0.440	0.4	ug/L	47	Standard
	V	51	404141.7	1.6	**49.2786**	0.530	1.1	ug/L	1402	Standard
	Cr	52	393369.3	1.4	**49.3133**	0.529	1.1	ug/L	6348	Standard
	Cr	53	48111.3	2.8	**48.8567**	1.208	2.5	ug/L	505	Standard
	Mn	55	669199.4	1.2	**49.7095**	0.498	1.0	ug/L	3411	Standard
	Co	59	519337.3	1.4	**49.3898**	0.550	1.1	ug/L	825	Standard
	Ni	60	111696.0	2.2	**49.4235**	1.011	2.0	ug/L	576	Standard
	Cu	65	116441.8	1.8	**49.6143**	0.856	1.7	ug/L	632	Standard
	Zn	66	69648.4	1.9	**49.8204**	0.728	1.5	ug/L	430	Standard
>	Ge	72	806943.5	0.5				ug/L	823185	Standard
	As	75	68564.2	1.5	**49.0631**	0.489	1.0	ug/L	-13	Standard
	Se	82	6267.9	2.6	**49.1217**	1.035	2.1	ug/L	20	Standard
	Se-1	77	4489.3	2.0	**48.1888**	0.761	1.6	ug/L	106	Standard
>	Ga	71	241.7	11.9				mg/L	237	Standard
	Rb	85	381.7	11.8				ug/L	52	Standard
	Y	89	544842.2	2.0				ug/L	565679	Standard
>	Rh	103	25.0	34.6				ug/L	18	Standard
	Mo	98	444838.2	0.9	**99.8716**	1.592	1.6	ug/L	56	Standard
	Ag	107	362162.6	0.4	**49.4889**	0.514	1.0	ug/L	128	Standard
	Cd	111	104603.0	0.6	**49.6323**	0.443	0.9	mg/L	8	Standard
	Cd	114	272367.5	1.3	**50.5005**	0.322	0.6	ug/L	49	Standard
>	In	115	676100.6	0.7				ug/L	692408	Standard
	Sn	118	61573.6	2.0	**51.4504**	0.970	1.9	ug/L	269	Standard
	Sb	123	275203.9	1.2	**49.9534**	0.881	1.8	ug/L	358	Standard
	Ba	135	107192.2	1.1	**49.5855**	0.802	1.6	ug/L	64	Standard
	Ce	140	333.3	6.8				ug/L	42	Standard
>	Tb	159	1008325.7	1.5				ug/L	1021298	Standard
	Ho	165	8.3	91.7				ug/L	12	Standard
	Tl	203	427553.1	0.8	**49.5929**	0.277	0.6	ug/L	17	Standard
	Tl	205	1021295.7	0.6	**46.5603**	0.156	0.3	ug/L	42	Standard
	Pb	206	342923.8	1.0	**49.4014**	0.344	0.7	ug/L	452	Standard
	Pb	207	310180.5	1.3	**49.4057**	0.516	1.0	ug/L	399	Standard
	Pb	208	364351.6	0.6	**49.5552**	0.179	0.4	ug/L	467	Standard
	U	238	282556.8	0.8	**49.7233**	0.294	0.6	ug/L	8	Standard
>	Bi	209	595969.2	0.3				ug/L	599665	Standard

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	Na	23	11.7	49.5	**3.6427**	2.506	68.8	mg/L	0	Standard
	Mg	24	538.3	6.3	**5.4936**	0.390	7.1	mg/L	30	Standard
	K	39	930.0	7.4	**4.8554**	0.412	8.5	mg/L	18	Standard
	Ca	43	68.3	18.4	**5.2737**	3.832	72.7	mg/L	65	Standard
	Fe	54	846.1	12.2	**4.5671**	0.564	12.4	mg/L	40	Standard
	Fe	57	623.3	2.3	**6.2600**	0.395	6.3	mg/L	342	Standard
>	**Sc-1**	45	38315.1	0.8				mg/L	40360	Standard
	Cl	35	2.7	114.6				ug/L	3	Standard
	Kr	83	5.3	28.6				ug/L	7	Standard
	Br	81	2313.5	7.6				ug/L	2587	Standard
	P	31	81.7	33.7				ug/L	95	Standard
	S	34	28.3	10.2				ug/L	28	Standard
	Sr	88	171.7	9.4				ug/L	207	Standard
	C	12	13.3	43.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.0	108.0				mg/L	6	Standard
	Ho-1	165	8.3	91.7				mg/L	12	Standard
	Er	166	20.0	50.0				mg/L	20	Standard
	I	127	2871.9	7.2				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	96.691		
	Al	27	98.622		
	Sc	45			
	Ti	47	99.738		
	V	51	98.557		
	Cr	52	98.627		
	Cr	53			
	Mn	55	99.419		
	Co	59	98.780		
	Ni	60	98.847		
	Cu	65	99.229		
	Zn	66	99.641		
>	Ge	72		98.027	
	As	75	98.126		
	Se	82	98.243		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.872		
Ag	107	98.978		
Cd	111	99.265		
Cd	114			
In	115			97.645
Sn	118	102.901		
Sb	123	99.907		
Ba	135	99.171		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.186		
Tl	205			
Pb	206	98.803		
Pb	207	98.811		
Pb	208	99.110		
U	238	99.447		
Bi	209			99.384
Na	23	72.854		
Mg	24	109.872		
K	39	97.107		
Ca	43	105.474		
Fe	54	91.341		
Fe	57	125.200		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	
QC Std 1	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, March 23, 2017 14:34:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	260785.2	3.4				ug/L	269762	Standard
	Be	9	43.3	33.3	**0.0059**	0.005	88.5	ug/L	22	Standard
	Al	27	1528.4	6.9	**0.0058**	0.001	11.7	ug/L	1527	Standard
	Sc	45	38741.1	2.2				ug/L	40360	Standard
	Ti	47	44.7	15.2	**0.0020**	0.030	1464.0	ug/L	47	Standard
	V	51	1122.2	3.3	**-0.0252**	0.005	21.4	ug/L	1402	Standard
	Cr	52	5522.0	1.4	**-0.0965**	0.020	20.9	ug/L	6348	Standard
	Cr	53	416.7	3.7	**-0.1149**	0.022	18.9	ug/L	505	Standard
	Mn	55	2975.6	4.6	**-0.0204**	0.010	50.6	ug/L	3411	Standard
	Co	59	606.0	7.9	**-0.0067**	0.004	62.2	ug/L	825	Standard
	Ni	60	471.3	3.4	**-0.0322**	0.009	28.7	ug/L	576	Standard
	Cu	65	687.7	2.4	**0.0303**	0.006	18.5	ug/L	632	Standard
	Zn	66	481.7	7.4	**0.0335**	0.026	77.7	ug/L	430	Standard
>	Ge	72	811165.6	1.5				ug/L	823185	Standard
	As	75	-26.1	112.1	**0.0256**	0.021	80.6	ug/L	-13	Standard
	Se	82	18.8	20.8	**-0.0043**	0.032	753.2	ug/L	20	Standard
	Se-1	77	99.3	4.5	**0.0002**	0.035	18818.4	ug/L	106	Standard
>	Ga	71	170.0	7.8				mg/L	237	Standard
	Rb	85	50.0	43.6				ug/L	52	Standard
	Y	89	551637.3	2.8				ug/L	565679	Standard
>	Rh	103	15.0	0.0				ug/L	18	Standard
	Mo	98	594.4	9.7	**0.1163**	0.012	10.0	ug/L	56	Standard
	Ag	107	163.0	8.6	**0.0028**	0.002	59.5	ug/L	128	Standard
	Cd	111	7.6	6.7	**-0.0061**	0.000	3.7	mg/L	8	Standard
	Cd	114	45.1	6.4	**-0.0053**	0.001	10.9	ug/L	49	Standard
>	In	115	677891.2	1.7				ug/L	692408	Standard
	Sn	118	307.0	8.0	**0.0377**	0.025	66.5	ug/L	269	Standard
	Sb	123	941.6	15.2	**0.1560**	0.029	18.7	ug/L	358	Standard
	Ba	135	87.3	15.2	**0.0040**	0.007	162.6	ug/L	64	Standard
	Ce	140	30.0	60.1				ug/L	42	Standard
>	Tb	159	1009086.7	3.0				ug/L	1021298	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	30.7	23.6	**0.0015**	0.001	55.5	ug/L	17	Standard
	Tl	205	70.0	14.3	**0.0030**	0.000	13.8	ug/L	42	Standard
	Pb	206	512.0	6.7	**0.0002**	0.004	2048.7	ug/L	452	Standard
	Pb	207	469.7	3.3	**0.0110**	0.002	15.1	ug/L	399	Standard
	Pb	208	528.3	6.9	**0.0021**	0.004	182.6	ug/L	467	Standard
	U	238	29.0	50.8	**0.0034**	0.003	80.1	ug/L	8	Standard
>	Bi	209	598377.4	1.6				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	30.0	33.3	**-0.0235**	0.108	459.8	mg/L	30	Standard
	K	39	16.7	17.3	**-0.0455**	0.016	35.6	mg/L	18	Standard
	Ca	43	56.7	13.5	**1.6374**	1.846	112.7	mg/L	65	Standard
	Fe	54	31.1	23.8	**-0.0566**	0.038	66.5	mg/L	40	Standard
	Fe	57	318.3	10.1	**-0.0292**	0.729	2493.0	mg/L	342	Standard
>	**Sc-1**	45	38741.1	2.2				mg/L	40360	Standard
	Cl	35	4.7	89.2				ug/L	3	Standard
	Kr	83	3.7	15.7				ug/L	7	Standard
	Br	81	2420.2	10.8				ug/L	2587	Standard
	P	31	60.0	44.1				ug/L	95	Standard
	S	34	26.7	21.7				ug/L	28	Standard
	Sr	88	143.3	23.2				ug/L	207	Standard
	C	12	13.3	43.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	2.5	239.4				mg/L	6	Standard
	Ho-1	165	10.0	86.6				mg/L	12	Standard
	Er	166	16.7	69.3				mg/L	20	Standard
	I	127	5382.6	1.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.540	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.903
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.785
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, March 23, 2017 14:37:52
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	251825.9	3.9				ug/L	269762	Standard
	Be	9	470.0	3.8	**0.1858**	0.008	4.5	ug/L	22	Standard
	Al	27	1218.4	15.4	**0.0043**	0.001	20.2	ug/L	1527	Standard
	Sc	45	38196.5	4.2				ug/L	40360	Standard
	Ti	47	38.7	6.5	**-0.0213**	0.017	78.7	ug/L	47	Standard
	V	51	4045.7	3.0	**0.3402**	0.031	9.2	ug/L	1402	Standard
	Cr	52	12911.5	0.6	**0.8705**	0.048	5.5	ug/L	6348	Standard
	Cr	53	1381.7	6.2	**0.8955**	0.049	5.5	ug/L	505	Standard
	Mn	55	9126.7	2.0	**0.4489**	0.009	2.1	ug/L	3411	Standard
	Co	59	4364.0	1.0	**0.3572**	0.017	4.8	ug/L	825	Standard
	Ni	60	3836.8	1.8	**1.4878**	0.027	1.8	ug/L	576	Standard
	Cu	65	2577.6	2.1	**0.8563**	0.041	4.8	ug/L	632	Standard
	Zn	66	8820.2	1.6	**6.1218**	0.134	2.2	ug/L	430	Standard
>	Ge	72	796714.1	3.4				ug/L	823185	Standard
	As	75	476.4	5.7	**0.3897**	0.031	7.8	ug/L	-13	Standard
	Se	82	64.2	2.1	**0.3597**	0.016	4.4	ug/L	20	Standard
	Se-1	77	124.7	12.9	**0.3045**	0.205	67.3	ug/L	106	Standard
>	Ga	71	171.7	12.1				mg/L	237	Standard
	Rb	85	46.7	37.6				ug/L	52	Standard
	Y	89	536050.4	5.2				ug/L	565679	Standard
>	Rh	103	26.7	10.8				ug/L	18	Standard
	Mo	98	138.2	5.1	**0.0148**	0.001	9.6	ug/L	56	Standard
	Ag	107	2803.6	2.0	**0.3704**	0.012	3.3	ug/L	128	Standard
	Cd	111	473.5	6.0	**0.2187**	0.011	5.1	mg/L	8	Standard
	Cd	114	1260.9	9.1	**0.2247**	0.028	12.5	ug/L	49	Standard
>	In	115	664984.9	2.9				ug/L	692408	Standard
	Sn	118	217.3	4.7	**-0.0342**	0.004	12.0	ug/L	269	Standard
	Sb	123	2369.4	3.6	**0.4229**	0.024	5.6	ug/L	358	Standard
	Ba	135	1519.7	4.1	**0.6791**	0.029	4.3	ug/L	64	Standard
	Ce	140	13.3	78.1				ug/L	42	Standard
>	Tb	159	997506.4	2.3				ug/L	1021298	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	672.7	2.5	**0.0763**	0.003	4.2	ug/L	17	Standard
	Tl	205	1598.4	9.9	**0.0729**	0.006	8.4	ug/L	42	Standard
	Pb	206	1827.4	2.1	**0.1915**	0.002	0.8	ug/L	452	Standard
	Pb	207	1496.7	0.6	**0.1763**	0.005	2.7	ug/L	399	Standard
	Pb	208	1791.0	3.3	**0.1755**	0.004	2.4	ug/L	467	Standard
	U	238	2082.5	0.3	**0.3665**	0.007	1.8	ug/L	8	Standard
>	Bi	209	593281.0	1.6				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	28.3	36.7	**-0.0380**	0.108	284.8	mg/L	30	Standard
	K	39	25.0	0.0	**0.0007**	0.006	876.2	mg/L	18	Standard
	Ca	43	56.7	13.5	**1.8585**	1.601	86.1	mg/L	65	Standard
	Fe	54	35.9	8.5	**-0.0253**	0.026	103.9	mg/L	40	Standard
	Fe	57	330.0	13.5	**0.3169**	1.078	340.2	mg/L	342	Standard
>	**Sc-1**	45	38196.5	4.2				mg/L	40360	Standard
	Cl	35	0.0					ug/L	3	Standard
	Kr	83	2.7	21.7				ug/L	7	Standard
	Br	81	2650.2	7.2				ug/L	2587	Standard
	P	31	58.3	9.9				ug/L	95	Standard
	S	34	35.0	42.9				ug/L	28	Standard
	Sr	88	141.7	28.7				ug/L	207	Standard
	C	12	6.7	173.2				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	6.0	93.6				mg/L	6	Standard
	Ho-1	165	8.3	124.9				mg/L	12	Standard
	Er	166	13.3	43.3				mg/L	20	Standard
	I	127	3513.7	3.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	92.875		
	Al	27	0.433		
	Sc	45			
	Ti	47			
	V	51	85.054		
	Cr	52	108.810		
	Cr	53			
	Mn	55	89.776		
	Co	59	89.292		
	Ni	60	92.987		
	Cu	65	107.032		
	Zn	66	97.949		
>	Ge	72		96.784	
	As	75	97.418		
	Se	82	89.920		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	92.599	
|	Cd	111	91.144	
|	Cd	114		
|>	In	115		96.039
|	Sn	118		
|	Sb	123	105.716	
⌊	Ba	135	90.544	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	95.417	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	87.746	
|	U	238	91.616	
⌊>	Bi	209		98.935
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, March 23, 2017 14:40:57
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255058.0	2.3				ug/L	269762	Standard
	Be	9	85.0	97.2	**0.0236**	0.034	144.3	ug/L	22	Standard
	Al	27	8014759.4	0.7	**46.1389**	1.383	3.0	ug/L	1527	Standard
	Sc	45	38107.9	2.9				ug/L	40360	Standard
	Ti	47	20567.6	1.2	**93.5034**	0.993	1.1	ug/L	47	Standard
	V	51	1489.0	13.2	**0.0225**	0.024	107.2	ug/L	1402	Standard
	Cr	52	8400.3	3.0	**0.2861**	0.035	12.3	ug/L	6348	Standard
	Cr	53	768.4	10.7	**0.2569**	0.080	31.0	ug/L	505	Standard
	Mn	55	5755.1	5.1	**0.1933**	0.023	12.1	ug/L	3411	Standard
	Co	59	1251.7	11.9	**0.0565**	0.015	25.7	ug/L	825	Standard
	Ni	60	998.7	4.0	**0.2085**	0.020	9.7	ug/L	576	Standard
	Cu	65	1029.7	4.2	**0.1834**	0.018	10.0	ug/L	632	Standard
	Zn	66	1354.7	1.0	**0.6751**	0.016	2.3	ug/L	430	Standard
>	Ge	72	797688.0	1.1				ug/L	823185	Standard
	As	75	6.2	682.7	**0.0483**	0.031	64.0	ug/L	-13	Standard
	Se	82	17.1	26.0	**-0.0162**	0.035	214.3	ug/L	20	Standard
	Se-1	77	85.7	9.8	**-0.1323**	0.101	76.6	ug/L	106	Standard
>	Ga	71	186.7	5.6				mg/L	237	Standard
	Rb	85	941.7	10.3				ug/L	52	Standard
	Y	89	541696.8	0.5				ug/L	565679	Standard
>	Rh	103	16.7	45.8				ug/L	18	Standard
	Mo	98	408135.7	2.3	**92.6291**	3.037	3.3	ug/L	56	Standard
	Ag	107	312.7	109.0	**0.0235**	0.047	197.7	ug/L	128	Standard
	Cd	111	-114.2	95.2	**-0.0649**	0.053	81.8	mg/L	8	Standard
	Cd	114	824.6	25.5	**0.1408**	0.038	27.3	ug/L	49	Standard
>	In	115	668973.3	2.0				ug/L	692408	Standard
	Sn	118	264.3	27.4	**0.0043**	0.060	1369.5	ug/L	269	Standard
	Sb	123	616.2	51.3	**0.0979**	0.057	58.2	ug/L	358	Standard
	Ba	135	122.3	80.1	**0.0207**	0.045	218.5	ug/L	64	Standard
	Ce	140	1183.4	9.2				ug/L	42	Standard
>	Tb	159	1013797.7	1.3				ug/L	1021298	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	217.3	162.1	**0.0234**	0.041	176.4	ug/L	17	Standard
	Tl	205	520.0	159.9	**0.0237**	0.038	161.2	ug/L	42	Standard
	Pb	206	735.7	38.6	**0.0344**	0.041	118.4	ug/L	452	Standard
	Pb	207	618.3	37.9	**0.0365**	0.037	101.5	ug/L	399	Standard
	Pb	208	711.3	29.1	**0.0289**	0.028	96.3	ug/L	467	Standard
	U	238	117.3	161.4	**0.0191**	0.034	176.0	ug/L	8	Standard
>	Bi	209	586091.2	1.4				ug/L	599665	Standard

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	Na	23	35.0	14.3	**13.8023**	1.873	13.6	mg/L	0	Standard
	Mg	24	1090.0	3.9	**11.5546**	0.809	7.0	mg/L	30	Standard
	K	39	901.7	3.4	**4.7334**	0.307	6.5	mg/L	18	Standard
	Ca	43	115.0	13.0	**19.1009**	4.587	24.0	mg/L	65	Standard
	Fe	54	2019.6	4.8	**11.2856**	0.369	3.3	mg/L	40	Standard
	Fe	57	841.7	5.5	**10.8331**	1.460	13.5	mg/L	342	Standard
>	**Sc-1**	45	38107.9	2.9				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	2.0	50.0				ug/L	7	Standard
	Br	81	2333.5	2.1				ug/L	2587	Standard
	P	31	75.0	6.7				ug/L	95	Standard
	S	34	31.7	39.7				ug/L	28	Standard
	Sr	88	156.7	9.8				ug/L	207	Standard
	C	12	23.3	65.5				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.3	36.2				mg/L	6	Standard
	Ho-1	165	13.3	21.7				mg/L	12	Standard
	Er	166	6.7	86.6				mg/L	20	Standard
	I	127	2668.6	2.8				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.923		
	Sc	45			
	Ti	47	93.503		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.903	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	92.629		
Ag	107			
Cd	111			
Cd	114			
In	115			96.615
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			97.736
Na	23	110.418		
Mg	24	231.091		
K	39	94.668		
Ca	43	127.339		
Fe	54	90.284		
Fe	57	86.665		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mg	24	
QC Std 4	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, March 23, 2017 14:44:02
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	281997.1	1.5				ug/L	269762	Standard
	Be	9	258738.0	2.4	**96.9367**	1.153	1.2	ug/L	22	Standard
	Al	27	8240823.9	1.8	**42.8873**	0.224	0.5	ug/L	1527	Standard
	Sc	45	40208.3	2.1				ug/L	40360	Standard
	Ti	47	22717.7	1.4	**98.8496**	1.406	1.4	ug/L	47	Standard
	V	51	813886.3	0.6	**96.2362**	0.581	0.6	ug/L	1402	Standard
	Cr	52	791823.6	1.2	**96.8597**	1.232	1.3	ug/L	6348	Standard
	Cr	53	98529.5	2.4	**97.4063**	2.397	2.5	ug/L	505	Standard
	Mn	55	1347346.7	0.3	**97.1256**	0.252	0.3	ug/L	3411	Standard
	Co	59	1061007.2	0.9	**97.7538**	0.935	1.0	ug/L	825	Standard
	Ni	60	226893.0	0.8	**97.4320**	0.818	0.8	ug/L	576	Standard
	Cu	65	239432.0	0.7	**99.0294**	0.712	0.7	ug/L	632	Standard
	Zn	66	144723.6	0.9	**100.5439**	0.955	0.9	ug/L	430	Standard
>	Ge	72	833494.5	0.0				ug/L	823185	Standard
	As	75	146146.2	0.7	**101.2043**	0.685	0.7	ug/L	-13	Standard
	Se	82	13363.2	1.7	**101.5612**	1.755	1.7	ug/L	20	Standard
	Se-1	77	9800.2	0.5	**103.0567**	0.542	0.5	ug/L	106	Standard
>	Ga	71	400.0	17.5				mg/L	237	Standard
	Rb	85	1608.4	3.6				ug/L	52	Standard
	Y	89	573823.3	1.1				ug/L	565679	Standard
>	Rh	103	45.0	38.5				ug/L	18	Standard
	Mo	98	428748.6	1.2	**93.4373**	2.097	2.2	ug/L	56	Standard
	Ag	107	711224.0	2.0	**94.3624**	2.747	2.9	ug/L	128	Standard
	Cd	111	214403.0	0.2	**98.7561**	1.245	1.3	mg/L	8	Standard
	Cd	114	538670.0	0.9	**96.9615**	1.144	1.2	ug/L	49	Standard
>	In	115	696573.0	1.1				ug/L	692408	Standard
	Sn	118	275.3	2.8	**0.0047**	0.005	101.7	ug/L	269	Standard
	Sb	123	573543.5	0.5	**101.0650**	1.498	1.5	ug/L	358	Standard
	Ba	135	223185.8	0.5	**100.2493**	1.512	1.5	ug/L	64	Standard
	Ce	140	283.3	8.2				ug/L	42	Standard
>	Tb	159	1074590.2	0.4				ug/L	1021298	Standard
	Ho	165	71.7	24.5				ug/L	12	Standard
	Tl	203	897502.8	2.3	**98.8580**	2.102	2.1	ug/L	17	Standard
	Tl	205	2585735.3	3.5	**111.9419**	3.887	3.5	ug/L	42	Standard
	Pb	206	723823.2	2.3	**99.0927**	2.157	2.2	ug/L	452	Standard
	Pb	207	652412.4	1.6	**98.7434**	1.378	1.4	ug/L	399	Standard
	Pb	208	775603.3	1.8	**100.2448**	1.779	1.8	ug/L	467	Standard
	U	238	612626.2	2.9	**102.3749**	2.777	2.7	ug/L	8	Standard
>	Bi	209	627602.4	0.6				ug/L	599665	Standard

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⌈	**Na**	23	28.3	27.0	**10.2795**	3.112	30.3	mg/L	0	Standard
|	**Mg**	24	996.7	3.9	**9.9542**	0.340	3.4	mg/L	30	Standard
|	**K**	39	815.0	16.0	**4.0254**	0.599	14.9	mg/L	18	Standard
|	**Ca**	43	53.3	23.6	**0.0927**	3.207	3460.2	mg/L	65	Standard
|	**Fe**	54	1893.1	3.6	**9.9995**	0.155	1.5	mg/L	40	Standard
|	**Fe**	57	901.7	6.4	**11.0797**	1.271	11.5	mg/L	342	Standard
⌊>	**Sc-1**	45	40208.3	2.1				mg/L	40360	Standard
	Cl	35	1.3	173.2				ug/L	3	Standard
	Kr	83	3.0	88.2				ug/L	7	Standard
	Br	81	3057.0	3.9				ug/L	2587	Standard
	P	31	86.7	6.7				ug/L	95	Standard
	S	34	30.0	28.9				ug/L	28	Standard
	Sr	88	118.3	17.1				ug/L	207	Standard
	C	12	100.0	20.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	30.0	33.3				mg/L	3	Standard
	Dy	164	17.6	153.4				mg/L	6	Standard
	Ho-1	165	71.7	24.5				mg/L	12	Standard
	Er	166	50.0	34.6				mg/L	20	Standard
	I	127	2865.3	3.0				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	96.937		
⌊	Al	27	0.858		
⌈	Sc	45			
|	Ti	47	98.850		
|	V	51	96.236		
|	Cr	52	96.860		
|	Cr	53			
|	Mn	55	97.126		
|	Co	59	97.754		
|	Ni	60	97.432		
|	Cu	65	99.029		
|	Zn	66	100.544		
|>	Ge	72		101.252	
|	As	75	101.204		
|	Se	82	101.561		
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85		
	Y	89		
>	Rh	103		
	Mo	98	93.437	
	Ag	107	94.362	
	Cd	111	98.756	
	Cd	114		
>	In	115		100.602
	Sn	118		
	Sb	123	101.065	
	Ba	135	100.249	
	Ce	140		
>	Tb	159		
	Ho	165		
	Tl	203	98.858	
	Tl	205		
	Pb	206		
	Pb	207		
	Pb	208	100.245	
	U	238	102.375	
>	Bi	209		104.659
	Na	23	82.236	
	Mg	24	199.083	
	K	39	80.509	
	Ca	43	0.618	
	Fe	54	79.996	
	Fe	57	88.637	
>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43
QC Std 5	Fe	54

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, March 23, 2017 14:47:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	275095.0	0.8				ug/L	269762	Standard
	Be	9	126090.9	1.4	**48.4214**	0.296	0.6	ug/L	22	Standard
	Al	27	8856225.3	2.8	**47.2438**	1.013	2.1	ug/L	1527	Standard
	Sc	45	38851.4	2.4				ug/L	40360	Standard
	Ti	47	22582.2	1.2	**98.7111**	1.694	1.7	ug/L	47	Standard
	V	51	413090.9	1.0	**48.9865**	0.294	0.6	ug/L	1402	Standard
	Cr	52	401033.4	1.1	**48.8858**	0.056	0.1	ug/L	6348	Standard
	Cr	53	49318.5	1.5	**48.7072**	0.536	1.1	ug/L	505	Standard
	Mn	55	680973.5	0.5	**49.1935**	0.336	0.7	ug/L	3411	Standard
	Co	59	529197.4	1.4	**48.9436**	0.312	0.6	ug/L	825	Standard
	Ni	60	112767.2	2.0	**48.5201**	0.619	1.3	ug/L	576	Standard
	Cu	65	117480.4	1.1	**48.6759**	0.216	0.4	ug/L	632	Standard
	Zn	66	70137.6	0.7	**48.7880**	0.297	0.6	ug/L	430	Standard
>	Ge	72	829766.0	1.2				ug/L	823185	Standard
	As	75	69930.3	0.7	**48.6687**	0.365	0.7	ug/L	-13	Standard
	Se	82	6505.3	2.0	**49.5823**	0.433	0.9	ug/L	20	Standard
	Se-1	77	4669.7	3.4	**48.7533**	1.159	2.4	ug/L	106	Standard
>	Ga	71	196.7	21.9				mg/L	237	Standard
	Rb	85	465.0	13.5				ug/L	52	Standard
	Y	89	572657.5	1.4				ug/L	565679	Standard
>	Rh	103	61.7	40.0				ug/L	18	Standard
	Mo	98	457596.7	1.2	**100.1014**	0.432	0.4	ug/L	56	Standard
	Ag	107	374548.4	0.7	**49.8729**	0.440	0.9	ug/L	128	Standard
	Cd	111	107247.8	1.1	**49.5868**	0.564	1.1	mg/L	8	Standard
	Cd	114	280605.2	0.7	**50.7017**	0.474	0.9	ug/L	49	Standard
>	In	115	693874.4	1.6				ug/L	692408	Standard
	Sn	118	61619.4	0.6	**50.1696**	0.520	1.0	ug/L	269	Standard
	Sb	123	282456.1	0.6	**49.9593**	0.633	1.3	ug/L	358	Standard
	Ba	135	108634.4	0.4	**48.9691**	0.704	1.4	ug/L	64	Standard
	Ce	140	378.3	26.5				ug/L	42	Standard
>	Tb	159	1051193.3	1.6				ug/L	1021298	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	441536.5	0.4	**49.1091**	0.714	1.5	ug/L	17	Standard
	Tl	205	1052071.3	1.3	**45.9857**	0.220	0.5	ug/L	42	Standard
	Pb	206	356328.4	0.7	**49.2198**	0.526	1.1	ug/L	452	Standard
	Pb	207	321857.5	1.1	**49.1541**	0.392	0.8	ug/L	399	Standard
	Pb	208	378937.9	1.4	**49.4170**	0.746	1.5	ug/L	467	Standard
	U	238	302286.1	2.4	**51.0038**	1.169	2.3	ug/L	8	Standard
>	Bi	209	621610.8	1.4				ug/L	599665	Standard

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⌈	**Na**	23	11.7	89.2	**3.5031**	4.366	124.6	mg/L	0	Standard
|	**Mg**	24	466.7	6.2	**4.6519**	0.423	9.1	mg/L	30	Standard
|	**K**	39	841.7	8.6	**4.3182**	0.384	8.9	mg/L	18	Standard
|	**Ca**	43	45.0	29.4	**-1.6953**	3.992	235.5	mg/L	65	Standard
|	**Fe**	54	853.7	4.8	**4.5459**	0.224	4.9	mg/L	40	Standard
|	**Fe**	57	615.0	1.4	**5.9219**	0.461	7.8	mg/L	342	Standard
⌊>	**Sc-1**	45	38851.4	2.4				mg/L	40360	Standard
	Cl	35	3.3	34.6				ug/L	3	Standard
	Kr	83	5.0	0.0				ug/L	7	Standard
	Br	81	2740.3	12.2				ug/L	2587	Standard
	P	31	78.3	36.3				ug/L	95	Standard
	S	34	23.3	12.4				ug/L	28	Standard
	Sr	88	168.3	30.3				ug/L	207	Standard
	C	12	16.7	69.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	22.1	69.0				mg/L	6	Standard
	Ho-1	165	13.3	21.7				mg/L	12	Standard
	Er	166	26.7	21.7				mg/L	20	Standard
	I	127	3247.0	5.3				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	96.843		
⌊	Al	27	94.488		
⌈	Sc	45			
|	Ti	47	98.711		
|	V	51	97.973		
|	Cr	52	97.772		
|	Cr	53			
|	Mn	55	98.387		
|	Co	59	97.887		
|	Ni	60	97.040		
|	Cu	65	97.352		
|	Zn	66	97.576		
|>	Ge	72		100.799	
|	As	75	97.337		
|	Se	82	99.165		
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.101		
Ag	107	99.746		
Cd	111	99.174		
Cd	114			
In	115			100.212
Sn	118	100.339		
Sb	123	99.919		
Ba	135	97.938		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.218		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.834		
U	238	102.008		
Bi	209			103.660
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, March 23, 2017 14:50:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266913.9	0.9				ug/L	269762	Standard
	Be	9	66.7	8.7	**0.0148**	0.002	15.9	ug/L	22	Standard
	Al	27	1780.1	11.3	**0.0070**	0.001	15.1	ug/L	1527	Standard
	Sc	45	38749.5	3.0				ug/L	40360	Standard
	Ti	47	40.0	22.5	**-0.0200**	0.041	204.4	ug/L	47	Standard
	V	51	1284.3	2.1	**-0.0066**	0.005	69.3	ug/L	1402	Standard
	Cr	52	5792.1	2.5	**-0.0680**	0.013	18.7	ug/L	6348	Standard
	Cr	53	470.0	11.2	**-0.0638**	0.058	91.5	ug/L	505	Standard
	Mn	55	2761.6	3.5	**-0.0378**	0.006	15.4	ug/L	3411	Standard
	Co	59	531.0	3.4	**-0.0142**	0.001	10.2	ug/L	825	Standard
	Ni	60	459.7	3.5	**-0.0390**	0.006	14.9	ug/L	576	Standard
	Cu	65	678.3	5.9	**0.0240**	0.014	59.8	ug/L	632	Standard
	Zn	66	468.7	3.3	**0.0216**	0.008	36.0	ug/L	430	Standard
>	Ge	72	817276.5	1.1				ug/L	823185	Standard
	As	75	-31.4	21.5	**0.0218**	0.005	20.8	ug/L	-13	Standard
	Se	82	23.3	19.0	**0.0291**	0.036	124.4	ug/L	20	Standard
	Se-1	77	103.7	2.0	**0.0394**	0.025	64.0	ug/L	106	Standard
>	Ga	71	185.0	7.2				mg/L	237	Standard
	Rb	85	30.0	28.9				ug/L	52	Standard
	Y	89	553842.8	0.8				ug/L	565679	Standard
>	Rh	103	16.7	34.6				ug/L	18	Standard
	Mo	98	592.2	12.4	**0.1144**	0.015	13.3	ug/L	56	Standard
	Ag	107	144.3	14.2	**0.0000**	0.003	15153.9	ug/L	128	Standard
	Cd	111	7.9	46.9	**-0.0060**	0.002	28.3	mg/L	8	Standard
	Cd	114	48.1	18.8	**-0.0048**	0.002	35.8	ug/L	49	Standard
>	In	115	685124.0	0.9				ug/L	692408	Standard
	Sn	118	320.7	23.4	**0.0463**	0.064	138.2	ug/L	269	Standard
	Sb	123	1011.2	8.0	**0.1664**	0.016	9.5	ug/L	358	Standard
	Ba	135	83.3	12.6	**0.0017**	0.005	279.4	ug/L	64	Standard
	Ce	140	18.3	41.7				ug/L	42	Standard
>	Tb	159	1038457.9	2.0				ug/L	1021298	Standard
	Ho	165	15.0	33.3				ug/L	12	Standard
	Tl	203	79.0	25.2	**0.0068**	0.002	31.3	ug/L	17	Standard
	Tl	205	160.0	44.3	**0.0068**	0.003	44.4	ug/L	42	Standard
	Pb	206	566.3	9.4	**0.0056**	0.007	123.1	ug/L	452	Standard
	Pb	207	484.0	1.3	**0.0111**	0.002	14.6	ug/L	399	Standard
	Pb	208	588.0	5.1	**0.0079**	0.003	40.1	ug/L	467	Standard
	U	238	38.0	32.0	**0.0047**	0.002	45.1	ug/L	8	Standard
>	Bi	209	616509.2	1.2				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	46.7	24.7	**0.1581**	0.141	89.4	mg/L	30	Standard
	K	39	28.3	79.6	**0.0184**	0.124	674.7	mg/L	18	Standard
	Ca	43	56.7	36.7	**1.6303**	5.779	354.5	mg/L	65	Standard
	Fe	54	21.1	26.7	**-0.1119**	0.033	29.5	mg/L	40	Standard
	Fe	57	308.3	18.7	**-0.2336**	1.170	500.7	mg/L	342	Standard
>	**Sc-1**	45	38749.5	3.0				mg/L	40360	Standard
	Cl	35	2.0	0.0				ug/L	3	Standard
	Kr	83	4.0	43.3				ug/L	7	Standard
	Br	81	2616.9	12.3				ug/L	2587	Standard
	P	31	66.7	30.3				ug/L	95	Standard
	S	34	28.3	36.7				ug/L	28	Standard
	Sr	88	158.3	7.3				ug/L	207	Standard
	C	12	23.3	65.5				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.2	92.5				mg/L	6	Standard
	Ho-1	165	15.0	33.3				mg/L	12	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	5030.8	0.4				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.282	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		98.948
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		102.809
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1703112604
Sample Date/Time: Thursday, March 23, 2017 14:53:21
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	250939.5	1.1				ug/L	269762	Standard
	Be	9	266.7	15.3	**0.1007**	0.017	17.0	ug/L	22	Standard
	Al	27	194483.6	0.4	**1.1349**	0.017	1.5	ug/L	1527	Standard
	Sc	45	36639.3	1.3				ug/L	40360	Standard
	Ti	47	1584.1	1.3	**7.3221**	0.111	1.5	ug/L	47	Standard
	V	51	25015.2	1.3	**3.0643**	0.045	1.5	ug/L	1402	Standard
	Cr	52	22907.0	1.0	**2.2796**	0.035	1.5	ug/L	6348	Standard
	Cr	53	2500.2	4.1	**2.1653**	0.106	4.9	ug/L	505	Standard
	Mn	55	1021735.9	0.9	**80.1548**	0.846	1.1	ug/L	3411	Standard
	Co	59	12009.1	0.9	**1.1414**	0.013	1.1	ug/L	825	Standard
	Ni	60	2896.6	1.0	**1.1170**	0.015	1.4	ug/L	576	Standard
	Cu	65	4705.1	1.8	**1.8618**	0.042	2.3	ug/L	632	Standard
	Zn	66	26002.3	0.8	**19.4187**	0.143	0.7	ug/L	430	Standard
>	Ge	72	765495.7	0.2				ug/L	823185	Standard
	As	75	7867.0	1.1	**5.9732**	0.069	1.2	ug/L	-13	Standard
	Se	82	30.0	25.0	**0.0971**	0.062	63.9	ug/L	20	Standard
	Se-1	77	114.0	5.3	**0.2349**	0.071	30.4	ug/L	106	Standard
>	Ga	71	3247.0	0.6				mg/L	237	Standard
	Rb	85	21470.2	2.9				ug/L	52	Standard
	Y	89	578050.8	1.8				ug/L	565679	Standard
>	Rh	103	25.0	40.0				ug/L	18	Standard
	Mo	98	349.5	22.1	**0.0665**	0.019	28.2	ug/L	56	Standard
	Ag	107	212.3	39.6	**0.0114**	0.012	108.5	ug/L	128	Standard
	Cd	111	136.9	18.1	**0.0592**	0.013	21.5	mg/L	8	Standard
	Cd	114	325.2	13.4	**0.0503**	0.009	17.6	ug/L	49	Standard
>	In	115	637688.5	0.4				ug/L	692408	Standard
	Sn	118	180.0	15.4	**-0.0594**	0.025	42.8	ug/L	269	Standard
	Sb	123	238.3	26.9	**0.0310**	0.013	40.4	ug/L	358	Standard
	Ba	135	19567.6	1.0	**9.5670**	0.091	1.0	ug/L	64	Standard
	Ce	140	250129.7	1.5				ug/L	42	Standard
>	Tb	159	961450.8	0.6				ug/L	1021298	Standard
	Ho	165	4223.9	0.2				ug/L	12	Standard
	Tl	203	294.0	26.3	**0.0328**	0.009	28.3	ug/L	17	Standard
	Tl	205	668.3	34.3	**0.0310**	0.011	34.6	ug/L	42	Standard
	Pb	206	129129.6	0.7	**18.9978**	0.087	0.5	ug/L	452	Standard
	Pb	207	109052.4	1.0	**17.7406**	0.097	0.5	ug/L	399	Standard
	Pb	208	131397.1	1.7	**18.2500**	0.241	1.3	ug/L	467	Standard
	U	238	698.3	1.7	**0.1241**	0.003	2.3	ug/L	8	Standard
>	Bi	209	582188.9	0.6				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	28.3	10.2	**-0.0237**	0.033	140.8	mg/L	30	Standard
	K	39	30.0	50.0	**0.0350**	0.086	246.8	mg/L	18	Standard
	Ca	43	40.0	54.5	**-2.5399**	6.480	255.1	mg/L	65	Standard
	Fe	54	381.2	14.2	**2.0332**	0.347	17.0	mg/L	40	Standard
	Fe	57	380.0	3.9	**1.6519**	0.429	26.0	mg/L	342	Standard
>	**Sc-1**	45	36639.3	1.3				mg/L	40360	Standard
	Cl	35	0.0					ug/L	3	Standard
	Kr	83	4.0	50.0				ug/L	7	Standard
	Br	81	2336.8	5.9				ug/L	2587	Standard
	P	31	53.3	10.8				ug/L	95	Standard
	S	34	21.7	26.6				ug/L	28	Standard
	Sr	88	143.3	8.8				ug/L	207	Standard
	C	12	10.0	100.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	66.7	82.6				mg/L	3	Standard
	Dy	164	6445.7	2.3				mg/L	6	Standard
	Ho-1	165	4223.9	0.2				mg/L	12	Standard
	Er	166	3877.2	4.3				mg/L	20	Standard
	I	127	10807.2	2.5				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		93.022	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.992	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	92.097
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	97.086
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703112604
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Method 6020 - Summary Report

Sample ID: L1703112605
Sample Date/Time: Thursday, March 23, 2017 14:56:26
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	253701.5	1.0				ug/L	269762	Standard
	Be	9	260.0	20.8	**0.0968**	0.023	23.7	ug/L	22	Standard
	Al	27	195463.0	1.8	**1.1280**	0.016	1.4	ug/L	1527	Standard
	Sc	45	36405.4	0.7				ug/L	40360	Standard
	Ti	47	1791.1	0.6	**8.2837**	0.121	1.5	ug/L	47	Standard
	V	51	24717.1	1.0	**3.0178**	0.047	1.5	ug/L	1402	Standard
	Cr	52	20245.5	1.1	**1.9154**	0.037	2.0	ug/L	6348	Standard
	Cr	53	2168.5	3.7	**1.8009**	0.102	5.7	ug/L	505	Standard
	Mn	55	710028.1	0.6	**55.4866**	0.466	0.8	ug/L	3411	Standard
	Co	59	10414.2	0.6	**0.9787**	0.008	0.8	ug/L	825	Standard
	Ni	60	2819.9	1.0	**1.0778**	0.027	2.5	ug/L	576	Standard
	Cu	65	4952.1	0.5	**1.9677**	0.018	0.9	ug/L	632	Standard
	Zn	66	25566.9	1.2	**19.0387**	0.124	0.7	ug/L	430	Standard
>	Ge	72	767469.4	1.1				ug/L	823185	Standard
	As	75	8660.8	1.7	**6.5544**	0.052	0.8	ug/L	-13	Standard
	Se	82	23.6	17.7	**0.0437**	0.036	81.2	ug/L	20	Standard
	Se-1	77	127.3	7.9	**0.3856**	0.118	30.5	ug/L	106	Standard
>	Ga	71	3045.3	2.4				mg/L	237	Standard
	Rb	85	19299.0	1.6				ug/L	52	Standard
	Y	89	560030.6	1.7				ug/L	565679	Standard
>	Rh	103	16.7	17.3				ug/L	18	Standard
	Mo	98	358.5	29.5	**0.0688**	0.025	36.4	ug/L	56	Standard
	Ag	107	227.7	42.8	**0.0136**	0.014	103.4	ug/L	128	Standard
	Cd	111	123.2	27.6	**0.0524**	0.017	32.5	mg/L	8	Standard
	Cd	114	288.7	29.3	**0.0433**	0.017	38.2	ug/L	49	Standard
>	In	115	636235.0	0.3				ug/L	692408	Standard
	Sn	118	171.3	8.2	**-0.0668**	0.013	18.9	ug/L	269	Standard
	Sb	123	181.1	45.0	**0.0200**	0.016	77.9	ug/L	358	Standard
	Ba	135	14567.0	0.8	**7.1292**	0.070	1.0	ug/L	64	Standard
	Ce	140	190442.8	0.8				ug/L	42	Standard
>	Tb	159	960045.7	0.6				ug/L	1021298	Standard
	Ho	165	2836.9	4.5				ug/L	12	Standard
	Tl	203	283.0	49.6	**0.0319**	0.017	53.8	ug/L	17	Standard
	Tl	205	658.3	41.7	**0.0308**	0.013	42.8	ug/L	42	Standard
	Pb	206	152678.8	1.4	**22.6400**	0.269	1.2	ug/L	452	Standard
	Pb	207	128549.0	0.7	**21.0782**	0.316	1.5	ug/L	399	Standard
	Pb	208	155761.7	0.2	**21.8066**	0.201	0.9	ug/L	467	Standard
	U	238	807.0	7.1	**0.1448**	0.012	8.0	ug/L	8	Standard
>	Bi	209	577985.8	0.9				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	15.0	33.3	**-0.1741**	0.056	32.1	mg/L	30	Standard
	K	39	38.3	64.3	**0.0831**	0.140	168.9	mg/L	18	Standard
	Ca	43	58.3	47.2	**3.2313**	8.517	263.6	mg/L	65	Standard
	Fe	54	400.5	11.6	**2.1618**	0.293	13.5	mg/L	40	Standard
	Fe	57	473.3	2.4	**3.7038**	0.210	5.7	mg/L	342	Standard
>	**Sc-1**	45	36405.4	0.7				mg/L	40360	Standard
	Cl	35	3.3	124.9				ug/L	3	Standard
	Kr	83	3.0	66.7				ug/L	7	Standard
	Br	81	2180.2	4.2				ug/L	2587	Standard
	P	31	76.7	18.8				ug/L	95	Standard
	S	34	25.0	20.0				ug/L	28	Standard
	Sr	88	170.0	19.3				ug/L	207	Standard
	C	12	16.7	91.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	86.7	26.6				mg/L	3	Standard
	Dy	164	4473.6	5.3				mg/L	6	Standard
	Ho-1	165	2836.9	4.5				mg/L	12	Standard
	Er	166	2653.6	4.7				mg/L	20	Standard
	I	127	9903.2	0.8				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.046	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.232	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.887
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.385
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703112605
Report Date/Time: Thursday, March 23, 2017 14:58:37
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Method 6020 - Summary Report

Sample ID: L1703112611
Sample Date/Time: Thursday, March 23, 2017 14:59:31
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	256044.0	1.6				ug/L	269762	Standard
	Be	9	286.7	17.9	**0.1066**	0.020	18.6	ug/L	22	Standard
	Al	27	223851.6	1.1	**1.2806**	0.026	2.0	ug/L	1527	Standard
	Sc	45	37335.9	1.0				ug/L	40360	Standard
	Ti	47	1632.4	3.0	**7.4150**	0.293	4.0	ug/L	47	Standard
	V	51	26000.4	0.6	**3.1316**	0.015	0.5	ug/L	1402	Standard
	Cr	52	21606.1	0.4	**2.0534**	0.039	1.9	ug/L	6348	Standard
	Cr	53	2411.9	5.1	**2.0226**	0.108	5.3	ug/L	505	Standard
	Mn	55	1067390.5	0.3	**82.2533**	0.844	1.0	ug/L	3411	Standard
	Co	59	13496.3	0.7	**1.2666**	0.009	0.7	ug/L	825	Standard
	Ni	60	3575.8	0.1	**1.4055**	0.015	1.1	ug/L	576	Standard
	Cu	65	5197.9	1.7	**2.0425**	0.040	2.0	ug/L	632	Standard
	Zn	66	29213.8	0.6	**21.4607**	0.087	0.4	ug/L	430	Standard
>	Ge	72	779401.7	1.0				ug/L	823185	Standard
	As	75	7905.2	0.2	**5.8961**	0.069	1.2	ug/L	-13	Standard
	Se	82	32.0	23.8	**0.1092**	0.064	58.8	ug/L	20	Standard
	Se-1	77	117.0	0.9	**0.2455**	0.002	1.0	ug/L	106	Standard
>	Ga	71	3508.7	3.1				mg/L	237	Standard
	Rb	85	24448.0	1.4				ug/L	52	Standard
	Y	89	595705.8	1.2				ug/L	565679	Standard
>	Rh	103	11.7	99.0				ug/L	18	Standard
	Mo	98	290.1	6.9	**0.0508**	0.005	10.2	ug/L	56	Standard
	Ag	107	175.0	5.5	**0.0054**	0.001	24.6	ug/L	128	Standard
	Cd	111	121.3	6.2	**0.0500**	0.004	7.9	mg/L	8	Standard
	Cd	114	266.8	8.1	**0.0377**	0.004	9.3	ug/L	49	Standard
>	In	115	652248.7	1.3				ug/L	692408	Standard
	Sn	118	180.3	20.1	**-0.0624**	0.033	53.5	ug/L	269	Standard
	Sb	123	113.2	16.8	**0.0065**	0.004	57.8	ug/L	358	Standard
	Ba	135	21948.9	1.0	**10.4970**	0.223	2.1	ug/L	64	Standard
	Ce	140	301599.2	1.4				ug/L	42	Standard
>	Tb	159	981891.6	1.8				ug/L	1021298	Standard
	Ho	165	4870.8	2.9				ug/L	12	Standard
	Tl	203	251.7	1.7	**0.0276**	0.000	1.1	ug/L	17	Standard
	Tl	205	593.3	16.7	**0.0273**	0.005	16.5	ug/L	42	Standard
	Pb	206	114678.7	1.2	**16.7404**	0.172	1.0	ug/L	452	Standard
	Pb	207	97255.2	0.9	**15.6998**	0.198	1.3	ug/L	399	Standard
	Pb	208	116468.2	0.8	**16.0509**	0.007	0.0	ug/L	467	Standard
	U	238	768.0	1.6	**0.1356**	0.002	1.6	ug/L	8	Standard
>	Bi	209	586456.3	0.7				ug/L	599665	Standard

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⌈	**Na**	23	1.7	173.2	**-0.6659**	1.292	194.0	mg/L	0	Standard
|	**Mg**	24	33.3	37.7	**0.0259**	0.141	544.0	mg/L	30	Standard
|	**K**	39	28.3	20.4	**0.0220**	0.032	147.4	mg/L	18	Standard
|	**Ca**	43	31.7	48.2	**-5.2243**	4.577	87.6	mg/L	65	Standard
|	**Fe**	54	379.2	8.2	**1.9783**	0.203	10.3	mg/L	40	Standard
|	**Fe**	57	431.7	13.7	**2.5709**	1.143	44.4	mg/L	342	Standard
⌊>	**Sc-1**	45	37335.9	1.0				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	4.7	53.9				ug/L	7	Standard
	Br	81	3863.8	5.1				ug/L	2587	Standard
	P	31	68.3	15.2				ug/L	95	Standard
	S	34	30.0	33.3				ug/L	28	Standard
	Sr	88	140.0	10.7				ug/L	207	Standard
	C	12	13.3	114.6				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	86.7	74.2				mg/L	3	Standard
	Dy	164	7490.4	2.0				mg/L	6	Standard
	Ho-1	165	4870.8	2.9				mg/L	12	Standard
	Er	166	4694.1	3.1				mg/L	20	Standard
	I	127	10827.2	1.1				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		94.915	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.681	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.200
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.797
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703112615
Sample Date/Time: Thursday, March 23, 2017 15:02:37
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	251507.0	0.9				ug/L	269762	Standard
	Be	9	286.7	11.6	**0.1088**	0.013	12.0	ug/L	22	Standard
	Al	27	259150.5	3.0	**1.5096**	0.046	3.1	ug/L	1527	Standard
	Sc	45	37040.2	2.4				ug/L	40360	Standard
	Ti	47	1922.1	3.4	**8.7624**	0.279	3.2	ug/L	47	Standard
	V	51	25782.8	1.1	**3.1034**	0.013	0.4	ug/L	1402	Standard
	Cr	52	27681.6	2.0	**2.8537**	0.039	1.4	ug/L	6348	Standard
	Cr	53	3115.3	6.3	**2.7698**	0.186	6.7	ug/L	505	Standard
	Mn	55	705851.6	2.3	**54.2944**	0.550	1.0	ug/L	3411	Standard
	Co	59	9326.2	2.2	**0.8552**	0.014	1.6	ug/L	825	Standard
	Ni	60	3235.3	2.1	**1.2484**	0.021	1.7	ug/L	576	Standard
	Cu	65	7925.7	1.9	**3.2515**	0.038	1.2	ug/L	632	Standard
	Zn	66	28096.7	2.1	**20.6228**	0.162	0.8	ug/L	430	Standard
>	Ge	72	779533.4	1.4				ug/L	823185	Standard
	As	75	12074.2	1.6	**8.9801**	0.057	0.6	ug/L	-13	Standard
	Se	82	26.0	22.4	**0.0600**	0.046	76.2	ug/L	20	Standard
	Se-1	77	118.0	13.3	**0.2575**	0.187	72.6	ug/L	106	Standard
>	Ga	71	3152.0	3.3				mg/L	237	Standard
	Rb	85	19455.8	4.0				ug/L	52	Standard
	Y	89	562985.9	0.9				ug/L	565679	Standard
>	Rh	103	40.0	69.6				ug/L	18	Standard
	Mo	98	271.9	2.4	**0.0474**	0.002	3.2	ug/L	56	Standard
	Ag	107	184.7	4.5	**0.0071**	0.001	16.6	ug/L	128	Standard
	Cd	111	119.3	13.0	**0.0498**	0.008	15.3	mg/L	8	Standard
	Cd	114	346.9	8.2	**0.0540**	0.005	10.2	ug/L	49	Standard
>	In	115	643797.1	0.3				ug/L	692408	Standard
	Sn	118	177.7	4.1	**-0.0630**	0.007	10.6	ug/L	269	Standard
	Sb	123	106.2	8.8	**0.0054**	0.002	32.7	ug/L	358	Standard
	Ba	135	19584.0	1.5	**9.4838**	0.137	1.4	ug/L	64	Standard
	Ce	140	178876.7	2.2				ug/L	42	Standard
>	Tb	159	969323.9	1.4				ug/L	1021298	Standard
	Ho	165	3375.4	3.4				ug/L	12	Standard
	Tl	203	196.0	4.0	**0.0214**	0.001	4.2	ug/L	17	Standard
	Tl	205	466.7	6.1	**0.0217**	0.001	6.3	ug/L	42	Standard
	Pb	206	218767.3	1.7	**32.5067**	0.483	1.5	ug/L	452	Standard
	Pb	207	186188.3	1.9	**30.5885**	0.532	1.7	ug/L	399	Standard
	Pb	208	221895.8	2.0	**31.1270**	0.542	1.7	ug/L	467	Standard
	U	238	736.4	7.2	**0.1320**	0.010	7.4	ug/L	8	Standard
>	Bi	209	577345.9	0.3				ug/L	599665	Standard

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⌈	**Na**	23	1.7	173.2	**-0.6776**	1.272	187.7	mg/L	0	Standard
|	**Mg**	24	36.7	20.8	**0.0655**	0.080	121.9	mg/L	30	Standard
|	**K**	39	31.7	9.1	**0.0420**	0.020	48.6	mg/L	18	Standard
|	**Ca**	43	43.3	6.7	**-1.6039**	1.031	64.3	mg/L	65	Standard
|	**Fe**	54	349.5	1.4	**1.8211**	0.054	3.0	mg/L	40	Standard
|	**Fe**	57	436.7	5.3	**2.7626**	0.606	21.9	mg/L	342	Standard
⌊>	**Sc-1**	45	37040.2	2.4				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	3.7	15.7				ug/L	7	Standard
	Br	81	2676.9	10.1				ug/L	2587	Standard
	P	31	76.7	13.6				ug/L	95	Standard
	S	34	33.3	22.9				ug/L	28	Standard
	Sr	88	160.0	16.5				ug/L	207	Standard
	C	12	23.3	24.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	140.0	21.4				mg/L	3	Standard
	Dy	164	4949.2	5.6				mg/L	6	Standard
	Ho-1	165	3375.4	3.4				mg/L	12	Standard
	Er	166	3097.0	1.9				mg/L	20	Standard
	I	127	10143.4	3.0				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		93.233	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.697	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	92.979
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	96.278
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703112615
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, March 23, 2017 15:06:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	260355.6	2.7				ug/L	269762	Standard
	Be	9	122878.1	2.0	**49.8670**	0.372	0.7	ug/L	22	Standard
	Al	27	8827193.5	1.6	**49.7692**	0.578	1.2	ug/L	1527	Standard
	Sc	45	39021.9	2.3				ug/L	40360	Standard
	Ti	47	22661.9	2.5	**100.2764**	1.619	1.6	ug/L	47	Standard
	V	51	418334.4	2.0	**50.2249**	0.587	1.2	ug/L	1402	Standard
	Cr	52	406658.0	1.4	**50.2080**	0.366	0.7	ug/L	6348	Standard
	Cr	53	49415.5	1.0	**49.4173**	0.234	0.5	ug/L	505	Standard
	Mn	55	684390.9	0.9	**50.0581**	0.410	0.8	ug/L	3411	Standard
	Co	59	534385.5	0.8	**50.0417**	0.532	1.1	ug/L	825	Standard
	Ni	60	114562.8	0.9	**49.9144**	0.175	0.4	ug/L	576	Standard
	Cu	65	118673.7	1.4	**49.7865**	0.410	0.8	ug/L	632	Standard
	Zn	66	70832.2	0.9	**49.8892**	0.194	0.4	ug/L	430	Standard
>	Ge	72	819568.9	0.9				ug/L	823185	Standard
	As	75	70061.5	1.4	**49.3629**	0.424	0.9	ug/L	-13	Standard
	Se	82	6481.5	1.5	**50.0181**	0.321	0.6	ug/L	20	Standard
	Se-1	77	4750.7	1.5	**50.2553**	0.375	0.7	ug/L	106	Standard
>	Ga	71	201.7	23.0				mg/L	237	Standard
	Rb	85	415.0	6.7				ug/L	52	Standard
	Y	89	557753.0	2.0				ug/L	565679	Standard
>	Rh	103	50.0	30.0				ug/L	18	Standard
	Mo	98	457157.5	1.4	**101.1491**	1.411	1.4	ug/L	56	Standard
	Ag	107	372603.4	0.8	**50.1800**	0.610	1.2	ug/L	128	Standard
	Cd	111	107513.9	0.9	**50.2763**	0.544	1.1	mg/L	8	Standard
	Cd	114	281006.4	1.2	**51.3529**	0.712	1.4	ug/L	49	Standard
>	In	115	686080.9	1.9				ug/L	692408	Standard
	Sn	118	63315.7	0.9	**52.1561**	1.389	2.7	ug/L	269	Standard
	Sb	123	279439.1	0.9	**49.9871**	0.541	1.1	ug/L	358	Standard
	Ba	135	109230.3	0.7	**49.7976**	0.619	1.2	ug/L	64	Standard
	Ce	140	478.3	70.0				ug/L	42	Standard
>	Tb	159	1017762.7	0.6				ug/L	1021298	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	433034.6	0.9	**49.7541**	0.048	0.1	ug/L	17	Standard
	Tl	205	1044787.8	1.4	**47.1812**	0.549	1.2	ug/L	42	Standard
	Pb	206	349097.4	0.8	**49.8165**	0.061	0.1	ug/L	452	Standard
	Pb	207	316310.0	0.6	**49.9090**	0.413	0.8	ug/L	399	Standard
	Pb	208	369004.2	1.0	**49.7137**	0.101	0.2	ug/L	467	Standard
	U	238	292274.2	0.9	**50.9475**	0.118	0.2	ug/L	8	Standard
>	Bi	209	601661.3	0.9				ug/L	599665	Standard

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⌈	**Na**	23	16.7	62.4	**5.7046**	4.442	77.9	mg/L	0	Standard
|	**Mg**	24	443.3	6.4	**4.3764**	0.305	7.0	mg/L	30	Standard
|	**K**	39	865.0	14.7	**4.4172**	0.615	13.9	mg/L	18	Standard
|	**Ca**	43	50.0	45.8	**-0.2610**	6.968	2669.7	mg/L	65	Standard
|	**Fe**	54	866.3	4.0	**4.5981**	0.284	6.2	mg/L	40	Standard
|	**Fe**	57	515.0	10.8	**3.8458**	0.921	24.0	mg/L	342	Standard
⌊>	**Sc-1**	45	39021.9	2.3				mg/L	40360	Standard
	Cl	35	1.3	86.6				ug/L	3	Standard
	Kr	83	3.7	56.8				ug/L	7	Standard
	Br	81	2613.6	2.6				ug/L	2587	Standard
	P	31	83.3	15.1				ug/L	95	Standard
	S	34	26.7	21.7				ug/L	28	Standard
	Sr	88	178.3	11.3				ug/L	207	Standard
	C	12	26.7	78.1				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	19.5	48.8				mg/L	6	Standard
	Ho-1	165	16.7	45.8				mg/L	12	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	3132.0	1.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	99.734		
⌊	Al	27	99.538		
⌈	Sc	45			
|	Ti	47	100.276		
|	V	51	100.450		
|	Cr	52	100.416		
|	Cr	53			
|	Mn	55	100.116		
|	Co	59	100.083		
|	Ni	60	99.829		
|	Cu	65	99.573		
|	Zn	66	99.778		
|>	Ge	72		99.561	
|	As	75	98.726		
|	Se	82	100.036		
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.149		
Ag	107	100.360		
Cd	111	100.553		
Cd	114			
In	115			99.086
Sn	118	104.312		
Sb	123	99.974		
Ba	135	99.595		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.508		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.427		
U	238	101.895		
Bi	209			100.333
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, March 23, 2017 15:09:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	264130.5	3.2				ug/L	269762	Standard
	Be	9	90.0	47.5	**0.0245**	0.018	71.6	ug/L	22	Standard
	Al	27	3310.5	66.9	**0.0157**	0.013	80.4	ug/L	1527	Standard
	Sc	45	38751.2	4.2				ug/L	40360	Standard
	Ti	47	37.0	24.0	**-0.0326**	0.038	117.6	ug/L	47	Standard
	V	51	1510.9	7.3	**0.0218**	0.011	49.6	ug/L	1402	Standard
	Cr	52	6219.6	2.4	**-0.0090**	0.010	109.0	ug/L	6348	Standard
	Cr	53	408.3	22.2	**-0.1233**	0.096	78.0	ug/L	505	Standard
	Mn	55	2881.3	8.8	**-0.0277**	0.017	60.8	ug/L	3411	Standard
	Co	59	571.7	11.4	**-0.0100**	0.006	58.9	ug/L	825	Standard
	Ni	60	450.0	4.7	**-0.0419**	0.008	18.8	ug/L	576	Standard
	Cu	65	662.3	4.0	**0.0192**	0.010	51.2	ug/L	632	Standard
	Zn	66	448.3	5.1	**0.0092**	0.013	136.6	ug/L	430	Standard
>	Ge	72	811843.4	1.4				ug/L	823185	Standard
	As	75	-56.9	66.2	**0.0033**	0.027	822.5	ug/L	-13	Standard
	Se	82	14.6	16.8	**-0.0378**	0.018	47.7	ug/L	20	Standard
	Se-1	77	98.0	16.2	**-0.0160**	0.161	1009.5	ug/L	106	Standard
>	Ga	71	166.7	18.1				mg/L	237	Standard
	Rb	85	36.7	7.9				ug/L	52	Standard
	Y	89	558799.8	1.7				ug/L	565679	Standard
>	Rh	103	33.3	43.3				ug/L	18	Standard
	Mo	98	412.0	14.7	**0.0743**	0.012	16.4	ug/L	56	Standard
	Ag	107	158.0	13.7	**0.0019**	0.003	179.2	ug/L	128	Standard
	Cd	111	10.5	52.7	**-0.0048**	0.003	55.0	mg/L	8	Standard
	Cd	114	50.5	30.6	**-0.0044**	0.003	59.7	ug/L	49	Standard
>	In	115	686391.7	2.3				ug/L	692408	Standard
	Sn	118	290.7	5.1	**0.0208**	0.013	62.1	ug/L	269	Standard
	Sb	123	468.7	13.7	**0.0691**	0.013	18.8	ug/L	358	Standard
	Ba	135	100.3	56.7	**0.0097**	0.027	278.2	ug/L	64	Standard
	Ce	140	70.0	130.0				ug/L	42	Standard
>	Tb	159	1015541.9	2.2				ug/L	1021298	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	157.3	143.6	**0.0161**	0.026	162.7	ug/L	17	Standard
	Tl	205	360.0	131.2	**0.0161**	0.022	133.7	ug/L	42	Standard
	Pb	206	668.0	39.9	**0.0220**	0.039	178.2	ug/L	452	Standard
	Pb	207	589.0	41.4	**0.0293**	0.039	134.6	ug/L	399	Standard
	Pb	208	656.0	33.2	**0.0188**	0.030	160.9	ug/L	467	Standard
	U	238	122.7	144.3	**0.0198**	0.031	157.5	ug/L	8	Standard
>	Bi	209	604235.9	1.5				ug/L	599665	Standard

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⌈	**Na**	23	5.0	100.0	**0.7050**	2.059	292.1	mg/L	0	Standard
|	**Mg**	24	31.7	18.2	**-0.0067**	0.051	756.2	mg/L	30	Standard
|	**K**	39	20.0	66.1	**-0.0283**	0.070	245.9	mg/L	18	Standard
|	**Ca**	43	41.7	18.3	**-2.6838**	2.082	77.6	mg/L	65	Standard
|	**Fe**	54	28.1	44.6	**-0.0748**	0.064	85.5	mg/L	40	Standard
|	**Fe**	57	320.0	11.3	**0.0080**	0.815	10184.5	mg/L	342	Standard
⌊>	**Sc-1**	45	38751.2	4.2				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	3.3	45.8				ug/L	7	Standard
	Br	81	2470.2	2.3				ug/L	2587	Standard
	P	31	75.0	13.3				ug/L	95	Standard
	S	34	25.0	0.0				ug/L	28	Standard
	Sr	88	143.3	16.5				ug/L	207	Standard
	C	12	30.0	33.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	18.6	5.2				mg/L	6	Standard
	Ho-1	165	8.3	124.9				mg/L	12	Standard
	Er	166	30.0	66.7				mg/L	20	Standard
	I	127	4954.1	1.6				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.622	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.131
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.762
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG607441-01
Sample Date/Time: Thursday, March 23, 2017 15:16:04
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	265026.7	1.9				ug/L	269762	Standard
	Be	9	35.0	14.3	**0.0024**	0.002	82.6	ug/L	22	Standard
	Al	27	6701.5	4.3	**0.0344**	0.002	5.8	ug/L	1527	Standard
	Sc	45	40340.3	1.5				ug/L	40360	Standard
	Ti	47	58.3	36.2	**0.0543**	0.089	163.2	ug/L	47	Standard
	V	51	1621.1	7.8	**0.0292**	0.014	46.8	ug/L	1402	Standard
	Cr	52	8396.0	1.4	**0.2338**	0.012	5.1	ug/L	6348	Standard
	Cr	53	598.3	4.1	**0.0513**	0.031	60.2	ug/L	505	Standard
	Mn	55	4174.2	4.1	**0.0587**	0.009	16.0	ug/L	3411	Standard
	Co	59	516.7	5.4	**-0.0167**	0.003	16.0	ug/L	825	Standard
	Ni	60	569.3	1.8	**0.0031**	0.002	61.4	ug/L	576	Standard
	Cu	65	1338.1	3.6	**0.2893**	0.015	5.3	ug/L	632	Standard
	Zn	66	1973.8	1.4	**1.0571**	0.014	1.3	ug/L	430	Standard
>	Ge	72	837721.2	1.2				ug/L	823185	Standard
	As	75	-11.1	333.0	**0.0365**	0.025	69.0	ug/L	-13	Standard
	Se	82	19.8	35.1	**-0.0013**	0.054	4088.6	ug/L	20	Standard
	Se-1	77	99.7	6.1	**-0.0306**	0.059	192.4	ug/L	106	Standard
>	Ga	71	155.0	0.0				mg/L	237	Standard
	Rb	85	80.0	0.0				ug/L	52	Standard
	Y	89	572117.1	1.9				ug/L	565679	Standard
>	Rh	103	10.0	86.6				ug/L	18	Standard
	Mo	98	122.8	5.6	**0.0097**	0.002	17.5	ug/L	56	Standard
	Ag	107	114.7	9.0	**-0.0044**	0.002	34.1	ug/L	128	Standard
	Cd	111	17.8	29.1	**-0.0016**	0.002	155.9	mg/L	8	Standard
	Cd	114	75.9	29.5	**-0.0001**	0.004	2988.1	ug/L	49	Standard
>	In	115	706683.7	1.6				ug/L	692408	Standard
	Sn	118	400.7	3.5	**0.1023**	0.016	16.0	ug/L	269	Standard
	Sb	123	320.9	17.7	**0.0410**	0.011	25.9	ug/L	358	Standard
	Ba	135	251.3	6.0	**0.0750**	0.008	10.8	ug/L	64	Standard
	Ce	140	95.0	27.9				ug/L	42	Standard
>	Tb	159	1038089.1	0.9				ug/L	1021298	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	29.3	81.8	**0.0012**	0.003	220.1	ug/L	17	Standard
	Tl	205	83.3	84.9	**0.0035**	0.003	90.4	ug/L	42	Standard
	Pb	206	610.7	2.3	**0.0125**	0.002	15.2	ug/L	452	Standard
	Pb	207	522.7	3.1	**0.0177**	0.003	15.2	ug/L	399	Standard
	Pb	208	603.0	5.7	**0.0105**	0.004	42.6	ug/L	467	Standard
	U	238	22.7	127.4	**0.0021**	0.005	231.7	ug/L	8	Standard
>	Bi	209	611355.8	0.4				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	28.3	36.7	**-0.0522**	0.112	214.1	mg/L	30	Standard
	K	39	26.7	28.6	**0.0018**	0.039	2200.4	mg/L	18	Standard
	Ca	43	43.3	54.5	**-2.6226**	6.755	257.6	mg/L	65	Standard
	Fe	54	27.7	20.1	**-0.0813**	0.028	34.2	mg/L	40	Standard
	Fe	57	296.7	9.3	**-0.7127**	0.484	67.9	mg/L	342	Standard
>	**Sc-1**	45	40340.3	1.5				mg/L	40360	Standard
	Cl	35	4.0	50.0				ug/L	3	Standard
	Kr	83	4.3	35.3				ug/L	7	Standard
	Br	81	2927.0	7.5				ug/L	2587	Standard
	P	31	88.3	23.6				ug/L	95	Standard
	S	34	28.3	36.7				ug/L	28	Standard
	Sr	88	165.0	3.0				ug/L	207	Standard
	C	12	46.7	53.9				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	15.5	92.9				mg/L	6	Standard
	Ho-1	165	15.0	88.2				mg/L	12	Standard
	Er	166	23.3	89.2				mg/L	20	Standard
	I	127	3790.5	4.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.245	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.766	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	102.062
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.950
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M7 WG607441-01
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Method 6020 - Summary Report

Sample ID: LCSS M7 WG607441-02
Sample Date/Time: Thursday, March 23, 2017 15:19:10
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	268681.9	1.8				ug/L	269762	Standard
	Be	9	66237.8	1.4	**26.0434**	0.470	1.8	ug/L	22	Standard
	Al	27	6446.4	1.6	**0.0325**	0.001	3.8	ug/L	1527	Standard
	Sc	45	40270.2	3.7				ug/L	40360	Standard
	Ti	47	40.7	6.2	**-0.0195**	0.014	72.0	ug/L	47	Standard
	V	51	224533.0	2.6	**26.5785**	0.258	1.0	ug/L	1402	Standard
	Cr	52	223001.2	2.1	**26.8593**	0.171	0.6	ug/L	6348	Standard
	Cr	53	27466.5	2.3	**26.9147**	0.196	0.7	ug/L	505	Standard
	Mn	55	367851.7	2.5	**26.4882**	0.218	0.8	ug/L	3411	Standard
	Co	59	286482.3	1.9	**26.4952**	0.087	0.3	ug/L	825	Standard
	Ni	60	62006.4	3.0	**26.5973**	0.376	1.4	ug/L	576	Standard
	Cu	65	65177.9	1.4	**26.9190**	0.109	0.4	ug/L	632	Standard
	Zn	66	39089.4	1.8	**27.0818**	0.140	0.5	ug/L	430	Standard
>	**Ge**	72	828850.7	1.7				ug/L	823185	Standard
	As	75	37749.3	1.7	**26.3203**	0.177	0.7	ug/L	-13	Standard
	Se	82	3408.8	3.5	**25.9351**	0.582	2.2	ug/L	20	Standard
	Se-1	77	2559.2	4.0	**26.2570**	0.664	2.5	ug/L	106	Standard
>	**Ga**	71	135.0	12.8				mg/L	237	Standard
	Rb	85	66.7	33.8				ug/L	52	Standard
	Y	89	563308.4	2.2				ug/L	565679	Standard
>	**Rh**	103	43.3	37.1				ug/L	18	Standard
	Mo	98	131.2	1.6	**0.0121**	0.001	7.6	ug/L	56	Standard
	Ag	107	198909.2	1.0	**26.5510**	0.271	1.0	ug/L	128	Standard
	Cd	111	57239.8	1.7	**26.5326**	0.067	0.3	mg/L	8	Standard
	Cd	114	144259.0	1.4	**26.1320**	0.344	1.3	ug/L	49	Standard
>	**In**	115	691936.4	1.7				ug/L	692408	Standard
	Sn	118	360.0	4.1	**0.0755**	0.007	9.6	ug/L	269	Standard
	Sb	123	147428.0	1.0	**26.1412**	0.227	0.9	ug/L	358	Standard
	Ba	135	57440.4	1.7	**25.9451**	0.279	1.1	ug/L	64	Standard
	Ce	140	58.3	21.6				ug/L	42	Standard
>	**Tb**	159	1036924.7	2.2				ug/L	1021298	Standard
	Ho	165	23.3	65.5				ug/L	12	Standard
	Tl	203	238697.2	1.6	**26.9586**	0.219	0.8	ug/L	17	Standard
	Tl	205	579513.8	1.1	**25.7286**	0.445	1.7	ug/L	42	Standard
	Pb	206	192706.6	1.4	**26.9997**	0.286	1.1	ug/L	452	Standard
	Pb	207	165694.5	1.2	**25.6705**	0.369	1.4	ug/L	399	Standard
	Pb	208	197482.5	1.2	**26.1238**	0.443	1.7	ug/L	467	Standard
	U	238	149702.7	1.5	**25.6522**	0.333	1.3	ug/L	8	Standard
>	**Bi**	209	612137.3	2.5				ug/L	599665	Standard

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⌈	**Na**	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	26.7	28.6	**-0.0716**	0.068	95.7	mg/L	30	Standard
|	**K**	39	18.3	41.7	**-0.0413**	0.036	86.9	mg/L	18	Standard
|	**Ca**	43	41.7	25.0	**-3.1731**	2.634	83.0	mg/L	65	Standard
|	**Fe**	54	25.7	40.8	**-0.0922**	0.052	56.5	mg/L	40	Standard
|	**Fe**	57	301.7	9.1	**-0.5863**	0.727	123.9	mg/L	342	Standard
⌊>	**Sc-1**	45	40270.2	3.7				mg/L	40360	Standard
	Cl	35	0.0					ug/L	3	Standard
	Kr	83	3.3	105.4				ug/L	7	Standard
	Br	81	2893.6	4.4				ug/L	2587	Standard
	P	31	75.0	24.0				ug/L	95	Standard
	S	34	28.3	20.4				ug/L	28	Standard
	Sr	88	173.3	33.4				ug/L	207	Standard
	C	12	16.7	69.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.7	43.3				mg/L	6	Standard
	Ho-1	165	23.3	65.5				mg/L	12	Standard
	Er	166	13.3	43.3				mg/L	20	Standard
	I	127	3653.8	2.7				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		99.600	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.688	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.932
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	102.080
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M7 WG607441-02
Report Date/Time: Thursday, March 23, 2017 15:21:20
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Method 6020 - Summary Report

Sample ID: LCSS DP WG607441-03
Sample Date/Time: Thursday, March 23, 2017 15:22:15
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	265353.6	1.2				ug/L	269762	Standard
	Be	9	62727.9	0.4	**24.9706**	0.329	1.3	ug/L	22	Standard
	Al	27	7843.7	1.7	**0.0406**	0.001	1.3	ug/L	1527	Standard
	Sc	45	39979.3	1.1				ug/L	40360	Standard
	Ti	47	53.7	47.5	**0.0328**	0.103	312.8	ug/L	47	Standard
	V	51	217631.1	1.0	**25.4800**	0.478	1.9	ug/L	1402	Standard
	Cr	52	215881.6	1.2	**25.6880**	0.438	1.7	ug/L	6348	Standard
	Cr	53	26605.0	0.9	**25.7691**	0.507	2.0	ug/L	505	Standard
	Mn	55	357677.7	0.8	**25.4724**	0.531	2.1	ug/L	3411	Standard
	Co	59	278780.9	1.1	**25.5026**	0.435	1.7	ug/L	825	Standard
	Ni	60	60603.0	1.1	**25.7104**	0.442	1.7	ug/L	576	Standard
	Cu	65	63365.3	1.8	**25.8734**	0.281	1.1	ug/L	632	Standard
	Zn	66	38492.5	2.0	**26.3681**	0.229	0.9	ug/L	430	Standard
>	**Ge**	72	838164.5	2.8				ug/L	823185	Standard
	As	75	36952.2	2.0	**25.4838**	0.304	1.2	ug/L	-13	Standard
	Se	82	3291.8	1.7	**24.7742**	0.656	2.6	ug/L	20	Standard
	Se-1	77	2431.5	2.7	**24.6292**	1.171	4.8	ug/L	106	Standard
>	**Ga**	71	161.7	20.1				mg/L	237	Standard
	Rb	85	80.0	16.5				ug/L	52	Standard
	Y	89	568736.8	1.1				ug/L	565679	Standard
>	**Rh**	103	43.3	17.6				ug/L	18	Standard
	Mo	98	82.9	14.4	**0.0013**	0.003	220.2	ug/L	56	Standard
	Ag	107	192719.6	0.8	**25.4094**	0.211	0.8	ug/L	128	Standard
	Cd	111	55786.4	1.3	**25.5436**	0.160	0.6	mg/L	8	Standard
	Cd	114	139217.7	0.4	**24.9111**	0.318	1.3	ug/L	49	Standard
>	**In**	115	700461.6	1.1				ug/L	692408	Standard
	Sn	118	337.7	3.3	**0.0539**	0.006	11.2	ug/L	269	Standard
	Sb	123	142332.3	1.0	**24.9279**	0.121	0.5	ug/L	358	Standard
	Ba	135	56162.9	1.2	**25.0569**	0.068	0.3	ug/L	64	Standard
	Ce	140	68.3	25.7				ug/L	42	Standard
>	**Tb**	159	1040694.7	1.9				ug/L	1021298	Standard
	Ho	165	18.3	31.5				ug/L	12	Standard
	Tl	203	232366.8	1.4	**26.3138**	0.055	0.2	ug/L	17	Standard
	Tl	205	562158.3	2.1	**25.0204**	0.244	1.0	ug/L	42	Standard
	Pb	206	186213.4	1.1	**26.1573**	0.159	0.6	ug/L	452	Standard
	Pb	207	160791.7	0.6	**24.9759**	0.273	1.1	ug/L	399	Standard
	Pb	208	192044.9	0.5	**25.4707**	0.345	1.4	ug/L	467	Standard
	U	238	146533.9	0.6	**25.1773**	0.248	1.0	ug/L	8	Standard
>	**Bi**	209	610414.6	1.2				ug/L	599665	Standard

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⌈	**Na**	23	5.0	100.0	**0.6484**	2.053	316.6	mg/L	0	Standard
|	**Mg**	24	35.0	42.9	**0.0181**	0.153	845.1	mg/L	30	Standard
|	**K**	39	15.0	33.3	**-0.0570**	0.025	44.6	mg/L	18	Standard
|	**Ca**	43	56.7	18.4	**1.1374**	2.761	242.7	mg/L	65	Standard
|	**Fe**	54	22.2	81.3	**-0.1100**	0.097	87.9	mg/L	40	Standard
|	**Fe**	57	300.0	4.4	**-0.5915**	0.308	52.1	mg/L	342	Standard
⌊>	**Sc-1**	45	39979.3	1.1				mg/L	40360	Standard
	Cl	35	2.0	100.0				ug/L	3	Standard
	Kr	83	3.3	45.8				ug/L	7	Standard
	Br	81	2630.2	1.3				ug/L	2587	Standard
	P	31	98.3	12.8				ug/L	95	Standard
	S	34	26.7	39.0				ug/L	28	Standard
	Sr	88	155.0	18.0				ug/L	207	Standard
	C	12	20.0	50.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	15.7	31.5				mg/L	6	Standard
	Ho-1	165	18.3	31.5				mg/L	12	Standard
	Er	166	20.0	86.6				mg/L	20	Standard
	I	127	3435.4	5.1				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.366	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.820	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	101.163
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	101.793
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS DP WG607441-03
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Method 6020 - Summary Report

Sample ID: L1703126401
Sample Date/Time: Thursday, March 23, 2017 15:25:20
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	290260.8	1.0				ug/L	269762	Standard
	Be	9	603.3	1.7	**0.2081**	0.006	2.7	ug/L	22	Standard
	Al	27	1303446.6	1.5	**6.5888**	0.133	2.0	ug/L	1527	Standard
	Sc	45	41932.9	0.9				ug/L	40360	Standard
	Ti	47	305752.9	0.6	**1298.3851**	14.752	1.1	ug/L	47	Standard
	V	51	5180984.9	1.0	**597.6052**	7.447	1.2	ug/L	1402	Standard
	Cr	52	541540.0	0.5	**64.2649**	0.745	1.2	ug/L	6348	Standard
	Cr	53	67587.2	3.0	**64.9113**	2.155	3.3	ug/L	505	Standard
	Mn	55	919575.1	1.4	**64.4928**	0.996	1.5	ug/L	3411	Standard
	Co	59	23917.5	0.8	**2.0839**	0.029	1.4	ug/L	825	Standard
	Ni	60	89217.6	0.9	**37.1713**	0.353	0.9	ug/L	576	Standard
	Cu	65	85795.9	1.5	**34.3953**	0.492	1.4	ug/L	632	Standard
	Zn	66	174562.2	0.9	**118.1857**	0.437	0.4	ug/L	430	Standard
>	Ge	72	855663.9	0.7				ug/L	823185	Standard
	As	75	7224.4	0.5	**4.9153**	0.058	1.2	ug/L	-13	Standard
	Se	82	46.5	23.8	**0.1929**	0.083	42.9	ug/L	20	Standard
	Se-1	77	132.7	5.3	**0.2894**	0.080	27.6	ug/L	106	Standard
>	Ga	71	22713.7	1.6				mg/L	237	Standard
	Rb	85	34926.9	1.9				ug/L	52	Standard
	Y	89	640673.8	0.9				ug/L	565679	Standard
>	Rh	103	33.3	22.9				ug/L	18	Standard
	Mo	98	408329.2	0.9	**87.4376**	1.342	1.5	ug/L	56	Standard
	Ag	107	75187.8	1.3	**9.7845**	0.196	2.0	ug/L	128	Standard
	Cd	111	139.9	11.0	**0.0536**	0.006	11.7	mg/L	8	Standard
	Cd	114	1790.9	4.9	**0.3031**	0.013	4.3	ug/L	49	Standard
>	In	115	708862.1	1.1				ug/L	692408	Standard
	Sn	118	3637.4	6.5	**2.6931**	0.216	8.0	ug/L	269	Standard
	Sb	123	490.1	7.8	**0.0700**	0.006	8.3	ug/L	358	Standard
	Ba	135	67771.9	0.1	**29.8872**	0.320	1.1	ug/L	64	Standard
	Ce	140	257703.5	1.7				ug/L	42	Standard
>	Tb	159	1067079.5	0.3				ug/L	1021298	Standard
	Ho	165	3543.7	4.1				ug/L	12	Standard
	Tl	203	348.3	17.1	**0.0362**	0.007	18.5	ug/L	17	Standard
	Tl	205	878.4	24.5	**0.0377**	0.009	25.0	ug/L	42	Standard
	Pb	206	63576.1	0.7	**8.6163**	0.086	1.0	ug/L	452	Standard
	Pb	207	52837.3	0.7	**7.9196**	0.051	0.6	ug/L	399	Standard
	Pb	208	64192.3	0.9	**8.2130**	0.032	0.4	ug/L	467	Standard
	U	238	4116.9	2.6	**0.6846**	0.015	2.1	ug/L	8	Standard
>	Bi	209	629100.2	0.5				ug/L	599665	Standard

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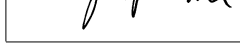

⌈	**Na**	23	6.7	86.6	**1.2270**	2.286	186.3	mg/L	0	Standard
|	**Mg**	24	138.3	5.5	**1.0258**	0.082	8.0	mg/L	30	Standard
|	**K**	39	135.0	7.4	**0.5277**	0.052	9.8	mg/L	18	Standard
|	**Ca**	43	43.3	17.6	**-3.1334**	2.096	66.9	mg/L	65	Standard
|	**Fe**	54	755.1	2.9	**3.6837**	0.142	3.9	mg/L	40	Standard
|	**Fe**	57	560.0	6.7	**3.9831**	0.758	19.0	mg/L	342	Standard
⌊>	**Sc-1**	45	41932.9	0.9				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	2.7	108.3				ug/L	7	Standard
	Br	81	5194.2	1.0				ug/L	2587	Standard
	P	31	86.7	8.8				ug/L	95	Standard
	S	34	25.0	20.0				ug/L	28	Standard
	Sr	88	171.7	16.6				ug/L	207	Standard
	C	12	43.3	48.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	1220.0	5.4				mg/L	3	Standard
	Dy	164	5269.9	3.4				mg/L	6	Standard
	Ho-1	165	3543.7	4.1				mg/L	12	Standard
	Er	166	3293.7	2.5				mg/L	20	Standard
	I	127	4624.0	4.3				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.599	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.946	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		102.376
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		104.909
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1703126402
Sample Date/Time: Thursday, March 23, 2017 15:28:26
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	279856.0	0.7				ug/L	269762	Standard
	Be	9	298.3	10.1	**0.1010**	0.011	10.6	ug/L	22	Standard
	Al	27	1701733.7	1.4	**8.9225**	0.155	1.7	ug/L	1527	Standard
	Sc	45	40652.9	5.4				ug/L	40360	Standard
	Ti	47	350350.6	1.0	**1491.5965**	8.476	0.6	ug/L	47	Standard
	V	51	2773260.5	0.4	**320.6581**	4.820	1.5	ug/L	1402	Standard
	Cr	52	877019.7	0.4	**104.8462**	1.413	1.3	ug/L	6348	Standard
	Cr	53	110348.7	0.7	**106.5929**	0.579	0.5	ug/L	505	Standard
	Mn	55	1461649.7	0.1	**102.9232**	1.173	1.1	ug/L	3411	Standard
	Co	59	53985.0	0.3	**4.7969**	0.057	1.2	ug/L	825	Standard
	Ni	60	129992.9	0.6	**54.4122**	0.477	0.9	ug/L	576	Standard
	Cu	65	169990.0	0.7	**68.5878**	0.862	1.3	ug/L	632	Standard
	Zn	66	619761.4	0.9	**421.4907**	1.105	0.3	ug/L	430	Standard
>	Ge	72	853465.5	1.2				ug/L	823185	Standard
	As	75	3007.9	0.8	**2.0775**	0.037	1.8	ug/L	-13	Standard
	Se	82	34.3	24.1	**0.1028**	0.061	58.9	ug/L	20	Standard
	Se-1	77	111.3	9.5	**0.0706**	0.098	138.8	ug/L	106	Standard
>	Ga	71	14161.6	2.7				mg/L	237	Standard
	Rb	85	16308.8	4.5				ug/L	52	Standard
	Y	89	600245.7	0.6				ug/L	565679	Standard
>	Rh	103	26.7	54.1				ug/L	18	Standard
	Mo	98	1305071.3	0.8	**279.0070**	0.491	0.2	ug/L	56	Standard
	Ag	107	2484.9	1.0	**0.3040**	0.002	0.6	ug/L	128	Standard
	Cd	111	90345.1	0.8	**40.8150**	0.168	0.4	mg/L	8	Standard
	Cd	114	231781.1	0.4	**40.9199**	0.075	0.2	ug/L	49	Standard
>	In	115	710040.0	0.6				ug/L	692408	Standard
	Sn	118	9525.0	0.7	**7.3917**	0.091	1.2	ug/L	269	Standard
	Sb	123	283.7	20.5	**0.0342**	0.010	30.3	ug/L	358	Standard
	Ba	135	54795.6	0.7	**24.1157**	0.042	0.2	ug/L	64	Standard
	Ce	140	65086.2	1.5				ug/L	42	Standard
>	Tb	159	1073958.5	0.7				ug/L	1021298	Standard
	Ho	165	1460.1	2.2				ug/L	12	Standard
	Tl	203	134.3	14.0	**0.0128**	0.002	16.0	ug/L	17	Standard
	Tl	205	311.7	2.5	**0.0133**	0.000	2.5	ug/L	42	Standard
	Pb	206	142494.3	0.5	**19.5179**	0.121	0.6	ug/L	452	Standard
	Pb	207	114831.5	0.5	**17.3891**	0.073	0.4	ug/L	399	Standard
	Pb	208	141920.0	0.6	**18.3507**	0.098	0.5	ug/L	467	Standard
	U	238	955.0	3.3	**0.1584**	0.005	3.0	ug/L	8	Standard
>	Bi	209	625397.2	0.5				ug/L	599665	Standard

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⌈	**Na**	23	8.3	124.9	**1.8941**	4.137	218.4	mg/L	0	Standard
|	**Mg**	24	115.0	15.7	**0.8274**	0.139	16.8	mg/L	30	Standard
|	**K**	39	68.3	33.8	**0.2097**	0.105	50.1	mg/L	18	Standard
|	**Ca**	43	61.7	32.8	**2.1174**	4.866	229.8	mg/L	65	Standard
|	**Fe**	54	604.3	8.1	**3.0025**	0.240	8.0	mg/L	40	Standard
|	**Fe**	57	445.0	8.9	**2.0975**	0.592	28.2	mg/L	342	Standard
⌊>	**Sc-1**	45	40652.9	5.4				mg/L	40360	Standard
	Cl	35	3.3	69.3				ug/L	3	Standard
	Kr	83	4.3	13.3				ug/L	7	Standard
	Br	81	4260.6	2.6				ug/L	2587	Standard
	P	31	81.7	9.4				ug/L	95	Standard
	S	34	18.3	41.7				ug/L	28	Standard
	Sr	88	148.3	17.3				ug/L	207	Standard
	C	12	36.7	15.7				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	110.0	24.1				mg/L	3	Standard
	Dy	164	1943.5	5.1				mg/L	6	Standard
	Ho-1	165	1460.1	2.2				mg/L	12	Standard
	Er	166	1390.1	11.6				mg/L	20	Standard
	I	127	30756.5	13.1				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.742	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.678	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703126402
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.546
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.291
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Mo 98 Upper, S, EEE	Mo	98

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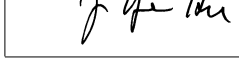

Method 6020 - Summary Report

Sample ID: L1703127201
Sample Date/Time: Thursday, March 23, 2017 15:31:32
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	312581.5	5.7				ug/L	269762	Standard
	Be	9	446.7	7.9	**0.1395**	0.010	7.0	ug/L	22	Standard
	Al	27	4800245.2	3.4	**22.5557**	0.506	2.2	ug/L	1527	Standard
	Sc	45	43104.7	5.1				ug/L	40360	Standard
	Ti	47	8946.0	6.2	**35.5055**	1.349	3.8	ug/L	47	Standard
	V	51	168131.0	4.2	**18.0813**	0.764	4.2	ug/L	1402	Standard
	Cr	52	2538215.3	3.5	**285.8790**	3.120	1.1	ug/L	6348	Standard
	Cr	53	265332.3	2.4	**241.0511**	0.540	0.2	ug/L	505	Standard
	Mn	55	13748536.0	3.7	**909.6336**	15.325	1.7	ug/L	3411	Standard
	Co	59	86483.4	4.4	**7.2368**	0.170	2.4	ug/L	825	Standard
	Ni	60	65466.6	3.6	**25.5701**	0.561	2.2	ug/L	576	Standard
	Cu	65	353296.3	2.8	**133.9276**	1.066	0.8	ug/L	632	Standard
	Zn	66	467211.8	2.6	**297.9086**	1.921	0.6	ug/L	430	Standard
>	Ge	72	909986.7	2.4				ug/L	823185	Standard
	As	75	14134.0	3.6	**9.0033**	0.115	1.3	ug/L	-13	Standard
	Se	82	697.1	3.3	**4.7072**	0.046	1.0	ug/L	20	Standard
	Se-1	77	608.3	8.3	**4.8330**	0.388	8.0	ug/L	106	Standard
>	Ga	71	6676.5	8.6				mg/L	237	Standard
	Rb	85	66269.6	0.6				ug/L	52	Standard
	Y	89	701049.5	1.7				ug/L	565679	Standard
>	Rh	103	61.7	49.5				ug/L	18	Standard
	Mo	98	17937.6	3.5	**3.5490**	0.028	0.8	ug/L	56	Standard
	Ag	107	25322.8	1.8	**3.0460**	0.034	1.1	ug/L	128	Standard
	Cd	111	28117.3	2.0	**11.8067**	0.144	1.2	mg/L	8	Standard
	Cd	114	71648.7	3.2	**11.7523**	0.183	1.6	ug/L	49	Standard
>	In	115	763581.2	2.6				ug/L	692408	Standard
	Sn	118	6571.1	2.3	**4.6663**	0.216	4.6	ug/L	269	Standard
	Sb	123	1942.9	1.2	**0.2976**	0.010	3.3	ug/L	358	Standard
	Ba	135	456443.8	1.9	**187.0685**	1.742	0.9	ug/L	64	Standard
	Ce	140	153094.8	2.2				ug/L	42	Standard
>	Tb	159	1171837.1	1.6				ug/L	1021298	Standard
	Ho	165	4262.3	2.7				ug/L	12	Standard
	Tl	203	2062.1	2.5	**0.0861**	0.002	2.4	ug/L	17	Standard
	Tl	205	4855.8	5.1	**0.0814**	0.004	4.4	ug/L	42	Standard
	Pb	206	218937.6	1.2	**11.5755**	0.013	0.1	ug/L	452	Standard
	Pb	207	179779.3	0.9	**10.5108**	0.063	0.6	ug/L	399	Standard
	Pb	208	223519.0	1.2	**11.1577**	0.082	0.7	ug/L	467	Standard
	U	238	8755.2	0.7	**0.5665**	0.005	0.9	ug/L	8	Standard
>	Bi	209	1616041.7	1.1				ug/L	599665	Standard

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⌈	**Na**	23	26.7	28.6	**8.9025**	3.231	36.3	mg/L	0	Standard
|	**Mg**	24	63.3	37.3	**0.2723**	0.254	93.1	mg/L	30	Standard
|	**K**	39	376.7	21.3	**1.6771**	0.463	27.6	mg/L	18	Standard
|	**Ca**	43	61.7	32.8	**1.2131**	4.714	388.6	mg/L	65	Standard
|	**Fe**	54	3823.3	4.4	**19.0532**	0.480	2.5	mg/L	40	Standard
|	**Fe**	57	1378.4	6.2	**18.5728**	1.886	10.2	mg/L	342	Standard
⌊>	**Sc-1**	45	43104.7	5.1				mg/L	40360	Standard
	Cl	35	4.0	50.0				ug/L	3	Standard
	Kr	83	3.7	15.7				ug/L	7	Standard
	Br	81	8148.9	8.1				ug/L	2587	Standard
	P	31	75.0	20.0				ug/L	95	Standard
	S	34	30.0	50.0				ug/L	28	Standard
	Sr	88	131.7	21.6				ug/L	207	Standard
	C	12	633.3	10.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	1250.1	13.3				mg/L	3	Standard
	Dy	164	6803.4	6.0				mg/L	6	Standard
	Ho-1	165	4262.3	2.7				mg/L	12	Standard
	Er	166	3580.4	2.4				mg/L	20	Standard
	I	127	178879.9	1.5				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		115.873	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		110.545	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	110.279
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	269.491
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Sample ID: L1703127201
Report Date/Time: Thursday, March 23, 2017 15:33:42
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Method 6020 - Summary Report

Sample ID: L1703127401
Sample Date/Time: Thursday, March 23, 2017 15:34:36
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266853.2	3.7				ug/L	269762	Standard
	Be	9	471.7	9.3	**0.1756**	0.022	12.8	ug/L	22	Standard
	Al	27	1406423.8	2.4	**7.7412**	0.392	5.1	ug/L	1527	Standard
	Sc	45	36243.3	2.5				ug/L	40360	Standard
	Ti	47	14243.7	1.5	**59.2918**	0.877	1.5	ug/L	47	Standard
	V	51	4661609.6	2.7	**528.8569**	19.593	3.7	ug/L	1402	Standard
	Cr	52	60104344.6	1.6	**7100.6330**	154.398	2.2	ug/L	6348	Standard
	Cr	53	7527498.2	2.3	**7168.4948**	210.305	2.9	ug/L	505	Standard
	Mn	55	30481683.5	1.7	**2110.0987**	49.875	2.4	ug/L	3411	Standard
	Co	59	3632079.6	1.7	**320.7327**	7.364	2.3	ug/L	825	Standard
	Ni	60	71757480.0	2.1	**29593.6260**	801.886	2.7	ug/L	576	Standard
	Cu	65	6868101.4	2.2	**2728.4264**	76.130	2.8	ug/L	632	Standard
	Zn	66	202596.3	1.1	**134.9456**	2.443	1.8	ug/L	430	Standard
>	Ge	72	870129.8	1.2				ug/L	823185	Standard
	As	75	151949.3	1.2	**100.8083**	2.136	2.1	ug/L	-13	Standard
	Se	82	110.3	0.6	**0.6524**	0.010	1.6	ug/L	20	Standard
	Se-1	77	198.7	6.2	**0.9375**	0.105	11.2	ug/L	106	Standard
>	Ga	71	34931.9	1.6				mg/L	237	Standard
	Rb	85	15201.0	0.2				ug/L	52	Standard
	Y	89	587326.4	2.9				ug/L	565679	Standard
>	Rh	103	481.7	9.4				ug/L	18	Standard
	Mo	98	59660637.9	0.5	**13902.6417**	417.717	3.0	ug/L	56	Standard
	Ag	107	5535.7	0.7	**0.7660**	0.029	3.7	ug/L	128	Standard
	Cd	111	-54524.7	1.9	**-26.8549**	0.407	1.5	mg/L	8	Standard
	Cd	114	43578.0	2.0	**8.3789**	0.451	5.4	ug/L	49	Standard
>	In	115	651897.2	3.4				ug/L	692408	Standard
	Sn	118	46156.9	2.3	**40.0030**	2.301	5.8	ug/L	269	Standard
	Sb	123	9060.4	2.3	**1.6932**	0.092	5.4	ug/L	358	Standard
	Ba	135	87967.0	0.6	**42.2310**	1.607	3.8	ug/L	64	Standard
	Ce	140	154645.2	0.4				ug/L	42	Standard
>	Tb	159	1015839.2	4.1				ug/L	1021298	Standard
	Ho	165	2023.5	5.6				ug/L	12	Standard
	Tl	203	354.7	18.7	**0.0394**	0.006	16.4	ug/L	17	Standard
	Tl	205	798.4	13.0	**0.0365**	0.004	12.0	ug/L	42	Standard
	Pb	206	81865.9	0.6	**11.8677**	0.456	3.8	ug/L	452	Standard
	Pb	207	66828.7	0.4	**10.7144**	0.498	4.6	ug/L	399	Standard
	Pb	208	87017.8	0.6	**11.9163**	0.587	4.9	ug/L	467	Standard
	U	238	1329.4	4.6	**0.2350**	0.018	7.8	ug/L	8	Standard
>	Bi	209	590137.5	4.3				ug/L	599665	Standard

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⌈	**Na**	23	16.7	17.3	**6.2386**	1.492	23.9	mg/L	0	Standard
|	**Mg**	24	66.7	42.6	**0.4249**	0.342	80.6	mg/L	30	Standard
|	**K**	39	36.7	34.3	**0.0728**	0.066	90.4	mg/L	18	Standard
|	**Ca**	43	33.3	22.9	**-4.3802**	2.527	57.7	mg/L	65	Standard
|	**Fe**	54	94718.3	0.9	**568.0340**	19.047	3.4	mg/L	40	Standard
|	**Fe**	57	26575.0	2.7	**566.7453**	11.476	2.0	mg/L	342	Standard
⌊>	**Sc-1**	45	36243.3	2.5				mg/L	40360	Standard
	Cl	35	2.7	43.3				ug/L	3	Standard
	Kr	83	2.3	65.5				ug/L	7	Standard
	Br	81	4334.0	4.1				ug/L	2587	Standard
	P	31	75.0	26.7				ug/L	95	Standard
	S	34	15.0	33.3				ug/L	28	Standard
	Sr	88	161.7	17.0				ug/L	207	Standard
	C	12	36.7	83.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	1410.1	4.7				mg/L	3	Standard
	Dy	164	3136.7	4.3				mg/L	6	Standard
	Ho-1	165	2023.5	5.6				mg/L	12	Standard
	Er	166	2093.5	2.0				mg/L	20	Standard
	I	127	8654.2	18.2				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		98.922	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		105.703	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703127401
Report Date/Time: Thursday, March 23, 2017 15:36:47
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.149
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.411
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

Sample ID: L1703127401
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Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
As 75 Upper, S, EEE	As	75
Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1703127401PS WG607493-01
Sample Date/Time: Thursday, March 23, 2017 15:37:42
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	259913.7	3.4				ug/L	269762	Standard
	Be	9	119393.6	0.8	**48.5580**	1.281	2.6	ug/L	22	Standard
	Al	27	1372261.2	3.4	**7.7464**	0.010	0.1	ug/L	1527	Standard
	Sc	45	36370.4	5.6				ug/L	40360	Standard
	Ti	47	13720.9	2.8	**59.0163**	0.298	0.5	ug/L	47	Standard
	V	51	4903268.0	3.4	**574.7476**	15.326	2.7	ug/L	1402	Standard
	Cr	52	58286559.6	2.4	**7115.3775**	74.996	1.1	ug/L	6348	Standard
	Cr	53	7290799.2	3.7	**7172.8712**	139.220	1.9	ug/L	505	Standard
	Mn	55	29961263.0	1.9	**2143.2459**	15.624	0.7	ug/L	3411	Standard
	Co	59	4066909.1	2.2	**371.1032**	0.869	0.2	ug/L	825	Standard
	Ni	60	68671723.2	1.8	**29265.4931**	185.976	0.6	ug/L	576	Standard
	Cu	65	6633751.1	2.1	**2723.1785**	28.219	1.0	ug/L	632	Standard
	Zn	66	261515.2	1.5	**180.1172**	1.457	0.8	ug/L	430	Standard
>	Ge	72	841986.8	2.3				ug/L	823185	Standard
	As	75	218432.3	1.9	**149.7238**	0.847	0.6	ug/L	-13	Standard
	Se	82	6488.8	1.4	**48.7483**	0.754	1.5	ug/L	20	Standard
	Se-1	77	4753.7	2.1	**48.9231**	0.162	0.3	ug/L	106	Standard
>	Ga	71	33525.4	3.9				mg/L	237	Standard
	Rb	85	14650.4	2.5				ug/L	52	Standard
	Y	89	578571.9	2.8				ug/L	565679	Standard
>	Rh	103	500.0	9.5				ug/L	18	Standard
	Mo	98	57118507.3	1.0	**13455.4737**	275.714	2.0	ug/L	56	Standard
	Ag	107	363280.7	1.7	**52.0741**	0.794	1.5	ug/L	128	Standard
	Cd	111	46738.1	2.0	**23.2582**	0.444	1.9	mg/L	8	Standard
	Cd	114	286455.4	1.3	**55.7234**	1.012	1.8	ug/L	49	Standard
>	In	115	644648.3	2.7				ug/L	692408	Standard
	Sn	118	44726.6	2.4	**39.1468**	0.152	0.4	ug/L	269	Standard
	Sb	123	278508.8	1.2	**53.0337**	0.999	1.9	ug/L	358	Standard
	Ba	135	178960.6	1.7	**86.8695**	1.730	2.0	ug/L	64	Standard
	Ce	140	151749.5	0.3				ug/L	42	Standard
>	Tb	159	1014142.8	2.6				ug/L	1021298	Standard
	Ho	165	2151.8	7.5				ug/L	12	Standard
	Tl	203	440620.2	1.4	**51.1738**	0.615	1.2	ug/L	17	Standard
	Tl	205	1066058.1	2.3	**48.6558**	0.325	0.7	ug/L	42	Standard
	Pb	206	431661.9	1.3	**62.2839**	0.659	1.1	ug/L	452	Standard
	Pb	207	379966.6	1.7	**60.6095**	0.370	0.6	ug/L	399	Standard
	Pb	208	469336.7	1.2	**63.9366**	0.743	1.2	ug/L	467	Standard
	U	238	316081.1	1.0	**55.6984**	0.942	1.7	ug/L	8	Standard
>	Bi	209	595307.4	2.3				ug/L	599665	Standard

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⌈	**Na**	23	16.7	45.8	**6.1406**	3.336	54.3	mg/L	0	Standard
|	**Mg**	24	85.0	47.1	**0.6165**	0.434	70.4	mg/L	30	Standard
|	**K**	39	51.7	29.6	**0.1552**	0.071	46.0	mg/L	18	Standard
|	**Ca**	43	51.7	20.1	**1.2199**	3.254	266.7	mg/L	65	Standard
|	**Fe**	54	90436.8	4.4	**540.4098**	8.687	1.6	mg/L	40	Standard
|	**Fe**	57	24994.0	4.4	**530.9560**	7.304	1.4	mg/L	342	Standard
⌊>	**Sc-1**	45	36370.4	5.6				mg/L	40360	Standard
	Cl	35	0.0					ug/L	3	Standard
	Kr	83	1.0	100.0				ug/L	7	Standard
	Br	81	4223.9	9.1				ug/L	2587	Standard
	P	31	80.0	39.0				ug/L	95	Standard
	S	34	11.7	65.5				ug/L	28	Standard
	Sr	88	160.0	9.4				ug/L	207	Standard
	C	12	43.3	74.2				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	1510.1	9.2				mg/L	3	Standard
	Dy	164	3272.2	1.6				mg/L	6	Standard
	Ho-1	165	2151.8	7.5				mg/L	12	Standard
	Er	166	1980.1	7.8				mg/L	20	Standard
	I	127	6014.5	2.4				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		96.349	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		102.284	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.102
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.273
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
As 75 Upper, S, EEE	As	75
Mo 98 Upper, S, EEE	Mo	98

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Method 6020 - Summary Report

Sample ID: L1703127401SDL WG607493-02
Sample Date/Time: Thursday, March 23, 2017 15:40:48
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	256372.5	0.2				ug/L	269762	Standard
	Be	9	168.3	27.6	**0.0578**	0.019	33.3	ug/L	22	Standard
	Al	27	275843.7	1.5	**1.5765**	0.027	1.7	ug/L	1527	Standard
	Sc	45	34390.7	4.3				ug/L	40360	Standard
	Ti	47	2721.6	4.4	**12.3267**	0.449	3.6	ug/L	47	Standard
	V	51	1298706.1	2.2	**162.2704**	5.561	3.4	ug/L	1402	Standard
	Cr	52	11420635.0	0.5	**1486.3498**	23.829	1.6	ug/L	6348	Standard
	Cr	53	1201249.4	1.0	**1260.2605**	21.973	1.7	ug/L	505	Standard
	Mn	55	5783455.0	0.2	**441.0333**	6.428	1.5	ug/L	3411	Standard
	Co	59	594880.6	0.7	**57.8386**	0.627	1.1	ug/L	825	Standard
	Ni	60	13750362.7	0.9	**6248.9511**	53.151	0.9	ug/L	576	Standard
	Cu	65	1143180.8	1.1	**500.2245**	2.449	0.5	ug/L	632	Standard
	Zn	66	42711.8	2.4	**31.1086**	0.376	1.2	ug/L	430	Standard
>	Ge	72	789549.2	1.6				ug/L	823185	Standard
	As	75	29342.5	0.5	**21.4874**	0.240	1.1	ug/L	-13	Standard
	Se	82	50.3	16.9	**0.2534**	0.075	29.4	ug/L	20	Standard
	Se-1	77	162.3	5.5	**0.7362**	0.077	10.4	ug/L	106	Standard
>	Ga	71	6706.5	1.8				mg/L	237	Standard
	Rb	85	3017.0	4.4				ug/L	52	Standard
	Y	89	540379.9	1.1				ug/L	565679	Standard
>	Rh	103	116.7	13.1				ug/L	18	Standard
	Mo	98	11199655.9	0.7	**2632.4157**	25.088	1.0	ug/L	56	Standard
	Ag	107	1241.7	10.0	**0.1581**	0.016	10.1	ug/L	128	Standard
	Cd	111	-9926.6	1.1	**-4.9414**	0.102	2.1	mg/L	8	Standard
	Cd	114	8790.6	2.1	**1.6933**	0.047	2.8	ug/L	49	Standard
>	In	115	645890.8	1.0				ug/L	692408	Standard
	Sn	118	9271.8	2.1	**7.9243**	0.099	1.2	ug/L	269	Standard
	Sb	123	2964.9	2.4	**0.5486**	0.014	2.5	ug/L	358	Standard
	Ba	135	18717.9	1.8	**9.0328**	0.082	0.9	ug/L	64	Standard
	Ce	140	34171.8	1.8				ug/L	42	Standard
>	Tb	159	1013948.7	0.9				ug/L	1021298	Standard
	Ho	165	450.0	4.8				ug/L	12	Standard
	Tl	203	215.3	30.9	**0.0224**	0.008	34.1	ug/L	17	Standard
	Tl	205	540.0	25.4	**0.0239**	0.006	25.8	ug/L	42	Standard
	Pb	206	16657.2	1.2	**2.2773**	0.030	1.3	ug/L	452	Standard
	Pb	207	13819.6	1.6	**2.0923**	0.044	2.1	ug/L	399	Standard
	Pb	208	16823.0	0.5	**2.1716**	0.009	0.4	ug/L	467	Standard
	U	238	299.3	15.2	**0.0498**	0.008	16.0	ug/L	8	Standard
>	Bi	209	609315.7	0.4				ug/L	599665	Standard

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⌈	**Na**	23	1.7	173.2	**-0.6456**	1.327	205.6	mg/L	0	Standard
|	**Mg**	24	43.3	37.1	**0.1780**	0.195	109.3	mg/L	30	Standard
|	**K**	39	21.7	35.3	**-0.0056**	0.040	700.4	mg/L	18	Standard
|	**Ca**	43	53.3	44.3	**2.8414**	8.331	293.2	mg/L	65	Standard
|	**Fe**	54	14912.9	2.6	**94.1726**	6.030	6.4	mg/L	40	Standard
|	**Fe**	57	4253.9	4.2	**90.4607**	8.057	8.9	mg/L	342	Standard
⌊>	**Sc-1**	45	34390.7	4.3				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	4.3	35.3				ug/L	7	Standard
	Br	81	2503.5	6.1				ug/L	2587	Standard
	P	31	60.0	28.9				ug/L	95	Standard
	S	34	13.3	43.3				ug/L	28	Standard
	Sr	88	153.3	15.4				ug/L	207	Standard
	C	12	23.3	24.7				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	733.4	6.7				mg/L	3	Standard
	Dy	164	734.8	21.3				mg/L	6	Standard
	Ho-1	165	450.0	4.8				mg/L	12	Standard
	Er	166	316.7	12.8				mg/L	20	Standard
	I	127	7186.7	1.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		95.036	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.914	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.282
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.609
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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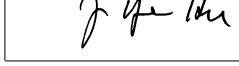

Method 6020 - Summary Report

Sample ID: L1703127401SDL WG607493-02
Sample Date/Time: Thursday, March 23, 2017 15:43:53
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	254751.4	2.7				ug/L	269762	Standard
	Be	9	66.7	34.6	**0.0162**	0.010	62.0	ug/L	22	Standard
	Al	27	58291.9	1.0	**0.3332**	0.009	2.6	ug/L	1527	Standard
	Sc	45	34415.7	0.8				ug/L	40360	Standard
	Ti	47	586.0	2.9	**2.5395**	0.094	3.7	ug/L	47	Standard
	V	51	238275.3	30.3	**30.1072**	9.292	30.9	ug/L	1402	Standard
	Cr	52	2259183.7	10.5	**297.8230**	32.881	11.0	ug/L	6348	Standard
	Cr	53	250541.2	0.6	**266.2909**	2.913	1.1	ug/L	505	Standard
	Mn	55	1023947.5	0.5	**79.0339**	0.662	0.8	ug/L	3411	Standard
	Co	59	122436.0	0.6	**12.0292**	0.144	1.2	ug/L	825	Standard
	Ni	60	2878827.2	1.4	**1327.5134**	26.221	2.0	ug/L	576	Standard
	Cu	65	241599.7	0.7	**107.0775**	1.208	1.1	ug/L	632	Standard
	Zn	66	10265.8	0.4	**7.3530**	0.057	0.8	ug/L	430	Standard
>	Ge	72	778009.9	0.6				ug/L	823185	Standard
	As	75	6006.7	0.6	**4.4985**	0.050	1.1	ug/L	-13	Standard
	Se	82	36.4	8.7	**0.1452**	0.026	18.0	ug/L	20	Standard
	Se-1	77	126.7	10.0	**0.3580**	0.147	40.9	ug/L	106	Standard
>	Ga	71	1500.1	5.5				mg/L	237	Standard
	Rb	85	725.0	3.4				ug/L	52	Standard
	Y	89	529134.7	0.9				ug/L	565679	Standard
>	Rh	103	55.0	18.2				ug/L	18	Standard
	Mo	98	1931366.8	1.1	**452.9687**	5.204	1.1	ug/L	56	Standard
	Ag	107	339.3	4.6	**0.0290**	0.002	7.2	ug/L	128	Standard
	Cd	111	-1553.1	1.5	**-0.7796**	0.011	1.4	mg/L	8	Standard
	Cd	114	1779.6	1.0	**0.3312**	0.004	1.3	ug/L	49	Standard
>	In	115	647256.8	0.3				ug/L	692408	Standard
	Sn	118	2070.1	4.8	**1.5949**	0.082	5.2	ug/L	269	Standard
	Sb	123	631.9	11.8	**0.1050**	0.014	13.5	ug/L	358	Standard
	Ba	135	4056.9	0.5	**1.9252**	0.010	0.5	ug/L	64	Standard
	Ce	140	7385.1	4.0				ug/L	42	Standard
>	Tb	159	976434.4	1.7				ug/L	1021298	Standard
	Ho	165	106.7	28.6				ug/L	12	Standard
	Tl	203	58.3	22.1	**0.0045**	0.001	33.0	ug/L	17	Standard
	Tl	205	141.7	24.8	**0.0060**	0.002	25.2	ug/L	42	Standard
	Pb	206	3834.5	0.9	**0.4628**	0.009	1.9	ug/L	452	Standard
	Pb	207	3216.3	1.1	**0.4336**	0.010	2.3	ug/L	399	Standard
	Pb	208	3758.2	0.7	**0.4265**	0.002	0.6	ug/L	467	Standard
	U	238	64.7	2.4	**0.0093**	0.000	3.4	ug/L	8	Standard
>	Bi	209	615005.1	1.0				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	38.3	19.9	**0.1182**	0.096	80.8	mg/L	30	Standard
	K	39	31.7	63.8	**0.0557**	0.122	219.3	mg/L	18	Standard
	Ca	43	61.7	33.8	**5.3264**	6.679	125.4	mg/L	65	Standard
	Fe	54	2979.4	2.0	**18.5821**	0.247	1.3	mg/L	40	Standard
	Fe	57	1113.4	7.9	**18.8253**	1.925	10.2	mg/L	342	Standard
>	**Sc-1**	45	34415.7	0.8				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	4.3	13.3				ug/L	7	Standard
	Br	81	2323.5	2.5				ug/L	2587	Standard
	P	31	51.7	34.0				ug/L	95	Standard
	S	34	28.3	10.2				ug/L	28	Standard
	Sr	88	158.3	23.7				ug/L	207	Standard
	C	12	16.7	34.6				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	163.3	14.1				mg/L	3	Standard
	Dy	164	140.4	36.9				mg/L	6	Standard
	Ho-1	165	106.7	28.6				mg/L	12	Standard
	Er	166	130.0	60.1				mg/L	20	Standard
	I	127	7105.0	2.6				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.436	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.512	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.479
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.558
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Ni 60 Upper, S, EEE	Ni	60	

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Cu 65 Upper, S, EEE	Cu	65
Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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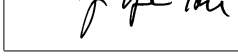

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, March 23, 2017 15:47:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267531.6	1.6				ug/L	269762	Standard
	Be	9	122878.0	1.2	**48.5269**	0.576	1.2	ug/L	22	Standard
	Al	27	8449817.6	0.1	**46.3619**	0.756	1.6	ug/L	1527	Standard
	Sc	45	37686.8	3.4				ug/L	40360	Standard
	Ti	47	21634.8	2.7	**94.7142**	2.261	2.4	ug/L	47	Standard
	V	51	393087.4	1.2	**46.6883**	0.584	1.3	ug/L	1402	Standard
	Cr	52	384435.1	1.1	**46.9129**	0.447	1.0	ug/L	6348	Standard
	Cr	53	47792.0	3.0	**47.2640**	1.276	2.7	ug/L	505	Standard
	Mn	55	663786.4	0.8	**48.0299**	0.566	1.2	ug/L	3411	Standard
	Co	59	513684.5	1.0	**47.5918**	0.560	1.2	ug/L	825	Standard
	Ni	60	111333.4	2.6	**47.9822**	0.984	2.1	ug/L	576	Standard
	Cu	65	115050.7	2.5	**47.7443**	0.959	2.0	ug/L	632	Standard
	Zn	66	69070.8	1.9	**48.1222**	0.678	1.4	ug/L	430	Standard
>	Ge	72	828326.1	1.0				ug/L	823185	Standard
	As	75	68835.6	2.0	**47.9870**	0.674	1.4	ug/L	-13	Standard
	Se	82	6422.9	2.1	**49.0428**	1.059	2.2	ug/L	20	Standard
	Se-1	77	4704.7	2.1	**49.2203**	0.710	1.4	ug/L	106	Standard
>	Ga	71	201.7	6.2				mg/L	237	Standard
	Rb	85	423.3	24.3				ug/L	52	Standard
	Y	89	565431.3	1.0				ug/L	565679	Standard
>	Rh	103	60.0	33.3				ug/L	18	Standard
	Mo	98	464049.4	1.3	**101.8164**	0.442	0.4	ug/L	56	Standard
	Ag	107	368909.3	2.1	**49.2645**	0.685	1.4	ug/L	128	Standard
	Cd	111	106994.1	1.7	**49.6135**	0.409	0.8	mg/L	8	Standard
	Cd	114	275475.6	2.3	**49.9169**	0.664	1.3	ug/L	49	Standard
>	In	115	691773.4	1.1				ug/L	692408	Standard
	Sn	118	64355.7	5.7	**52.5435**	2.425	4.6	ug/L	269	Standard
	Sb	123	278698.7	1.2	**49.4381**	0.263	0.5	ug/L	358	Standard
	Ba	135	108633.1	1.4	**49.1098**	0.393	0.8	ug/L	64	Standard
	Ce	140	340.0	16.6				ug/L	42	Standard
>	Tb	159	1046812.1	1.1				ug/L	1021298	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	446954.4	0.7	**48.8679**	0.153	0.3	ug/L	17	Standard
	Tl	205	1068906.6	0.2	**45.9368**	0.555	1.2	ug/L	42	Standard
	Pb	206	359036.8	0.1	**48.7556**	0.460	0.9	ug/L	452	Standard
	Pb	207	327403.3	0.6	**49.1573**	0.348	0.7	ug/L	399	Standard
	Pb	208	373971.3	1.2	**47.9433**	0.633	1.3	ug/L	467	Standard
	U	238	310432.1	1.1	**51.4938**	0.480	0.9	ug/L	8	Standard
>	Bi	209	632275.1	1.0				ug/L	599665	Standard

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	Na	23	15.0	57.7	**5.2798**	4.103	77.7	mg/L	0	Standard
	Mg	24	458.3	7.1	**4.7060**	0.270	5.7	mg/L	30	Standard
	K	39	711.7	6.1	**3.7519**	0.330	8.8	mg/L	18	Standard
	Ca	43	68.3	27.7	**5.7179**	6.372	111.4	mg/L	65	Standard
	Fe	54	846.1	2.1	**4.6512**	0.148	3.2	mg/L	40	Standard
	Fe	57	536.7	10.0	**4.6839**	1.195	25.5	mg/L	342	Standard
>	**Sc-1**	45	37686.8	3.4				mg/L	40360	Standard
	Cl	35	4.0	86.6				ug/L	3	Standard
	Kr	83	3.0	88.2				ug/L	7	Standard
	Br	81	2666.9	10.3				ug/L	2587	Standard
	P	31	60.0	25.0				ug/L	95	Standard
	S	34	26.7	54.1				ug/L	28	Standard
	Sr	88	155.0	8.5				ug/L	207	Standard
	C	12	23.3	99.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	20.0	86.6				mg/L	3	Standard
	Dy	164	29.4	60.0				mg/L	6	Standard
	Ho-1	165	6.7	114.6				mg/L	12	Standard
	Er	166	13.3	86.6				mg/L	20	Standard
	I	127	3088.6	0.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	97.054		
	Al	27	92.724		
	Sc	45			
	Ti	47	94.714		
	V	51	93.377		
	Cr	52	93.826		
	Cr	53			
	Mn	55	96.060		
	Co	59	95.184		
	Ni	60	95.964		
	Cu	65	95.489		
	Zn	66	96.244		
>	Ge	72		100.625	
	As	75	95.974		
	Se	82	98.086		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	101.816	
|	Ag	107	98.529	
|	Cd	111	99.227	
|	Cd	114		
|>	In	115		99.908
|	Sn	118	105.087	
|	Sb	123	98.876	
⌊	Ba	135	98.220	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	97.736	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	95.887	
|	U	238	102.988	
⌊>	Bi	209		105.438
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, March 23, 2017 15:50:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	267745.9	2.4				ug/L	269762	Standard
	Be	9	61.7	16.9	**0.0128**	0.005	36.2	ug/L	22	Standard
	Al	27	1935.1	34.2	**0.0078**	0.003	42.9	ug/L	1527	Standard
	Sc	45	36582.5	4.4				ug/L	40360	Standard
	Ti	47	35.3	16.1	**-0.0393**	0.028	70.2	ug/L	47	Standard
	V	51	1273.9	22.5	**-0.0060**	0.039	648.2	ug/L	1402	Standard
	Cr	52	6663.9	25.6	**0.0529**	0.241	454.7	ug/L	6348	Standard
	Cr	53	570.0	48.0	**0.0476**	0.300	629.5	ug/L	505	Standard
	Mn	55	3787.2	22.2	**0.0414**	0.070	170.0	ug/L	3411	Standard
	Co	59	696.3	11.7	**0.0020**	0.009	438.9	ug/L	825	Standard
	Ni	60	2536.6	51.3	**0.8929**	0.614	68.8	ug/L	576	Standard
	Cu	65	1139.7	11.3	**0.2244**	0.065	29.0	ug/L	632	Standard
	Zn	66	498.3	7.6	**0.0456**	0.018	39.7	ug/L	430	Standard
>	**Ge**	72	810146.3	2.9				ug/L	823185	Standard
	As	75	6.6	284.9	**0.0489**	0.014	27.9	ug/L	-13	Standard
	Se	82	21.7	19.0	**0.0176**	0.030	168.5	ug/L	20	Standard
	Se-1	77	99.0	8.6	**-0.0019**	0.086	4599.2	ug/L	106	Standard
>	**Ga**	71	153.3	16.7				mg/L	237	Standard
	Rb	85	81.7	15.4				ug/L	52	Standard
	Y	89	550950.1	3.7				ug/L	565679	Standard
>	**Rh**	103	26.7	47.2				ug/L	18	Standard
	Mo	98	4579.5	8.9	**0.9983**	0.080	8.0	ug/L	56	Standard
	Ag	107	182.3	6.8	**0.0052**	0.002	31.9	ug/L	128	Standard
	Cd	111	29.8	62.5	**0.0043**	0.009	207.0	mg/L	8	Standard
	Cd	114	80.6	35.6	**0.0011**	0.005	461.9	ug/L	49	Standard
>	**In**	115	684568.6	1.7				ug/L	692408	Standard
	Sn	118	290.0	3.9	**0.0209**	0.013	61.0	ug/L	269	Standard
	Sb	123	587.2	10.2	**0.0905**	0.012	13.7	ug/L	358	Standard
	Ba	135	125.0	45.8	**0.0210**	0.027	128.9	ug/L	64	Standard
	Ce	140	56.7	74.0				ug/L	42	Standard
>	**Tb**	159	1019570.4	1.7				ug/L	1021298	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	123.3	58.2	**0.0114**	0.008	68.9	ug/L	17	Standard
	Tl	205	288.3	53.2	**0.0122**	0.007	54.8	ug/L	42	Standard
	Pb	206	613.7	19.3	**0.0105**	0.017	156.7	ug/L	452	Standard
	Pb	207	529.0	11.3	**0.0163**	0.008	47.2	ug/L	399	Standard
	Pb	208	614.0	13.3	**0.0096**	0.008	87.8	ug/L	467	Standard
	U	238	71.3	66.0	**0.0101**	0.008	77.0	ug/L	8	Standard
>	**Bi**	209	629210.8	3.1				ug/L	599665	Standard

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⌈	**Na**	23	3.3	86.6	**0.1183**	1.328	1122.7	mg/L	0	Standard
|	**Mg**	24	15.0	88.2	**-0.1764**	0.144	81.6	mg/L	30	Standard
|	**K**	39	23.3	24.7	**-0.0018**	0.039	2201.0	mg/L	18	Standard
|	**Ca**	43	28.3	27.0	**-6.0967**	2.003	32.9	mg/L	65	Standard
|	**Fe**	54	24.5	40.8	**-0.0828**	0.066	79.9	mg/L	40	Standard
|	**Fe**	57	295.0	14.5	**-0.1470**	0.939	638.9	mg/L	342	Standard
⌊>	**Sc-1**	45	36582.5	4.4				mg/L	40360	Standard
	Cl	35	2.0	173.2				ug/L	3	Standard
	Kr	83	3.3	96.4				ug/L	7	Standard
	Br	81	2643.6	4.2				ug/L	2587	Standard
	P	31	50.0	17.3				ug/L	95	Standard
	S	34	23.3	32.7				ug/L	28	Standard
	Sr	88	171.7	16.0				ug/L	207	Standard
	C	12	46.7	53.9				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	5.1	111.3				mg/L	6	Standard
	Ho-1	165	8.3	124.9				mg/L	12	Standard
	Er	166	33.3	17.3				mg/L	20	Standard
	I	127	5144.2	1.0				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.416	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.868
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.927
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	
QC Std 7	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, March 23, 2017 16:01:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	273561.4	1.9				ug/L	269762	Standard
	Be	9	123062.8	1.7	**47.5257**	0.100	0.2	ug/L	22	Standard
	Al	27	8824981.8	1.3	**47.3491**	0.327	0.7	ug/L	1527	Standard
	Sc	45	37675.1	0.9				ug/L	40360	Standard
	Ti	47	22141.2	2.0	**96.7469**	0.984	1.0	ug/L	47	Standard
	V	51	403227.4	2.0	**47.8015**	0.667	1.4	ug/L	1402	Standard
	Cr	52	391590.9	1.2	**47.7076**	0.393	0.8	ug/L	6348	Standard
	Cr	53	48821.9	3.7	**48.2009**	1.697	3.5	ug/L	505	Standard
	Mn	55	677440.6	0.8	**48.9280**	0.462	0.9	ug/L	3411	Standard
	Co	59	526668.6	1.4	**48.7016**	0.560	1.1	ug/L	825	Standard
	Ni	60	112954.2	1.5	**48.5925**	0.331	0.7	ug/L	576	Standard
	Cu	65	117764.3	1.2	**48.7914**	1.043	2.1	ug/L	632	Standard
	Zn	66	70353.0	2.1	**48.9300**	1.048	2.1	ug/L	430	Standard
>	Ge	72	829947.2	1.6				ug/L	823185	Standard
	As	75	70247.0	1.5	**48.8788**	0.651	1.3	ug/L	-13	Standard
	Se	82	6598.6	0.9	**50.2917**	0.412	0.8	ug/L	20	Standard
	Se-1	77	4662.4	0.5	**48.6817**	0.944	1.9	ug/L	106	Standard
>	Ga	71	201.7	16.5				mg/L	237	Standard
	Rb	85	440.0	19.9				ug/L	52	Standard
	Y	89	566904.7	1.8				ug/L	565679	Standard
>	Rh	103	58.3	32.5				ug/L	18	Standard
	Mo	98	457088.5	1.5	**99.4773**	0.937	0.9	ug/L	56	Standard
	Ag	107	373054.3	1.8	**49.4155**	0.555	1.1	ug/L	128	Standard
	Cd	111	107476.4	1.2	**49.4357**	0.326	0.7	mg/L	8	Standard
	Cd	114	277234.5	2.3	**49.8305**	0.835	1.7	ug/L	49	Standard
>	In	115	697405.6	0.7				ug/L	692408	Standard
	Sn	118	63831.5	0.8	**51.7085**	0.149	0.3	ug/L	269	Standard
	Sb	123	280074.1	1.9	**49.2783**	0.611	1.2	ug/L	358	Standard
	Ba	135	108676.4	1.0	**48.7320**	0.128	0.3	ug/L	64	Standard
	Ce	140	345.0	22.8				ug/L	42	Standard
>	Tb	159	1037234.9	0.9				ug/L	1021298	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	443254.6	1.0	**48.7111**	0.154	0.3	ug/L	17	Standard
	Tl	205	1069040.6	1.7	**46.1746**	0.684	1.5	ug/L	42	Standard
	Pb	206	358040.4	1.3	**48.8658**	0.246	0.5	ug/L	452	Standard
	Pb	207	326114.0	1.4	**49.2117**	0.299	0.6	ug/L	399	Standard
	Pb	208	372994.2	0.9	**48.0616**	0.069	0.1	ug/L	467	Standard
	U	238	309386.1	1.1	**51.5818**	0.145	0.3	ug/L	8	Standard
>	Bi	209	629043.0	0.8				ug/L	599665	Standard

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⌈	**Na**	23	16.7	69.3	**5.9457**	5.138	86.4	mg/L	0	Standard
|	**Mg**	24	468.3	6.9	**4.8221**	0.402	8.3	mg/L	30	Standard
|	**K**	39	746.7	3.4	**3.9391**	0.171	4.3	mg/L	18	Standard
|	**Ca**	43	51.7	36.6	**0.6765**	5.737	848.1	mg/L	65	Standard
|	**Fe**	54	774.7	7.5	**4.2367**	0.294	6.9	mg/L	40	Standard
|	**Fe**	57	493.3	7.1	**3.7733**	0.645	17.1	mg/L	342	Standard
⌊>	**Sc-1**	45	37675.1	0.9				mg/L	40360	Standard
	Cl	35	2.7	114.6				ug/L	3	Standard
	Kr	83	5.0	52.9				ug/L	7	Standard
	Br	81	2683.6	17.0				ug/L	2587	Standard
	P	31	66.7	37.7				ug/L	95	Standard
	S	34	26.7	10.8				ug/L	28	Standard
	Sr	88	178.3	28.4				ug/L	207	Standard
	C	12	36.7	15.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	19.5	88.8				mg/L	6	Standard
	Ho-1	165	8.3	34.6				mg/L	12	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	2918.6	5.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	95.051		
⌊	Al	27	94.698		
⌈	Sc	45			
|	Ti	47	96.747		
|	V	51	95.603		
|	Cr	52	95.415		
|	Cr	53			
|	Mn	55	97.856		
|	Co	59	97.403		
|	Ni	60	97.185		
|	Cu	65	97.583		
|	Zn	66	97.860		
|>	Ge	72		100.821	
|	As	75	97.758		
|	Se	82	100.583		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	99.477	
|	Ag	107	98.831	
|	Cd	111	98.871	
|	Cd	114		
|>	In	115		100.722
|	Sn	118	103.417	
|	Sb	123	98.557	
⌊	Ba	135	97.464	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	97.422	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	96.123	
|	U	238	103.164	
⌊>	Bi	209		104.899
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, March 23, 2017 16:04:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269718.9	5.3				ug/L	269762	Standard
	Be	9	43.3	46.6	**0.0052**	0.007	142.6	ug/L	22	Standard
	Al	27	1193.4	17.9	**0.0037**	0.001	22.2	ug/L	1527	Standard
	Sc	45	38096.2	4.8				ug/L	40360	Standard
	Ti	47	34.7	31.8	**-0.0454**	0.048	106.1	ug/L	47	Standard
	V	51	1042.9	3.9	**-0.0369**	0.003	8.7	ug/L	1402	Standard
	Cr	52	5189.9	0.9	**-0.1491**	0.020	13.3	ug/L	6348	Standard
	Cr	53	376.7	18.0	**-0.1611**	0.077	48.0	ug/L	505	Standard
	Mn	55	2688.6	2.4	**-0.0449**	0.001	2.0	ug/L	3411	Standard
	Co	59	516.0	4.3	**-0.0160**	0.001	4.4	ug/L	825	Standard
	Ni	60	969.4	2.1	**0.1812**	0.005	2.9	ug/L	576	Standard
	Cu	65	836.7	3.0	**0.0880**	0.001	1.5	ug/L	632	Standard
	Zn	66	378.7	2.1	**-0.0445**	0.010	23.4	ug/L	430	Standard
>	Ge	72	824503.2	2.8				ug/L	823185	Standard
	As	75	-47.8	124.3	**0.0101**	0.043	422.0	ug/L	-13	Standard
	Se	82	16.3	29.0	**-0.0269**	0.035	130.7	ug/L	20	Standard
	Se-1	77	103.3	6.2	**0.0256**	0.055	214.9	ug/L	106	Standard
>	Ga	71	130.0	20.0				mg/L	237	Standard
	Rb	85	73.3	50.3				ug/L	52	Standard
	Y	89	564326.1	1.9				ug/L	565679	Standard
>	Rh	103	18.3	31.5				ug/L	18	Standard
	Mo	98	1264.7	6.6	**0.2572**	0.011	4.2	ug/L	56	Standard
	Ag	107	146.3	15.5	**-0.0002**	0.003	1562.3	ug/L	128	Standard
	Cd	111	7.4	14.0	**-0.0063**	0.001	8.0	mg/L	8	Standard
	Cd	114	41.0	23.4	**-0.0062**	0.002	30.1	ug/L	49	Standard
>	In	115	700362.8	2.6				ug/L	692408	Standard
	Sn	118	272.0	12.5	**0.0014**	0.033	2435.0	ug/L	269	Standard
	Sb	123	383.3	14.6	**0.0525**	0.011	21.7	ug/L	358	Standard
	Ba	135	58.3	20.1	**-0.0103**	0.005	50.6	ug/L	64	Standard
	Ce	140	30.0	33.3				ug/L	42	Standard
>	Tb	159	1025079.4	2.8				ug/L	1021298	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	26.3	21.6	**0.0008**	0.001	71.8	ug/L	17	Standard
	Tl	205	83.3	43.4	**0.0033**	0.001	42.8	ug/L	42	Standard
	Pb	206	500.0	3.9	**-0.0056**	0.002	35.4	ug/L	452	Standard
	Pb	207	420.3	1.8	**-0.0006**	0.003	494.3	ug/L	399	Standard
	Pb	208	500.7	10.6	**-0.0056**	0.005	87.1	ug/L	467	Standard
	U	238	25.3	28.0	**0.0024**	0.001	49.2	ug/L	8	Standard
>	Bi	209	634892.6	3.0				ug/L	599665	Standard

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⌈	**Na**	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
|	**Mg**	24	28.3	27.0	**-0.0351**	0.090	255.4	mg/L	30	Standard
|	**K**	39	21.7	53.3	**-0.0167**	0.063	379.9	mg/L	18	Standard
|	**Ca**	43	38.3	54.3	**-3.6073**	5.715	158.4	mg/L	65	Standard
|	**Fe**	54	16.0	35.4	**-0.1400**	0.030	21.1	mg/L	40	Standard
|	**Fe**	57	316.7	6.4	**0.0579**	0.661	1141.4	mg/L	342	Standard
⌊>	**Sc-1**	45	38096.2	4.8				mg/L	40360	Standard
	Cl	35	2.0	100.0				ug/L	3	Standard
	Kr	83	4.0	25.0				ug/L	7	Standard
	Br	81	2570.2	9.8				ug/L	2587	Standard
	P	31	56.7	33.4				ug/L	95	Standard
	S	34	21.7	81.0				ug/L	28	Standard
	Sr	88	163.3	13.8				ug/L	207	Standard
	C	12	40.0	25.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	23.0	65.5				mg/L	6	Standard
	Ho-1	165	13.3	21.7				mg/L	12	Standard
	Er	166	6.7	86.6				mg/L	20	Standard
	I	127	5382.6	0.4				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.160	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.149
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.875
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW JH WG607249-02
Sample Date/Time: Thursday, March 23, 2017 16:22:58
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	257624.1	2.2				ug/L	269762	Standard
	Be	9	26.7	21.7	**-0.0006**	0.002	369.5	ug/L	22	Standard
	Al	27	4068.9	5.8	**0.0204**	0.001	5.3	ug/L	1527	Standard
	Sc	45	36077.9	2.2				ug/L	40360	Standard
	Ti	47	33.0	18.4	**-0.0452**	0.028	62.4	ug/L	47	Standard
	V	51	1044.7	0.9	**-0.0304**	0.002	5.7	ug/L	1402	Standard
	Cr	52	5720.7	0.5	**-0.0470**	0.013	28.5	ug/L	6348	Standard
	Cr	53	430.0	12.1	**-0.0873**	0.047	54.4	ug/L	505	Standard
	Mn	55	63027.8	0.7	**4.5975**	0.121	2.6	ug/L	3411	Standard
	Co	59	430.7	5.2	**-0.0219**	0.002	10.2	ug/L	825	Standard
	Ni	60	946.4	4.5	**0.1921**	0.022	11.4	ug/L	576	Standard
	Cu	65	1087.0	0.3	**0.2161**	0.010	4.8	ug/L	632	Standard
	Zn	66	1529.1	3.4	**0.8204**	0.039	4.7	ug/L	430	Standard
>	**Ge**	72	784832.9	2.1				ug/L	823185	Standard
	As	75	-7.6	802.5	**0.0388**	0.044	113.8	ug/L	-13	Standard
	Se	82	20.6	20.3	**0.0154**	0.035	229.3	ug/L	20	Standard
	Se-1	77	113.3	8.8	**0.1945**	0.102	52.7	ug/L	106	Standard
>	**Ga**	71	158.3	21.5				mg/L	237	Standard
	Rb	85	76.7	16.4				ug/L	52	Standard
	Y	89	529484.6	0.4				ug/L	565679	Standard
>	**Rh**	103	10.0	86.6				ug/L	18	Standard
	Mo	98	607.0	5.9	**0.1223**	0.008	6.8	ug/L	56	Standard
	Ag	107	118.7	13.1	**-0.0029**	0.002	72.6	ug/L	128	Standard
	Cd	111	16.9	16.8	**-0.0015**	0.001	91.0	mg/L	8	Standard
	Cd	114	68.2	20.8	**-0.0007**	0.003	353.6	ug/L	49	Standard
>	**In**	115	662908.0	0.8				ug/L	692408	Standard
	Sn	118	317.3	3.2	**0.0520**	0.008	14.4	ug/L	269	Standard
	Sb	123	186.2	21.2	**0.0196**	0.008	38.3	ug/L	358	Standard
	Ba	135	112.0	5.6	**0.0165**	0.003	15.4	ug/L	64	Standard
	Ce	140	118.3	6.5				ug/L	42	Standard
>	**Tb**	159	980952.2	2.1				ug/L	1021298	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	64.0	30.1	**0.0052**	0.002	43.8	ug/L	17	Standard
	Tl	205	180.0	12.7	**0.0078**	0.001	14.0	ug/L	42	Standard
	Pb	206	854.0	3.4	**0.0470**	0.006	11.7	ug/L	452	Standard
	Pb	207	678.3	2.5	**0.0421**	0.004	9.0	ug/L	399	Standard
	Pb	208	822.0	3.6	**0.0398**	0.003	8.0	ug/L	467	Standard
	U	238	5.0	60.0	**-0.0009**	0.001	57.7	ug/L	8	Standard
>	**Bi**	209	610359.9	1.2				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	31.7	9.1	**0.0201**	0.040	197.2	mg/L	30	Standard
	K	39	20.0	43.3	**-0.0206**	0.048	233.8	mg/L	18	Standard
	Ca	43	50.0	20.0	**0.7961**	3.064	384.8	mg/L	65	Standard
	Fe	54	24.6	35.7	**-0.0825**	0.052	63.5	mg/L	40	Standard
	Fe	57	311.7	6.7	**0.2958**	0.476	161.0	mg/L	342	Standard
>	**Sc-1**	45	36077.9	2.2				mg/L	40360	Standard
	Cl	35	2.7	114.6				ug/L	3	Standard
	Kr	83	5.0	34.6				ug/L	7	Standard
	Br	81	2593.6	6.0				ug/L	2587	Standard
	P	31	65.0	15.4				ug/L	95	Standard
	S	34	25.0	20.0				ug/L	28	Standard
	Sr	88	160.0	14.3				ug/L	207	Standard
	C	12	13.3	114.6				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	256.7	12.5				mg/L	3	Standard
	Dy	164	10.0					mg/L	6	Standard
	Ho-1	165	11.7	65.5				mg/L	12	Standard
	Er	166	0.0					mg/L	20	Standard
	I	127	5809.4	2.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.500	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.341	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.739
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.784
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW JH WG607249-03
Sample Date/Time: Thursday, March 23, 2017 16:26:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	276614.0	4.6				ug/L	269762	Standard
	Be	9	124029.1	2.2	**47.4220**	1.945	4.1	ug/L	22	Standard
	Al	27	7887.1	1.5	**0.0391**	0.001	3.7	ug/L	1527	Standard
	Sc	45	39157.3	5.1				ug/L	40360	Standard
	Ti	47	43.3	17.9	**-0.0146**	0.028	190.5	ug/L	47	Standard
	V	51	408045.1	1.2	**46.8886**	1.939	4.1	ug/L	1402	Standard
	Cr	52	402707.6	2.2	**47.5573**	2.245	4.7	ug/L	6348	Standard
	Cr	53	49502.4	1.9	**47.3746**	2.344	4.9	ug/L	505	Standard
	Mn	55	682303.6	2.2	**47.7636**	2.254	4.7	ug/L	3411	Standard
	Co	59	531446.2	2.3	**47.6320**	2.073	4.4	ug/L	825	Standard
	Ni	60	116698.8	2.1	**48.6632**	2.065	4.2	ug/L	576	Standard
	Cu	65	120241.7	2.1	**48.2796**	2.097	4.3	ug/L	632	Standard
	Zn	66	72279.8	2.9	**48.7158**	2.068	4.2	ug/L	430	Standard
>	Ge	72	857045.7	3.9				ug/L	823185	Standard
	As	75	69478.3	1.8	**46.8572**	1.825	3.9	ug/L	-13	Standard
	Se	82	6468.0	2.3	**47.7784**	2.269	4.7	ug/L	20	Standard
	Se-1	77	4685.7	1.8	**47.3879**	1.996	4.2	ug/L	106	Standard
>	Ga	71	186.7	16.1				mg/L	237	Standard
	Rb	85	123.3	26.1				ug/L	52	Standard
	Y	89	583309.8	4.1				ug/L	565679	Standard
>	Rh	103	43.3	6.7				ug/L	18	Standard
	Mo	98	585.0	1.8	**0.1064**	0.004	3.3	ug/L	56	Standard
	Ag	107	371174.8	2.4	**47.5324**	1.503	3.2	ug/L	128	Standard
	Cd	111	108791.2	2.5	**48.3790**	1.667	3.4	mg/L	8	Standard
	Cd	114	273469.8	1.6	**47.5224**	1.297	2.7	ug/L	49	Standard
>	In	115	721719.5	3.0				ug/L	692408	Standard
	Sn	118	372.7	5.3	**0.0738**	0.023	31.6	ug/L	269	Standard
	Sb	123	279562.5	1.4	**47.5616**	1.590	3.3	ug/L	358	Standard
	Ba	135	109410.4	1.8	**47.4315**	1.440	3.0	ug/L	64	Standard
	Ce	140	148.3	8.5				ug/L	42	Standard
>	Tb	159	1068559.1	3.2				ug/L	1021298	Standard
	Ho	165	31.7	32.9				ug/L	12	Standard
	Tl	203	466992.0	1.6	**49.7692**	2.118	4.3	ug/L	17	Standard
	Tl	205	1120227.3	1.4	**46.9306**	2.203	4.7	ug/L	42	Standard
	Pb	206	373687.4	1.5	**49.4590**	1.977	4.0	ug/L	452	Standard
	Pb	207	323179.5	0.8	**47.2892**	1.719	3.6	ug/L	399	Standard
	Pb	208	379549.1	1.7	**47.4285**	2.076	4.4	ug/L	467	Standard
	U	238	302541.7	1.3	**48.9166**	2.018	4.1	ug/L	8	Standard
>	Bi	209	649257.1	3.5				ug/L	599665	Standard

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⌈	**Na**	23	5.0	0.0	**0.7105**	0.111	15.6	mg/L	0	Standard
|	**Mg**	24	31.7	39.7	**-0.0079**	0.133	1675.8	mg/L	30	Standard
|	**K**	39	13.3	78.1	**-0.0640**	0.053	83.5	mg/L	18	Standard
|	**Ca**	43	43.3	24.0	**-2.2075**	3.658	165.7	mg/L	65	Standard
|	**Fe**	54	43.6	48.7	**0.0142**	0.126	883.7	mg/L	40	Standard
|	**Fe**	57	306.7	17.4	**-0.3620**	0.798	220.5	mg/L	342	Standard
⌊>	**Sc-1**	45	39157.3	5.1				mg/L	40360	Standard
	Cl	35	1.3	86.6				ug/L	3	Standard
	Kr	83	2.3	49.5				ug/L	7	Standard
	Br	81	2870.3	9.1				ug/L	2587	Standard
	P	31	96.7	36.7				ug/L	95	Standard
	S	34	30.0	33.3				ug/L	28	Standard
	Sr	88	128.3	8.1				ug/L	207	Standard
	C	12	33.3	62.5				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.8	99.2				mg/L	6	Standard
	Ho-1	165	31.7	32.9				mg/L	12	Standard
	Er	166	3.3	173.2				mg/L	20	Standard
	I	127	3895.5	1.1				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.540	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		104.113	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: LCSW JH WG607249-03
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.233
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	108.270
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116101 WG607249-01
Sample Date/Time: Thursday, March 23, 2017 16:29:10
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	288169.0	2.5				ug/L	269762	Standard
	Be	9	291.7	12.9	**0.0954**	0.013	14.0	ug/L	22	Standard
	Al	27	4599056.1	0.2	**23.4304**	0.552	2.4	ug/L	1527	Standard
	Sc	45	39742.1	1.8				ug/L	40360	Standard
	Ti	47	1529.4	8.8	**6.4102**	0.605	9.4	ug/L	47	Standard
	V	51	19320.3	4.6	**2.1053**	0.096	4.6	ug/L	1402	Standard
	Cr	52	171110.8	0.3	**20.1137**	0.204	1.0	ug/L	6348	Standard
	Cr	53	21899.2	3.4	**21.0302**	0.769	3.7	ug/L	505	Standard
	Mn	55	919454.9	1.2	**65.5912**	0.230	0.4	ug/L	3411	Standard
	Co	59	20844.7	2.3	**1.8398**	0.026	1.4	ug/L	825	Standard
	Ni	60	9485.0	1.6	**3.8046**	0.023	0.6	ug/L	576	Standard
	Cu	65	3531.4	1.3	**1.1882**	0.004	0.3	ug/L	632	Standard
	Zn	66	13196.1	0.2	**8.8007**	0.096	1.1	ug/L	430	Standard
>	Ge	72	841242.3	1.1				ug/L	823185	Standard
	As	75	1893.0	1.9	**1.3424**	0.034	2.5	ug/L	-13	Standard
	Se	82	332.6	0.9	**2.3565**	0.047	2.0	ug/L	20	Standard
	Se-1	77	437.3	6.9	**3.5188**	0.274	7.8	ug/L	106	Standard
>	Ga	71	833.4	4.4				mg/L	237	Standard
	Rb	85	12104.8	1.0				ug/L	52	Standard
	Y	89	584859.3	1.6				ug/L	565679	Standard
>	Rh	103	35.0	49.5				ug/L	18	Standard
	Mo	98	9543.2	4.1	**2.0714**	0.065	3.1	ug/L	56	Standard
	Ag	107	212.7	33.5	**0.0088**	0.009	103.9	ug/L	128	Standard
	Cd	111	364.0	5.4	**0.1587**	0.008	4.9	mg/L	8	Standard
	Cd	114	1064.4	5.5	**0.1788**	0.011	6.3	ug/L	49	Standard
>	In	115	693660.0	1.0				ug/L	692408	Standard
	Sn	118	396.0	5.9	**0.1044**	0.021	20.5	ug/L	269	Standard
	Sb	123	2213.4	7.0	**0.3768**	0.028	7.5	ug/L	358	Standard
	Ba	135	65151.8	0.9	**29.3613**	0.485	1.7	ug/L	64	Standard
	Ce	140	58422.4	0.7				ug/L	42	Standard
>	Tb	159	1051944.2	0.4				ug/L	1021298	Standard
	Ho	165	1066.7	16.0				ug/L	12	Standard
	Tl	203	1554.7	18.9	**0.1700**	0.032	18.6	ug/L	17	Standard
	Tl	205	3802.2	16.1	**0.1652**	0.026	15.6	ug/L	42	Standard
	Pb	206	3725.5	4.0	**0.4399**	0.017	3.8	ug/L	452	Standard
	Pb	207	3085.0	3.9	**0.4062**	0.016	4.0	ug/L	399	Standard
	Pb	208	3749.8	1.7	**0.4182**	0.006	1.3	ug/L	467	Standard
	U	238	648.7	10.7	**0.1073**	0.012	10.7	ug/L	8	Standard
>	Bi	209	624066.4	0.8				ug/L	599665	Standard

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⌈	**Na**	23	10.0	50.0	**2.7879**	2.154	77.3	mg/L	0	Standard
|	**Mg**	24	5012.5	3.7	**52.0459**	1.015	2.0	mg/L	30	Standard
|	**K**	39	73.3	37.6	**0.2436**	0.135	55.3	mg/L	18	Standard
|	**Ca**	43	41.7	30.2	**-2.9319**	3.739	127.5	mg/L	65	Standard
|	**Fe**	54	336.8	8.1	**1.6102**	0.118	7.3	mg/L	40	Standard
|	**Fe**	57	420.0	0.0	**1.8037**	0.147	8.2	mg/L	342	Standard
⌊>	**Sc-1**	45	39742.1	1.8				mg/L	40360	Standard
	Cl	35	2.7	86.6				ug/L	3	Standard
	Kr	83	4.7	101.3				ug/L	7	Standard
	Br	81	159694.1	2.3				ug/L	2587	Standard
	P	31	91.7	36.3				ug/L	95	Standard
	S	34	25.0	52.9				ug/L	28	Standard
	Sr	88	150.0	11.5				ug/L	207	Standard
	C	12	73.3	7.9				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	26.7	57.3				mg/L	3	Standard
	Dy	164	1648.5	9.7				mg/L	6	Standard
	Ho-1	165	1066.7	16.0				mg/L	12	Standard
	Er	166	1006.7	4.1				mg/L	20	Standard
	I	127	162986.9	5.3				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.823	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		102.194	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.181
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.069
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116102S WG607249-04
Sample Date/Time: Thursday, March 23, 2017 16:32:15
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	280108.9	6.3				ug/L	269762	Standard
	Be	9	127878.7	6.0	**48.2380**	0.331	0.7	ug/L	22	Standard
	Al	27	4416628.3	6.5	**23.1384**	0.252	1.1	ug/L	1527	Standard
	Sc	45	38823.1	6.2				ug/L	40360	Standard
	Ti	47	1314.7	23.1	**5.6195**	1.183	21.1	ug/L	47	Standard
	V	51	414542.5	6.3	**49.7854**	0.649	1.3	ug/L	1402	Standard
	Cr	52	534677.1	6.2	**66.2865**	0.815	1.2	ug/L	6348	Standard
	Cr	53	67800.3	7.7	**67.9864**	1.691	2.5	ug/L	505	Standard
	Mn	55	1578875.9	6.3	**115.8237**	1.330	1.1	ug/L	3411	Standard
	Co	59	536219.2	6.7	**50.2183**	0.843	1.7	ug/L	825	Standard
	Ni	60	119958.9	6.2	**52.2922**	0.595	1.1	ug/L	576	Standard
	Cu	65	118194.0	6.2	**49.6013**	0.618	1.2	ug/L	632	Standard
	Zn	66	77103.9	6.3	**54.3490**	0.718	1.3	ug/L	430	Standard
>	Ge	72	819096.5	5.4				ug/L	823185	Standard
	As	75	73027.8	6.2	**51.4662**	0.435	0.8	ug/L	-13	Standard
	Se	82	6822.5	7.4	**52.6540**	1.366	2.6	ug/L	20	Standard
	Se-1	77	5070.2	6.5	**53.7213**	0.879	1.6	ug/L	106	Standard
>	Ga	71	745.0	4.8				mg/L	237	Standard
	Rb	85	11589.4	3.9				ug/L	52	Standard
	Y	89	571927.7	6.3				ug/L	565679	Standard
>	Rh	103	66.7	15.6				ug/L	18	Standard
	Mo	98	8315.8	6.3	**1.8481**	0.028	1.5	ug/L	56	Standard
	Ag	107	361843.1	6.2	**49.3812**	0.575	1.2	ug/L	128	Standard
	Cd	111	107323.3	7.0	**50.8384**	0.546	1.1	mg/L	8	Standard
	Cd	114	268953.9	6.0	**49.8122**	0.681	1.4	ug/L	49	Standard
>	In	115	676933.3	6.0				ug/L	692408	Standard
	Sn	118	419.0	5.6	**0.1317**	0.004	2.8	ug/L	269	Standard
	Sb	123	275041.7	5.6	**49.8687**	0.331	0.7	ug/L	358	Standard
	Ba	135	169047.8	5.2	**78.1516**	1.207	1.5	ug/L	64	Standard
	Ce	140	58943.0	5.6				ug/L	42	Standard
>	Tb	159	1025879.9	4.9				ug/L	1021298	Standard
	Ho	165	1133.4	16.3				ug/L	12	Standard
	Tl	203	453892.6	4.2	**50.9677**	0.597	1.2	ug/L	17	Standard
	Tl	205	1088793.9	4.2	**48.0525**	0.527	1.1	ug/L	42	Standard
	Pb	206	367227.4	5.2	**51.1977**	0.062	0.1	ug/L	452	Standard
	Pb	207	316909.2	6.1	**48.8325**	0.439	0.9	ug/L	399	Standard
	Pb	208	374168.6	5.3	**49.2458**	0.064	0.1	ug/L	467	Standard
	U	238	305891.2	5.9	**52.0794**	0.355	0.7	ug/L	8	Standard
>	Bi	209	615861.4	5.2				ug/L	599665	Standard

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⌈	**Na**	23	6.7	43.3	**1.4982**	1.468	98.0	mg/L	0	Standard
|	**Mg**	24	4820.8	7.6	**51.2264**	1.404	2.7	mg/L	30	Standard
|	**K**	39	53.3	23.6	**0.1493**	0.069	45.9	mg/L	18	Standard
|	**Ca**	43	55.0	39.6	**1.4613**	7.552	516.8	mg/L	65	Standard
|	**Fe**	54	322.7	7.7	**1.5843**	0.229	14.5	mg/L	40	Standard
|	**Fe**	57	368.3	14.4	**0.9417**	0.761	80.8	mg/L	342	Standard
⌊>	**Sc-1**	45	38823.1	6.2				mg/L	40360	Standard
	Cl	35	3.3	69.3				ug/L	3	Standard
	Kr	83	3.3	34.6				ug/L	7	Standard
	Br	81	139335.5	5.1				ug/L	2587	Standard
	P	31	76.7	21.0				ug/L	95	Standard
	S	34	25.0	52.9				ug/L	28	Standard
	Sr	88	151.7	11.6				ug/L	207	Standard
	C	12	106.7	23.6				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	13.3	86.6				mg/L	3	Standard
	Dy	164	1905.4	5.4				mg/L	6	Standard
	Ho-1	165	1133.4	16.3				mg/L	12	Standard
	Er	166	1073.4	6.2				mg/L	20	Standard
	I	127	176712.2	3.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.835	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.503	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.765
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.701
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703116103SD WG607249-05
Sample Date/Time: Thursday, March 23, 2017 16:35:20
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	287343.1	1.9				ug/L	269762	Standard
	Be	9	135769.0	1.0	**49.9235**	0.517	1.0	ug/L	22	Standard
	Al	27	5225643.1	1.9	**26.6900**	0.226	0.8	ug/L	1527	Standard
	Sc	45	39610.1	1.7				ug/L	40360	Standard
	Ti	47	1527.1	10.0	**6.3929**	0.567	8.9	ug/L	47	Standard
	V	51	440240.1	1.9	**51.4950**	0.325	0.6	ug/L	1402	Standard
	Cr	52	595943.3	1.2	**72.0213**	0.197	0.3	ug/L	6348	Standard
	Cr	53	76350.3	1.8	**74.6529**	0.725	1.0	ug/L	505	Standard
	Mn	55	1816390.5	0.8	**129.8126**	1.063	0.8	ug/L	3411	Standard
	Co	59	570777.8	1.5	**52.0701**	0.387	0.7	ug/L	825	Standard
	Ni	60	126428.4	1.6	**53.6786**	0.290	0.5	ug/L	576	Standard
	Cu	65	125056.0	1.3	**51.1205**	0.679	1.3	ug/L	632	Standard
	Zn	66	82343.5	1.0	**56.5424**	0.248	0.4	ug/L	430	Standard
>	Ge	72	841297.0	1.4				ug/L	823185	Standard
	As	75	78007.1	0.4	**53.5457**	0.786	1.5	ug/L	-13	Standard
	Se	82	7230.3	1.4	**54.3806**	1.259	2.3	ug/L	20	Standard
	Se-1	77	5388.6	0.2	**55.6555**	0.938	1.7	ug/L	106	Standard
>	Ga	71	965.0	9.9				mg/L	237	Standard
	Rb	85	14411.9	1.5				ug/L	52	Standard
	Y	89	591812.8	2.0				ug/L	565679	Standard
>	Rh	103	86.7	32.8				ug/L	18	Standard
	Mo	98	9566.5	1.3	**2.0856**	0.038	1.8	ug/L	56	Standard
	Ag	107	382924.9	0.6	**51.2109**	0.596	1.2	ug/L	128	Standard
	Cd	111	113104.3	0.4	**52.5222**	0.420	0.8	mg/L	8	Standard
	Cd	114	285471.2	1.3	**51.8032**	0.564	1.1	ug/L	49	Standard
>	In	115	690837.3	0.8				ug/L	692408	Standard
	Sn	118	378.0	1.5	**0.0909**	0.007	7.7	ug/L	269	Standard
	Sb	123	292031.2	1.0	**51.8753**	0.571	1.1	ug/L	358	Standard
	Ba	135	186584.9	1.2	**84.4884**	0.382	0.5	ug/L	64	Standard
	Ce	140	72663.9	2.5				ug/L	42	Standard
>	Tb	159	1047881.3	0.0				ug/L	1021298	Standard
	Ho	165	1371.7	8.7				ug/L	12	Standard
	Tl	203	475436.5	0.4	**52.3745**	0.124	0.2	ug/L	17	Standard
	Tl	205	1143915.8	1.1	**49.5300**	0.713	1.4	ug/L	42	Standard
	Pb	206	386794.3	0.4	**52.9266**	0.475	0.9	ug/L	452	Standard
	Pb	207	335042.6	0.5	**50.6857**	0.401	0.8	ug/L	399	Standard
	Pb	208	397837.7	0.1	**51.3922**	0.252	0.5	ug/L	467	Standard
	U	238	325551.3	0.4	**54.4092**	0.215	0.4	ug/L	8	Standard
>	Bi	209	627526.9	0.5				ug/L	599665	Standard

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⌈	**Na**	23	6.7	43.3	**1.3735**	1.177	85.7	mg/L	0	Standard
|	**Mg**	24	5571.0	4.4	**58.0886**	2.261	3.9	mg/L	30	Standard
|	**K**	39	73.3	32.2	**0.2455**	0.118	48.0	mg/L	18	Standard
|	**Ca**	43	30.0	66.7	**-6.1774**	5.803	93.9	mg/L	65	Standard
|	**Fe**	54	399.3	5.4	**1.9596**	0.083	4.2	mg/L	40	Standard
|	**Fe**	57	395.0	14.1	**1.3264**	0.990	74.7	mg/L	342	Standard
⌊>	**Sc-1**	45	39610.1	1.7				mg/L	40360	Standard
	Cl	35	1.3	86.6				ug/L	3	Standard
	Kr	83	2.0	50.0				ug/L	7	Standard
	Br	81	172752.7	1.6				ug/L	2587	Standard
	P	31	91.7	22.0				ug/L	95	Standard
	S	34	23.3	49.5				ug/L	28	Standard
	Sr	88	186.7	6.2				ug/L	207	Standard
	C	12	83.3	25.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	2350.0	7.1				mg/L	6	Standard
	Ho-1	165	1371.7	8.7				mg/L	12	Standard
	Er	166	1256.7	9.8				mg/L	20	Standard
	I	127	180794.0	0.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.517	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		102.200	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.773
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.646
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703117601
Sample Date/Time: Thursday, March 23, 2017 16:38:26
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	280020.4	3.0				ug/L	269762	Standard
	Be	9	85.0	27.0	**0.0205**	0.008	41.1	ug/L	22	Standard
	Al	27	8127963.3	2.2	**42.6292**	1.742	4.1	ug/L	1527	Standard
	Sc	45	37864.0	3.4				ug/L	40360	Standard
	Ti	47	384.0	9.8	**1.5142**	0.178	11.8	ug/L	47	Standard
	V	51	6296.2	3.6	**0.6007**	0.033	5.5	ug/L	1402	Standard
	Cr	52	9863.5	4.6	**0.4469**	0.051	11.5	ug/L	6348	Standard
	Cr	53	4250.6	11.4	**3.7763**	0.458	12.1	ug/L	505	Standard
	Mn	55	1073334.3	2.0	**79.0557**	2.024	2.6	ug/L	3411	Standard
	Co	59	5612.4	1.8	**0.4649**	0.013	2.9	ug/L	825	Standard
	Ni	60	2200.2	3.2	**0.7273**	0.026	3.6	ug/L	576	Standard
	Cu	65	3313.7	2.1	**1.1422**	0.043	3.8	ug/L	632	Standard
	Zn	66	3090.3	4.1	**1.8904**	0.105	5.6	ug/L	430	Standard
>	Ge	72	815434.8	1.7				ug/L	823185	Standard
	As	75	83.2	116.3	**0.1021**	0.068	66.3	ug/L	-13	Standard
	Se	82	43.3	47.5	**0.1839**	0.154	83.9	ug/L	20	Standard
	Se-1	77	967.7	7.1	**9.4306**	0.805	8.5	ug/L	106	Standard
>	Ga	71	456.7	6.7				mg/L	237	Standard
	Rb	85	49014.2	1.5				ug/L	52	Standard
	Y	89	672228.6	3.8				ug/L	565679	Standard
>	Rh	103	121.7	45.3				ug/L	18	Standard
	Mo	98	732.1	3.9	**0.1510**	0.000	0.1	ug/L	56	Standard
	Ag	107	156.7	13.5	**0.0024**	0.003	106.6	ug/L	128	Standard
	Cd	111	32.7	17.3	**0.0061**	0.002	38.2	mg/L	8	Standard
	Cd	114	148.6	5.2	**0.0145**	0.001	3.5	ug/L	49	Standard
>	In	115	662583.6	3.8				ug/L	692408	Standard
	Sn	118	364.7	9.3	**0.0930**	0.031	33.1	ug/L	269	Standard
	Sb	123	339.7	8.1	**0.0481**	0.005	11.0	ug/L	358	Standard
	Ba	135	208188.8	1.6	**98.3785**	3.437	3.5	ug/L	64	Standard
	Ce	140	52032.6	3.9				ug/L	42	Standard
>	Tb	159	1034218.0	2.3				ug/L	1021298	Standard
	Ho	165	5477.7	2.5				ug/L	12	Standard
	Tl	203	1272.7	11.7	**0.1436**	0.016	11.5	ug/L	17	Standard
	Tl	205	3042.0	6.7	**0.1366**	0.009	6.4	ug/L	42	Standard
	Pb	206	2570.9	3.8	**0.2926**	0.012	4.2	ug/L	452	Standard
	Pb	207	2165.2	5.1	**0.2772**	0.019	6.9	ug/L	399	Standard
	Pb	208	2576.8	2.7	**0.2769**	0.012	4.4	ug/L	467	Standard
	U	238	1902.8	4.2	**0.3288**	0.017	5.1	ug/L	8	Standard
>	Bi	209	604036.9	1.9				ug/L	599665	Standard

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⌈	**Na**	23	48.3	47.8	**19.7524**	10.016	50.7	mg/L	0	Standard
|	**Mg**	24	9319.5	1.9	**102.0180**	4.803	4.7	mg/L	30	Standard
|	**K**	39	415.0	13.9	**2.1218**	0.338	16.0	mg/L	18	Standard
|	**Ca**	43	95.0	19.0	**13.3012**	4.724	35.5	mg/L	65	Standard
|	**Fe**	54	149.3	12.0	**0.6251**	0.075	12.0	mg/L	40	Standard
|	**Fe**	57	403.3	11.2	**1.8806**	1.038	55.2	mg/L	342	Standard
⌊>	**Sc-1**	45	37864.0	3.4				mg/L	40360	Standard
	Cl	35	2.0	100.0				ug/L	3	Standard
	Kr	83	3.0	33.3				ug/L	7	Standard
	Br	81	29993.0	2.8				ug/L	2587	Standard
	P	31	63.3	32.9				ug/L	95	Standard
	S	34	28.3	36.7				ug/L	28	Standard
	Sr	88	168.3	27.0				ug/L	207	Standard
	C	12	83.3	30.2				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	7622.3	4.0				mg/L	6	Standard
	Ho-1	165	5477.7	2.5				mg/L	12	Standard
	Er	166	5074.2	7.0				mg/L	20	Standard
	I	127	288915.4	5.4				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.803	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.059	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.693
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.729
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703117602
Sample Date/Time: Thursday, March 23, 2017 16:41:32
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	291704.5	3.0				ug/L	269762	Standard
	Be	9	421.7	14.2	**0.1408**	0.017	12.4	ug/L	22	Standard
	Al	27	10003529.8	1.3	**50.3669**	1.939	3.8	ug/L	1527	Standard
	Sc	45	39954.3	2.6				ug/L	40360	Standard
	Ti	47	302.7	16.9	**1.0928**	0.200	18.3	ug/L	47	Standard
	V	51	1813.1	23.1	**0.0483**	0.048	98.5	ug/L	1402	Standard
	Cr	52	10015.6	2.6	**0.4133**	0.013	3.1	ug/L	6348	Standard
	Cr	53	3342.0	4.1	**2.7154**	0.185	6.8	ug/L	505	Standard
	Mn	55	1662612.4	0.8	**117.4560**	1.285	1.1	ug/L	3411	Standard
	Co	59	65568.2	0.4	**5.8576**	0.074	1.3	ug/L	825	Standard
	Ni	60	5005.2	1.6	**1.8697**	0.001	0.0	ug/L	576	Standard
	Cu	65	3383.4	1.9	**1.1115**	0.009	0.8	ug/L	632	Standard
	Zn	66	7296.8	0.8	**4.6705**	0.120	2.6	ug/L	430	Standard
>	Ge	72	850954.4	1.7				ug/L	823185	Standard
	As	75	33.1	213.7	**0.0661**	0.048	72.6	ug/L	-13	Standard
	Se	82	67.1	8.8	**0.3485**	0.042	12.1	ug/L	20	Standard
	Se-1	77	614.0	3.6	**5.3075**	0.241	4.5	ug/L	106	Standard
>	Ga	71	311.7	14.0				mg/L	237	Standard
	Rb	85	56831.4	1.3				ug/L	52	Standard
	Y	89	674611.6	0.6				ug/L	565679	Standard
>	Rh	103	61.7	32.8				ug/L	18	Standard
	Mo	98	419.4	8.0	**0.0737**	0.005	7.1	ug/L	56	Standard
	Ag	107	313.3	70.7	**0.0213**	0.028	130.6	ug/L	128	Standard
	Cd	111	305.1	20.3	**0.1291**	0.025	19.2	mg/L	8	Standard
	Cd	114	834.7	25.3	**0.1347**	0.034	25.1	ug/L	49	Standard
>	In	115	703450.2	2.3				ug/L	692408	Standard
	Sn	118	445.7	2.3	**0.1399**	0.008	5.8	ug/L	269	Standard
	Sb	123	496.2	25.5	**0.0714**	0.020	28.1	ug/L	358	Standard
	Ba	135	228933.6	0.6	**101.8502**	2.310	2.3	ug/L	64	Standard
	Ce	140	77712.1	1.2				ug/L	42	Standard
>	Tb	159	1080497.1	1.2				ug/L	1021298	Standard
	Ho	165	7246.7	3.8				ug/L	12	Standard
	Tl	203	1292.4	19.4	**0.1374**	0.024	17.7	ug/L	17	Standard
	Tl	205	3170.3	17.2	**0.1343**	0.021	15.4	ug/L	42	Standard
	Pb	206	1920.8	11.0	**0.1847**	0.024	12.7	ug/L	452	Standard
	Pb	207	1658.4	11.8	**0.1827**	0.024	13.2	ug/L	399	Standard
	Pb	208	1940.0	9.9	**0.1765**	0.019	11.0	ug/L	467	Standard
	U	238	255.3	42.1	**0.0399**	0.017	41.9	ug/L	8	Standard
>	Bi	209	639387.0	2.0				ug/L	599665	Standard

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⌈	**Na**	23	26.7	28.6	**9.7028**	3.416	35.2	mg/L	0	Standard
|	**Mg**	24	2885.3	6.8	**29.7073**	2.811	9.5	mg/L	30	Standard
|	**K**	39	506.7	4.4	**2.4707**	0.048	1.9	mg/L	18	Standard
|	**Ca**	43	78.3	3.7	**7.2459**	0.995	13.7	mg/L	65	Standard
|	**Fe**	54	37.6	46.3	**-0.0242**	0.100	412.6	mg/L	40	Standard
|	**Fe**	57	401.7	17.4	**1.4198**	1.544	108.7	mg/L	342	Standard
⌊>	**Sc-1**	45	39954.3	2.6				mg/L	40360	Standard
	Cl	35	2.0	100.0				ug/L	3	Standard
	Kr	83	4.0	0.0				ug/L	7	Standard
	Br	81	22236.3	3.5				ug/L	2587	Standard
	P	31	68.3	40.3				ug/L	95	Standard
	S	34	33.3	22.9				ug/L	28	Standard
	Sr	88	165.0	21.0				ug/L	207	Standard
	C	12	23.3	24.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	40.0	25.0				mg/L	3	Standard
	Dy	164	10922.4	1.7				mg/L	6	Standard
	Ho-1	165	7246.7	3.8				mg/L	12	Standard
	Er	166	6438.0	2.2				mg/L	20	Standard
	I	127	171216.9	5.0				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.134	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.373	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.595
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.624
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703117602PS WG607276-01
Sample Date/Time: Thursday, March 23, 2017 16:44:37
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	290880.7	0.7				ug/L	269762	Standard
	Be	9	135743.9	2.3	**49.3022**	1.150	2.3	ug/L	22	Standard
	Al	27	9918518.8	2.5	**50.0446**	1.249	2.5	ug/L	1527	Standard
	Sc	45	39051.9	2.1				ug/L	40360	Standard
	Ti	47	336.7	20.5	**1.2462**	0.302	24.2	ug/L	47	Standard
	V	51	421082.3	1.5	**48.9008**	1.128	2.3	ug/L	1402	Standard
	Cr	52	412370.7	1.0	**49.2351**	1.074	2.2	ug/L	6348	Standard
	Cr	53	53723.4	1.1	**51.9932**	0.803	1.5	ug/L	505	Standard
	Mn	55	2745427.6	1.6	**194.9472**	5.453	2.8	ug/L	3411	Standard
	Co	59	605571.4	1.2	**54.8598**	1.322	2.4	ug/L	825	Standard
	Ni	60	120101.5	1.7	**50.6223**	1.385	2.7	ug/L	576	Standard
	Cu	65	124900.8	1.4	**50.7038**	1.787	3.5	ug/L	632	Standard
	Zn	66	80775.1	1.2	**55.0658**	1.316	2.4	ug/L	430	Standard
>	Ge	72	847517.0	2.4				ug/L	823185	Standard
	As	75	75735.6	1.2	**51.6227**	1.574	3.0	ug/L	-13	Standard
	Se	82	6982.0	2.4	**52.1181**	1.037	2.0	ug/L	20	Standard
	Se-1	77	5410.6	1.6	**55.4720**	1.011	1.8	ug/L	106	Standard
>	Ga	71	361.7	9.7				mg/L	237	Standard
	Rb	85	56896.6	1.0				ug/L	52	Standard
	Y	89	679040.0	2.1				ug/L	565679	Standard
>	Rh	103	108.3	11.6				ug/L	18	Standard
	Mo	98	399.4	9.7	**0.0705**	0.009	12.3	ug/L	56	Standard
	Ag	107	338772.5	0.4	**44.9910**	0.311	0.7	ug/L	128	Standard
	Cd	111	111439.1	0.7	**51.3944**	0.737	1.4	mg/L	8	Standard
	Cd	114	279148.1	0.6	**50.3081**	0.425	0.8	ug/L	49	Standard
>	In	115	695623.8	0.8				ug/L	692408	Standard
	Sn	118	443.7	1.8	**0.1423**	0.006	4.0	ug/L	269	Standard
	Sb	123	296509.0	0.5	**52.3107**	0.687	1.3	ug/L	358	Standard
	Ba	135	341607.0	1.1	**153.6693**	2.960	1.9	ug/L	64	Standard
	Ce	140	76864.5	0.5				ug/L	42	Standard
>	Tb	159	1094252.7	0.7				ug/L	1021298	Standard
	Ho	165	7186.7	3.2				ug/L	12	Standard
	Tl	203	470856.2	0.6	**51.0874**	0.296	0.6	ug/L	17	Standard
	Tl	205	1123448.8	1.2	**47.9077**	0.498	1.0	ug/L	42	Standard
	Pb	206	380955.9	1.2	**51.3374**	0.550	1.1	ug/L	452	Standard
	Pb	207	340376.1	1.1	**50.7144**	0.455	0.9	ug/L	399	Standard
	Pb	208	394919.2	0.8	**50.2432**	0.309	0.6	ug/L	467	Standard
	U	238	329027.0	0.9	**54.1598**	0.351	0.6	ug/L	8	Standard
>	Bi	209	637136.7	0.3				ug/L	599665	Standard

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⌈	**Na**	23	25.0	20.0	**9.1928**	1.965	21.4	mg/L	0	Standard
|	**Mg**	24	2805.3	6.6	**29.5037**	1.975	6.7	mg/L	30	Standard
|	**K**	39	490.0	12.2	**2.4406**	0.264	10.8	mg/L	18	Standard
|	**Ca**	43	70.0	14.3	**5.3334**	2.580	48.4	mg/L	65	Standard
|	**Fe**	54	49.3	31.7	**0.0451**	0.092	204.8	mg/L	40	Standard
|	**Fe**	57	291.7	19.0	**-0.6100**	1.175	192.7	mg/L	342	Standard
⌊>	**Sc-1**	45	39051.9	2.1				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	2.3	65.5				ug/L	7	Standard
	Br	81	22606.9	5.1				ug/L	2587	Standard
	P	31	70.0	21.4				ug/L	95	Standard
	S	34	30.0	60.1				ug/L	28	Standard
	Sr	88	151.7	24.7				ug/L	207	Standard
	C	12	46.7	32.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	33.3	86.6				mg/L	3	Standard
	Dy	164	10887.8	4.3				mg/L	6	Standard
	Ho-1	165	7186.7	3.2				mg/L	12	Standard
	Er	166	6604.8	1.9				mg/L	20	Standard
	I	127	168564.5	5.8				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.829	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		102.956	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.464
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.249
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703117602SDL WG607276-02
Sample Date/Time: Thursday, March 23, 2017 16:47:43
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270604.1	2.1				ug/L	269762	Standard
	Be	9	158.3	9.1	**0.0503**	0.007	13.3	ug/L	22	Standard
	Al	27	1686130.6	1.5	**9.1468**	0.314	3.4	ug/L	1527	Standard
	Sc	45	35892.5	0.8				ug/L	40360	Standard
	Ti	47	357.3	132.5	**1.4508**	2.187	150.7	ug/L	47	Standard
	V	51	1488.7	35.2	**0.0243**	0.065	268.5	ug/L	1402	Standard
	Cr	52	6922.3	16.9	**0.1048**	0.151	144.2	ug/L	6348	Standard
	Cr	53	1376.7	12.5	**0.9041**	0.179	19.9	ug/L	505	Standard
	Mn	55	339176.7	0.1	**25.6378**	0.095	0.4	ug/L	3411	Standard
	Co	59	13637.1	1.8	**1.2633**	0.022	1.7	ug/L	825	Standard
	Ni	60	1824.5	43.4	**0.5883**	0.359	61.0	ug/L	576	Standard
	Cu	65	1281.7	7.9	**0.2984**	0.044	14.8	ug/L	632	Standard
	Zn	66	2919.3	1.7	**1.8365**	0.034	1.8	ug/L	430	Standard
>	Ge	72	789431.6	0.3				ug/L	823185	Standard
	As	75	-16.4	217.3	**0.0319**	0.026	81.8	ug/L	-13	Standard
	Se	82	30.9	25.1	**0.0965**	0.062	64.1	ug/L	20	Standard
	Se-1	77	220.7	4.1	**1.3916**	0.100	7.2	ug/L	106	Standard
>	Ga	71	125.0	6.9				mg/L	237	Standard
	Rb	85	11275.9	0.8				ug/L	52	Standard
	Y	89	553950.3	1.0				ug/L	565679	Standard
>	Rh	103	33.3	52.7				ug/L	18	Standard
	Mo	98	293.3	65.1	**0.0514**	0.044	86.4	ug/L	56	Standard
	Ag	107	192.0	14.5	**0.0077**	0.004	51.5	ug/L	128	Standard
	Cd	111	74.3	10.0	**0.0268**	0.004	13.9	mg/L	8	Standard
	Cd	114	180.7	11.3	**0.0210**	0.004	18.3	ug/L	49	Standard
>	In	115	653803.3	0.2				ug/L	692408	Standard
	Sn	118	223.3	6.0	**-0.0257**	0.012	46.8	ug/L	269	Standard
	Sb	123	1259.7	9.1	**0.2216**	0.021	9.5	ug/L	358	Standard
	Ba	135	46151.9	1.3	**22.0561**	0.327	1.5	ug/L	64	Standard
	Ce	140	15674.8	2.9				ug/L	42	Standard
>	Tb	159	1012918.3	0.4				ug/L	1021298	Standard
	Ho	165	1371.7	4.4				ug/L	12	Standard
	Tl	203	1082.0	34.4	**0.1188**	0.040	33.3	ug/L	17	Standard
	Tl	205	2610.2	38.8	**0.1143**	0.043	37.2	ug/L	42	Standard
	Pb	206	1337.4	25.4	**0.1126**	0.044	39.3	ug/L	452	Standard
	Pb	207	1118.7	27.7	**0.1083**	0.045	41.3	ug/L	399	Standard
	Pb	208	1328.7	26.8	**0.1048**	0.044	41.7	ug/L	467	Standard
	U	238	234.0	116.6	**0.0376**	0.045	120.8	ug/L	8	Standard
>	Bi	209	617021.5	1.6				ug/L	599665	Standard

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⌈	**Na**	23	6.7	114.6	**1.6835**	3.563	211.7	mg/L	0	Standard
|	**Mg**	24	660.0	9.9	**7.2934**	0.730	10.0	mg/L	30	Standard
|	**K**	39	110.0	24.1	**0.4960**	0.153	30.9	mg/L	18	Standard
|	**Ca**	43	43.3	6.7	**-1.1912**	0.979	82.2	mg/L	65	Standard
|	**Fe**	54	22.8	11.7	**-0.0924**	0.017	18.3	mg/L	40	Standard
|	**Fe**	57	353.3	5.0	**1.2350**	0.347	28.1	mg/L	342	Standard
⌊>	**Sc-1**	45	35892.5	0.8				mg/L	40360	Standard
	Cl	35	4.0	50.0				ug/L	3	Standard
	Kr	83	3.0	88.2				ug/L	7	Standard
	Br	81	6338.0	1.5				ug/L	2587	Standard
	P	31	56.7	39.8				ug/L	95	Standard
	S	34	36.7	47.9				ug/L	28	Standard
	Sr	88	170.0	20.4				ug/L	207	Standard
	C	12	33.3	96.4				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	33.3	75.5				mg/L	3	Standard
	Dy	164	2335.5	7.9				mg/L	6	Standard
	Ho-1	165	1371.7	4.4				mg/L	12	Standard
	Er	166	1350.1	13.2				mg/L	20	Standard
	I	127	43596.0	0.6				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.312	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		95.900	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.425
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.894
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703117602SDL WG607276-02
Sample Date/Time: Thursday, March 23, 2017 16:50:48
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	260444.4	0.8				ug/L	269762	Standard
	Be	9	41.7	18.3	**0.0053**	0.003	57.4	ug/L	22	Standard
	Al	27	270264.8	2.1	**1.5202**	0.021	1.4	ug/L	1527	Standard
	Sc	45	35167.4	0.6				ug/L	40360	Standard
	Ti	47	42.3	23.9	**0.0009**	0.045	5135.1	ug/L	47	Standard
	V	51	1238.5	5.7	**-0.0035**	0.008	218.0	ug/L	1402	Standard
	Cr	52	5337.3	0.7	**-0.0860**	0.012	14.3	ug/L	6348	Standard
	Cr	53	565.0	1.5	**0.0654**	0.003	5.2	ug/L	505	Standard
	Mn	55	55413.8	1.0	**4.0810**	0.064	1.6	ug/L	3411	Standard
	Co	59	2418.9	1.3	**0.1766**	0.005	2.9	ug/L	825	Standard
	Ni	60	633.7	6.4	**0.0538**	0.021	39.5	ug/L	576	Standard
	Cu	65	751.7	1.8	**0.0737**	0.007	8.8	ug/L	632	Standard
	Zn	66	2212.8	3.1	**1.3531**	0.061	4.5	ug/L	430	Standard
>	Ge	72	772281.2	1.1				ug/L	823185	Standard
	As	75	-20.7	113.1	**0.0287**	0.017	59.9	ug/L	-13	Standard
	Se	82	18.0	25.5	**-0.0039**	0.039	999.3	ug/L	20	Standard
	Se-1	77	123.7	11.8	**0.3353**	0.180	53.6	ug/L	106	Standard
>	Ga	71	96.7	24.4				mg/L	237	Standard
	Rb	85	1843.4	2.1				ug/L	52	Standard
	Y	89	521347.8	0.1				ug/L	565679	Standard
>	Rh	103	45.0	29.4				ug/L	18	Standard
	Mo	98	142.6	4.6	**0.0169**	0.002	9.2	ug/L	56	Standard
	Ag	107	145.7	5.2	**0.0014**	0.001	68.1	ug/L	128	Standard
	Cd	111	16.5	22.9	**-0.0015**	0.002	125.0	mg/L	8	Standard
	Cd	114	66.5	38.5	**-0.0007**	0.005	720.9	ug/L	49	Standard
>	In	115	644626.3	0.5				ug/L	692408	Standard
	Sn	118	191.3	25.6	**-0.0510**	0.044	86.5	ug/L	269	Standard
	Sb	123	267.6	13.7	**0.0361**	0.007	19.7	ug/L	358	Standard
	Ba	135	7477.2	1.0	**3.5938**	0.031	0.9	ug/L	64	Standard
	Ce	140	2371.9	9.9				ug/L	42	Standard
>	Tb	159	968652.1	1.2				ug/L	1021298	Standard
	Ho	165	241.7	14.1				ug/L	12	Standard
	Tl	203	568.7	5.9	**0.0633**	0.004	6.6	ug/L	17	Standard
	Tl	205	1423.4	4.4	**0.0641**	0.003	5.4	ug/L	42	Standard
	Pb	206	692.7	4.6	**0.0257**	0.005	19.3	ug/L	452	Standard
	Pb	207	627.3	7.0	**0.0355**	0.006	17.2	ug/L	399	Standard
	Pb	208	707.7	2.4	**0.0260**	0.003	11.4	ug/L	467	Standard
	U	238	13.0	81.4	**0.0005**	0.002	358.3	ug/L	8	Standard
>	Bi	209	601674.2	1.0				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	113.3	35.9	**0.9929**	0.477	48.0	mg/L	30	Standard
	K	39	35.0	14.3	**0.0706**	0.030	42.9	mg/L	18	Standard
	Ca	43	40.0	37.5	**-1.9621**	4.844	246.9	mg/L	65	Standard
	Fe	54	12.8	20.9	**-0.1512**	0.016	10.7	mg/L	40	Standard
	Fe	57	310.0	7.0	**0.4298**	0.447	104.0	mg/L	342	Standard
>	**Sc-1**	45	35167.4	0.6				mg/L	40360	Standard
	Cl	35	1.3	173.2				ug/L	3	Standard
	Kr	83	3.0	66.7				ug/L	7	Standard
	Br	81	2960.3	9.5				ug/L	2587	Standard
	P	31	66.7	15.6				ug/L	95	Standard
	S	34	30.0	76.4				ug/L	28	Standard
	Sr	88	145.0	19.2				ug/L	207	Standard
	C	12	20.0	86.6				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	363.4	8.4				mg/L	6	Standard
	Ho-1	165	241.7	14.1				mg/L	12	Standard
	Er	166	206.7	14.8				mg/L	20	Standard
	I	127	13075.6	1.8				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		96.546	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.816	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	93.099
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.335
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, March 23, 2017 16:53:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	279711.8	1.2				ug/L	269762	Standard
	Be	9	126390.0	0.1	**47.7414**	0.629	1.3	ug/L	22	Standard
	Al	27	8992931.8	2.0	**47.1824**	0.421	0.9	ug/L	1527	Standard
	Sc	45	38149.7	3.3				ug/L	40360	Standard
	Ti	47	22487.3	1.5	**98.2868**	0.808	0.8	ug/L	47	Standard
	V	51	404712.1	1.6	**47.9881**	0.374	0.8	ug/L	1402	Standard
	Cr	52	393982.1	1.9	**48.0095**	0.232	0.5	ug/L	6348	Standard
	Cr	53	48138.0	2.3	**47.5226**	0.018	0.0	ug/L	505	Standard
	Mn	55	677786.8	1.8	**48.9587**	0.436	0.9	ug/L	3411	Standard
	Co	59	529179.5	1.1	**48.9455**	0.619	1.3	ug/L	825	Standard
	Ni	60	112071.3	1.5	**48.2231**	0.672	1.4	ug/L	576	Standard
	Cu	65	116830.4	1.4	**48.4064**	0.580	1.2	ug/L	632	Standard
	Zn	66	70467.2	1.1	**49.0232**	0.912	1.9	ug/L	430	Standard
>	Ge	72	829858.1	2.3				ug/L	823185	Standard
	As	75	70082.1	1.6	**48.7726**	0.487	1.0	ug/L	-13	Standard
	Se	82	6463.4	1.9	**49.2627**	0.303	0.6	ug/L	20	Standard
	Se-1	77	4640.0	3.4	**48.4304**	0.603	1.2	ug/L	106	Standard
>	Ga	71	151.7	6.9				mg/L	237	Standard
	Rb	85	476.7	9.7				ug/L	52	Standard
	Y	89	561808.0	1.7				ug/L	565679	Standard
>	Rh	103	56.7	18.4				ug/L	18	Standard
	Mo	98	458268.0	2.2	**99.3406**	0.817	0.8	ug/L	56	Standard
	Ag	107	374878.2	2.3	**49.4599**	0.096	0.2	ug/L	128	Standard
	Cd	111	108580.9	2.5	**49.7454**	0.652	1.3	mg/L	8	Standard
	Cd	114	279557.8	1.8	**50.0544**	0.335	0.7	ug/L	49	Standard
>	In	115	700210.5	2.3				ug/L	692408	Standard
	Sn	118	62834.4	1.1	**50.7022**	0.630	1.2	ug/L	269	Standard
	Sb	123	282250.1	1.0	**49.4746**	0.664	1.3	ug/L	358	Standard
	Ba	135	107756.2	0.9	**48.1356**	0.645	1.3	ug/L	64	Standard
	Ce	140	353.3	11.5				ug/L	42	Standard
>	Tb	159	1046955.3	0.8				ug/L	1021298	Standard
	Ho	165	15.0	33.3				ug/L	12	Standard
	Tl	203	447618.8	0.5	**48.7155**	0.343	0.7	ug/L	17	Standard
	Tl	205	1069283.3	1.7	**45.7400**	0.893	2.0	ug/L	42	Standard
	Pb	206	361870.6	0.9	**48.9118**	0.373	0.8	ug/L	452	Standard
	Pb	207	326405.3	1.1	**48.7782**	0.080	0.2	ug/L	399	Standard
	Pb	208	373066.0	1.5	**47.6022**	0.264	0.6	ug/L	467	Standard
	U	238	312936.5	0.9	**51.6696**	0.429	0.8	ug/L	8	Standard
>	Bi	209	635206.5	1.0				ug/L	599665	Standard

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⌈	**Na**	23	11.7	24.7	**3.6420**	1.094	30.0	mg/L	0	Standard
|	**Mg**	24	481.7	8.8	**4.9139**	0.632	12.9	mg/L	30	Standard
|	**K**	39	810.0	9.6	**4.2407**	0.560	13.2	mg/L	18	Standard
|	**Ca**	43	43.3	54.5	**-1.8422**	7.408	402.1	mg/L	65	Standard
|	**Fe**	54	811.3	9.0	**4.3947**	0.453	10.3	mg/L	40	Standard
|	**Fe**	57	516.7	6.8	**4.1282**	0.646	15.7	mg/L	342	Standard
⌊>	**Sc-1**	45	38149.7	3.3				mg/L	40360	Standard
	Cl	35	2.0	100.0				ug/L	3	Standard
	Kr	83	2.3	24.7				ug/L	7	Standard
	Br	81	3000.3	11.7				ug/L	2587	Standard
	P	31	106.7	14.3				ug/L	95	Standard
	S	34	45.0	19.2				ug/L	28	Standard
	Sr	88	168.3	22.7				ug/L	207	Standard
	C	12	13.3	43.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	26.0	81.6				mg/L	6	Standard
	Ho-1	165	15.0	33.3				mg/L	12	Standard
	Er	166	13.3	114.6				mg/L	20	Standard
	I	127	3360.4	3.5				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	95.483		
⌊	Al	27	94.365		
⌈	Sc	45			
|	Ti	47	98.287		
|	V	51	95.976		
|	Cr	52	96.019		
|	Cr	53			
|	Mn	55	97.917		
|	Co	59	97.891		
|	Ni	60	96.446		
|	Cu	65	96.813		
|	Zn	66	98.046		
|>	Ge	72		100.811	
|	As	75	97.545		
|	Se	82	98.525		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	99.341	
|	Ag	107	98.920	
|	Cd	111	99.491	
|	Cd	114		
|>	In	115		101.127
|	Sn	118	101.404	
|	Sb	123	98.949	
⌊	Ba	135	96.271	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	97.431	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	95.204	
|	U	238	103.339	
⌊>	Bi	209		105.927
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, March 23, 2017 16:57:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	272296.5	3.0				ug/L	269762	Standard
	Be	9	61.7	9.4	**0.0123**	0.002	13.1	ug/L	22	Standard
	Al	27	1315.1	16.5	**0.0043**	0.001	26.3	ug/L	1527	Standard
	Sc	45	37730.3	2.1				ug/L	40360	Standard
	Ti	47	35.7	33.9	**-0.0396**	0.052	132.2	ug/L	47	Standard
	V	51	1166.5	1.2	**-0.0207**	0.002	10.2	ug/L	1402	Standard
	Cr	52	5391.3	2.2	**-0.1175**	0.008	6.8	ug/L	6348	Standard
	Cr	53	405.0	7.4	**-0.1293**	0.036	27.9	ug/L	505	Standard
	Mn	55	2173.2	2.7	**-0.0810**	0.003	3.4	ug/L	3411	Standard
	Co	59	458.7	5.7	**-0.0209**	0.002	10.4	ug/L	825	Standard
	Ni	60	490.7	7.0	**-0.0251**	0.014	55.5	ug/L	576	Standard
	Cu	65	713.4	4.6	**0.0393**	0.010	24.8	ug/L	632	Standard
	Zn	66	403.7	2.9	**-0.0242**	0.006	24.6	ug/L	430	Standard
>	Ge	72	816156.8	1.4				ug/L	823185	Standard
	As	75	-23.9	93.4	**0.0271**	0.016	58.0	ug/L	-13	Standard
	Se	82	21.6	20.3	**0.0161**	0.032	197.7	ug/L	20	Standard
	Se-1	77	100.3	16.5	**0.0054**	0.184	3391.0	ug/L	106	Standard
>	Ga	71	106.7	17.7				mg/L	237	Standard
	Rb	85	78.3	32.1				ug/L	52	Standard
	Y	89	559302.3	2.7				ug/L	565679	Standard
>	Rh	103	15.0	57.7				ug/L	18	Standard
	Mo	98	453.6	14.3	**0.0830**	0.013	15.6	ug/L	56	Standard
	Ag	107	152.3	6.1	**0.0010**	0.002	151.4	ug/L	128	Standard
	Cd	111	5.4	55.2	**-0.0072**	0.001	19.8	mg/L	8	Standard
	Cd	114	57.0	17.1	**-0.0032**	0.002	57.3	ug/L	49	Standard
>	In	115	689552.4	1.5				ug/L	692408	Standard
	Sn	118	296.7	6.1	**0.0247**	0.018	74.8	ug/L	269	Standard
	Sb	123	554.0	14.9	**0.0838**	0.015	18.4	ug/L	358	Standard
	Ba	135	61.0	9.1	**-0.0087**	0.002	24.2	ug/L	64	Standard
	Ce	140	13.3	21.7				ug/L	42	Standard
>	Tb	159	1024473.0	1.1				ug/L	1021298	Standard
	Ho	165	5.0	0.0				ug/L	12	Standard
	Tl	203	76.0	27.2	**0.0062**	0.002	35.3	ug/L	17	Standard
	Tl	205	166.7	37.5	**0.0069**	0.003	38.0	ug/L	42	Standard
	Pb	206	502.7	4.1	**-0.0048**	0.002	49.7	ug/L	452	Standard
	Pb	207	434.3	7.3	**0.0019**	0.004	238.5	ug/L	399	Standard
	Pb	208	504.7	9.2	**-0.0046**	0.005	119.5	ug/L	467	Standard
	U	238	43.7	13.0	**0.0055**	0.001	16.7	ug/L	8	Standard
>	Bi	209	630732.2	0.9				ug/L	599665	Standard

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⌈	**Na**	23	1.7	173.2	**-0.6736**	1.279	189.8	mg/L	0	Standard
|	**Mg**	24	21.7	53.3	**-0.1081**	0.121	111.9	mg/L	30	Standard
|	**K**	39	26.7	21.7	**0.0111**	0.031	276.6	mg/L	18	Standard
|	**Ca**	43	30.0	60.1	**-5.7664**	5.434	94.2	mg/L	65	Standard
|	**Fe**	54	29.6	85.1	**-0.0582**	0.147	251.9	mg/L	40	Standard
|	**Fe**	57	318.3	9.6	**0.1345**	0.600	446.1	mg/L	342	Standard
⌊>	**Sc-1**	45	37730.3	2.1				mg/L	40360	Standard
	Cl	35	2.7	86.6				ug/L	3	Standard
	Kr	83	3.0	66.7				ug/L	7	Standard
	Br	81	2826.9	4.2				ug/L	2587	Standard
	P	31	58.3	38.7				ug/L	95	Standard
	S	34	21.7	35.3				ug/L	28	Standard
	Sr	88	153.3	7.5				ug/L	207	Standard
	C	12	10.0	100.0				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.4	50.0				mg/L	6	Standard
	Ho-1	165	5.0	0.0				mg/L	12	Standard
	Er	166	20.0	50.0				mg/L	20	Standard
	I	127	5827.8	5.4				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.146	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.588
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	105.181
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116104
Sample Date/Time: Thursday, March 23, 2017 17:00:08
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	288246.9	2.2				ug/L	269762	Standard
	Be	9	160.0	30.1	**0.0468**	0.016	34.9	ug/L	22	Standard
	Al	27	8355692.9	2.0	**42.5488**	0.745	1.8	ug/L	1527	Standard
	Sc	45	39681.9	2.6				ug/L	40360	Standard
	Ti	47	1104.0	4.9	**4.6223**	0.231	5.0	ug/L	47	Standard
	V	51	4310.4	4.0	**0.3494**	0.019	5.4	ug/L	1402	Standard
	Cr	52	10064.0	2.3	**0.4465**	0.026	5.8	ug/L	6348	Standard
	Cr	53	2841.9	11.1	**2.2878**	0.304	13.3	ug/L	505	Standard
	Mn	55	4962479.7	1.0	**358.8854**	1.831	0.5	ug/L	3411	Standard
	Co	59	1946.8	3.5	**0.1156**	0.006	4.8	ug/L	825	Standard
	Ni	60	1924.1	1.7	**0.5888**	0.018	3.1	ug/L	576	Standard
	Cu	65	1818.8	1.2	**0.4925**	0.006	1.2	ug/L	632	Standard
	Zn	66	4057.5	1.6	**2.5201**	0.031	1.2	ug/L	430	Standard
>	Ge	72	832299.8	0.5				ug/L	823185	Standard
	As	75	1912.0	1.6	**1.3693**	0.022	1.6	ug/L	-13	Standard
	Se	82	400.9	3.9	**2.9038**	0.124	4.3	ug/L	20	Standard
	Se-1	77	478.3	11.6	**4.0071**	0.601	15.0	ug/L	106	Standard
>	Ga	71	425.0	12.7				mg/L	237	Standard
	Rb	85	20907.8	1.4				ug/L	52	Standard
	Y	89	578868.6	2.6				ug/L	565679	Standard
>	Rh	103	88.3	27.9				ug/L	18	Standard
	Mo	98	1557.8	3.4	**0.3253**	0.014	4.2	ug/L	56	Standard
	Ag	107	151.0	15.0	**0.0008**	0.003	419.3	ug/L	128	Standard
	Cd	111	48.0	18.0	**0.0126**	0.004	33.3	mg/L	8	Standard
	Cd	114	234.2	11.6	**0.0288**	0.005	16.6	ug/L	49	Standard
>	In	115	691520.6	0.8				ug/L	692408	Standard
	Sn	118	712.0	3.3	**0.3645**	0.015	4.1	ug/L	269	Standard
	Sb	123	442.9	17.9	**0.0638**	0.015	23.0	ug/L	358	Standard
	Ba	135	258062.1	0.1	**116.7601**	0.904	0.8	ug/L	64	Standard
	Ce	140	12536.9	2.7				ug/L	42	Standard
>	Tb	159	1057835.1	0.8				ug/L	1021298	Standard
	Ho	165	163.3	4.7				ug/L	12	Standard
	Tl	203	1140.0	5.2	**0.1237**	0.007	5.7	ug/L	17	Standard
	Tl	205	2588.6	17.0	**0.1121**	0.020	17.6	ug/L	42	Standard
	Pb	206	1602.1	2.8	**0.1465**	0.007	5.1	ug/L	452	Standard
	Pb	207	1323.1	1.5	**0.1371**	0.003	2.5	ug/L	399	Standard
	Pb	208	1532.4	2.7	**0.1290**	0.006	4.5	ug/L	467	Standard
	U	238	170.3	8.7	**0.0267**	0.002	8.5	ug/L	8	Standard
>	Bi	209	626740.2	0.6				ug/L	599665	Standard

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⌈	**Na**	23	8.3	91.7	**2.0527**	3.209	156.3	mg/L	0	Standard
|	**Mg**	24	2705.2	5.8	**27.9646**	0.915	3.3	mg/L	30	Standard
|	**K**	39	171.7	11.0	**0.7569**	0.119	15.7	mg/L	18	Standard
|	**Ca**	43	58.3	27.6	**1.7102**	4.380	256.1	mg/L	65	Standard
|	**Fe**	54	3558.2	4.6	**19.2802**	1.379	7.2	mg/L	40	Standard
|	**Fe**	57	1331.7	6.6	**19.7686**	1.447	7.3	mg/L	342	Standard
⌊>	**Sc-1**	45	39681.9	2.6				mg/L	40360	Standard
	Cl	35	2.7	114.6				ug/L	3	Standard
	Kr	83	4.0	43.3				ug/L	7	Standard
	Br	81	206536.9	4.8				ug/L	2587	Standard
	P	31	81.7	28.9				ug/L	95	Standard
	S	34	26.7	43.3				ug/L	28	Standard
	Sr	88	158.3	17.4				ug/L	207	Standard
	C	12	16.7	34.6				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	225.4	34.0				mg/L	6	Standard
	Ho-1	165	163.3	4.7				mg/L	12	Standard
	Er	166	166.7	21.1				mg/L	20	Standard
	I	127	184408.3	7.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.852	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.107	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.872
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.515
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703116105
Sample Date/Time: Thursday, March 23, 2017 17:03:14
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	319328.5	1.0				ug/L	269762	Standard
	Be	9	496.7	10.3	**0.1529**	0.018	11.9	ug/L	22	Standard
	Al	27	19800620.8	1.0	**91.0119**	1.227	1.3	ug/L	1527	Standard
	Sc	45	40768.1	1.5				ug/L	40360	Standard
	Ti	47	639.3	3.7	**2.6091**	0.077	3.0	ug/L	47	Standard
	V	51	2481.9	22.7	**0.1347**	0.070	52.3	ug/L	1402	Standard
	Cr	52	13658.3	15.8	**0.9022**	0.289	32.0	ug/L	6348	Standard
	Cr	53	5522.7	8.4	**4.9926**	0.529	10.6	ug/L	505	Standard
	Mn	55	1483977.4	0.5	**107.7778**	1.201	1.1	ug/L	3411	Standard
	Co	59	13071.3	0.5	**1.1497**	0.015	1.3	ug/L	825	Standard
	Ni	60	12979.6	1.2	**5.3868**	0.013	0.2	ug/L	576	Standard
	Cu	65	3267.0	5.5	**1.1024**	0.090	8.2	ug/L	632	Standard
	Zn	66	15012.8	1.7	**10.2270**	0.232	2.3	ug/L	430	Standard
>	Ge	72	827550.3	1.1				ug/L	823185	Standard
	As	75	2018.5	18.4	**1.4499**	0.246	17.0	ug/L	-13	Standard
	Se	82	771.5	9.2	**5.7599**	0.486	8.4	ug/L	20	Standard
	Se-1	77	1313.4	7.7	**12.9801**	1.205	9.3	ug/L	106	Standard
>	Ga	71	345.0	12.6				mg/L	237	Standard
	Rb	85	11632.8	1.3				ug/L	52	Standard
	Y	89	593769.6	1.7				ug/L	565679	Standard
>	Rh	103	241.7	24.9				ug/L	18	Standard
	Mo	98	303.2	0.9	**0.0512**	0.001	2.9	ug/L	56	Standard
	Ag	107	149.3	4.7	**0.0009**	0.001	122.2	ug/L	128	Standard
	Cd	111	132.6	14.0	**0.0531**	0.009	17.1	mg/L	8	Standard
	Cd	114	401.1	4.6	**0.0605**	0.003	4.3	ug/L	49	Standard
>	In	115	678018.5	1.5				ug/L	692408	Standard
	Sn	118	394.3	3.7	**0.1104**	0.012	10.7	ug/L	269	Standard
	Sb	123	467.0	11.8	**0.0698**	0.011	15.9	ug/L	358	Standard
	Ba	135	73228.9	1.3	**33.7739**	0.916	2.7	ug/L	64	Standard
	Ce	140	11279.2	0.3				ug/L	42	Standard
>	Tb	159	1061405.6	0.8				ug/L	1021298	Standard
	Ho	165	403.3	14.4				ug/L	12	Standard
	Tl	203	654.0	14.4	**0.0715**	0.010	14.7	ug/L	17	Standard
	Tl	205	1595.1	9.4	**0.0703**	0.007	9.4	ug/L	42	Standard
	Pb	206	1187.0	2.8	**0.0929**	0.005	5.2	ug/L	452	Standard
	Pb	207	983.7	5.7	**0.0887**	0.008	9.4	ug/L	399	Standard
	Pb	208	1201.4	6.7	**0.0893**	0.010	11.6	ug/L	467	Standard
	U	238	85.7	14.0	**0.0129**	0.002	16.0	ug/L	8	Standard
>	Bi	209	614123.0	0.2				ug/L	599665	Standard

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⌈	**Na**	23	36.7	47.9	**13.5418**	7.300	53.9	mg/L	0	Standard
|	**Mg**	24	19649.4	1.5	**199.9262**	3.573	1.8	mg/L	30	Standard
|	**K**	39	45.0	19.2	**0.0925**	0.041	44.8	mg/L	18	Standard
|	**Ca**	43	50.0	52.0	**-1.0322**	7.029	680.9	mg/L	65	Standard
|	**Fe**	54	61.2	28.7	**0.0968**	0.098	101.4	mg/L	40	Standard
|	**Fe**	57	386.7	2.7	**0.9552**	0.185	19.4	mg/L	342	Standard
⌊>	**Sc-1**	45	40768.1	1.5				mg/L	40360	Standard
	Cl	35	1.3	173.2				ug/L	3	Standard
	Kr	83	4.7	65.5				ug/L	7	Standard
	Br	81	495734.2	1.7				ug/L	2587	Standard
	P	31	78.3	20.5				ug/L	95	Standard
	S	34	26.7	60.3				ug/L	28	Standard
	Sr	88	193.3	16.4				ug/L	207	Standard
	C	12	56.7	50.9				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	173.2				mg/L	3	Standard
	Dy	164	542.4	8.9				mg/L	6	Standard
	Ho-1	165	403.3	14.4				mg/L	12	Standard
	Er	166	436.7	24.3				mg/L	20	Standard
	I	127	308038.7	5.2				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		118.374	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.530	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⎣	Rb	85	
⎡	Y	89	
⎣>	Rh	103	
⎡	Mo	98	
⎢	Ag	107	
⎢	Cd	111	
⎢	Cd	114	
⎢>	In	115	97.922
⎢	Sn	118	
⎢	Sb	123	
⎣	Ba	135	
⎡	Ce	140	
⎣>	Tb	159	
⎡	Ho	165	
⎢	Tl	203	
⎢	Tl	205	
⎢	Pb	206	
⎢	Pb	207	
⎢	Pb	208	
⎢	U	238	
⎣>	Bi	209	102.411
⎡	Na	23	
⎢	Mg	24	
⎢	K	39	
⎢	Ca	43	
⎢	Fe	54	
⎢	Fe	57	
⎣>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703116107
Sample Date/Time: Thursday, March 23, 2017 17:06:19
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	306029.5	2.8				ug/L	269762	Standard
	Be	9	91.7	12.6	**0.0200**	0.003	15.7	ug/L	22	Standard
	Al	27	9892207.1	2.4	**47.4454**	0.570	1.2	ug/L	1527	Standard
	Sc	45	40497.4	3.0				ug/L	40360	Standard
	Ti	47	211.3	7.1	**0.6819**	0.047	7.0	ug/L	47	Standard
	V	51	1112.5	15.9	**-0.0361**	0.018	50.0	ug/L	1402	Standard
	Cr	52	8427.3	1.2	**0.1966**	0.006	2.8	ug/L	6348	Standard
	Cr	53	2333.5	8.7	**1.6778**	0.225	13.4	ug/L	505	Standard
	Mn	55	19738904.4	1.2	**1362.7901**	7.857	0.6	ug/L	3411	Standard
	Co	59	20037.6	1.6	**1.7010**	0.008	0.4	ug/L	825	Standard
	Ni	60	2813.6	1.4	**0.9167**	0.023	2.5	ug/L	576	Standard
	Cu	65	1966.8	5.1	**0.5163**	0.026	5.1	ug/L	632	Standard
	Zn	66	4384.0	1.8	**2.6081**	0.063	2.4	ug/L	430	Standard
>	Ge	72	872324.2	1.7				ug/L	823185	Standard
	As	75	949.5	5.0	**0.6724**	0.041	6.0	ug/L	-13	Standard
	Se	82	172.6	7.6	**1.1033**	0.084	7.6	ug/L	20	Standard
	Se-1	77	311.0	2.4	**2.0745**	0.109	5.3	ug/L	106	Standard
>	Ga	71	458.3	2.3				mg/L	237	Standard
	Rb	85	13377.6	3.0				ug/L	52	Standard
	Y	89	603353.9	1.6				ug/L	565679	Standard
>	Rh	103	130.0	13.9				ug/L	18	Standard
	Mo	98	800.5	1.9	**0.1517**	0.003	1.7	ug/L	56	Standard
	Ag	107	161.7	22.8	**0.0012**	0.005	368.6	ug/L	128	Standard
	Cd	111	109.0	19.9	**0.0388**	0.010	25.1	mg/L	8	Standard
	Cd	114	260.2	17.0	**0.0316**	0.007	23.6	ug/L	49	Standard
>	In	115	721465.1	1.7				ug/L	692408	Standard
	Sn	118	365.7	3.2	**0.0681**	0.012	18.2	ug/L	269	Standard
	Sb	123	307.0	13.8	**0.0374**	0.008	20.4	ug/L	358	Standard
	Ba	135	277053.6	0.9	**120.1573**	1.153	1.0	ug/L	64	Standard
	Ce	140	720.0	11.2				ug/L	42	Standard
>	Tb	159	1109057.8	2.4				ug/L	1021298	Standard
	Ho	165	28.3	27.0				ug/L	12	Standard
	Tl	203	996.4	5.6	**0.1021**	0.005	5.1	ug/L	17	Standard
	Tl	205	2423.5	7.6	**0.0994**	0.007	7.2	ug/L	42	Standard
	Pb	206	749.7	5.5	**0.0242**	0.005	21.1	ug/L	452	Standard
	Pb	207	636.7	7.2	**0.0280**	0.007	23.6	ug/L	399	Standard
	Pb	208	779.7	5.9	**0.0262**	0.005	19.7	ug/L	467	Standard
	U	238	65.7	12.7	**0.0087**	0.001	15.6	ug/L	8	Standard
>	Bi	209	660823.5	0.6				ug/L	599665	Standard

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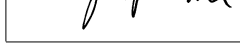

	Na	23	18.3	41.7	**6.1641**	3.316	53.8	mg/L	0	Standard
	Mg	24	1371.7	5.3	**13.7289**	0.663	4.8	mg/L	30	Standard
	K	39	110.0	4.5	**0.4245**	0.034	7.9	mg/L	18	Standard
	Ca	43	68.3	15.2	**4.1391**	2.358	57.0	mg/L	65	Standard
	Fe	54	921.0	6.8	**4.7213**	0.474	10.0	mg/L	40	Standard
	Fe	57	533.3	2.9	**3.8365**	0.169	4.4	mg/L	342	Standard
>	**Sc-1**	45	40497.4	3.0				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	2.7	57.3				ug/L	7	Standard
	Br	81	86231.4	2.1				ug/L	2587	Standard
	P	31	71.7	42.1				ug/L	95	Standard
	S	34	30.0	44.1				ug/L	28	Standard
	Sr	88	191.7	13.4				ug/L	207	Standard
	C	12	106.7	30.1				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	37.9	53.6				mg/L	6	Standard
	Ho-1	165	28.3	27.0				mg/L	12	Standard
	Er	166	43.3	87.4				mg/L	20	Standard
	I	127	223840.6	2.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.444	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.969	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.197
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.199
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703116109
Sample Date/Time: Thursday, March 23, 2017 17:09:24
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	300112.3	2.2				ug/L	269762	Standard
	Be	9	41.7	25.0	**0.0031**	0.004	124.4	ug/L	22	Standard
	Al	27	4753392.6	1.3	**23.2471**	0.244	1.0	ug/L	1527	Standard
	Sc	45	39187.3	2.4				ug/L	40360	Standard
	Ti	47	149.0	11.5	**0.4379**	0.083	18.9	ug/L	47	Standard
	V	51	875.6	35.8	**-0.0597**	0.039	65.2	ug/L	1402	Standard
	Cr	52	10275.8	2.7	**0.4421**	0.010	2.2	ug/L	6348	Standard
	Cr	53	3187.0	5.1	**2.5541**	0.072	2.8	ug/L	505	Standard
	Mn	55	3279996.8	1.6	**231.4657**	3.929	1.7	ug/L	3411	Standard
	Co	59	10728.5	1.7	**0.9027**	0.010	1.1	ug/L	825	Standard
	Ni	60	14435.2	2.2	**5.8332**	0.101	1.7	ug/L	576	Standard
	Cu	65	2084.1	2.3	**0.5826**	0.041	7.0	ug/L	632	Standard
	Zn	66	11353.6	1.5	**7.4227**	0.100	1.4	ug/L	430	Standard
>	Ge	72	852873.1	2.8				ug/L	823185	Standard
	As	75	876.9	3.2	**0.6376**	0.030	4.7	ug/L	-13	Standard
	Se	82	266.9	3.1	**1.8339**	0.068	3.7	ug/L	20	Standard
	Se-1	77	466.0	4.3	**3.7588**	0.279	7.4	ug/L	106	Standard
>	Ga	71	211.7	23.9				mg/L	237	Standard
	Rb	85	16914.4	2.3				ug/L	52	Standard
	Y	89	593169.5	1.4				ug/L	565679	Standard
>	Rh	103	88.3	17.3				ug/L	18	Standard
	Mo	98	308.7	8.2	**0.0494**	0.005	9.1	ug/L	56	Standard
	Ag	107	127.0	13.0	**-0.0029**	0.002	66.1	ug/L	128	Standard
	Cd	111	456.9	3.9	**0.1971**	0.005	2.3	mg/L	8	Standard
	Cd	114	1215.2	9.4	**0.2012**	0.017	8.3	ug/L	49	Standard
>	In	115	708791.1	1.8				ug/L	692408	Standard
	Sn	118	368.3	3.5	**0.0754**	0.013	17.4	ug/L	269	Standard
	Sb	123	250.5	18.8	**0.0286**	0.009	31.1	ug/L	358	Standard
	Ba	135	381706.4	1.9	**168.5039**	1.021	0.6	ug/L	64	Standard
	Ce	140	560.0	8.6				ug/L	42	Standard
>	Tb	159	1104376.0	1.6				ug/L	1021298	Standard
	Ho	165	28.3	10.2				ug/L	12	Standard
	Tl	203	860.7	5.3	**0.0885**	0.004	4.0	ug/L	17	Standard
	Tl	205	2056.8	3.1	**0.0849**	0.002	2.6	ug/L	42	Standard
	Pb	206	780.4	6.1	**0.0288**	0.006	20.7	ug/L	452	Standard
	Pb	207	677.7	8.2	**0.0344**	0.006	17.7	ug/L	399	Standard
	Pb	208	787.3	4.4	**0.0278**	0.003	10.7	ug/L	467	Standard
	U	238	12.3	20.4	**0.0002**	0.000	169.7	ug/L	8	Standard
>	Bi	209	656849.3	2.0				ug/L	599665	Standard

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	Na	23	8.3	34.6	**2.0995**	1.160	55.2	mg/L	0	Standard
	Mg	24	1781.8	4.7	**18.5654**	1.298	7.0	mg/L	30	Standard
	K	39	175.0	22.7	**0.7867**	0.230	29.2	mg/L	18	Standard
	Ca	43	41.7	30.2	**-2.8336**	3.480	122.8	mg/L	65	Standard
	Fe	54	1696.3	9.7	**9.1802**	0.930	10.1	mg/L	40	Standard
	Fe	57	646.7	1.6	**6.4426**	0.184	2.9	mg/L	342	Standard
>	**Sc-1**	45	39187.3	2.4				mg/L	40360	Standard
	Cl	35	3.3	91.7				ug/L	3	Standard
	Kr	83	3.3	62.4				ug/L	7	Standard
	Br	81	140828.5	2.9				ug/L	2587	Standard
	P	31	80.0	22.5				ug/L	95	Standard
	S	34	38.3	64.3				ug/L	28	Standard
	Sr	88	191.7	19.6				ug/L	207	Standard
	C	12	83.3	59.2				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	25.5	59.6				mg/L	6	Standard
	Ho-1	165	28.3	10.2				mg/L	12	Standard
	Er	166	23.3	24.7				mg/L	20	Standard
	I	127	130337.3	4.6				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.251	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.606	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.366
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.536
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, March 23, 2017 17:12:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	282132.0	4.1				ug/L	269762	Standard
	Be	9	130244.7	4.2	**48.8267**	2.934	6.0	ug/L	22	Standard
	Al	27	8955243.7	1.9	**46.6254**	1.709	3.7	ug/L	1527	Standard
	Sc	45	38386.9	1.7				ug/L	40360	Standard
	Ti	47	22262.0	1.1	**96.6644**	2.050	2.1	ug/L	47	Standard
	V	51	404789.4	1.8	**47.6803**	0.982	2.1	ug/L	1402	Standard
	Cr	52	394540.8	1.7	**47.7609**	1.066	2.2	ug/L	6348	Standard
	Cr	53	49385.4	0.6	**48.4486**	0.590	1.2	ug/L	505	Standard
	Mn	55	678221.9	0.9	**48.6712**	1.027	2.1	ug/L	3411	Standard
	Co	59	526277.3	2.5	**48.3534**	1.390	2.9	ug/L	825	Standard
	Ni	60	112221.2	2.4	**47.9681**	1.392	2.9	ug/L	576	Standard
	Cu	65	118007.5	1.7	**48.5687**	0.777	1.6	ug/L	632	Standard
	Zn	66	71043.2	1.9	**49.0942**	1.183	2.4	ug/L	430	Standard
>	Ge	72	835344.3	1.4				ug/L	823185	Standard
	As	75	70851.8	1.1	**48.9839**	0.855	1.7	ug/L	-13	Standard
	Se	82	6688.6	1.1	**50.6541**	1.092	2.2	ug/L	20	Standard
	Se-1	77	4782.1	0.7	**49.6278**	0.917	1.8	ug/L	106	Standard
>	Ga	71	155.0	17.1				mg/L	237	Standard
	Rb	85	465.0	14.2				ug/L	52	Standard
	Y	89	584095.2	1.3				ug/L	565679	Standard
>	Rh	103	51.7	49.7				ug/L	18	Standard
	Mo	98	467516.7	2.2	**101.6716**	3.247	3.2	ug/L	56	Standard
	Ag	107	383528.0	1.7	**50.7614**	1.123	2.2	ug/L	128	Standard
	Cd	111	109481.7	0.8	**50.3177**	1.032	2.1	mg/L	8	Standard
	Cd	114	283359.4	1.1	**50.8890**	0.765	1.5	ug/L	49	Standard
>	In	115	698096.8	1.3				ug/L	692408	Standard
	Sn	118	63460.3	1.8	**51.3684**	1.551	3.0	ug/L	269	Standard
	Sb	123	283569.6	0.9	**49.8541**	0.982	2.0	ug/L	358	Standard
	Ba	135	110061.0	0.6	**49.3121**	0.879	1.8	ug/L	64	Standard
	Ce	140	336.7	9.1				ug/L	42	Standard
>	Tb	159	1078378.2	0.7				ug/L	1021298	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	462895.7	1.3	**49.3267**	0.987	2.0	ug/L	17	Standard
	Tl	205	1104318.1	0.5	**46.2514**	0.708	1.5	ug/L	42	Standard
	Pb	206	374310.3	1.7	**49.5391**	1.114	2.2	ug/L	452	Standard
	Pb	207	336009.9	1.2	**49.1687**	0.946	1.9	ug/L	399	Standard
	Pb	208	392141.1	1.7	**48.9971**	1.101	2.2	ug/L	467	Standard
	U	238	325888.5	1.9	**52.6891**	1.447	2.7	ug/L	8	Standard
>	Bi	209	648790.4	1.0				ug/L	599665	Standard

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⌈	**Na**	23	18.3	63.0	**6.5624**	5.066	77.2	mg/L	0	Standard
|	**Mg**	24	481.7	7.3	**4.8670**	0.344	7.1	mg/L	30	Standard
|	**K**	39	695.0	9.7	**3.5856**	0.346	9.7	mg/L	18	Standard
|	**Ca**	43	45.0	50.9	**-1.6072**	6.660	414.4	mg/L	65	Standard
|	**Fe**	54	869.3	7.4	**4.6957**	0.439	9.3	mg/L	40	Standard
|	**Fe**	57	553.3	5.9	**4.8070**	0.594	12.4	mg/L	342	Standard
⌊>	**Sc-1**	45	38386.9	1.7				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	4.0	43.3				ug/L	7	Standard
	Br	81	4937.5	14.5				ug/L	2587	Standard
	P	31	76.7	19.9				ug/L	95	Standard
	S	34	18.3	31.5				ug/L	28	Standard
	Sr	88	158.3	29.3				ug/L	207	Standard
	C	12	56.7	79.6				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	11.6	45.3				mg/L	6	Standard
	Ho-1	165	15.0	57.7				mg/L	12	Standard
	Er	166	36.7	41.7				mg/L	20	Standard
	I	127	6318.1	31.8				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	97.653		
⌊	Al	27	93.251		
⌈	Sc	45			
|	Ti	47	96.664		
|	V	51	95.361		
|	Cr	52	95.522		
|	Cr	53			
|	Mn	55	97.342		
|	Co	59	96.707		
|	Ni	60	95.936		
|	Cu	65	97.137		
|	Zn	66	98.188		
|>	Ge	72		101.477	
|	As	75	97.968		
|	Se	82	101.308		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	101.672	
|	Ag	107	101.523	
|	Cd	111	100.635	
|	Cd	114		
|>	In	115		100.822
|	Sn	118	102.737	
|	Sb	123	99.708	
⌊	Ba	135	98.624	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	98.653	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	97.994	
|	U	238	105.378	
⌊>	Bi	209		108.192
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, March 23, 2017 17:15:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274471.9	3.0				ug/L	269762	Standard
	Be	9	71.7	38.4	**0.0159**	0.010	65.0	ug/L	22	Standard
	Al	27	1828.5	40.2	**0.0071**	0.004	59.1	ug/L	1527	Standard
	Sc	45	37127.1	2.8				ug/L	40360	Standard
	Ti	47	34.3	17.1	**-0.0442**	0.030	68.5	ug/L	47	Standard
	V	51	1158.0	8.0	**-0.0211**	0.014	68.5	ug/L	1402	Standard
	Cr	52	5611.4	7.9	**-0.0867**	0.073	84.4	ug/L	6348	Standard
	Cr	53	510.0	3.5	**-0.0212**	0.029	136.6	ug/L	505	Standard
	Mn	55	2604.2	13.2	**-0.0481**	0.031	63.4	ug/L	3411	Standard
	Co	59	466.0	11.7	**-0.0200**	0.006	29.6	ug/L	825	Standard
	Ni	60	637.7	57.7	**0.0432**	0.172	397.4	ug/L	576	Standard
	Cu	65	766.0	3.1	**0.0625**	0.006	9.2	ug/L	632	Standard
	Zn	66	400.0	3.8	**-0.0260**	0.011	43.0	ug/L	430	Standard
>	Ge	72	813993.6	2.5				ug/L	823185	Standard
	As	75	-14.9	102.1	**0.0336**	0.011	31.7	ug/L	-13	Standard
	Se	82	19.1	16.0	**-0.0029**	0.027	923.9	ug/L	20	Standard
	Se-1	77	107.3	10.7	**0.0841**	0.124	148.1	ug/L	106	Standard
>	Ga	71	75.0	29.1				mg/L	237	Standard
	Rb	85	66.7	24.1				ug/L	52	Standard
	Y	89	564847.7	3.5				ug/L	565679	Standard
>	Rh	103	33.3	43.3				ug/L	18	Standard
	Mo	98	1293.7	109.6	**0.2750**	0.325	118.1	ug/L	56	Standard
	Ag	107	229.0	32.2	**0.0116**	0.011	91.4	ug/L	128	Standard
	Cd	111	33.0	93.4	**0.0060**	0.015	247.0	mg/L	8	Standard
	Cd	114	118.6	95.2	**0.0085**	0.021	252.9	ug/L	49	Standard
>	In	115	683515.5	2.3				ug/L	692408	Standard
	Sn	118	302.3	8.2	**0.0318**	0.026	82.2	ug/L	269	Standard
	Sb	123	430.7	23.4	**0.0628**	0.020	31.8	ug/L	358	Standard
	Ba	135	138.0	69.1	**0.0275**	0.045	165.2	ug/L	64	Standard
	Ce	140	71.7	107.3				ug/L	42	Standard
>	Tb	159	1035106.1	3.4				ug/L	1021298	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	141.3	64.0	**0.0135**	0.010	76.8	ug/L	17	Standard
	Tl	205	356.7	60.5	**0.0152**	0.010	64.0	ug/L	42	Standard
	Pb	206	580.3	18.9	**0.0054**	0.017	309.7	ug/L	452	Standard
	Pb	207	500.3	14.3	**0.0115**	0.013	110.8	ug/L	399	Standard
	Pb	208	518.0	3.8	**-0.0033**	0.004	123.8	ug/L	467	Standard
	U	238	64.7	98.8	**0.0091**	0.011	120.2	ug/L	8	Standard
>	Bi	209	635501.6	2.6				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	46.7	6.2	**0.1776**	0.040	22.4	mg/L	30	Standard
	K	39	8.3	69.3	**-0.0884**	0.030	34.2	mg/L	18	Standard
	Ca	43	26.7	10.8	**-6.6550**	1.033	15.5	mg/L	65	Standard
	Fe	54	24.4	19.6	**-0.0874**	0.029	33.6	mg/L	40	Standard
	Fe	57	318.3	14.1	**0.2569**	1.073	417.6	mg/L	342	Standard
>	**Sc-1**	45	37127.1	2.8				mg/L	40360	Standard
	Cl	35	2.7	114.6				ug/L	3	Standard
	Kr	83	2.3	24.7				ug/L	7	Standard
	Br	81	3483.7	3.1				ug/L	2587	Standard
	P	31	85.0	15.6				ug/L	95	Standard
	S	34	23.3	65.5				ug/L	28	Standard
	Sr	88	136.7	23.5				ug/L	207	Standard
	C	12	26.7	21.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.7	103.3				mg/L	6	Standard
	Ho-1	165	13.3	21.7				mg/L	12	Standard
	Er	166	6.7	86.6				mg/L	20	Standard
	I	127	6629.8	1.8				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.883	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.716
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	105.976
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, March 23, 2017 17:18:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	272633.1	1.6				ug/L	269762	Standard
	Be	9	543.3	9.8	**0.1990**	0.020	10.2	ug/L	22	Standard
	Al	27	2930.5	114.5	**0.0129**	0.018	137.9	ug/L	1527	Standard
	Sc	45	37653.4	2.3				ug/L	40360	Standard
	Ti	47	30.3	10.6	**-0.0617**	0.014	22.6	ug/L	47	Standard
	V	51	4092.4	1.8	**0.3379**	0.005	1.4	ug/L	1402	Standard
	Cr	52	12806.1	1.0	**0.8321**	0.026	3.1	ug/L	6348	Standard
	Cr	53	1478.4	4.7	**0.9742**	0.058	5.9	ug/L	505	Standard
	Mn	55	9321.6	11.4	**0.4529**	0.075	16.5	ug/L	3411	Standard
	Co	59	4372.3	1.6	**0.3515**	0.007	2.1	ug/L	825	Standard
	Ni	60	3775.1	3.0	**1.4348**	0.042	2.9	ug/L	576	Standard
	Cu	65	2777.9	1.8	**0.9253**	0.039	4.2	ug/L	632	Standard
	Zn	66	9187.8	1.2	**6.2906**	0.100	1.6	ug/L	430	Standard
>	Ge	72	808446.1	1.8				ug/L	823185	Standard
	As	75	497.8	18.1	**0.3986**	0.059	14.8	ug/L	-13	Standard
	Se	82	69.1	14.3	**0.3903**	0.071	18.3	ug/L	20	Standard
	Se-1	77	130.3	1.9	**0.3443**	0.052	15.0	ug/L	106	Standard
>	Ga	71	88.3	23.6				mg/L	237	Standard
	Rb	85	66.7	24.1				ug/L	52	Standard
	Y	89	556714.5	1.4				ug/L	565679	Standard
>	Rh	103	33.3	8.7				ug/L	18	Standard
	Mo	98	298.4	55.1	**0.0500**	0.036	72.2	ug/L	56	Standard
	Ag	107	3041.6	5.6	**0.3956**	0.023	5.8	ug/L	128	Standard
	Cd	111	529.0	13.4	**0.2407**	0.031	12.9	mg/L	8	Standard
	Cd	114	1415.7	9.7	**0.2487**	0.028	11.4	ug/L	49	Standard
>	In	115	677471.6	2.2				ug/L	692408	Standard
	Sn	118	225.0	11.9	**-0.0313**	0.020	63.6	ug/L	269	Standard
	Sb	123	2316.5	4.4	**0.4048**	0.016	3.8	ug/L	358	Standard
	Ba	135	1658.8	10.0	**0.7299**	0.073	10.1	ug/L	64	Standard
	Ce	140	31.7	63.8				ug/L	42	Standard
>	Tb	159	1034868.0	1.8				ug/L	1021298	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	820.4	23.4	**0.0884**	0.020	23.0	ug/L	17	Standard
	Tl	205	2076.8	26.8	**0.0897**	0.023	25.7	ug/L	42	Standard
	Pb	206	1959.5	5.0	**0.1956**	0.010	5.2	ug/L	452	Standard
	Pb	207	1654.4	4.8	**0.1875**	0.011	5.8	ug/L	399	Standard
	Pb	208	1998.7	5.0	**0.1895**	0.012	6.1	ug/L	467	Standard
	U	238	2393.2	4.8	**0.3989**	0.017	4.1	ug/L	8	Standard
>	Bi	209	626416.7	2.1				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	28.3	20.4	**-0.0314**	0.071	226.7	mg/L	30	Standard
	K	39	21.7	35.3	**-0.0161**	0.040	247.0	mg/L	18	Standard
	Ca	43	23.3	24.7	**-7.7912**	1.573	20.2	mg/L	65	Standard
	Fe	54	32.4	23.9	**-0.0437**	0.041	93.4	mg/L	40	Standard
	Fe	57	316.7	14.3	**0.1319**	1.099	833.7	mg/L	342	Standard
>	**Sc-1**	45	37653.4	2.3				mg/L	40360	Standard
	Cl	35	2.0	173.2				ug/L	3	Standard
	Kr	83	2.3	107.9				ug/L	7	Standard
	Br	81	3283.7	7.5				ug/L	2587	Standard
	P	31	71.7	34.4				ug/L	95	Standard
	S	34	26.7	28.6				ug/L	28	Standard
	Sr	88	145.0	28.2				ug/L	207	Standard
	C	12	20.0	50.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	22.7	64.8				mg/L	6	Standard
	Ho-1	165	16.7	45.8				mg/L	12	Standard
	Er	166	13.3	114.6				mg/L	20	Standard
	I	127	3998.9	1.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.500		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	84.487		
	Cr	52	104.009		
	Cr	53			
	Mn	55	90.587		
	Co	59	87.880		
	Ni	60	89.672		
	Cu	65	115.668		
	Zn	66	100.650		
>	Ge	72		98.210	
	As	75	99.646		
	Se	82	97.564		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98			
Ag	107	98.890		
Cd	111	100.277		
Cd	114			
In	115		97.843	
Sn	118			
Sb	123	101.208		
Ba	135	97.316		
Ce	140			
Tb	159			
Ho	165			
Tl	203	110.439		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.738		
U	238	99.729		
Bi	209		104.461	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1703117603
Sample Date/Time: Thursday, March 23, 2017 17:21:51
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	285515.4	1.5				ug/L	269762	Standard
	Be	9	280.0	14.3	**0.0919**	0.013	14.6	ug/L	22	Standard
	Al	27	5701173.0	2.6	**29.3026**	0.441	1.5	ug/L	1527	Standard
	Sc	45	38874.8	2.8				ug/L	40360	Standard
	Ti	47	527.7	12.3	**2.0626**	0.253	12.3	ug/L	47	Standard
	V	51	6351.7	5.6	**0.5779**	0.036	6.3	ug/L	1402	Standard
	Cr	52	9894.6	4.0	**0.4034**	0.035	8.7	ug/L	6348	Standard
	Cr	53	2693.6	10.9	**2.0913**	0.264	12.6	ug/L	505	Standard
	Mn	55	4965661.1	1.7	**352.6520**	2.448	0.7	ug/L	3411	Standard
	Co	59	30301.6	2.1	**2.6831**	0.030	1.1	ug/L	825	Standard
	Ni	60	3139.0	0.5	**1.0883**	0.020	1.8	ug/L	576	Standard
	Cu	65	2024.1	3.7	**0.5626**	0.023	4.1	ug/L	632	Standard
	Zn	66	7943.7	1.2	**5.1328**	0.035	0.7	ug/L	430	Standard
>	Ge	72	847521.3	1.1				ug/L	823185	Standard
	As	75	431.9	22.5	**0.3384**	0.069	20.3	ug/L	-13	Standard
	Se	82	111.9	7.3	**0.6857**	0.061	8.8	ug/L	20	Standard
	Se-1	77	403.7	7.2	**3.1330**	0.264	8.4	ug/L	106	Standard
>	Ga	71	485.0	10.3				mg/L	237	Standard
	Rb	85	36335.2	1.8				ug/L	52	Standard
	Y	89	615894.3	1.8				ug/L	565679	Standard
>	Rh	103	35.0	51.5				ug/L	18	Standard
	Mo	98	480.5	3.9	**0.0880**	0.004	4.1	ug/L	56	Standard
	Ag	107	141.7	8.8	**-0.0006**	0.002	273.8	ug/L	128	Standard
	Cd	111	17.4	22.9	**-0.0017**	0.002	105.4	mg/L	8	Standard
	Cd	114	64.4	46.6	**-0.0020**	0.005	268.3	ug/L	49	Standard
>	In	115	696320.3	0.7				ug/L	692408	Standard
	Sn	118	397.0	3.7	**0.1039**	0.010	9.2	ug/L	269	Standard
	Sb	123	188.7	11.4	**0.0184**	0.004	21.9	ug/L	358	Standard
	Ba	135	130563.8	0.8	**58.6460**	0.256	0.4	ug/L	64	Standard
	Ce	140	71225.4	0.7				ug/L	42	Standard
>	Tb	159	1074515.1	0.4				ug/L	1021298	Standard
	Ho	165	2265.2	1.5				ug/L	12	Standard
	Tl	203	990.0	3.0	**0.1053**	0.003	3.0	ug/L	17	Standard
	Tl	205	2305.2	8.1	**0.0980**	0.008	7.9	ug/L	42	Standard
	Pb	206	1305.7	5.3	**0.1027**	0.009	9.0	ug/L	452	Standard
	Pb	207	1117.7	3.9	**0.1030**	0.006	5.9	ug/L	399	Standard
	Pb	208	1319.7	6.2	**0.0985**	0.011	10.7	ug/L	467	Standard
	U	238	194.7	13.5	**0.0303**	0.004	14.8	ug/L	8	Standard
>	Bi	209	637659.5	0.5				ug/L	599665	Standard

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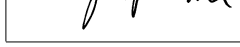

⌈	**Na**	23	11.7	24.7	**3.5925**	1.388	38.6	mg/L	0	Standard
|	**Mg**	24	2340.2	6.4	**24.6505**	0.973	3.9	mg/L	30	Standard
|	**K**	39	323.3	21.9	**1.5708**	0.337	21.5	mg/L	18	Standard
|	**Ca**	43	58.3	40.5	**2.0294**	6.470	318.8	mg/L	65	Standard
|	**Fe**	54	1786.3	0.9	**9.7603**	0.283	2.9	mg/L	40	Standard
|	**Fe**	57	863.4	12.4	**10.9499**	2.665	24.3	mg/L	342	Standard
⌊>	**Sc-1**	45	38874.8	2.8				mg/L	40360	Standard
	Cl	35	1.3	173.2				ug/L	3	Standard
	Kr	83	2.3	65.5				ug/L	7	Standard
	Br	81	51879.0	7.7				ug/L	2587	Standard
	P	31	71.7	46.5				ug/L	95	Standard
	S	34	15.0	88.2				ug/L	28	Standard
	Sr	88	188.3	10.7				ug/L	207	Standard
	C	12	53.3	47.2				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	33.3	45.8				mg/L	3	Standard
	Dy	164	3376.6	4.6				mg/L	6	Standard
	Ho-1	165	2265.2	1.5				mg/L	12	Standard
	Er	166	2166.8	2.9				mg/L	20	Standard
	I	127	171328.1	4.9				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.840	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		102.956	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	100.565
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	106.336
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703117605
Sample Date/Time: Thursday, March 23, 2017 17:24:57
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	290096.5	3.6				ug/L	269762	Standard
	Be	9	450.0	5.1	**0.1524**	0.007	4.7	ug/L	22	Standard
	Al	27	10797431.2	1.8	**54.6498**	1.000	1.8	ug/L	1527	Standard
	Sc	45	39641.8	3.4				ug/L	40360	Standard
	Ti	47	331.3	29.4	**1.2323**	0.416	33.7	ug/L	47	Standard
	V	51	1554.1	0.4	**0.0205**	0.002	10.7	ug/L	1402	Standard
	Cr	52	9097.7	2.4	**0.3151**	0.036	11.4	ug/L	6348	Standard
	Cr	53	3198.7	3.0	**2.6090**	0.096	3.7	ug/L	505	Standard
	Mn	55	1803436.1	1.2	**128.8525**	0.899	0.7	ug/L	3411	Standard
	Co	59	72590.5	0.7	**6.5651**	0.038	0.6	ug/L	825	Standard
	Ni	60	5351.6	1.7	**2.0415**	0.054	2.6	ug/L	576	Standard
	Cu	65	3473.7	0.4	**1.1642**	0.015	1.3	ug/L	632	Standard
	Zn	66	8972.7	0.9	**5.8826**	0.071	1.2	ug/L	430	Standard
>	Ge	72	841446.0	0.8				ug/L	823185	Standard
	As	75	28.5	14.2	**0.0635**	0.003	4.5	ug/L	-13	Standard
	Se	82	63.3	13.4	**0.3261**	0.068	20.8	ug/L	20	Standard
	Se-1	77	560.3	8.0	**4.8167**	0.518	10.8	ug/L	106	Standard
>	Ga	71	326.7	5.4				mg/L	237	Standard
	Rb	85	62066.9	2.7				ug/L	52	Standard
	Y	89	680675.1	1.2				ug/L	565679	Standard
>	Rh	103	66.7	43.9				ug/L	18	Standard
	Mo	98	225.9	3.7	**0.0326**	0.002	6.5	ug/L	56	Standard
	Ag	107	149.3	2.5	**0.0004**	0.000	105.2	ug/L	128	Standard
	Cd	111	283.0	3.0	**0.1210**	0.005	4.3	mg/L	8	Standard
	Cd	114	672.5	10.0	**0.1076**	0.010	9.7	ug/L	49	Standard
>	In	115	695058.0	1.3				ug/L	692408	Standard
	Sn	118	405.7	1.0	**0.1116**	0.007	6.3	ug/L	269	Standard
	Sb	123	228.8	2.5	**0.0255**	0.001	5.4	ug/L	358	Standard
	Ba	135	248684.6	0.6	**111.9454**	0.791	0.7	ug/L	64	Standard
	Ce	140	81957.8	2.3				ug/L	42	Standard
>	Tb	159	1086295.7	0.9				ug/L	1021298	Standard
	Ho	165	7983.8	2.5				ug/L	12	Standard
	Tl	203	1075.4	5.3	**0.1149**	0.006	4.9	ug/L	17	Standard
	Tl	205	2715.2	4.3	**0.1158**	0.004	3.7	ug/L	42	Standard
	Pb	206	1710.1	0.7	**0.1580**	0.003	1.8	ug/L	452	Standard
	Pb	207	1442.4	3.0	**0.1522**	0.008	5.3	ug/L	399	Standard
	Pb	208	1672.0	1.5	**0.1440**	0.003	1.8	ug/L	467	Standard
	U	238	159.3	5.7	**0.0245**	0.002	6.7	ug/L	8	Standard
>	Bi	209	635607.0	0.7				ug/L	599665	Standard

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⌈	**Na**	23	21.7	26.6	**7.6799**	2.520	32.8	mg/L	0	Standard
|	**Mg**	24	2932.0	2.6	**30.4174**	1.623	5.3	mg/L	30	Standard
|	**K**	39	548.3	10.5	**2.7121**	0.332	12.2	mg/L	18	Standard
|	**Ca**	43	80.0	10.8	**7.8813**	2.318	29.4	mg/L	65	Standard
|	**Fe**	54	62.8	71.7	**0.1101**	0.235	213.8	mg/L	40	Standard
|	**Fe**	57	400.0	9.4	**1.4327**	0.753	52.6	mg/L	342	Standard
⌊>	**Sc-1**	45	39641.8	3.4				mg/L	40360	Standard
	Cl	35	4.0	100.0				ug/L	3	Standard
	Kr	83	3.3	91.7				ug/L	7	Standard
	Br	81	23581.7	5.3				ug/L	2587	Standard
	P	31	85.0	15.6				ug/L	95	Standard
	S	34	20.0	50.0				ug/L	28	Standard
	Sr	88	135.0	6.4				ug/L	207	Standard
	C	12	40.0	75.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	50.0	60.0				mg/L	3	Standard
	Dy	164	11896.5	7.3				mg/L	6	Standard
	Ho-1	165	7983.8	2.5				mg/L	12	Standard
	Er	166	7135.0	6.5				mg/L	20	Standard
	I	127	190306.9	5.7				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.538	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		102.218	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.383
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.994
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703117701
Sample Date/Time: Thursday, March 23, 2017 17:28:02
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	291600.1	2.1				ug/L	269762	Standard
	Be	9	121.7	6.3	**0.0325**	0.002	6.1	ug/L	22	Standard
	Al	27	2665387.8	0.2	**13.4170**	0.292	2.2	ug/L	1527	Standard
	Sc	45	39671.9	2.5				ug/L	40360	Standard
	Ti	47	2459.2	6.7	**10.4419**	0.785	7.5	ug/L	47	Standard
	V	51	11856.2	2.3	**1.2311**	0.019	1.6	ug/L	1402	Standard
	Cr	52	12374.1	0.9	**0.7174**	0.008	1.2	ug/L	6348	Standard
	Cr	53	2026.8	8.7	**1.4570**	0.155	10.6	ug/L	505	Standard
	Mn	55	1565577.0	0.4	**112.0021**	1.645	1.5	ug/L	3411	Standard
	Co	59	36323.2	0.3	**3.2582**	0.055	1.7	ug/L	825	Standard
	Ni	60	4266.3	3.1	**1.5809**	0.040	2.5	ug/L	576	Standard
	Cu	65	2851.9	3.4	**0.9103**	0.030	3.3	ug/L	632	Standard
	Zn	66	4739.4	0.7	**2.9654**	0.065	2.2	ug/L	430	Standard
>	Ge	72	840249.8	1.5				ug/L	823185	Standard
	As	75	7376.8	0.5	**5.1099**	0.087	1.7	ug/L	-13	Standard
	Se	82	57.2	2.6	**0.2806**	0.015	5.5	ug/L	20	Standard
	Se-1	77	239.3	7.5	**1.4372**	0.151	10.5	ug/L	106	Standard
>	Ga	71	1253.4	10.1				mg/L	237	Standard
	Rb	85	23843.8	5.3				ug/L	52	Standard
	Y	89	626930.2	1.2				ug/L	565679	Standard
>	Rh	103	48.3	41.8				ug/L	18	Standard
	Mo	98	1367.8	3.4	**0.2789**	0.015	5.4	ug/L	56	Standard
	Ag	107	177.7	3.7	**0.0039**	0.001	25.0	ug/L	128	Standard
	Cd	111	20.6	33.3	**-0.0003**	0.003	837.0	mg/L	8	Standard
	Cd	114	105.0	9.3	**0.0051**	0.002	35.0	ug/L	49	Standard
>	In	115	702947.0	2.4				ug/L	692408	Standard
	Sn	118	371.0	2.6	**0.0800**	0.012	15.1	ug/L	269	Standard
	Sb	123	338.7	7.5	**0.0442**	0.004	8.1	ug/L	358	Standard
	Ba	135	138179.9	0.6	**61.5012**	1.108	1.8	ug/L	64	Standard
	Ce	140	91272.5	1.8				ug/L	42	Standard
>	Tb	159	1086465.2	1.7				ug/L	1021298	Standard
	Ho	165	2760.3	3.6				ug/L	12	Standard
	Tl	203	868.4	7.5	**0.0921**	0.006	7.0	ug/L	17	Standard
	Tl	205	2013.5	0.9	**0.0857**	0.000	0.4	ug/L	42	Standard
	Pb	206	3408.7	1.2	**0.3868**	0.004	1.1	ug/L	452	Standard
	Pb	207	2904.3	1.3	**0.3698**	0.003	0.9	ug/L	399	Standard
	Pb	208	3512.5	5.0	**0.3780**	0.019	5.0	ug/L	467	Standard
	U	238	779.4	3.1	**0.1266**	0.005	3.9	ug/L	8	Standard
>	Bi	209	637016.7	0.9				ug/L	599665	Standard

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⌈	**Na**	23	6.7	43.3	**1.3860**	1.246	89.9	mg/L	0	Standard
|	**Mg**	24	3377.0	3.3	**35.0551**	2.000	5.7	mg/L	30	Standard
|	**K**	39	131.7	33.2	**0.5488**	0.232	42.3	mg/L	18	Standard
|	**Ca**	43	30.0	33.3	**-6.2378**	2.884	46.2	mg/L	65	Standard
|	**Fe**	54	2282.8	10.2	**12.2602**	0.978	8.0	mg/L	40	Standard
|	**Fe**	57	890.0	10.2	**11.1001**	2.066	18.6	mg/L	342	Standard
⌊>	**Sc-1**	45	39671.9	2.5				mg/L	40360	Standard
	Cl	35	3.3	34.6				ug/L	3	Standard
	Kr	83	4.3	53.3				ug/L	7	Standard
	Br	81	18861.8	5.1				ug/L	2587	Standard
	P	31	65.0	23.1				ug/L	95	Standard
	S	34	28.3	27.0				ug/L	28	Standard
	Sr	88	141.7	13.4				ug/L	207	Standard
	C	12	103.3	36.6				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	23.3	24.7				mg/L	3	Standard
	Dy	164	3802.6	8.9				mg/L	6	Standard
	Ho-1	165	2760.3	3.6				mg/L	12	Standard
	Er	166	2530.2	5.0				mg/L	20	Standard
	I	127	272194.2	8.3				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.095	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		102.073	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.522
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.229
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703118001
Sample Date/Time: Thursday, March 23, 2017 17:31:07
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	291904.0	1.8				ug/L	269762	Standard
	Be	9	66.7	18.9	**0.0126**	0.005	37.4	ug/L	22	Standard
	Al	27	15079653.8	1.4	**75.8466**	2.342	3.1	ug/L	1527	Standard
	Sc	45	39976.0	1.8				ug/L	40360	Standard
	Ti	47	767.0	13.2	**3.1270**	0.391	12.5	ug/L	47	Standard
	V	51	10852.9	1.5	**1.1178**	0.020	1.8	ug/L	1402	Standard
	Cr	52	23308.6	0.9	**2.0650**	0.032	1.6	ug/L	6348	Standard
	Cr	53	4379.0	7.6	**3.7956**	0.387	10.2	ug/L	505	Standard
	Mn	55	576147.7	0.9	**41.2053**	0.578	1.4	ug/L	3411	Standard
	Co	59	5061.2	2.4	**0.4003**	0.006	1.4	ug/L	825	Standard
	Ni	60	5890.1	0.6	**2.2834**	0.036	1.6	ug/L	576	Standard
	Cu	65	18027.7	1.2	**7.1791**	0.091	1.3	ug/L	632	Standard
	Zn	66	31766.3	0.2	**21.7263**	0.343	1.6	ug/L	430	Standard
>	Ge	72	837381.0	1.4				ug/L	823185	Standard
	As	75	28497.7	0.9	**19.6821**	0.439	2.2	ug/L	-13	Standard
	Se	82	2744.4	1.9	**20.6454**	0.631	3.1	ug/L	20	Standard
	Se-1	77	457.3	6.7	**3.7566**	0.386	10.3	ug/L	106	Standard
>	Ga	71	926.7	7.1				mg/L	237	Standard
	Rb	85	103284.2	1.8				ug/L	52	Standard
	Y	89	593299.9	0.5				ug/L	565679	Standard
>	Rh	103	151.7	3.8				ug/L	18	Standard
	Mo	98	6145.8	1.4	**1.2959**	0.024	1.9	ug/L	56	Standard
	Ag	107	165.7	21.2	**0.0021**	0.004	207.4	ug/L	128	Standard
	Cd	111	54.1	5.1	**0.0147**	0.001	8.1	mg/L	8	Standard
	Cd	114	39826.8	1.5	**7.0129**	0.151	2.2	ug/L	49	Standard
>	In	115	710869.5	1.6				ug/L	692408	Standard
	Sn	118	317235.0	1.4	**253.0090**	5.083	2.0	ug/L	269	Standard
	Sb	123	1209.5	3.0	**0.1940**	0.007	3.4	ug/L	358	Standard
	Ba	135	131989.8	0.5	**58.0851**	1.191	2.1	ug/L	64	Standard
	Ce	140	4527.3	2.8				ug/L	42	Standard
>	Tb	159	1081675.7	0.6				ug/L	1021298	Standard
	Ho	165	221.7	7.3				ug/L	12	Standard
	Tl	203	723.7	6.9	**0.0777**	0.004	5.8	ug/L	17	Standard
	Tl	205	1728.4	13.9	**0.0746**	0.009	12.6	ug/L	42	Standard
	Pb	206	2786.9	1.8	**0.3091**	0.008	2.6	ug/L	452	Standard
	Pb	207	2297.8	1.9	**0.2850**	0.010	3.6	ug/L	399	Standard
	Pb	208	2780.1	1.7	**0.2906**	0.009	3.2	ug/L	467	Standard
	U	238	448.7	9.5	**0.0733**	0.006	8.5	ug/L	8	Standard
>	Bi	209	626683.2	1.3				ug/L	599665	Standard

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⌈	**Na**	23	78.3	20.5	**31.0673**	6.413	20.6	mg/L	0	Standard
|	**Mg**	24	6446.4	3.6	**66.6480**	1.807	2.7	mg/L	30	Standard
|	**K**	39	783.4	3.7	**3.8922**	0.133	3.4	mg/L	18	Standard
|	**Ca**	43	115.0	11.5	**17.5421**	4.252	24.2	mg/L	65	Standard
|	**Fe**	54	124.4	24.1	**0.4452**	0.158	35.5	mg/L	40	Standard
|	**Fe**	57	445.0	9.2	**2.2479**	0.878	39.1	mg/L	342	Standard
⌊>	**Sc-1**	45	39976.0	1.8				mg/L	40360	Standard
	Cl	35	3.3	34.6				ug/L	3	Standard
	Kr	83	3.7	31.5				ug/L	7	Standard
	Br	81	1489138.5	3.1				ug/L	2587	Standard
	P	31	70.0	12.4				ug/L	95	Standard
	S	34	20.0	25.0				ug/L	28	Standard
	Sr	88	198.3	29.4				ug/L	207	Standard
	C	12	90.0	40.1				mg/L	23	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	16.7	69.3				mg/L	3	Standard
	Dy	164	356.4	23.0				mg/L	6	Standard
	Ho-1	165	221.7	7.3				mg/L	12	Standard
	Er	166	283.3	33.4				mg/L	20	Standard
	I	127	106273.1	1.6				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.208	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.725	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.666
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.506
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703118002
Sample Date/Time: Thursday, March 23, 2017 17:34:12
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	295163.5	2.5				ug/L	269762	Standard
	Be	9	55.0	24.1	**0.0082**	0.005	63.6	ug/L	22	Standard
	Al	27	16522894.9	1.2	**82.2036**	2.781	3.4	ug/L	1527	Standard
	Sc	45	39860.7	3.3				ug/L	40360	Standard
	Ti	47	376.0	6.5	**1.4274**	0.111	7.8	ug/L	47	Standard
	V	51	4219.1	8.8	**0.3334**	0.040	12.0	ug/L	1402	Standard
	Cr	52	17463.4	1.7	**1.3385**	0.021	1.6	ug/L	6348	Standard
	Cr	53	4622.4	7.3	**4.0161**	0.365	9.1	ug/L	505	Standard
	Mn	55	383998.5	1.1	**27.2690**	0.395	1.4	ug/L	3411	Standard
	Co	59	4067.9	2.8	**0.3076**	0.007	2.3	ug/L	825	Standard
	Ni	60	5952.5	2.0	**2.2993**	0.030	1.3	ug/L	576	Standard
	Cu	65	13295.5	1.3	**5.2036**	0.111	2.1	ug/L	632	Standard
	Zn	66	26805.4	0.8	**18.2073**	0.195	1.1	ug/L	430	Standard
>	Ge	72	840818.2	1.2				ug/L	823185	Standard
	As	75	15875.0	1.0	**10.9370**	0.053	0.5	ug/L	-13	Standard
	Se	82	1920.7	2.3	**14.3390**	0.177	1.2	ug/L	20	Standard
	Se-1	77	517.0	3.0	**4.3636**	0.224	5.1	ug/L	106	Standard
>	Ga	71	496.7	6.4				mg/L	237	Standard
	Rb	85	113720.4	3.1				ug/L	52	Standard
	Y	89	591222.4	2.1				ug/L	565679	Standard
>	Rh	103	138.3	17.1				ug/L	18	Standard
	Mo	98	6084.0	2.1	**1.2937**	0.039	3.0	ug/L	56	Standard
	Ag	107	147.7	1.4	**-0.0001**	0.000	503.0	ug/L	128	Standard
	Cd	111	34.5	23.1	**0.0060**	0.004	63.4	mg/L	8	Standard
	Cd	114	31084.4	1.3	**5.5159**	0.088	1.6	ug/L	49	Standard
>	In	115	704994.5	1.6				ug/L	692408	Standard
	Sn	118	255399.5	1.5	**205.3191**	0.574	0.3	ug/L	269	Standard
	Sb	123	1164.5	1.6	**0.1879**	0.006	3.3	ug/L	358	Standard
	Ba	135	23223.1	0.7	**10.2746**	0.172	1.7	ug/L	64	Standard
	Ce	140	3420.4	14.6				ug/L	42	Standard
>	Tb	159	1093913.8	1.2				ug/L	1021298	Standard
	Ho	165	206.7	14.6				ug/L	12	Standard
	Tl	203	765.4	5.7	**0.0819**	0.004	5.0	ug/L	17	Standard
	Tl	205	1766.8	2.8	**0.0760**	0.002	2.3	ug/L	42	Standard
	Pb	206	2035.8	1.2	**0.2044**	0.002	1.0	ug/L	452	Standard
	Pb	207	1679.8	3.3	**0.1898**	0.007	3.5	ug/L	399	Standard
	Pb	208	2050.1	5.5	**0.1945**	0.013	6.5	ug/L	467	Standard
	U	238	286.0	9.7	**0.0459**	0.005	10.6	ug/L	8	Standard
>	Bi	209	630172.3	0.7				ug/L	599665	Standard

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⌈	**Na**	23	65.0	20.4	**25.6768**	5.616	21.9	mg/L	0	Standard
|	**Mg**	24	6821.5	0.1	**70.8126**	2.487	3.5	mg/L	30	Standard
|	**K**	39	810.0	3.3	**4.0452**	0.223	5.5	mg/L	18	Standard
|	**Ca**	43	130.0	16.8	**21.8189**	6.197	28.4	mg/L	65	Standard
|	**Fe**	54	106.0	18.9	**0.3491**	0.121	34.5	mg/L	40	Standard
|	**Fe**	57	410.0	24.5	**1.5890**	1.982	124.7	mg/L	342	Standard
⌊>	**Sc-1**	45	39860.7	3.3				mg/L	40360	Standard
	Cl	35	2.0	100.0				ug/L	3	Standard
	Kr	83	3.7	56.8				ug/L	7	Standard
	Br	81	1003909.6	1.4				ug/L	2587	Standard
	P	31	50.0	30.0				ug/L	95	Standard
	S	34	25.0	34.6				ug/L	28	Standard
	Sr	88	155.0	28.1				ug/L	207	Standard
	C	12	96.7	26.0				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	16.7	34.6				mg/L	3	Standard
	Dy	164	279.3	19.8				mg/L	6	Standard
	Ho-1	165	206.7	14.6				mg/L	12	Standard
	Er	166	223.3	39.1				mg/L	20	Standard
	I	127	110139.3	4.0				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		109.416	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		102.142	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.818
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.087
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703118301
Sample Date/Time: Thursday, March 23, 2017 17:37:18
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	297618.8	2.1				ug/L	269762	Standard
	Be	9	65.0	7.7	**0.0115**	0.002	14.4	ug/L	22	Standard
	Al	27	11629135.1	0.9	**57.3564**	0.751	1.3	ug/L	1527	Standard
	Sc	45	39225.8	4.0				ug/L	40360	Standard
	Ti	47	539.7	13.3	**2.1020**	0.256	12.2	ug/L	47	Standard
	V	51	8479.2	5.4	**0.8213**	0.040	4.8	ug/L	1402	Standard
	Cr	52	20146.1	1.9	**1.6365**	0.015	0.9	ug/L	6348	Standard
	Cr	53	5599.4	1.1	**4.9110**	0.118	2.4	ug/L	505	Standard
	Mn	55	486529.8	1.7	**34.1908**	0.551	1.6	ug/L	3411	Standard
	Co	59	4135.6	2.1	**0.3092**	0.002	0.6	ug/L	825	Standard
	Ni	60	4922.8	1.9	**1.8347**	0.044	2.4	ug/L	576	Standard
	Cu	65	15655.1	1.0	**6.0956**	0.112	1.8	ug/L	632	Standard
	Zn	66	27646.9	0.9	**18.5580**	0.302	1.6	ug/L	430	Standard
>	Ge	72	851265.9	2.5				ug/L	823185	Standard
	As	75	21904.7	1.8	**14.8916**	0.175	1.2	ug/L	-13	Standard
	Se	82	2410.7	2.2	**17.8168**	0.326	1.8	ug/L	20	Standard
	Se-1	77	478.3	2.6	**3.8944**	0.163	4.2	ug/L	106	Standard
>	Ga	71	746.7	11.5				mg/L	237	Standard
	Rb	85	80277.1	1.0				ug/L	52	Standard
	Y	89	602290.5	2.0				ug/L	565679	Standard
>	Rh	103	100.0	36.1				ug/L	18	Standard
	Mo	98	4937.4	2.3	**1.0363**	0.003	0.3	ug/L	56	Standard
	Ag	107	146.3	6.6	**-0.0004**	0.001	301.7	ug/L	128	Standard
	Cd	111	43.0	20.7	**0.0096**	0.004	39.1	mg/L	8	Standard
	Cd	114	38925.5	0.8	**6.8459**	0.129	1.9	ug/L	49	Standard
>	In	115	711754.6	2.2				ug/L	692408	Standard
	Sn	118	310760.6	1.5	**247.5917**	7.518	3.0	ug/L	269	Standard
	Sb	123	1073.0	3.9	**0.1701**	0.003	2.0	ug/L	358	Standard
	Ba	135	102610.6	0.9	**45.0941**	0.895	2.0	ug/L	64	Standard
	Ce	140	4018.9	9.2				ug/L	42	Standard
>	Tb	159	1085802.6	1.3				ug/L	1021298	Standard
	Ho	165	186.7	15.2				ug/L	12	Standard
	Tl	203	730.0	6.2	**0.0767**	0.004	5.4	ug/L	17	Standard
	Tl	205	1780.1	6.7	**0.0753**	0.004	5.6	ug/L	42	Standard
	Pb	206	2275.5	3.0	**0.2323**	0.006	2.6	ug/L	452	Standard
	Pb	207	1927.8	1.2	**0.2227**	0.001	0.4	ug/L	399	Standard
	Pb	208	2304.7	1.8	**0.2228**	0.008	3.7	ug/L	467	Standard
	U	238	350.3	6.6	**0.0557**	0.004	7.9	ug/L	8	Standard
>	Bi	209	640143.0	1.4				ug/L	599665	Standard

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⌈	**Na**	23	65.0	50.4	**26.0950**	14.154	54.2	mg/L	0	Standard
|	**Mg**	24	5034.2	1.4	**53.0436**	2.567	4.8	mg/L	30	Standard
|	**K**	39	588.3	7.7	**2.9450**	0.123	4.2	mg/L	18	Standard
|	**Ca**	43	81.7	14.1	**8.5339**	2.320	27.2	mg/L	65	Standard
|	**Fe**	54	82.7	53.6	**0.2221**	0.223	100.3	mg/L	40	Standard
|	**Fe**	57	411.7	13.1	**1.7475**	1.078	61.7	mg/L	342	Standard
⌊>	**Sc-1**	45	39225.8	4.0				mg/L	40360	Standard
	Cl	35	2.7	43.3				ug/L	3	Standard
	Kr	83	2.3	99.0				ug/L	7	Standard
	Br	81	1302025.4	1.4				ug/L	2587	Standard
	P	31	56.7	44.4				ug/L	95	Standard
	S	34	35.0	14.3				ug/L	28	Standard
	Sr	88	213.3	19.1				ug/L	207	Standard
	C	12	90.0	22.2				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	30.0	88.2				mg/L	3	Standard
	Dy	164	249.3	19.3				mg/L	6	Standard
	Ho-1	165	186.7	15.2				mg/L	12	Standard
	Er	166	153.3	37.7				mg/L	20	Standard
	I	127	75082.3	1.4				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		110.326	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.411	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.794
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.750
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703118302
Sample Date/Time: Thursday, March 23, 2017 17:40:23
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	297687.3	2.7				ug/L	269762	Standard
	Be	9	41.7	25.0	**0.0032**	0.003	107.7	ug/L	22	Standard
	Al	27	15690453.8	2.1	**77.3964**	2.737	3.5	ug/L	1527	Standard
	Sc	45	38642.6	3.3				ug/L	40360	Standard
	Ti	47	405.3	28.5	**1.5466**	0.486	31.4	ug/L	47	Standard
	V	51	3125.7	6.5	**0.2040**	0.017	8.3	ug/L	1402	Standard
	Cr	52	16103.9	0.9	**1.1676**	0.034	3.0	ug/L	6348	Standard
	Cr	53	5187.6	0.5	**4.5597**	0.137	3.0	ug/L	505	Standard
	Mn	55	371759.8	0.2	**26.3287**	0.616	2.3	ug/L	3411	Standard
	Co	59	3210.3	3.2	**0.2285**	0.006	2.6	ug/L	825	Standard
	Ni	60	4113.6	0.9	**1.5104**	0.029	1.9	ug/L	576	Standard
	Cu	65	11301.9	1.4	**4.3723**	0.111	2.5	ug/L	632	Standard
	Zn	66	26148.2	1.5	**17.7067**	0.213	1.2	ug/L	430	Standard
>	Ge	72	843068.4	2.4				ug/L	823185	Standard
	As	75	9020.6	1.4	**6.2183**	0.103	1.7	ug/L	-13	Standard
	Se	82	988.4	2.7	**7.2866**	0.172	2.4	ug/L	20	Standard
	Se-1	77	508.0	2.1	**4.2565**	0.232	5.4	ug/L	106	Standard
>	Ga	71	515.0	16.6				mg/L	237	Standard
	Rb	85	92935.9	2.5				ug/L	52	Standard
	Y	89	594489.1	1.0				ug/L	565679	Standard
>	Rh	103	96.7	24.4				ug/L	18	Standard
	Mo	98	5426.0	0.5	**1.1482**	0.010	0.9	ug/L	56	Standard
	Ag	107	193.0	34.2	**0.0058**	0.009	152.1	ug/L	128	Standard
	Cd	111	45.7	60.5	**0.0111**	0.013	114.8	mg/L	8	Standard
	Cd	114	31811.0	0.8	**5.6283**	0.120	2.1	ug/L	49	Standard
>	In	115	707165.5	1.4				ug/L	692408	Standard
	Sn	118	256156.0	1.9	**205.3011**	3.490	1.7	ug/L	269	Standard
	Sb	123	1032.9	5.3	**0.1645**	0.012	7.2	ug/L	358	Standard
	Ba	135	21831.7	1.4	**9.6255**	0.036	0.4	ug/L	64	Standard
	Ce	140	3300.4	22.8				ug/L	42	Standard
>	Tb	159	1091709.5	0.3				ug/L	1021298	Standard
	Ho	165	160.0	13.6				ug/L	12	Standard
	Tl	203	824.7	8.5	**0.0876**	0.007	8.1	ug/L	17	Standard
	Tl	205	1998.5	3.4	**0.0853**	0.003	3.7	ug/L	42	Standard
	Pb	206	2016.8	3.1	**0.1996**	0.007	3.5	ug/L	452	Standard
	Pb	207	1710.8	2.7	**0.1924**	0.005	2.8	ug/L	399	Standard
	Pb	208	2039.1	0.8	**0.1911**	0.004	2.0	ug/L	467	Standard
	U	238	181.7	23.8	**0.0282**	0.007	24.8	ug/L	8	Standard
>	Bi	209	635254.0	0.7				ug/L	599665	Standard

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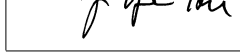

⌈	**Na**	23	41.7	25.0	**16.3971**	3.959	24.1	mg/L	0	Standard
|	**Mg**	24	5169.2	4.3	**55.3174**	3.994	7.2	mg/L	30	Standard
|	**K**	39	650.0	5.4	**3.3205**	0.072	2.2	mg/L	18	Standard
|	**Ca**	43	81.7	25.5	**9.0580**	6.726	74.3	mg/L	65	Standard
|	**Fe**	54	82.3	40.2	**0.2341**	0.190	81.0	mg/L	40	Standard
|	**Fe**	57	400.0	9.0	**1.6496**	0.923	56.0	mg/L	342	Standard
⌊>	**Sc-1**	45	38642.6	3.3				mg/L	40360	Standard
	Cl	35	4.0	86.6				ug/L	3	Standard
	Kr	83	2.7	43.3				ug/L	7	Standard
	Br	81	513466.8	2.9				ug/L	2587	Standard
	P	31	70.0	25.8				ug/L	95	Standard
	S	34	18.3	56.8				ug/L	28	Standard
	Sr	88	171.7	4.4				ug/L	207	Standard
	C	12	53.3	28.6				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	86.6				mg/L	3	Standard
	Dy	164	194.7	32.7				mg/L	6	Standard
	Ho-1	165	160.0	13.6				mg/L	12	Standard
	Er	166	180.0	33.8				mg/L	20	Standard
	I	127	75404.1	4.3				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		110.352	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		102.415	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.131
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.935
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703118401
Sample Date/Time: Thursday, March 23, 2017 17:43:29
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	301651.7	0.9				ug/L	269762	Standard
	Be	9	50.0	34.6	**0.0059**	0.006	103.5	ug/L	22	Standard
	Al	27	11701384.3	0.6	**56.9324**	0.214	0.4	ug/L	1527	Standard
	Sc	45	39227.4	2.1				ug/L	40360	Standard
	Ti	47	640.0	27.3	**2.5513**	0.756	29.6	ug/L	47	Standard
	V	51	8501.4	6.5	**0.8299**	0.061	7.3	ug/L	1402	Standard
	Cr	52	20645.1	1.7	**1.7113**	0.014	0.8	ug/L	6348	Standard
	Cr	53	6824.9	2.7	**6.1410**	0.106	1.7	ug/L	505	Standard
	Mn	55	530167.6	1.2	**37.4954**	0.056	0.1	ug/L	3411	Standard
	Co	59	4325.6	1.1	**0.3288**	0.009	2.8	ug/L	825	Standard
	Ni	60	5110.9	2.6	**1.9260**	0.030	1.6	ug/L	576	Standard
	Cu	65	18289.7	3.0	**7.2069**	0.135	1.9	ug/L	632	Standard
	Zn	66	27970.5	0.9	**18.8881**	0.094	0.5	ug/L	430	Standard
>	Ge	72	846225.7	1.3				ug/L	823185	Standard
	As	75	23873.5	0.5	**16.3227**	0.288	1.8	ug/L	-13	Standard
	Se	82	2847.4	0.8	**21.1973**	0.351	1.7	ug/L	20	Standard
	Se-1	77	523.7	7.9	**4.4013**	0.503	11.4	ug/L	106	Standard
>	Ga	71	711.7	8.4				mg/L	237	Standard
	Rb	85	81795.2	1.4				ug/L	52	Standard
	Y	89	599031.7	1.3				ug/L	565679	Standard
>	Rh	103	80.0	22.5				ug/L	18	Standard
	Mo	98	5019.9	0.6	**1.0486**	0.013	1.2	ug/L	56	Standard
	Ag	107	158.0	15.3	**0.0010**	0.003	325.5	ug/L	128	Standard
	Cd	111	42.2	37.4	**0.0092**	0.007	77.1	mg/L	8	Standard
	Cd	114	42643.1	0.8	**7.4610**	0.028	0.4	ug/L	49	Standard
>	In	115	715387.2	0.7				ug/L	692408	Standard
	Sn	118	339848.8	1.1	**269.3032**	1.737	0.6	ug/L	269	Standard
	Sb	123	1119.8	2.9	**0.1773**	0.007	3.9	ug/L	358	Standard
	Ba	135	103677.5	0.9	**45.3195**	0.135	0.3	ug/L	64	Standard
	Ce	140	3732.1	2.4				ug/L	42	Standard
>	Tb	159	1093314.0	0.8				ug/L	1021298	Standard
	Ho	165	193.3	8.3				ug/L	12	Standard
	Tl	203	671.3	8.2	**0.0705**	0.006	8.1	ug/L	17	Standard
	Tl	205	1610.1	9.5	**0.0682**	0.006	9.4	ug/L	42	Standard
	Pb	206	2522.5	2.7	**0.2658**	0.010	3.8	ug/L	452	Standard
	Pb	207	2109.1	1.3	**0.2498**	0.003	1.1	ug/L	399	Standard
	Pb	208	2569.8	2.1	**0.2566**	0.006	2.4	ug/L	467	Standard
	U	238	363.3	7.4	**0.0578**	0.005	8.0	ug/L	8	Standard
>	Bi	209	639616.3	0.4				ug/L	599665	Standard

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⌈	**Na**	23	53.3	5.4	**21.1672**	1.632	7.7	mg/L	0	Standard
|	**Mg**	24	5337.6	7.6	**56.1575**	3.387	6.0	mg/L	30	Standard
|	**K**	39	613.3	10.3	**3.0767**	0.291	9.5	mg/L	18	Standard
|	**Ca**	43	81.7	24.7	**8.6296**	6.012	69.7	mg/L	65	Standard
|	**Fe**	54	116.1	17.7	**0.4119**	0.101	24.6	mg/L	40	Standard
|	**Fe**	57	411.7	8.1	**1.7405**	0.571	32.8	mg/L	342	Standard
⌊>	**Sc-1**	45	39227.4	2.1				mg/L	40360	Standard
	Cl	35	4.7	49.5				ug/L	3	Standard
	Kr	83	1.0	100.0				ug/L	7	Standard
	Br	81	1519919.5	1.7				ug/L	2587	Standard
	P	31	75.0	40.0				ug/L	95	Standard
	S	34	15.0	66.7				ug/L	28	Standard
	Sr	88	163.3	18.7				ug/L	207	Standard
	C	12	80.0	57.3				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	46.7	61.9				mg/L	3	Standard
	Dy	164	285.7	10.0				mg/L	6	Standard
	Ho-1	165	193.3	8.3				mg/L	12	Standard
	Er	166	160.0	50.0				mg/L	20	Standard
	I	127	77246.5	2.2				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		111.821	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		102.799	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.319
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.662
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703118402
Sample Date/Time: Thursday, March 23, 2017 17:46:34
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	301514.1	1.2				ug/L	269762	Standard
	Be	9	40.0	33.1	**0.0024**	0.005	191.0	ug/L	22	Standard
	Al	27	14498406.8	0.5	**70.5779**	0.729	1.0	ug/L	1527	Standard
	Sc	45	38478.8	2.1				ug/L	40360	Standard
	Ti	47	268.3	3.5	**0.9513**	0.041	4.3	ug/L	47	Standard
	V	51	2314.8	3.0	**0.1076**	0.010	9.1	ug/L	1402	Standard
	Cr	52	15294.7	2.5	**1.0568**	0.060	5.7	ug/L	6348	Standard
	Cr	53	5601.0	2.9	**4.9292**	0.172	3.5	ug/L	505	Standard
	Mn	55	350868.6	0.7	**24.6683**	0.353	1.4	ug/L	3411	Standard
	Co	59	2830.6	8.1	**0.1923**	0.023	11.8	ug/L	825	Standard
	Ni	60	4928.5	8.0	**1.8442**	0.181	9.8	ug/L	576	Standard
	Cu	65	9697.4	1.0	**3.6880**	0.057	1.6	ug/L	632	Standard
	Zn	66	19395.7	0.8	**12.9664**	0.019	0.1	ug/L	430	Standard
>	Ge	72	848479.3	0.7				ug/L	823185	Standard
	As	75	7249.4	0.9	**4.9732**	0.007	0.1	ug/L	-13	Standard
	Se	82	818.7	1.5	**5.9699**	0.128	2.1	ug/L	20	Standard
	Se-1	77	500.0	7.5	**4.1371**	0.424	10.3	ug/L	106	Standard
>	Ga	71	661.7	2.2				mg/L	237	Standard
	Rb	85	85426.8	1.2				ug/L	52	Standard
	Y	89	593490.3	2.1				ug/L	565679	Standard
>	Rh	103	71.7	28.2				ug/L	18	Standard
	Mo	98	4865.5	1.7	**1.0355**	0.036	3.5	ug/L	56	Standard
	Ag	107	155.7	11.0	**0.0011**	0.003	242.8	ug/L	128	Standard
	Cd	111	34.1	36.0	**0.0059**	0.006	99.4	mg/L	8	Standard
	Cd	114	31673.6	1.6	**5.6426**	0.088	1.6	ug/L	49	Standard
>	In	115	702252.7	1.7				ug/L	692408	Standard
	Sn	118	254552.6	0.9	**205.4538**	1.661	0.8	ug/L	269	Standard
	Sb	123	888.9	3.6	**0.1406**	0.007	5.3	ug/L	358	Standard
	Ba	135	16234.4	1.3	**7.1990**	0.052	0.7	ug/L	64	Standard
	Ce	140	2488.5	4.1				ug/L	42	Standard
>	Tb	159	1076760.8	1.1				ug/L	1021298	Standard
	Ho	165	128.3	26.5				ug/L	12	Standard
	Tl	203	807.7	1.7	**0.0861**	0.003	3.2	ug/L	17	Standard
	Tl	205	1878.4	0.3	**0.0804**	0.001	1.1	ug/L	42	Standard
	Pb	206	1732.4	1.1	**0.1618**	0.001	0.6	ug/L	452	Standard
	Pb	207	1459.4	2.0	**0.1554**	0.003	2.2	ug/L	399	Standard
	Pb	208	1732.0	1.5	**0.1525**	0.006	4.1	ug/L	467	Standard
	U	238	147.3	14.6	**0.0227**	0.004	17.0	ug/L	8	Standard
>	Bi	209	633408.0	1.4				ug/L	599665	Standard

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⌈	**Na**	23	50.0	26.5	**20.0927**	5.343	26.6	mg/L	0	Standard
|	**Mg**	24	4997.5	2.2	**53.6364**	1.878	3.5	mg/L	30	Standard
|	**K**	39	620.0	7.0	**3.1787**	0.264	8.3	mg/L	18	Standard
|	**Ca**	43	95.0	19.0	**12.8610**	4.719	36.7	mg/L	65	Standard
|	**Fe**	54	82.8	29.3	**0.2386**	0.144	60.2	mg/L	40	Standard
|	**Fe**	57	403.3	13.3	**1.7322**	1.039	60.0	mg/L	342	Standard
⌊>	**Sc-1**	45	38478.8	2.1				mg/L	40360	Standard
	Cl	35	3.3	34.6				ug/L	3	Standard
	Kr	83	1.3	114.6				ug/L	7	Standard
	Br	81	430564.4	3.8				ug/L	2587	Standard
	P	31	65.0	15.4				ug/L	95	Standard
	S	34	26.7	28.6				ug/L	28	Standard
	Sr	88	156.7	21.7				ug/L	207	Standard
	C	12	63.3	9.1				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	173.2				mg/L	3	Standard
	Dy	164	147.3	14.0				mg/L	6	Standard
	Ho-1	165	128.3	26.5				mg/L	12	Standard
	Er	166	126.7	9.1				mg/L	20	Standard
	I	127	66547.5	2.2				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		111.770	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.073	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.422
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.627
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, March 23, 2017 17:49:41
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	288188.5	4.5				ug/L	269762	Standard
	Be	9	134139.5	1.0	**49.2469**	2.469	5.0	ug/L	22	Standard
	Al	27	9004231.8	1.7	**45.8950**	1.382	3.0	ug/L	1527	Standard
	Sc	45	38144.6	1.1				ug/L	40360	Standard
	Ti	47	22498.0	0.4	**98.2713**	1.801	1.8	ug/L	47	Standard
	V	51	405915.1	0.3	**48.1024**	0.945	2.0	ug/L	1402	Standard
	Cr	52	395588.1	0.7	**48.1786**	0.782	1.6	ug/L	6348	Standard
	Cr	53	48726.6	1.3	**48.0798**	0.605	1.3	ug/L	505	Standard
	Mn	55	678103.0	0.6	**48.9506**	0.812	1.7	ug/L	3411	Standard
	Co	59	532650.0	1.3	**49.2264**	0.547	1.1	ug/L	825	Standard
	Ni	60	113204.7	0.8	**48.6817**	1.072	2.2	ug/L	576	Standard
	Cu	65	119179.2	0.7	**49.3504**	0.829	1.7	ug/L	632	Standard
	Zn	66	71326.5	0.9	**49.5850**	0.842	1.7	ug/L	430	Standard
>	Ge	72	830506.1	2.2				ug/L	823185	Standard
	As	75	71880.7	1.5	**49.9836**	0.489	1.0	ug/L	-13	Standard
	Se	82	6833.2	1.8	**52.0504**	0.617	1.2	ug/L	20	Standard
	Se-1	77	4808.4	3.3	**50.2026**	1.608	3.2	ug/L	106	Standard
>	Ga	71	110.0	19.8				mg/L	237	Standard
	Rb	85	460.0	2.9				ug/L	52	Standard
	Y	89	581992.1	2.2				ug/L	565679	Standard
>	Rh	103	46.7	16.4				ug/L	18	Standard
	Mo	98	470643.6	0.6	**103.1480**	1.775	1.7	ug/L	56	Standard
	Ag	107	388126.0	1.1	**51.7708**	0.593	1.1	ug/L	128	Standard
	Cd	111	109761.1	0.2	**50.8442**	1.072	2.1	mg/L	8	Standard
	Cd	114	280770.3	0.9	**50.8198**	0.607	1.2	ug/L	49	Standard
>	In	115	692710.9	2.0				ug/L	692408	Standard
	Sn	118	64075.9	2.1	**52.2709**	1.280	2.4	ug/L	269	Standard
	Sb	123	283388.8	0.5	**50.2153**	0.995	2.0	ug/L	358	Standard
	Ba	135	109487.2	0.8	**49.4377**	0.623	1.3	ug/L	64	Standard
	Ce	140	325.0	8.1				ug/L	42	Standard
>	Tb	159	1056823.9	1.6				ug/L	1021298	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	458752.5	0.3	**49.5879**	0.775	1.6	ug/L	17	Standard
	Tl	205	1105762.4	1.5	**46.9758**	0.835	1.8	ug/L	42	Standard
	Pb	206	372940.3	0.2	**50.0665**	0.622	1.2	ug/L	452	Standard
	Pb	207	337225.2	0.2	**50.0550**	0.578	1.2	ug/L	399	Standard
	Pb	208	395488.0	0.1	**50.1268**	0.698	1.4	ug/L	467	Standard
	U	238	326851.2	0.2	**53.6007**	0.803	1.5	ug/L	8	Standard
>	Bi	209	639615.3	1.3				ug/L	599665	Standard

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⌈	**Na**	23	10.0	100.0	**2.9291**	4.311	147.2	mg/L	0	Standard
|	**Mg**	24	398.3	1.9	**3.9943**	0.112	2.8	mg/L	30	Standard
|	**K**	39	755.0	7.4	**3.9312**	0.260	6.6	mg/L	18	Standard
|	**Ca**	43	61.7	26.1	**3.3855**	4.691	138.6	mg/L	65	Standard
|	**Fe**	54	856.2	3.1	**4.6474**	0.118	2.5	mg/L	40	Standard
|	**Fe**	57	556.7	6.6	**4.9517**	0.815	16.5	mg/L	342	Standard
⌊>	**Sc-1**	45	38144.6	1.1				mg/L	40360	Standard
	Cl	35	0.0					ug/L	3	Standard
	Kr	83	2.3	107.9				ug/L	7	Standard
	Br	81	11571.2	18.1				ug/L	2587	Standard
	P	31	78.3	31.5				ug/L	95	Standard
	S	34	31.7	39.7				ug/L	28	Standard
	Sr	88	178.3	7.1				ug/L	207	Standard
	C	12	36.7	41.7				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	19.4	50.5				mg/L	6	Standard
	Ho-1	165	11.7	24.7				mg/L	12	Standard
	Er	166	13.3	114.6				mg/L	20	Standard
	I	127	3538.8	14.7				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	98.494		
⌊	Al	27	91.790		
⌈	Sc	45			
|	Ti	47	98.271		
|	V	51	96.205		
|	Cr	52	96.357		
|	Cr	53			
|	Mn	55	97.901		
|	Co	59	98.453		
|	Ni	60	97.363		
|	Cu	65	98.701		
|	Zn	66	99.170		
|>	Ge	72		100.889	
|	As	75	99.967		
|	Se	82	104.101		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	103.148	
|	Ag	107	103.542	
|	Cd	111	101.688	
|	Cd	114		
|>	In	115		100.044
|	Sn	118	104.542	
|	Sb	123	100.431	
⌊	Ba	135	98.875	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.176	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	100.254	
|	U	238	107.201	
⌊>	Bi	209		106.662
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, March 23, 2017 17:52:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	284491.6	3.6				ug/L	269762	Standard
	Be	9	46.7	16.4	**0.0057**	0.002	38.7	ug/L	22	Standard
	Al	27	1235.1	18.7	**0.0036**	0.001	31.4	ug/L	1527	Standard
	Sc	45	38296.7	3.1				ug/L	40360	Standard
	Ti	47	31.0	3.2	**-0.0595**	0.007	12.2	ug/L	47	Standard
	V	51	1240.2	3.3	**-0.0113**	0.007	63.5	ug/L	1402	Standard
	Cr	52	5759.1	2.3	**-0.0691**	0.007	9.6	ug/L	6348	Standard
	Cr	53	480.0	10.0	**-0.0526**	0.040	76.5	ug/L	505	Standard
	Mn	55	2028.1	4.2	**-0.0913**	0.002	2.2	ug/L	3411	Standard
	Co	59	370.3	1.5	**-0.0291**	0.001	4.7	ug/L	825	Standard
	Ni	60	331.7	2.7	**-0.0944**	0.008	8.7	ug/L	576	Standard
	Cu	65	769.4	3.0	**0.0640**	0.006	8.6	ug/L	632	Standard
	Zn	66	422.0	2.5	**-0.0102**	0.007	72.8	ug/L	430	Standard
>	Ge	72	813937.6	2.9				ug/L	823185	Standard
	As	75	2.1	520.6	**0.0454**	0.008	16.8	ug/L	-13	Standard
	Se	82	34.4	24.2	**0.1153**	0.057	49.6	ug/L	20	Standard
	Se-1	77	93.3	6.5	**-0.0692**	0.038	54.2	ug/L	106	Standard
>	Ga	71	50.0	26.5				mg/L	237	Standard
	Rb	85	55.0	24.1				ug/L	52	Standard
	Y	89	567623.7	3.2				ug/L	565679	Standard
>	Rh	103	31.7	39.7				ug/L	18	Standard
	Mo	98	363.7	20.1	**0.0646**	0.014	22.3	ug/L	56	Standard
	Ag	107	145.7	8.7	**0.0005**	0.002	381.8	ug/L	128	Standard
	Cd	111	5.2	46.9	**-0.0072**	0.001	15.4	mg/L	8	Standard
	Cd	114	53.5	24.7	**-0.0037**	0.002	62.1	ug/L	49	Standard
>	In	115	676868.7	2.4				ug/L	692408	Standard
	Sn	118	365.3	6.3	**0.0870**	0.024	27.6	ug/L	269	Standard
	Sb	123	324.3	11.6	**0.0440**	0.007	16.2	ug/L	358	Standard
	Ba	135	53.0	11.3	**-0.0118**	0.003	26.0	ug/L	64	Standard
	Ce	140	21.7	48.0				ug/L	42	Standard
>	Tb	159	1035028.9	2.7				ug/L	1021298	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	91.7	20.3	**0.0080**	0.002	23.1	ug/L	17	Standard
	Tl	205	240.0	18.5	**0.0102**	0.002	16.8	ug/L	42	Standard
	Pb	206	490.3	5.4	**-0.0061**	0.002	38.1	ug/L	452	Standard
	Pb	207	415.3	7.8	**-0.0006**	0.003	540.8	ug/L	399	Standard
	Pb	208	488.7	5.7	**-0.0062**	0.003	40.4	ug/L	467	Standard
	U	238	27.0	17.0	**0.0028**	0.001	28.8	ug/L	8	Standard
>	Bi	209	626695.8	2.3				ug/L	599665	Standard

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	Na	23	0.0		**-1.4118**	0.000	0.0	mg/L	0	Standard
	Mg	24	26.7	43.3	**-0.0571**	0.119	207.8	mg/L	30	Standard
	K	39	23.3	49.5	**-0.0079**	0.064	803.3	mg/L	18	Standard
	Ca	43	30.0	72.6	**-6.0261**	6.141	101.9	mg/L	65	Standard
	Fe	54	29.3	59.1	**-0.0632**	0.100	158.1	mg/L	40	Standard
	Fe	57	321.7	11.8	**0.1064**	0.731	687.4	mg/L	342	Standard
>	**Sc-1**	45	38296.7	3.1				mg/L	40360	Standard
	Cl	35	0.7	173.2				ug/L	3	Standard
	Kr	83	3.3	45.8				ug/L	7	Standard
	Br	81	6774.9	4.9				ug/L	2587	Standard
	P	31	68.3	18.4				ug/L	95	Standard
	S	34	21.7	26.6				ug/L	28	Standard
	Sr	88	141.7	7.3				ug/L	207	Standard
	C	12	23.3	107.9				mg/L	23	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	19.5	52.5				mg/L	6	Standard
	Ho-1	165	11.7	65.5				mg/L	12	Standard
	Er	166	10.0	100.0				mg/L	20	Standard
	I	127	5812.8	3.0				mg/L	5339	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.877	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	97.756
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	104.508
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexION Data\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

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Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1319	2026	0.705	
Mg	23.985	23.975	4499	2021	0.708	
Co	58.933	58.925	11692	2023	0.689	
In	114.904	114.925	22859	2029	0.691	
U	238.050	238.075	47456	2046	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	10.511
5.575	4.521
5.625	3.060
5.675	1.407
5.725	1.702
5.775	1.110
5.825	1.128
5.875	2.348
5.925	1.774
5.975	1.676
6.025	0.221
6.075	1.806
6.125	1.951
6.175	1.704
6.225	0.769
6.275	2.685
6.325	9.565
6.375	44.605
6.425	71.261
6.475	10.648
6.525	15.215
6.575	12.539
6.625	5.091
6.675	2.360
6.725	0.818
6.775	1.227
6.825	1.668

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6.875	0.785
6.925	1.056
6.975	0.789
7.025	1.132
7.075	1.390
7.125	1.838
7.175	0.873
7.225	1.423
7.275	2.100
7.325	1.082
7.375	5.275
7.425	45.913
7.475	49.793
7.525	71.261
7.575	70.613
7.625	106.066
7.675	129.603
7.725	64.438
7.775	20.328
7.825	43.853
7.875	43.241
7.925	69.869
7.975	61.237
8.025	51.602
8.075	70.711
8.125	37.268
8.175	47.140
8.225	51.349
8.275	72.436
8.325	46.481
8.375	69.722
8.425	46.481
8.475	61.237
22.525	91.287
22.575	31.044
22.625	38.030
22.675	14.425
22.725	68.316
22.775	46.967
22.825	22.588
22.875	24.601
22.925	19.457
22.975	33.503
23.025	39.123
23.075	45.913
23.125	21.114
23.175	36.444

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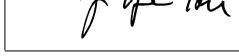

23.225	31.186
23.275	37.171
23.325	32.407
23.375	39.316
23.425	15.385
23.475	5.257
23.525	2.750
23.575	2.313
23.625	1.457
23.675	0.323
23.725	1.135
23.775	0.794
23.825	0.918
23.875	0.934
23.925	0.705
23.975	0.935
24.025	0.610
24.075	0.512
24.125	0.589
24.175	1.653
24.225	1.196
24.275	2.211
24.325	2.171
24.375	49.155
24.425	23.234
24.475	18.378
24.525	4.129
24.575	1.802
24.625	1.807
24.675	1.662
24.725	2.141
24.775	0.779
24.825	2.031
24.875	1.640
24.925	1.796
24.975	1.889
25.025	1.662
25.075	1.203
25.125	1.827
25.175	1.574
25.225	1.845
25.275	8.440
25.325	16.110
25.375	63.246
25.425	30.322
25.475	21.597
57.525	6.298

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57.575	2.207
57.625	1.422
57.675	2.303
57.725	2.064
57.775	1.649
57.825	2.065
57.875	1.368
57.925	0.692
57.975	1.466
58.025	0.607
58.075	0.999
58.125	1.067
58.175	2.113
58.225	3.515
58.275	23.406
58.325	26.769
58.375	22.720
58.425	10.137
58.475	8.304
58.525	4.604
58.575	2.725
58.625	1.743
58.675	1.254
58.725	2.187
58.775	1.228
58.825	1.240
58.875	0.890
58.925	0.560
58.975	2.861
59.025	0.884
59.075	2.233
59.125	1.028
59.175	0.654
59.225	7.188
59.275	16.347
59.325	67.748
59.375	82.402
59.425	43.026
59.475	11.874
59.525	6.059
59.575	4.243
59.625	4.834
59.675	2.293
59.725	1.524
59.775	3.661
59.825	3.166
59.875	3.193

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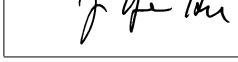

59.925	4.026
59.975	3.539
60.025	2.292
60.075	2.157
60.125	4.383
60.175	3.131
60.225	8.442
60.275	31.780
60.325	84.735
60.375	43.853
60.425	74.154
60.475	47.380
113.525	6.249
113.575	5.265
113.625	3.047
113.675	0.745
113.725	1.516
113.775	2.901
113.825	1.585
113.875	0.583
113.925	1.681
113.975	1.439
114.025	1.531
114.075	1.631
114.125	1.651
114.175	1.411
114.225	3.040
114.275	5.952
114.325	14.048
114.375	26.702
114.425	29.821
114.475	8.937
114.525	6.846
114.575	2.739
114.625	1.801
114.675	0.993
114.725	2.667
114.775	0.934
114.825	1.744
114.875	1.108
114.925	1.509
114.975	1.058
115.025	1.801
115.075	1.194
115.125	1.326
115.175	1.156
115.225	1.426

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115.275	3.397
115.325	2.987
115.375	44.628
115.425	45.644
115.475	22.222
115.525	10.159
115.575	11.135
115.625	5.514
115.675	9.236
115.725	2.131
115.775	3.300
115.825	3.001
115.875	5.646
115.925	3.523
115.975	4.536
116.025	2.773
116.075	2.031
116.125	1.314
116.175	3.810
116.225	3.865
116.275	10.860
116.325	18.133
116.375	19.444
116.425	41.691
116.475	39.033
236.525	
236.575	21.812
236.625	33.048
236.675	12.163
236.725	21.317
236.775	15.901
236.825	27.082
236.875	20.242
236.925	18.088
236.975	15.710
237.025	36.647
237.075	23.044
237.125	25.529
237.175	14.650
237.225	10.012
237.275	25.408
237.325	31.367
237.375	6.858
237.425	24.594
237.475	29.954
237.525	27.288
237.575	22.794

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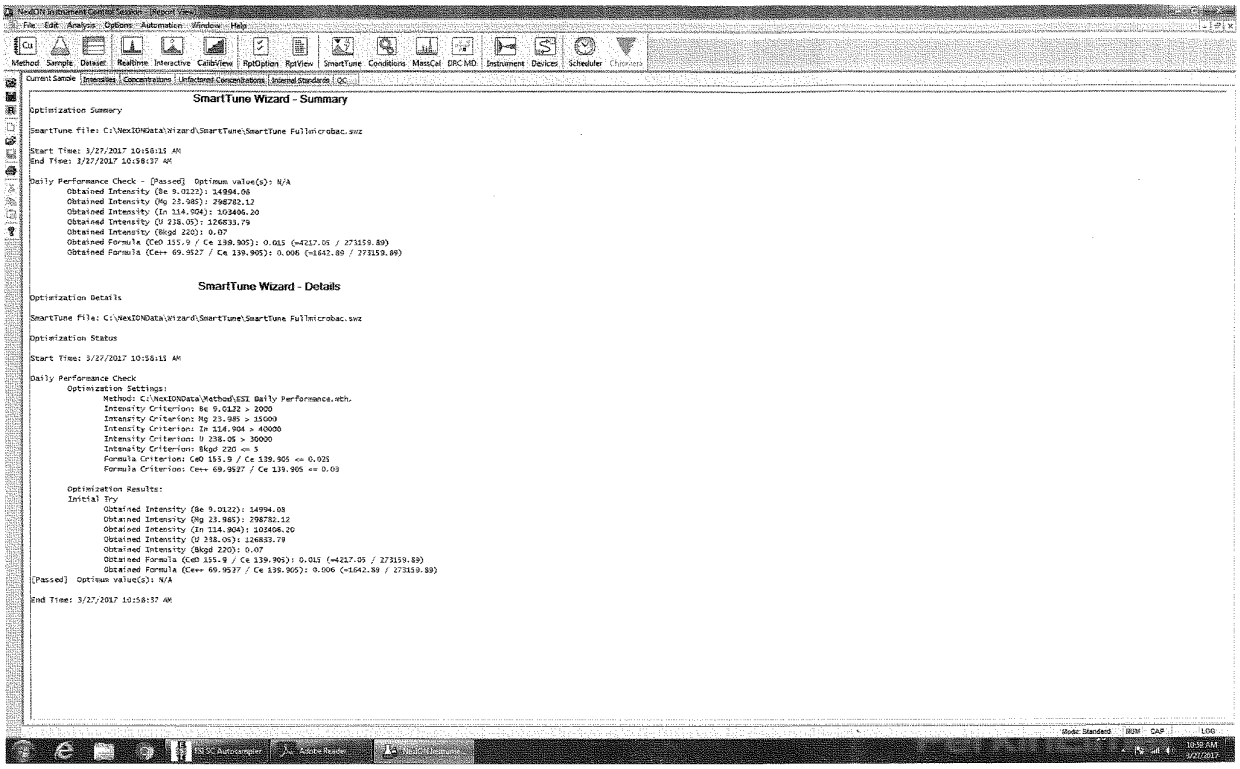
237.625	9.892
237.675	3.250
237.725	5.678
237.775	1.873
237.825	3.181
237.875	2.129
237.925	1.836
237.975	1.890
238.025	0.969
238.075	1.255
238.125	0.511
238.175	1.423
238.225	1.154
238.275	1.049
238.325	1.508
238.375	2.275
238.425	2.119
238.475	1.112
238.525	7.757
238.575	13.324
238.625	18.222
238.675	19.518
238.725	17.255
238.775	16.564
238.825	18.442
238.875	21.221
238.925	21.706
238.975	21.520
239.025	20.787
239.075	29.433
239.125	29.691
239.175	24.341
239.225	31.276
239.275	21.195
239.325	17.320
239.375	38.379
239.425	22.482
239.475	14.038

Approved: March 28, 2017





SmartTune Wizard - Summary

Optimization Summary

SmartTune file: C:\NexION\Data\Wizard\SmartTune\SmartTune Full\microbac.swz

Start Time: 3/27/2017 10:58:15 AM
End Time: 3/27/2017 10:58:37 AM

Daily Performance Check - [Passed] Optimum value(s): N/A
Obtained Intensity (Be 9.0122): 14994.08
Obtained Intensity (Mg 23.985): 298782.12
Obtained Intensity (In 114.904): 102406.20
Obtained Intensity (U 238.05): 126833.79
Obtained Intensity (Bkgd 220): 0.07
Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=4217.05 / 273159.89)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1642.89 / 273159.89)

SmartTune Wizard - Details

Optimization Details

SmartTune file: C:\NexION\Data\Wizard\SmartTune\SmartTune Full\microbac.swz

Optimization Status

Start Time: 3/27/2017 10:58:15 AM

Daily Performance Check
Optimization Settings:
Method: C:\NexION\Data\Method\ESI Daily Performance.mth.
Intensity Criterion: Be 9.0122 > 2000
Intensity Criterion: Mg 23.985 > 15000
Intensity Criterion: In 114.904 > 40000
Intensity Criterion: U 238.05 > 30000
Intensity Criterion: Bkgd 220 <= 3
Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

Optimization Results:
Initial Try
Obtained Intensity (Be 9.0122): 14994.08
Obtained Intensity (Mg 23.985): 298782.12
Obtained Intensity (In 114.904): 102406.20
Obtained Intensity (U 238.05): 126833.79
Obtained Intensity (Bkgd 220): 0.07
Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=4217.05 / 273159.89)
Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1642.89 / 273159.89)
[Passed] Optimum value(s): N/A

End Time: 3/27/2017 10:58:37 AM

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, March 27, 2017 11:21:12
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	262784.6	1.5				ug/L		Standard
	Be	9	28.3	56.7				ug/L		Standard
	Al	27	2186.8	5.0				ug/L		Standard
	Sc	45	39299.2	1.4				ug/L		Standard
	Ti	47	82.3	18.3				ug/L		Standard
	V	51	1875.5	1.9				ug/L		Standard
	Cr	52	8220.6	1.7				ug/L		Standard
	Cr	53	1083.4	3.3				ug/L		Standard
	Mn	55	2737.9	3.0				ug/L		Standard
	Co	59	635.0	1.8				ug/L		Standard
	Ni	60	260.7	7.7				ug/L		Standard
	Cu	65	659.7	2.4				ug/L		Standard
	Zn	66	558.0	6.5				ug/L		Standard
>	Ge	72	807250.9	1.2				ug/L		Standard
	As	75	-42.8	56.3				ug/L		Standard
	Se	82	17.8	39.9				ug/L		Standard
	Se-1	77	126.7	9.4				ug/L		Standard
>	Ga	71	31.7	32.9				mg/L		Standard
	Rb	85	26.7	39.0				ug/L		Standard
	Y	89	534993.9	1.2				ug/L		Standard
>	Rh	103	20.0	25.0				ug/L		Standard
	Mo	98	285.5	29.8				ug/L		Standard
	Ag	107	129.3	12.5				ug/L		Standard
	Cd	111	5.6	34.6				mg/L		Standard
	Cd	114	45.7	69.2				ug/L		Standard
>	In	115	679215.2	1.4				ug/L		Standard
	Sn	118	410.7	16.8				ug/L		Standard
	Sb	123	497.0	29.2				ug/L		Standard
	Ba	135	43.3	19.6				ug/L		Standard
	Ce	140	21.7	13.3				ug/L		Standard
>	Tb	159	983965.4	0.1				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	248.0	17.7				ug/L		Standard
	Tl	205	620.0	25.4				ug/L		Standard
	Pb	206	502.7	2.0				ug/L		Standard
	Pb	207	406.3	1.5				ug/L		Standard
	Pb	208	497.0	2.3				ug/L		Standard
	U	238	17.0	58.8				ug/L		Standard
>	Bi	209	559220.7	0.2				ug/L		Standard

Sample ID: Blank
Report Date/Time: Monday, March 27, 2017 11:23:23
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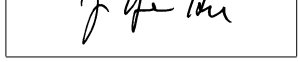

Na	23	1.7	173.2	mg/L	Standard
Mg	24	33.3	17.3	mg/L	Standard
K	39	18.3	15.7	mg/L	Standard
Ca	43	71.7	24.5	mg/L	Standard
Fe	54	29.2	17.1	mg/L	Standard
Fe	57	381.7	11.3	mg/L	Standard
Sc-1	45	39299.2	1.4	mg/L	Standard
Cl	35	4.0	50.0	ug/L	Standard
Kr	83	3.3	91.7	ug/L	Standard
Br	81	2286.8	11.2	ug/L	Standard
P	31	80.0	21.7	ug/L	Standard
S	34	45.0	40.1	ug/L	Standard
Sr	88	178.3	14.1	ug/L	Standard
C	12	33.3	75.5	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	3.3	173.2	mg/L	Standard
Dy	164	15.9	34.8	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	16.7	69.3	mg/L	Standard
I	127	5887.8	2.2	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Monday, March 27, 2017 11:23:23
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Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, March 27, 2017 11:24:17
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266166.5	2.1				ug/L	262785	Standard
	Be	9	13.3	21.7				ug/L	28	Standard
	Al	27	2211.8	1.5				ug/L	2187	Standard
	Sc	45	39342.7	1.8				ug/L	39299	Standard
	Ti	47	66.7	14.7				ug/L	82	Standard
	V	51	1795.7	7.8				ug/L	1876	Standard
	Cr	52	8083.8	2.3				ug/L	8221	Standard
	Cr	53	1090.0	11.3				ug/L	1083	Standard
	Mn	55	2625.2	1.3				ug/L	2738	Standard
	Co	59	598.0	4.8				ug/L	635	Standard
	Ni	60	247.3	2.4				ug/L	261	Standard
	Cu	65	639.3	2.1				ug/L	660	Standard
	Zn	66	562.3	5.3				ug/L	558	Standard
>	Ge	72	798567.4	0.5				ug/L	807251	Standard
	As	75	-10.9	322.0				ug/L	-43	Standard
	Se	82	21.5	26.7				ug/L	18	Standard
	Se-1	77	121.7	9.5				ug/L	127	Standard
>	Ga	71	33.3	8.7				mg/L	32	Standard
	Rb	85	26.7	28.6				ug/L	27	Standard
	Y	89	543593.1	0.7				ug/L	534994	Standard
>	Rh	103	18.3	41.7				ug/L	20	Standard
	Mo	98	86.2	30.7				ug/L	285	Standard
	Ag	107	118.7	10.2				ug/L	129	Standard
	Cd	111	6.6	38.8				mg/L	6	Standard
	Cd	114	55.6	21.0				ug/L	46	Standard
>	In	115	677898.2	0.5				ug/L	679215	Standard
	Sn	118	287.7	4.2				ug/L	411	Standard
	Sb	123	203.4	41.2				ug/L	497	Standard
	Ba	135	54.0	9.8				ug/L	43	Standard
	Ce	140	33.3	45.8				ug/L	22	Standard
>	Tb	159	988371.4	2.0				ug/L	983965	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	223.3	5.2				ug/L	248	Standard
	Tl	205	480.0	29.0				ug/L	620	Standard
	Pb	206	478.0	2.7				ug/L	503	Standard
	Pb	207	398.0	4.5				ug/L	406	Standard
	Pb	208	474.7	9.3				ug/L	497	Standard
	U	238	4.3	66.6				ug/L	17	Standard
>	Bi	209	560936.1	0.1				ug/L	559221	Standard

Sample ID: Standard 1
Report Date/Time: Monday, March 27, 2017 11:26:28
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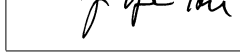

Na	23	0.0		mg/L	2	Standard
Mg	24	43.3	13.3	mg/L	33	Standard
K	39	18.3	63.0	mg/L	18	Standard
Ca	43	65.0	13.3	mg/L	72	Standard
Fe	54	41.1	6.7	mg/L	29	Standard
Fe	57	376.7	9.6	mg/L	382	Standard
Sc-1	45	39342.7	1.8	mg/L	39299	Standard
Cl	35	0.7	173.2	ug/L	4	Standard
Kr	83	3.3	45.8	ug/L	3	Standard
Br	81	2330.2	4.5	ug/L	2287	Standard
P	31	85.0	21.2	ug/L	80	Standard
S	34	33.3	22.9	ug/L	45	Standard
Sr	88	175.0	20.6	ug/L	178	Standard
C	12	23.3	99.0	mg/L	33	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	9.7	2.9	mg/L	16	Standard
Ho-1	165	13.3	57.3	mg/L	10	Standard
Er	166	6.7	86.6	mg/L	17	Standard
I	127	5747.8	5.8	mg/L	5888	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Monday, March 27, 2017 11:26:28
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Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, March 27, 2017 11:27:23
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270604.8	3.0				ug/L	262785	Standard
	Be	9	131.7	2.2				ug/L	28	Standard
	Al	27	9996.6	3.3				ug/L	2187	Standard
	Sc	45	39289.2	1.5				ug/L	39299	Standard
	Ti	47	105.0	9.9				ug/L	82	Standard
	V	51	2237.4	5.3				ug/L	1876	Standard
	Cr	52	8481.7	1.2				ug/L	8221	Standard
	Cr	53	1081.7	7.1				ug/L	1083	Standard
	Mn	55	3141.7	1.8				ug/L	2738	Standard
	Co	59	1106.7	0.7				ug/L	635	Standard
	Ni	60	352.0	6.6				ug/L	261	Standard
	Cu	65	813.7	3.1				ug/L	660	Standard
	Zn	66	683.0	3.4				ug/L	558	Standard
>	Ge	72	812254.8	1.5				ug/L	807251	Standard
	As	75	2.0	2438.3				ug/L	-43	Standard
	Se	82	15.5	10.5				ug/L	18	Standard
	Se-1	77	128.3	13.3				ug/L	127	Standard
>	Ga	71	40.0	43.3				mg/L	32	Standard
	Rb	85	35.0	14.3				ug/L	27	Standard
	Y	89	544193.2	1.3				ug/L	534994	Standard
>	Rh	103	15.0	66.7				ug/L	20	Standard
	Mo	98	547.3	2.0				ug/L	285	Standard
	Ag	107	487.3	1.7				ug/L	129	Standard
	Cd	111	119.3	8.8				mg/L	6	Standard
	Cd	114	324.3	7.0				ug/L	46	Standard
>	In	115	676608.5	1.6				ug/L	679215	Standard
	Sn	118	336.3	1.2				ug/L	411	Standard
	Sb	123	438.7	13.5				ug/L	497	Standard
	Ba	135	147.3	6.6				ug/L	43	Standard
	Ce	140	31.7	9.1				ug/L	22	Standard
>	Tb	159	991376.8	1.2				ug/L	983965	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	625.0	2.0				ug/L	248	Standard
	Tl	205	1568.4	8.9				ug/L	620	Standard
	Pb	206	819.0	3.8				ug/L	503	Standard
	Pb	207	703.3	4.5				ug/L	406	Standard
	Pb	208	830.3	2.5				ug/L	497	Standard
	U	238	259.7	7.7				ug/L	17	Standard
>	Bi	209	560503.7	1.5				ug/L	559221	Standard

Sample ID: Standard 2
Report Date/Time: Monday, March 27, 2017 11:29:34
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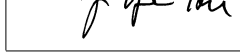

	Na	23	1.7	173.2	mg/L	2	Standard
	Mg	24	43.3	13.3	mg/L	33	Standard
	K	39	23.3	12.4	mg/L	18	Standard
	Ca	43	80.0	45.1	mg/L	72	Standard
	Fe	54	35.8	57.3	mg/L	29	Standard
	Fe	57	396.7	12.4	mg/L	382	Standard
>	**Sc-1**	45	39289.2	1.5	mg/L	39299	Standard
	Cl	35	0.7	173.2	ug/L	4	Standard
	Kr	83	2.0	100.0	ug/L	3	Standard
	Br	81	2133.5	18.4	ug/L	2287	Standard
	P	31	78.3	20.5	ug/L	80	Standard
	S	34	41.7	25.0	ug/L	45	Standard
	Sr	88	138.3	30.3	ug/L	178	Standard
	C	12	20.0	86.6	mg/L	33	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	3	Standard
	Dy	164	12.9	120.1	mg/L	16	Standard
	Ho-1	165	11.7	49.5	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	17	Standard
	I	127	5484.3	1.7	mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Monday, March 27, 2017 11:29:34
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Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, March 27, 2017 11:30:28
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255180.3	2.8				ug/L	262785	Standard
	Be	9	120660.5	2.9	**50.0000**	2.174	4.3	ug/L	28	Standard
	Al	27	8492704.4	0.6	**50.0000**	1.394	2.8	ug/L	2187	Standard
	Sc	45	39123.8	3.1				ug/L	39299	Standard
	Ti	47	26346.2	0.7	**100.0000**	2.000	2.0	ug/L	82	Standard
	V	51	423181.6	0.8	**50.0000**	1.109	2.2	ug/L	1876	Standard
	Cr	52	401997.0	0.1	**50.0000**	0.815	1.6	ug/L	8221	Standard
	Cr	53	50116.1	1.4	**50.0000**	1.054	2.1	ug/L	1083	Standard
	Mn	55	669560.8	1.5	**50.0000**	1.548	3.1	ug/L	2738	Standard
	Co	59	509002.9	1.6	**50.0000**	1.537	3.1	ug/L	635	Standard
	Ni	60	109605.4	0.7	**50.0000**	1.115	2.2	ug/L	261	Standard
	Cu	65	112221.1	1.8	**50.0000**	1.443	2.9	ug/L	660	Standard
	Zn	66	67392.6	1.1	**50.0000**	1.345	2.7	ug/L	558	Standard
>	Ge	72	782555.2	1.6				ug/L	807251	Standard
	As	75	66312.4	0.8	**50.0000**	1.159	2.3	ug/L	-43	Standard
	Se	82	5977.3	1.2	**50.0000**	1.287	2.6	ug/L	18	Standard
	Se-1	77	4442.3	1.5	**50.0000**	1.260	2.5	ug/L	127	Standard
>	Ga	71	85.0	17.6				mg/L	32	Standard
	Rb	85	398.3	5.1				ug/L	27	Standard
	Y	89	534593.5	2.1				ug/L	534994	Standard
>	Rh	103	40.0	25.0				ug/L	20	Standard
	Mo	98	435460.7	0.5	**100.0000**	2.511	2.5	ug/L	285	Standard
	Ag	107	351605.6	0.3	**50.0000**	1.045	2.1	ug/L	129	Standard
	Cd	111	101480.7	0.2	**50.0000**	1.006	2.0	mg/L	6	Standard
	Cd	114	264152.9	0.5	**50.0000**	1.108	2.2	ug/L	46	Standard
>	In	115	665212.6	2.0				ug/L	679215	Standard
	Sn	118	59043.5	1.4	**50.0000**	0.573	1.1	ug/L	411	Standard
	Sb	123	265466.8	0.5	**50.0000**	1.217	2.4	ug/L	497	Standard
	Ba	135	104132.4	1.8	**50.0000**	1.828	3.7	ug/L	43	Standard
	Ce	140	310.0	11.3				ug/L	22	Standard
>	Tb	159	977512.5	1.4				ug/L	983965	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	393959.8	1.1	**50.0000**	1.022	2.0	ug/L	248	Standard
	Tl	205	940794.0	1.5	**50.0000**	1.140	2.3	ug/L	620	Standard
	Pb	206	319422.5	1.1	**50.0000**	0.984	2.0	ug/L	503	Standard
	Pb	207	289270.7	0.8	**50.0000**	0.893	1.8	ug/L	406	Standard
	Pb	208	336347.1	0.6	**50.0000**	0.672	1.3	ug/L	497	Standard
	U	238	248110.7	0.8	**50.0000**	0.876	1.8	ug/L	17	Standard
>	Bi	209	548110.5	1.0				ug/L	559221	Standard

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	Na	23	10.0	50.0	**5.0000**	3.052	61.0	mg/L	2	Standard
	Mg	24	441.7	9.6	**5.0000**	0.361	7.2	mg/L	33	Standard
	K	39	790.0	9.3	**5.0000**	0.318	6.4	mg/L	18	Standard
	Ca	43	75.0	29.1	**5.0000**	20.041	400.8	mg/L	72	Standard
	Fe	54	871.3	5.4	**5.0000**	0.184	3.7	mg/L	29	Standard
	Fe	57	658.3	3.7	**5.0000**	0.831	16.6	mg/L	382	Standard
>	**Sc-1**	45	39123.8	3.1				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	3.7	15.7				ug/L	3	Standard
	Br	81	2146.8	3.1				ug/L	2287	Standard
	P	31	55.0	24.1				ug/L	80	Standard
	S	34	51.7	47.7				ug/L	45	Standard
	Sr	88	148.3	17.0				ug/L	178	Standard
	C	12	13.3	43.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	13.2	116.4				mg/L	16	Standard
	Ho-1	165	8.3	91.7				mg/L	10	Standard
	Er	166	3.3	173.2				mg/L	17	Standard
	I	127	3218.7	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, March 27, 2017 11:33:33
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	250131.3	1.2				ug/L	262785	Standard
	Be	9	238621.4	1.7	**100.4139**	2.463	2.5	ug/L	28	Standard
	Al	27	16267518.9	3.1	**98.8349**	4.223	4.3	ug/L	2187	Standard
	Sc	45	38057.7	1.8				ug/L	39299	Standard
	Ti	47	50958.2	0.3	**196.9929**	3.255	1.7	ug/L	82	Standard
	V	51	823918.6	0.6	**98.8572**	1.937	2.0	ug/L	1876	Standard
	Cr	52	771841.0	0.5	**98.5339**	1.823	1.8	ug/L	8221	Standard
	Cr	53	96516.5	1.9	**98.7014**	2.836	2.9	ug/L	1083	Standard
	Mn	55	1318862.8	1.2	**99.4222**	2.470	2.5	ug/L	2738	Standard
	Co	59	997525.7	1.2	**99.1094**	2.543	2.6	ug/L	635	Standard
	Ni	60	212400.7	0.2	**98.5716**	1.539	1.6	ug/L	261	Standard
	Cu	65	220061.3	0.8	**99.2621**	2.111	2.1	ug/L	660	Standard
	Zn	66	133769.3	0.7	**99.9389**	2.049	2.1	ug/L	558	Standard
>	**Ge**	72	780951.0	1.4				ug/L	807251	Standard
	As	75	133780.2	0.8	**100.5088**	2.144	2.1	ug/L	-43	Standard
	Se	82	12004.7	0.2	**100.3430**	1.449	1.4	ug/L	18	Standard
	Se-1	77	8800.2	2.2	**100.2908**	1.171	1.2	ug/L	127	Standard
>	**Ga**	71	128.3	12.5				mg/L	32	Standard
	Rb	85	705.0	5.6				ug/L	27	Standard
	Y	89	520475.3	1.8				ug/L	534994	Standard
>	**Rh**	103	45.0	19.2				ug/L	20	Standard
	Mo	98	844901.3	1.3	**198.3581**	4.605	2.3	ug/L	285	Standard
	Ag	107	684218.6	1.0	**99.3313**	1.962	2.0	ug/L	129	Standard
	Cd	111	196161.8	0.8	**98.9916**	1.817	1.8	mg/L	6	Standard
	Cd	114	514467.0	0.3	**99.3644**	0.700	0.7	ug/L	46	Standard
>	**In**	115	655986.2	1.0				ug/L	679215	Standard
	Sn	118	111682.8	0.7	**98.0206**	1.353	1.4	ug/L	411	Standard
	Sb	123	527769.8	1.3	**100.4068**	2.326	2.3	ug/L	497	Standard
	Ba	135	206200.1	1.2	**100.1926**	2.043	2.0	ug/L	43	Standard
	Ce	140	551.7	13.6				ug/L	22	Standard
>	**Tb**	159	966580.1	1.4				ug/L	983965	Standard
	Ho	165	41.7	27.7				ug/L	10	Standard
	Tl	203	778302.7	0.8	**99.3453**	2.287	2.3	ug/L	248	Standard
	Tl	205	1851882.7	0.9	**99.1660**	2.402	2.4	ug/L	620	Standard
	Pb	206	637692.1	1.0	**99.8947**	2.559	2.6	ug/L	503	Standard
	Pb	207	572683.5	1.0	**99.4725**	2.493	2.5	ug/L	406	Standard
	Pb	208	670022.4	0.5	**99.7830**	2.085	2.1	ug/L	497	Standard
	U	238	492552.3	0.8	**99.5760**	2.321	2.3	ug/L	17	Standard
>	**Bi**	209	548769.3	1.6				ug/L	559221	Standard

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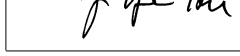

	Na	23	16.7	75.5	**9.5889**	7.871	82.1	mg/L	2	Standard
	Mg	24	823.4	1.3	**10.0443**	0.056	0.6	mg/L	33	Standard
	K	39	1416.7	4.8	**9.6692**	0.609	6.3	mg/L	18	Standard
	Ca	43	100.0	15.0	**33.9275**	20.047	59.1	mg/L	72	Standard
	Fe	54	1731.3	3.6	**10.2128**	0.416	4.1	mg/L	29	Standard
	Fe	57	863.4	6.4	**9.6511**	1.263	13.1	mg/L	382	Standard
>	**Sc-1**	45	38057.7	1.8				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	2076.8	5.3				ug/L	2287	Standard
	P	31	75.0	34.6				ug/L	80	Standard
	S	34	46.7	6.2				ug/L	45	Standard
	Sr	88	181.7	22.1				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	173.2				mg/L	3	Standard
	Dy	164	28.7	115.8				mg/L	16	Standard
	Ho-1	165	41.7	27.7				mg/L	10	Standard
	Er	166	26.7	114.6				mg/L	17	Standard
	I	127	4875.8	4.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
In	115
Sn	118
Sb	123
Ba	135
Ce	140
Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, March 27, 2017 11:36:40
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	256239.0	1.8				ug/L	262785	Standard
	Be	9	120809.9	2.3	**49.6395**	1.933	3.9	ug/L	28	Standard
	Al	27	8316174.5	1.9	**49.3130**	1.316	2.7	ug/L	2187	Standard
	Sc	45	38056.1	0.3				ug/L	39299	Standard
	Ti	47	25304.4	1.1	**97.6360**	1.906	2.0	ug/L	82	Standard
	V	51	416793.0	1.2	**49.8809**	0.769	1.5	ug/L	1876	Standard
	Cr	52	395345.5	1.1	**49.9604**	1.002	2.0	ug/L	8221	Standard
	Cr	53	48938.9	0.7	**49.5204**	1.015	2.0	ug/L	1083	Standard
	Mn	55	668619.9	1.3	**50.2926**	1.094	2.2	ug/L	2738	Standard
	Co	59	505986.1	1.5	**50.2195**	1.007	2.0	ug/L	635	Standard
	Ni	60	108679.7	1.1	**50.3622**	0.813	1.6	ug/L	261	Standard
	Cu	65	112022.7	2.0	**50.3563**	1.218	2.4	ug/L	660	Standard
	Zn	66	68015.4	1.9	**50.5723**	1.139	2.3	ug/L	558	Standard
>	Ge	72	781263.1	1.4				ug/L	807251	Standard
	As	75	67297.4	1.6	**50.5651**	1.343	2.7	ug/L	-43	Standard
	Se	82	6068.0	0.6	**50.6620**	0.646	1.3	ug/L	18	Standard
	Se-1	77	4461.0	1.8	**50.1495**	1.097	2.2	ug/L	127	Standard
>	Ga	71	56.7	5.1				mg/L	32	Standard
	Rb	85	971.7	5.1				ug/L	27	Standard
	Y	89	524310.4	2.3				ug/L	534994	Standard
>	Rh	103	31.7	39.7				ug/L	20	Standard
	Mo	98	424096.3	0.8	**99.3773**	1.740	1.8	ug/L	285	Standard
	Ag	107	348392.1	0.7	**50.4813**	0.931	1.8	ug/L	129	Standard
	Cd	111	100422.9	0.8	**50.5865**	0.940	1.9	mg/L	6	Standard
	Cd	114	261903.3	0.3	**50.4951**	0.792	1.6	ug/L	46	Standard
>	In	115	657134.6	1.3				ug/L	679215	Standard
	Sn	118	57237.9	1.3	**50.0310**	0.607	1.2	ug/L	411	Standard
	Sb	123	268854.0	0.9	**51.0425**	0.847	1.7	ug/L	497	Standard
	Ba	135	103923.5	1.1	**50.4018**	1.141	2.3	ug/L	43	Standard
	Ce	140	70.0	28.6				ug/L	22	Standard
>	Tb	159	972572.3	1.3				ug/L	983965	Standard
	Ho	165	33.3	90.4				ug/L	10	Standard
	Tl	203	402746.2	0.9	**50.6844**	0.833	1.6	ug/L	248	Standard
	Tl	205	960067.4	0.8	**50.6830**	0.667	1.3	ug/L	620	Standard
	Pb	206	326078.6	1.5	**50.3372**	1.098	2.2	ug/L	503	Standard
	Pb	207	294256.5	1.2	**50.3697**	0.888	1.8	ug/L	406	Standard
	Pb	208	343916.1	1.2	**50.4796**	1.139	2.3	ug/L	497	Standard
	U	238	252251.8	1.5	**50.2939**	1.195	2.4	ug/L	17	Standard
>	Bi	209	556377.4	1.2				ug/L	559221	Standard

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	Na	23	8.3	69.3	**4.3132**	3.725	86.4	mg/L	2	Standard
	Mg	24	448.3	4.6	**5.2261**	0.282	5.4	mg/L	33	Standard
	K	39	848.4	5.9	**5.7252**	0.336	5.9	mg/L	18	Standard
	Ca	43	90.0	5.6	**19.1409**	7.155	37.4	mg/L	72	Standard
	Fe	54	922.9	7.6	**5.3485**	0.424	7.9	mg/L	29	Standard
	Fe	57	596.7	5.1	**4.2777**	0.603	14.1	mg/L	382	Standard
>	**Sc-1**	45	38056.1	0.3				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	2183.5	9.5				ug/L	2287	Standard
	P	31	70.0	25.8				ug/L	80	Standard
	S	34	45.0	11.1				ug/L	45	Standard
	Sr	88	156.7	20.8				ug/L	178	Standard
	C	12	26.7	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.2	38.3				mg/L	16	Standard
	Ho-1	165	33.3	90.4				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	4434.0	6.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.279		
	Al	27	98.626		
	Sc	45			
	Ti	47	97.636		
	V	51	99.762		
	Cr	52	99.921		
	Cr	53			
	Mn	55	100.585		
	Co	59	100.439		
	Ni	60	100.724		
	Cu	65	100.713		
	Zn	66	101.145		
>	Ge	72		96.781	
	As	75	101.130		
	Se	82	101.324		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 1
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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	99.377	
|	Ag	107	100.963	
|	Cd	111	101.173	
|	Cd	114		
|>	In	115		96.749
|	Sn	118	100.062	
|	Sb	123	102.085	
⌊	Ba	135	100.804	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	101.369	
|	Tl	205		
|	Pb	206	100.674	
|	Pb	207	100.739	
|	Pb	208	100.959	
|	U	238	100.588	
⌊>	Bi	209		99.492
⌈	Na	23	86.265	
|	Mg	24	104.522	
|	K	39	114.504	
|	Ca	43	382.819	
|	Fe	54	106.970	
|	Fe	57	85.554	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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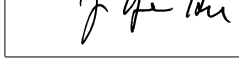

QC Std 1	Fe	57

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, March 27, 2017 11:39:47
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	254424.2	2.4				ug/L	262785	Standard
	Be	9	75.0	50.3	**0.0296**	0.015	50.5	ug/L	28	Standard
	Al	27	3085.3	29.3	**0.0122**	0.005	40.5	ug/L	2187	Standard
	Sc	45	39329.4	3.5				ug/L	39299	Standard
	Ti	47	65.3	20.6	**-0.0409**	0.050	121.7	ug/L	82	Standard
	V	51	1181.2	3.1	**-0.0685**	0.005	7.2	ug/L	1876	Standard
	Cr	52	5874.1	2.5	**-0.2537**	0.009	3.7	ug/L	8221	Standard
	Cr	53	958.4	1.8	**-0.0460**	0.022	46.9	ug/L	1083	Standard
	Mn	55	2685.6	13.2	**0.0218**	0.022	100.9	ug/L	2738	Standard
	Co	59	701.7	49.6	**0.0126**	0.032	255.9	ug/L	635	Standard
	Ni	60	278.0	22.6	**0.0199**	0.026	130.2	ug/L	261	Standard
	Cu	65	762.0	16.7	**0.0356**	0.049	138.3	ug/L	660	Standard
	Zn	66	751.0	5.2	**0.1134**	0.027	23.4	ug/L	558	Standard
>	Ge	72	790938.6	2.2				ug/L	807251	Standard
	As	75	4.4	1132.7	**0.0513**	0.037	71.6	ug/L	-43	Standard
	Se	82	20.6	23.7	**0.0953**	0.038	39.5	ug/L	18	Standard
	Se-1	77	121.3	11.2	**0.0094**	0.142	1511.9	ug/L	127	Standard
>	Ga	71	23.3	12.4				mg/L	32	Standard
	Rb	85	36.7	15.7				ug/L	27	Standard
	Y	89	525210.2	3.1				ug/L	534994	Standard
>	Rh	103	13.3	57.3				ug/L	20	Standard
	Mo	98	747.7	48.6	**0.1463**	0.079	54.2	ug/L	285	Standard
	Ag	107	354.3	60.8	**0.0314**	0.029	93.7	ug/L	129	Standard
	Cd	111	68.4	95.3	**0.0249**	0.031	125.7	mg/L	6	Standard
	Cd	114	202.5	77.4	**0.0272**	0.029	105.1	ug/L	46	Standard
>	In	115	669177.2	2.3				ug/L	679215	Standard
	Sn	118	341.7	17.0	**0.0571**	0.043	75.6	ug/L	411	Standard
	Sb	123	2103.9	3.7	**0.3616**	0.020	5.6	ug/L	497	Standard
	Ba	135	106.7	44.3	**0.0311**	0.021	68.0	ug/L	43	Standard
	Ce	140	31.7	36.5				ug/L	22	Standard
>	Tb	159	968100.9	1.0				ug/L	983965	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	356.3	58.9	**0.0158**	0.026	161.6	ug/L	248	Standard
	Tl	205	756.7	54.5	**0.0069**	0.021	302.0	ug/L	620	Standard
	Pb	206	672.3	21.7	**0.0263**	0.021	80.4	ug/L	503	Standard
	Pb	207	573.3	19.9	**0.0267**	0.018	68.1	ug/L	406	Standard
	Pb	208	641.0	8.4	**0.0214**	0.007	33.0	ug/L	497	Standard
	U	238	99.0	60.3	**0.0179**	0.012	64.3	ug/L	17	Standard
>	Bi	209	566319.7	1.1				ug/L	559221	Standard

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	Na	23	1.7	173.2	**0.0152**	1.845	12123.2	mg/L	2	Standard
	Mg	24	26.7	10.8	**-0.2027**	0.045	22.0	mg/L	33	Standard
	K	39	18.3	63.0	**-0.0292**	0.077	263.1	mg/L	18	Standard
	Ca	43	50.0	17.3	**-42.8956**	14.763	34.4	mg/L	72	Standard
	Fe	54	21.2	27.6	**-0.0800**	0.033	41.6	mg/L	29	Standard
	Fe	57	395.0	3.3	**-0.0368**	0.009	24.1	mg/L	382	Standard
>	**Sc-1**	45	39329.4	3.5				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	2.7	108.3				ug/L	3	Standard
	Br	81	2160.2	10.0				ug/L	2287	Standard
	P	31	73.3	38.8				ug/L	80	Standard
	S	34	45.0	29.4				ug/L	45	Standard
	Sr	88	146.7	8.6				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	2.7	235.5				mg/L	16	Standard
	Ho-1	165	18.3	31.5				mg/L	10	Standard
	Er	166	13.3	114.6				mg/L	17	Standard
	I	127	5484.3	4.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.979	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.522
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.269
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Mg	24	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, March 27, 2017 11:42:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	250519.3	1.1				ug/L	262785	Standard
	Be	9	446.7	5.0	**0.1865**	0.011	5.9	ug/L	28	Standard
	Al	27	2053.5	36.7	**0.0063**	0.005	73.5	ug/L	2187	Standard
	Sc	45	37396.1	0.7				ug/L	39299	Standard
	Ti	47	62.0	12.8	**-0.0462**	0.028	60.8	ug/L	82	Standard
	V	51	4181.3	2.8	**0.3035**	0.020	6.5	ug/L	1876	Standard
	Cr	52	13119.0	1.5	**0.7223**	0.053	7.3	ug/L	8221	Standard
	Cr	53	1781.8	5.9	**0.8510**	0.100	11.7	ug/L	1083	Standard
	Mn	55	8142.5	1.0	**0.4484**	0.016	3.5	ug/L	2738	Standard
	Co	59	4102.9	2.0	**0.3598**	0.015	4.1	ug/L	635	Standard
	Ni	60	3373.4	1.2	**1.4894**	0.034	2.3	ug/L	261	Standard
	Cu	65	2372.2	1.4	**0.7892**	0.013	1.6	ug/L	660	Standard
	Zn	66	8317.3	0.9	**5.9157**	0.157	2.7	ug/L	558	Standard
>	Ge	72	766596.9	1.6				ug/L	807251	Standard
	As	75	437.4	11.0	**0.3830**	0.039	10.1	ug/L	-43	Standard
	Se	82	60.6	15.0	**0.4428**	0.082	18.6	ug/L	18	Standard
	Se-1	77	136.0	18.0	**0.2246**	0.264	117.7	ug/L	127	Standard
>	Ga	71	38.3	27.2				mg/L	32	Standard
	Rb	85	20.0	66.1				ug/L	27	Standard
	Y	89	518352.8	0.5				ug/L	534994	Standard
>	Rh	103	15.0	0.0				ug/L	20	Standard
	Mo	98	148.0	5.7	**0.0106**	0.002	23.1	ug/L	285	Standard
	Ag	107	2655.2	1.1	**0.3717**	0.011	2.8	ug/L	129	Standard
	Cd	111	450.8	3.9	**0.2220**	0.012	5.4	mg/L	6	Standard
	Cd	114	1114.3	5.9	**0.2073**	0.016	7.6	ug/L	46	Standard
>	In	115	648025.5	1.7				ug/L	679215	Standard
	Sn	118	214.0	2.4	**-0.0463**	0.004	9.2	ug/L	411	Standard
	Sb	123	2413.1	6.2	**0.4341**	0.036	8.3	ug/L	497	Standard
	Ba	135	1458.7	4.8	**0.6987**	0.046	6.6	ug/L	43	Standard
	Ce	140	16.7	34.6				ug/L	22	Standard
>	Tb	159	947114.6	0.9				ug/L	983965	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	847.0	11.0	**0.0790**	0.013	16.7	ug/L	248	Standard
	Tl	205	2020.1	4.6	**0.0750**	0.006	7.7	ug/L	620	Standard
	Pb	206	1699.4	3.1	**0.1882**	0.011	6.0	ug/L	503	Standard
	Pb	207	1442.4	6.7	**0.1786**	0.020	11.2	ug/L	406	Standard
	Pb	208	1716.7	1.9	**0.1822**	0.008	4.3	ug/L	497	Standard
	U	238	1826.4	2.4	**0.3642**	0.013	3.5	ug/L	17	Standard
>	Bi	209	554229.7	1.3				ug/L	559221	Standard

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	Na	23	5.0	100.0	**2.2333**	3.298	147.7	mg/L	2	Standard
	Mg	24	28.3	10.2	**-0.1644**	0.040	24.1	mg/L	33	Standard
	K	39	11.7	24.7	**-0.0694**	0.020	29.1	mg/L	18	Standard
	Ca	43	81.7	30.8	**8.9358**	39.022	436.7	mg/L	72	Standard
	Fe	54	25.9	30.4	**-0.0447**	0.049	110.0	mg/L	29	Standard
	Fe	57	370.0	8.4	**-0.1497**	0.667	445.5	mg/L	382	Standard
>	**Sc-1**	45	37396.1	0.7				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	1983.5	8.3				ug/L	2287	Standard
	P	31	73.3	44.4				ug/L	80	Standard
	S	34	35.0	42.9				ug/L	45	Standard
	Sr	88	158.3	24.1				ug/L	178	Standard
	C	12	3.3	173.2				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	6.2	100.1				mg/L	16	Standard
	Ho-1	165	6.7	43.3				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	3768.8	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	93.248		
	Al	27	0.627		
	Sc	45			
	Ti	47			
	V	51	75.879		
	Cr	52	90.282		
	Cr	53			
	Mn	55	89.680		
	Co	59	89.947		
	Ni	60	93.088		
	Cu	65	98.648		
	Zn	66	94.652		
>	Ge	72		94.964	
	As	75	95.742		
	Se	82	110.690		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98		
|	Ag	107	92.933	
|	Cd	111	92.494	
|	Cd	114		
|>	In	115		95.408
|	Sn	118		
|	Sb	123	108.535	
⌊	Ba	135	93.160	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	98.812	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	91.104	
|	U	238	91.046	
⌊>	Bi	209		99.108
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, March 27, 2017 11:45:58
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	251846.4	2.1				ug/L	262785	Standard
	Be	9	38.3	45.8	**0.0149**	0.008	51.4	ug/L	28	Standard
	Al	27	7818489.4	1.1	**47.1661**	0.513	1.1	ug/L	2187	Standard
	Sc	45	38196.4	1.8				ug/L	39299	Standard
	Ti	47	23991.6	1.3	**93.5681**	0.469	0.5	ug/L	82	Standard
	V	51	1404.9	8.8	**-0.0379**	0.017	44.6	ug/L	1876	Standard
	Cr	52	8477.4	2.2	**0.1033**	0.026	25.3	ug/L	8221	Standard
	Cr	53	1246.7	6.3	**0.2785**	0.095	34.0	ug/L	1083	Standard
	Mn	55	5231.2	6.5	**0.2209**	0.021	9.5	ug/L	2738	Standard
	Co	59	1188.0	27.4	**0.0633**	0.031	49.0	ug/L	635	Standard
	Ni	60	728.0	13.3	**0.2342**	0.041	17.5	ug/L	261	Standard
	Cu	65	1011.0	13.4	**0.1577**	0.056	35.3	ug/L	660	Standard
	Zn	66	1296.1	3.7	**0.5396**	0.026	4.9	ug/L	558	Standard
>	Ge	72	772721.2	1.3				ug/L	807251	Standard
	As	75	7.5	1353.8	**0.0534**	0.077	144.3	ug/L	-43	Standard
	Se	82	26.6	38.6	**0.1497**	0.084	56.2	ug/L	18	Standard
	Se-1	77	110.0	2.4	**-0.0895**	0.025	28.4	ug/L	127	Standard
>	Ga	71	50.0	26.5				mg/L	32	Standard
	Rb	85	920.0	10.8				ug/L	27	Standard
	Y	89	519041.2	1.1				ug/L	534994	Standard
>	Rh	103	16.7	17.3				ug/L	20	Standard
	Mo	98	396558.0	0.8	**95.2766**	0.151	0.2	ug/L	285	Standard
	Ag	107	247.0	80.4	**0.0180**	0.029	162.2	ug/L	129	Standard
	Cd	111	-149.6	40.8	**-0.0858**	0.032	37.2	mg/L	6	Standard
	Cd	114	792.8	17.0	**0.1459**	0.025	17.4	ug/L	46	Standard
>	In	115	640812.0	0.7				ug/L	679215	Standard
	Sn	118	270.7	19.6	**0.0066**	0.046	694.6	ug/L	411	Standard
	Sb	123	623.6	34.7	**0.0902**	0.041	45.6	ug/L	497	Standard
	Ba	135	77.7	41.1	**0.0192**	0.016	81.1	ug/L	43	Standard
	Ce	140	1228.4	2.7				ug/L	22	Standard
>	Tb	159	954679.1	1.8				ug/L	983965	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	242.3	42.4	**0.0029**	0.013	433.6	ug/L	248	Standard
	Tl	205	621.7	25.6	**0.0013**	0.008	625.5	ug/L	620	Standard
	Pb	206	619.3	11.9	**0.0220**	0.010	44.6	ug/L	503	Standard
	Pb	207	482.0	14.6	**0.0145**	0.011	74.4	ug/L	406	Standard
	Pb	208	592.7	10.3	**0.0177**	0.008	43.0	ug/L	497	Standard
	U	238	37.7	154.8	**0.0061**	0.012	190.6	ug/L	17	Standard
>	Bi	209	544754.3	1.7				ug/L	559221	Standard

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⌈	**Na**	23	26.7	103.3	**16.1842**	17.752	109.7	mg/L	2	Standard
|	**Mg**	24	983.4	7.4	**12.0549**	0.941	7.8	mg/L	33	Standard
|	**K**	39	711.7	6.4	**4.7650**	0.392	8.2	mg/L	18	Standard
|	**Ca**	43	83.3	12.5	**8.5452**	13.258	155.2	mg/L	72	Standard
|	**Fe**	54	2036.2	1.8	**12.0004**	0.061	0.5	mg/L	29	Standard
|	**Fe**	57	940.0	4.7	**11.1117**	0.653	5.9	mg/L	382	Standard
⌊>	**Sc-1**	45	38196.4	1.8				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	4.3	35.3				ug/L	3	Standard
	Br	81	1973.5	9.4				ug/L	2287	Standard
	P	31	53.3	27.1				ug/L	80	Standard
	S	34	48.3	29.9				ug/L	45	Standard
	Sr	88	160.0	6.3				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	2.5	238.7				mg/L	16	Standard
	Ho-1	165	6.7	43.3				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	2751.9	1.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27	0.943		
⌈	Sc	45			
|	Ti	47	93.568		
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.723	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.277		
Ag	107			
Cd	111			
Cd	114			
In	115			94.346
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			97.413
Na	23	129.474		
Mg	24	241.099		
K	39	95.300		
Ca	43	56.968		
Fe	54	96.004		
Fe	57	88.893		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, March 27, 2017 11:49:04
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274071.7	1.0				ug/L	262785	Standard
	Be	9	213176.4	2.4	**81.8505**	1.162	1.4	ug/L	28	Standard
	Al	27	7878701.2	3.1	**43.6628**	0.979	2.2	ug/L	2187	Standard
	Sc	45	38179.7	1.1				ug/L	39299	Standard
	Ti	47	26165.9	3.0	**99.4465**	3.709	3.7	ug/L	82	Standard
	V	51	694261.5	1.3	**81.9715**	1.705	2.1	ug/L	1876	Standard
	Cr	52	661463.2	0.6	**82.9732**	1.147	1.4	ug/L	8221	Standard
	Cr	53	83097.3	1.3	**83.4956**	1.350	1.6	ug/L	1083	Standard
	Mn	55	1114346.4	0.6	**82.6624**	0.964	1.2	ug/L	2738	Standard
	Co	59	838694.4	0.5	**82.0164**	0.928	1.1	ug/L	635	Standard
	Ni	60	179755.7	0.5	**82.1060**	0.792	1.0	ug/L	261	Standard
	Cu	65	187086.6	0.1	**83.0213**	0.582	0.7	ug/L	660	Standard
	Zn	66	116947.9	0.6	**85.9480**	1.021	1.2	ug/L	558	Standard
>	Ge	72	793210.2	0.8				ug/L	807251	Standard
	As	75	114553.5	1.3	**84.7301**	1.464	1.7	ug/L	-43	Standard
	Se	82	10363.2	1.8	**85.2670**	1.857	2.2	ug/L	18	Standard
	Se-1	77	7791.0	0.8	**87.2523**	1.384	1.6	ug/L	127	Standard
>	Ga	71	153.3	19.9				mg/L	32	Standard
	Rb	85	1475.1	3.4				ug/L	27	Standard
	Y	89	544458.5	0.9				ug/L	534994	Standard
>	Rh	103	35.0	51.5				ug/L	20	Standard
	Mo	98	410675.7	1.5	**94.9446**	1.743	1.8	ug/L	285	Standard
	Ag	107	552896.1	0.6	**79.0499**	0.788	1.0	ug/L	129	Standard
	Cd	111	169640.9	0.7	**84.3131**	0.773	0.9	mg/L	6	Standard
	Cd	114	431261.3	0.4	**82.0402**	0.646	0.8	ug/L	46	Standard
>	In	115	665985.9	0.7				ug/L	679215	Standard
	Sn	118	263.7	2.8	**-0.0084**	0.008	95.0	ug/L	411	Standard
	Sb	123	459037.3	1.2	**86.0077**	1.518	1.8	ug/L	497	Standard
	Ba	135	176173.4	1.2	**84.3101**	1.514	1.8	ug/L	43	Standard
	Ce	140	525.0	9.7				ug/L	22	Standard
>	Tb	159	998288.0	0.8				ug/L	983965	Standard
	Ho	165	53.3	47.2				ug/L	10	Standard
	Tl	203	686838.3	1.9	**84.0113**	1.191	1.4	ug/L	248	Standard
	Tl	205	1643085.1	2.6	**84.3008**	0.945	1.1	ug/L	620	Standard
	Pb	206	559187.5	2.1	**83.9285**	1.167	1.4	ug/L	503	Standard
	Pb	207	501941.6	2.2	**83.5379**	1.489	1.8	ug/L	406	Standard
	Pb	208	596484.1	2.4	**85.1117**	0.882	1.0	ug/L	497	Standard
	U	238	450753.5	3.4	**87.3149**	2.079	2.4	ug/L	17	Standard
>	Bi	209	572511.7	1.5				ug/L	559221	Standard

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⌈	**Na**	23	30.0	0.0	**18.1824**	0.213	1.2	mg/L	2	Standard
|	**Mg**	24	971.7	2.6	**11.9092**	0.253	2.1	mg/L	33	Standard
|	**K**	39	591.7	7.9	**3.9359**	0.351	8.9	mg/L	18	Standard
|	**Ca**	43	100.0	21.8	**33.9083**	34.024	100.3	mg/L	72	Standard
|	**Fe**	54	1976.1	3.0	**11.6452**	0.318	2.7	mg/L	29	Standard
|	**Fe**	57	941.7	2.0	**11.1623**	0.586	5.2	mg/L	382	Standard
⌊>	**Sc-1**	45	38179.7	1.1				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.3	17.3				ug/L	3	Standard
	Br	81	2150.2	6.2				ug/L	2287	Standard
	P	31	78.3	19.5				ug/L	80	Standard
	S	34	38.3	32.8				ug/L	45	Standard
	Sr	88	156.7	18.4				ug/L	178	Standard
	C	12	56.7	53.9				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	26.7	21.7				mg/L	3	Standard
	Dy	164	18.4	58.2				mg/L	16	Standard
	Ho-1	165	53.3	47.2				mg/L	10	Standard
	Er	166	33.3	45.8				mg/L	17	Standard
	I	127	2546.9	2.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	81.851		
⌊	Al	27	0.873		
⌈	Sc	45			
|	Ti	47	99.446		
|	V	51	81.971		
|	Cr	52	82.973		
|	Cr	53			
|	Mn	55	82.662		
|	Co	59	82.016		
|	Ni	60	82.106		
|	Cu	65	83.021		
|	Zn	66	85.948		
|>	Ge	72		98.261	
|	As	75	84.730		
|	Se	82	85.267		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	94.945	
|	Ag	107	79.050	
|	Cd	111	84.313	
|	Cd	114		
|>	In	115		98.052
|	Sn	118		
|	Sb	123	86.008	
⌊	Ba	135	84.310	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	84.011	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	85.112	
|	U	238	87.315	
⌊>	Bi	209		102.377
⌈	Na	23	145.459	
|	Mg	24	238.183	
|	K	39	78.718	
|	Ca	43	226.055	
|	Fe	54	93.162	
|	Fe	57	89.299	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

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QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, March 27, 2017 11:55:29
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278252.0	1.2				ug/L	262785	Standard
	Be	9	258115.4	1.7	**97.6322**	1.878	1.9	ug/L	28	Standard
	Al	27	8067980.2	0.9	**44.0528**	0.900	2.0	ug/L	2187	Standard
	Sc	45	39539.9	3.0				ug/L	39299	Standard
	Ti	47	26412.0	0.9	**97.4167**	1.661	1.7	ug/L	82	Standard
	V	51	826487.4	0.4	**94.7594**	2.481	2.6	ug/L	1876	Standard
	Cr	52	782663.7	0.3	**95.4551**	2.506	2.6	ug/L	8221	Standard
	Cr	53	98846.4	1.4	**96.5532**	1.116	1.2	ug/L	1083	Standard
	Mn	55	1339104.7	0.6	**96.4531**	1.969	2.0	ug/L	2738	Standard
	Co	59	1009997.3	0.4	**95.8835**	1.972	2.1	ug/L	635	Standard
	Ni	60	216273.4	1.0	**95.9003**	1.361	1.4	ug/L	261	Standard
	Cu	65	225907.0	0.6	**97.3616**	1.816	1.9	ug/L	660	Standard
	Zn	66	141521.2	0.3	**101.0458**	2.625	2.6	ug/L	558	Standard
>	Ge	72	817382.7	2.4				ug/L	807251	Standard
	As	75	138945.8	1.1	**99.7400**	1.363	1.4	ug/L	-43	Standard
	Se	82	12680.3	0.7	**101.2822**	1.814	1.8	ug/L	18	Standard
	Se-1	77	9436.9	1.2	**102.8178**	1.769	1.7	ug/L	127	Standard
>	Ga	71	156.7	20.3				mg/L	32	Standard
	Rb	85	1485.1	12.9				ug/L	27	Standard
	Y	89	560908.0	1.2				ug/L	534994	Standard
>	Rh	103	43.3	29.0				ug/L	20	Standard
	Mo	98	414932.4	1.1	**94.3366**	1.026	1.1	ug/L	285	Standard
	Ag	107	701236.4	1.1	**98.5997**	0.729	0.7	ug/L	129	Standard
	Cd	111	202119.5	1.5	**98.7870**	0.516	0.5	mg/L	6	Standard
	Cd	114	510500.5	1.4	**95.5120**	1.782	1.9	ug/L	46	Standard
>	In	115	677228.8	1.4				ug/L	679215	Standard
	Sn	118	252.3	4.0	**-0.0219**	0.008	35.8	ug/L	411	Standard
	Sb	123	543427.5	0.4	**100.1372**	1.127	1.1	ug/L	497	Standard
	Ba	135	206817.4	1.0	**97.3324**	0.734	0.8	ug/L	43	Standard
	Ce	140	475.0	6.9				ug/L	22	Standard
>	Tb	159	1021902.1	2.2				ug/L	983965	Standard
	Ho	165	73.3	35.0				ug/L	10	Standard
	Tl	203	823195.2	1.4	**97.7419**	1.594	1.6	ug/L	248	Standard
	Tl	205	1958045.0	1.1	**97.5288**	0.998	1.0	ug/L	620	Standard
	Pb	206	666761.5	1.1	**97.1533**	1.213	1.2	ug/L	503	Standard
	Pb	207	599328.3	1.4	**96.8338**	1.705	1.8	ug/L	406	Standard
	Pb	208	715013.4	1.1	**99.0593**	1.863	1.9	ug/L	497	Standard
	U	238	541547.9	1.7	**101.8330**	1.174	1.2	ug/L	17	Standard
>	Bi	209	589892.5	2.0				ug/L	559221	Standard

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⌈	**Na**	23	26.7	10.8	**15.4569**	1.714	11.1	mg/L	2	Standard
|	**Mg**	24	998.4	11.9	**11.8157**	1.463	12.4	mg/L	33	Standard
|	**K**	39	608.3	7.8	**3.9015**	0.218	5.6	mg/L	18	Standard
|	**Ca**	43	93.3	21.7	**18.6289**	27.126	145.6	mg/L	72	Standard
|	**Fe**	54	2020.8	3.3	**11.5037**	0.531	4.6	mg/L	29	Standard
|	**Fe**	57	908.4	9.3	**9.8474**	1.234	12.5	mg/L	382	Standard
⌊>	**Sc-1**	45	39539.9	3.0				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	4.3	13.3				ug/L	3	Standard
	Br	81	2396.9	7.8				ug/L	2287	Standard
	P	31	58.3	42.3				ug/L	80	Standard
	S	34	46.7	16.4				ug/L	45	Standard
	Sr	88	143.3	12.3				ug/L	178	Standard
	C	12	56.7	40.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	23.3	24.7				mg/L	3	Standard
	Dy	164	29.4	2.5				mg/L	16	Standard
	Ho-1	165	73.3	35.0				mg/L	10	Standard
	Er	166	13.3	114.6				mg/L	17	Standard
	I	127	2823.6	1.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	97.632		
⌊	Al	27	0.881		
⌈	Sc	45			
|	Ti	47	97.417		
|	V	51	94.759		
|	Cr	52	95.455		
|	Cr	53			
|	Mn	55	96.453		
|	Co	59	95.883		
|	Ni	60	95.900		
|	Cu	65	97.362		
|	Zn	66	101.046		
|>	Ge	72		101.255	
|	As	75	99.740		
|	Se	82	101.282		
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	94.337	
|	Ag	107	98.600	
|	Cd	111	98.787	
|	Cd	114		
|>	In	115		99.708
|	Sn	118		
|	Sb	123	100.137	
⌊	Ba	135	97.332	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	97.742	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.059	
|	U	238	101.833	
⌊>	Bi	209		105.485
⌈	Na	23	123.655	
|	Mg	24	236.315	
|	K	39	78.031	
|	Ca	43	124.193	
|	Fe	54	92.030	
|	Fe	57	78.779	
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39
QC Std 5	Ca	43
QC Std 5	Fe	57

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 11:58:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267437.1	2.3				ug/L	262785	Standard
	Be	9	125633.9	2.1	**49.4409**	0.272	0.6	ug/L	28	Standard
	Al	27	8486145.6	1.4	**48.2106**	0.563	1.2	ug/L	2187	Standard
	Sc	45	38955.0	2.4				ug/L	39299	Standard
	Ti	47	26194.0	1.3	**98.4072**	2.316	2.4	ug/L	82	Standard
	V	51	417561.7	0.1	**48.6504**	0.602	1.2	ug/L	1876	Standard
	Cr	52	396419.3	0.1	**48.7486**	0.598	1.2	ug/L	8221	Standard
	Cr	53	49887.0	0.9	**49.1360**	0.683	1.4	ug/L	1083	Standard
	Mn	55	674356.5	0.5	**49.3812**	0.756	1.5	ug/L	2738	Standard
	Co	59	506781.2	1.1	**48.9681**	0.676	1.4	ug/L	635	Standard
	Ni	60	109125.9	0.4	**49.2307**	0.367	0.7	ug/L	261	Standard
	Cu	65	111967.5	0.9	**48.9954**	0.794	1.6	ug/L	660	Standard
	Zn	66	68052.5	1.3	**49.2516**	0.745	1.5	ug/L	558	Standard
>	Ge	72	802416.6	1.1				ug/L	807251	Standard
	As	75	67514.3	0.2	**49.3849**	0.469	0.9	ug/L	-43	Standard
	Se	82	6126.4	0.9	**49.7980**	0.680	1.4	ug/L	18	Standard
	Se-1	77	4550.7	1.3	**49.7949**	0.502	1.0	ug/L	127	Standard
>	Ga	71	70.0	32.7				mg/L	32	Standard
	Rb	85	361.7	7.1				ug/L	27	Standard
	Y	89	542429.2	0.8				ug/L	534994	Standard
>	Rh	103	50.0	36.1				ug/L	20	Standard
	Mo	98	441340.9	0.9	**101.6515**	0.794	0.8	ug/L	285	Standard
	Ag	107	355294.0	1.0	**50.6018**	0.553	1.1	ug/L	129	Standard
	Cd	111	102531.6	0.9	**50.7662**	0.487	1.0	mg/L	6	Standard
	Cd	114	264352.9	0.6	**50.0981**	0.519	1.0	ug/L	46	Standard
>	In	115	668465.3	0.6				ug/L	679215	Standard
	Sn	118	59427.7	2.6	**51.0630**	1.060	2.1	ug/L	411	Standard
	Sb	123	270471.6	0.8	**50.4721**	0.120	0.2	ug/L	497	Standard
	Ba	135	103799.0	0.9	**49.4776**	0.224	0.5	ug/L	43	Standard
	Ce	140	301.7	16.4				ug/L	22	Standard
>	Tb	159	988298.5	0.7				ug/L	983965	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	412644.6	0.9	**50.0332**	0.418	0.8	ug/L	248	Standard
	Tl	205	980899.5	0.4	**49.8924**	0.201	0.4	ug/L	620	Standard
	Pb	206	334187.5	1.5	**49.7026**	0.695	1.4	ug/L	503	Standard
	Pb	207	303141.7	1.1	**49.9951**	0.494	1.0	ug/L	406	Standard
	Pb	208	356238.0	0.8	**50.3754**	0.346	0.7	ug/L	497	Standard
	U	238	272322.2	0.6	**52.3096**	0.237	0.5	ug/L	17	Standard
>	Bi	209	577404.4	0.2				ug/L	559221	Standard

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Na	23	10.0		**5.2352**	0.151	2.9	mg/L	2	Standard
Mg	24	423.3	5.3	**4.7779**	0.219	4.6	mg/L	33	Standard
K	39	698.3	7.3	**4.5796**	0.417	9.1	mg/L	18	Standard
Ca	43	68.3	47.6	**-15.8737**	47.654	300.2	mg/L	72	Standard
Fe	54	910.8	6.6	**5.1459**	0.231	4.5	mg/L	29	Standard
Fe	57	593.3	1.3	**3.9418**	0.411	10.4	mg/L	382	Standard
Sc-1	45	38955.0	2.4				mg/L	39299	Standard
Cl	35	2.7	86.6				ug/L	4	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2366.9	3.3				ug/L	2287	Standard
P	31	80.0	25.0				ug/L	80	Standard
S	34	41.7	45.4				ug/L	45	Standard
Sr	88	178.3	14.4				ug/L	178	Standard
C	12	20.0	50.0				mg/L	33	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.5	2.5				mg/L	16	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	2943.6	1.7				mg/L	5888	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.882		
Al	27	96.421		
Sc	45			
Ti	47	98.407		
V	51	97.301		
Cr	52	97.497		
Cr	53			
Mn	55	98.762		
Co	59	97.936		
Ni	60	98.461		
Cu	65	97.991		
Zn	66	98.503		
Ge	72		99.401	
As	75	98.770		
Se	82	99.596		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	101.652	
|	Ag	107	101.204	
|	Cd	111	101.532	
|	Cd	114		
|>	In	115		98.417
|	Sn	118	102.126	
|	Sb	123	100.944	
⌊	Ba	135	98.955	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	100.066	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	100.751	
|	U	238	104.619	
⌊>	Bi	209		103.252
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 12:01:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	268310.5	2.1				ug/L	262785	Standard
	Be	9	65.0	33.5	**0.0243**	0.009	36.2	ug/L	28	Standard
	Al	27	2625.2	29.2	**0.0087**	0.004	47.9	ug/L	2187	Standard
	Sc	45	38697.7	3.5				ug/L	39299	Standard
	Ti	47	55.7	12.7	**-0.0772**	0.028	36.8	ug/L	82	Standard
	V	51	1171.3	15.1	**-0.0693**	0.022	31.9	ug/L	1876	Standard
	Cr	52	5981.2	1.8	**-0.2388**	0.011	4.5	ug/L	8221	Standard
	Cr	53	861.7	1.7	**-0.1433**	0.020	13.7	ug/L	1083	Standard
	Mn	55	2483.9	4.0	**0.0074**	0.005	70.4	ug/L	2738	Standard
	Co	59	440.3	10.1	**-0.0125**	0.004	30.2	ug/L	635	Standard
	Ni	60	239.7	10.3	**0.0028**	0.010	344.2	ug/L	261	Standard
	Cu	65	718.7	11.1	**0.0172**	0.031	181.1	ug/L	660	Standard
	Zn	66	707.0	6.5	**0.0814**	0.026	31.7	ug/L	558	Standard
>	Ge	72	789669.0	1.7				ug/L	807251	Standard
	As	75	-21.2	184.9	**0.0326**	0.029	90.0	ug/L	-43	Standard
	Se	82	22.1	33.5	**0.1090**	0.063	57.8	ug/L	18	Standard
	Se-1	77	122.7	3.1	**0.0280**	0.049	175.7	ug/L	127	Standard
>	Ga	71	30.0	0.0				mg/L	32	Standard
	Rb	85	23.3	12.4				ug/L	27	Standard
	Y	89	536079.3	2.5				ug/L	534994	Standard
>	Rh	103	21.7	35.3				ug/L	20	Standard
	Mo	98	533.8	23.3	**0.1017**	0.030	29.7	ug/L	285	Standard
	Ag	107	228.7	20.9	**0.0149**	0.008	53.1	ug/L	129	Standard
	Cd	111	21.3	74.9	**0.0025**	0.008	333.8	mg/L	6	Standard
	Cd	114	103.8	53.6	**0.0097**	0.012	119.2	ug/L	46	Standard
>	In	115	652121.3	3.8				ug/L	679215	Standard
	Sn	118	291.7	11.1	**0.0207**	0.019	93.4	ug/L	411	Standard
	Sb	123	1056.4	17.5	**0.1715**	0.037	21.5	ug/L	497	Standard
	Ba	135	66.0	23.3	**0.0130**	0.008	63.9	ug/L	43	Standard
	Ce	140	21.7	58.1				ug/L	22	Standard
>	Tb	159	962165.2	4.3				ug/L	983965	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	223.3	26.5	**-0.0006**	0.007	1214.5	ug/L	248	Standard
	Tl	205	510.0	23.8	**-0.0057**	0.007	116.9	ug/L	620	Standard
	Pb	206	613.0	9.2	**0.0172**	0.009	54.9	ug/L	503	Standard
	Pb	207	520.3	2.7	**0.0176**	0.003	18.7	ug/L	406	Standard
	Pb	208	673.0	12.1	**0.0255**	0.009	35.7	ug/L	497	Standard
	U	238	75.3	28.8	**0.0132**	0.004	29.6	ug/L	17	Standard
>	Bi	209	568559.1	2.8				ug/L	559221	Standard

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⌈	**Na**	23	3.3	86.6	**1.0986**	1.861	169.4	mg/L	2	Standard
|	**Mg**	24	43.3	35.3	**0.0156**	0.209	1337.8	mg/L	33	Standard
|	**K**	39	15.0	100.0	**-0.0507**	0.099	194.5	mg/L	18	Standard
|	**Ca**	43	65.0	13.3	**-20.1038**	10.432	51.9	mg/L	72	Standard
|	**Fe**	54	26.1	72.4	**-0.0508**	0.109	214.6	mg/L	29	Standard
|	**Fe**	57	310.0	11.6	**-1.5916**	0.709	44.5	mg/L	382	Standard
⌊>	**Sc-1**	45	38697.7	3.5				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	3.7	31.5				ug/L	3	Standard
	Br	81	2156.8	5.6				ug/L	2287	Standard
	P	31	75.0	17.6				ug/L	80	Standard
	S	34	38.3	61.6				ug/L	45	Standard
	Sr	88	160.0	14.3				ug/L	178	Standard
	C	12	26.7	57.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	9.4	186.5				mg/L	16	Standard
	Ho-1	165	11.7	49.5				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	5229.2	3.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.822	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	96.011
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.670
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 75 WG607550-03
Sample Date/Time: Monday, March 27, 2017 12:05:28
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	259900.4	1.4				ug/L	262785	Standard
	Be	9	53.3	37.9	**0.0203**	0.008	38.7	ug/L	28	Standard
	Al	27	3952.2	4.8	**0.0169**	0.001	7.0	ug/L	2187	Standard
	Sc	45	37065.3	2.6				ug/L	39299	Standard
	Ti	47	56.3	7.2	**-0.0670**	0.017	25.7	ug/L	82	Standard
	V	51	1275.7	4.5	**-0.0516**	0.006	12.5	ug/L	1876	Standard
	Cr	52	6435.4	1.5	**-0.1513**	0.017	11.5	ug/L	8221	Standard
	Cr	53	980.0	6.0	**0.0137**	0.068	497.9	ug/L	1083	Standard
	Mn	55	2999.6	0.8	**0.0540**	0.003	5.9	ug/L	2738	Standard
	Co	59	364.7	5.3	**-0.0186**	0.002	9.9	ug/L	635	Standard
	Ni	60	302.3	7.7	**0.0366**	0.011	29.0	ug/L	261	Standard
	Cu	65	827.4	3.6	**0.0794**	0.015	18.7	ug/L	660	Standard
	Zn	66	1063.4	4.9	**0.3743**	0.036	9.7	ug/L	558	Standard
>	Ge	72	762249.7	0.6				ug/L	807251	Standard
	As	75	-24.3	44.1	**0.0295**	0.008	28.3	ug/L	-43	Standard
	Se	82	23.5	8.9	**0.1274**	0.018	14.4	ug/L	18	Standard
	Se-1	77	124.7	3.0	**0.1018**	0.042	41.5	ug/L	127	Standard
>	Ga	71	31.7	9.1				mg/L	32	Standard
	Rb	85	73.3	51.2				ug/L	27	Standard
	Y	89	518054.6	0.6				ug/L	534994	Standard
>	Rh	103	11.7	24.7				ug/L	20	Standard
	Mo	98	124.3	17.7	**0.0050**	0.005	102.7	ug/L	285	Standard
	Ag	107	129.0	5.4	**0.0004**	0.001	276.6	ug/L	129	Standard
	Cd	111	3.2	37.3	**-0.0068**	0.001	9.0	mg/L	6	Standard
	Cd	114	40.0	38.5	**-0.0029**	0.003	105.6	ug/L	46	Standard
>	In	115	647508.1	0.3				ug/L	679215	Standard
	Sn	118	248.7	6.9	**-0.0153**	0.015	96.5	ug/L	411	Standard
	Sb	123	332.4	22.5	**0.0330**	0.014	43.0	ug/L	497	Standard
	Ba	135	65.0	11.1	**0.0126**	0.004	28.9	ug/L	43	Standard
	Ce	140	65.0	23.1				ug/L	22	Standard
>	Tb	159	944212.4	0.6				ug/L	983965	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	274.3	9.7	**0.0061**	0.003	51.4	ug/L	248	Standard
	Tl	205	560.0	8.5	**-0.0029**	0.002	81.6	ug/L	620	Standard
	Pb	206	611.3	2.3	**0.0180**	0.002	12.5	ug/L	503	Standard
	Pb	207	510.3	3.6	**0.0170**	0.004	21.0	ug/L	406	Standard
	Pb	208	634.7	5.7	**0.0213**	0.005	23.6	ug/L	497	Standard
	U	238	6.0	33.3	**-0.0002**	0.000	160.3	ug/L	17	Standard
>	Bi	209	561392.7	0.5				ug/L	559221	Standard

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	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	31.7	55.5	**-0.1206**	0.223	185.3	mg/L	33	Standard
	K	39	23.3	44.6	**0.0135**	0.071	525.5	mg/L	18	Standard
	Ca	43	63.3	58.2	**-17.2475**	60.124	348.6	mg/L	72	Standard
	Fe	54	31.3	17.9	**-0.0094**	0.037	396.4	mg/L	29	Standard
	Fe	57	351.7	7.3	**-0.4498**	0.728	161.8	mg/L	382	Standard
>	**Sc-1**	45	37065.3	2.6				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	2420.2	8.6				ug/L	2287	Standard
	P	31	56.7	51.7				ug/L	80	Standard
	S	34	45.0	0.0				ug/L	45	Standard
	Sr	88	146.7	20.8				ug/L	178	Standard
	C	12	6.7	86.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	12.9	45.1				mg/L	16	Standard
	Ho-1	165	8.3	34.6				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	2300.2	10.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.902	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.425	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.332
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.388
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 75 WG607550-04
Sample Date/Time: Monday, March 27, 2017 12:08:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267462.8	2.7				ug/L	262785	Standard
	Be	9	132108.7	2.5	**51.9980**	1.499	2.9	ug/L	28	Standard
	Al	27	10413.6	4.5	**0.0530**	0.003	5.2	ug/L	2187	Standard
	Sc	45	38961.7	2.4				ug/L	39299	Standard
	Ti	47	85.0	15.0	**0.0280**	0.048	171.2	ug/L	82	Standard
	V	51	434738.1	0.8	**50.3644**	0.396	0.8	ug/L	1876	Standard
	Cr	52	417993.6	0.2	**51.1520**	0.372	0.7	ug/L	8221	Standard
	Cr	53	51251.5	1.3	**50.2073**	0.369	0.7	ug/L	1083	Standard
	Mn	55	706697.5	1.1	**51.4537**	0.332	0.6	ug/L	2738	Standard
	Co	59	535406.0	0.4	**51.4370**	0.128	0.2	ug/L	635	Standard
	Ni	60	115396.1	0.5	**51.7647**	0.401	0.8	ug/L	261	Standard
	Cu	65	120570.2	0.7	**52.4750**	0.513	1.0	ug/L	660	Standard
	Zn	66	72416.0	0.5	**52.1323**	0.199	0.4	ug/L	558	Standard
>	Ge	72	807044.1	0.6				ug/L	807251	Standard
	As	75	71062.1	0.9	**51.6761**	0.331	0.6	ug/L	-43	Standard
	Se	82	6335.8	0.7	**51.2055**	0.626	1.2	ug/L	18	Standard
	Se-1	77	4699.7	1.1	**51.1697**	0.817	1.6	ug/L	127	Standard
>	Ga	71	30.0	33.3				mg/L	32	Standard
	Rb	85	135.0	31.6				ug/L	27	Standard
	Y	89	557202.6	0.6				ug/L	534994	Standard
>	Rh	103	40.0	45.1				ug/L	20	Standard
	Mo	98	160.6	7.6	**0.0119**	0.003	22.4	ug/L	285	Standard
	Ag	107	371078.4	0.2	**52.1112**	0.346	0.7	ug/L	129	Standard
	Cd	111	106388.7	0.6	**51.9395**	0.457	0.9	mg/L	6	Standard
	Cd	114	271644.6	1.3	**50.7584**	0.645	1.3	ug/L	46	Standard
>	In	115	677955.0	0.7				ug/L	679215	Standard
	Sn	118	473.0	1.8	**0.1657**	0.007	3.9	ug/L	411	Standard
	Sb	123	278432.5	0.4	**51.2318**	0.173	0.3	ug/L	497	Standard
	Ba	135	108341.0	0.9	**50.9207**	0.271	0.5	ug/L	43	Standard
	Ce	140	201.7	22.5				ug/L	22	Standard
>	Tb	159	992598.8	1.6				ug/L	983965	Standard
	Ho	165	50.0	26.5				ug/L	10	Standard
	Tl	203	440121.1	0.9	**52.9604**	0.518	1.0	ug/L	248	Standard
	Tl	205	1053842.6	1.5	**53.1951**	0.663	1.2	ug/L	620	Standard
	Pb	206	355738.8	0.7	**52.5098**	0.371	0.7	ug/L	503	Standard
	Pb	207	308467.8	0.6	**50.4876**	0.409	0.8	ug/L	406	Standard
	Pb	208	368759.7	1.1	**51.7494**	0.294	0.6	ug/L	497	Standard
	U	238	271210.9	1.0	**51.6995**	0.469	0.9	ug/L	17	Standard
>	Bi	209	581846.9	0.8				ug/L	559221	Standard

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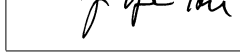

	Na	23	3.3	86.6	**1.0366**	1.808	174.4	mg/L	2	Standard
	Mg	24	58.3	38.7	**0.1942**	0.269	138.6	mg/L	33	Standard
	K	39	15.0	33.3	**-0.0506**	0.031	62.0	mg/L	18	Standard
	Ca	43	63.3	29.9	**-22.7262**	29.427	129.5	mg/L	72	Standard
	Fe	54	31.0	16.0	**-0.0207**	0.030	146.8	mg/L	29	Standard
	Fe	57	345.0	13.8	**-0.9592**	0.772	80.5	mg/L	382	Standard
>	**Sc-1**	45	38961.7	2.4				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	3.0	57.7				ug/L	3	Standard
	Br	81	3913.8	1.2				ug/L	2287	Standard
	P	31	66.7	34.6				ug/L	80	Standard
	S	34	36.7	56.8				ug/L	45	Standard
	Sr	88	176.7	26.1				ug/L	178	Standard
	C	12	30.0	66.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	15.9	130.0				mg/L	16	Standard
	Ho-1	165	50.0	26.5				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	1338.4	7.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.780	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.974	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.814
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.046
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 75 WG607550-04
Report Date/Time: Monday, March 27, 2017 12:10:45
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Method 6020 - Summary Report

Sample ID: L1703114713 WG607550-01
Sample Date/Time: Monday, March 27, 2017 12:11:39
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	267782.5	1.3				ug/L	262785	Standard
	Be	9	103.3	68.5	**0.0395**	0.028	71.2	ug/L	28	Standard
	Al	27	620902.7	2.3	**3.5162**	0.036	1.0	ug/L	2187	Standard
	Sc	45	39561.6	1.4				ug/L	39299	Standard
	Ti	47	309.0	11.5	**0.8711**	0.131	15.1	ug/L	82	Standard
	V	51	2448.4	13.2	**0.0772**	0.038	49.5	ug/L	1876	Standard
	Cr	52	9240.8	2.0	**0.1558**	0.025	16.4	ug/L	8221	Standard
	Cr	53	1463.4	2.1	**0.4445**	0.025	5.7	ug/L	1083	Standard
	Mn	55	62901.0	0.3	**4.4349**	0.023	0.5	ug/L	2738	Standard
	Co	59	1099.0	22.0	**0.0503**	0.023	46.4	ug/L	635	Standard
	Ni	60	688.0	1.8	**0.2032**	0.005	2.4	ug/L	261	Standard
	Cu	65	1565.7	4.9	**0.3839**	0.034	8.9	ug/L	660	Standard
	Zn	66	2481.2	2.0	**1.3653**	0.041	3.0	ug/L	558	Standard
>	Ge	72	804022.0	0.3				ug/L	807251	Standard
	As	75	23.3	90.8	**0.0652**	0.015	23.7	ug/L	-43	Standard
	Se	82	26.9	12.1	**0.1444**	0.027	18.8	ug/L	18	Standard
	Se-1	77	141.3	6.9	**0.2124**	0.114	53.7	ug/L	127	Standard
>	Ga	71	121.7	22.6				mg/L	32	Standard
	Rb	85	2791.9	0.9				ug/L	27	Standard
	Y	89	546957.1	1.5				ug/L	534994	Standard
>	Rh	103	16.7	17.3				ug/L	20	Standard
	Mo	98	174.0	33.9	**0.0156**	0.014	90.6	ug/L	285	Standard
	Ag	107	382.0	111.1	**0.0363**	0.062	169.6	ug/L	129	Standard
	Cd	111	91.4	139.5	**0.0374**	0.064	171.7	mg/L	6	Standard
	Cd	114	257.4	125.4	**0.0386**	0.062	161.2	ug/L	46	Standard
>	In	115	668812.3	1.3				ug/L	679215	Standard
	Sn	118	346.3	9.1	**0.0621**	0.031	49.5	ug/L	411	Standard
	Sb	123	589.6	48.1	**0.0795**	0.055	68.9	ug/L	497	Standard
	Ba	135	8161.2	1.6	**3.8703**	0.038	1.0	ug/L	43	Standard
	Ce	140	4143.9	2.9				ug/L	22	Standard
>	Tb	159	992343.5	1.7				ug/L	983965	Standard
	Ho	165	85.0	31.1				ug/L	10	Standard
	Tl	203	688.0	84.2	**0.0563**	0.073	128.9	ug/L	248	Standard
	Tl	205	1691.8	85.0	**0.0550**	0.076	137.4	ug/L	620	Standard
	Pb	206	1003.0	33.9	**0.0747**	0.054	72.2	ug/L	503	Standard
	Pb	207	853.0	39.4	**0.0721**	0.059	81.4	ug/L	406	Standard
	Pb	208	991.3	28.0	**0.0700**	0.042	60.4	ug/L	497	Standard
	U	238	184.0	120.7	**0.0345**	0.044	127.1	ug/L	17	Standard
>	Bi	209	576279.1	1.9				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0356**	1.757	4930.6	mg/L	2	Standard
	Mg	24	138.3	15.0	**1.1734**	0.242	20.7	mg/L	33	Standard
	K	39	36.7	39.4	**0.0924**	0.095	103.0	mg/L	18	Standard
	Ca	43	78.3	28.8	**-3.0338**	31.139	1026.4	mg/L	72	Standard
	Fe	54	43.0	52.5	**0.0443**	0.127	287.0	mg/L	29	Standard
	Fe	57	375.0	16.2	**-0.4590**	1.258	274.2	mg/L	382	Standard
>	**Sc-1**	45	39561.6	1.4				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	4.3	35.3				ug/L	3	Standard
	Br	81	5194.2	8.0				ug/L	2287	Standard
	P	31	86.7	20.3				ug/L	80	Standard
	S	34	51.7	31.1				ug/L	45	Standard
	Sr	88	161.7	17.6				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	110.9	31.4				mg/L	16	Standard
	Ho-1	165	85.0	31.1				mg/L	10	Standard
	Er	166	50.0	20.0				mg/L	17	Standard
	I	127	10777.2	6.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.902	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.600	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.468
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.050
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703114714S WG607550-05
Sample Date/Time: Monday, March 27, 2017 12:14:45
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278173.0	2.5				ug/L	262785	Standard
	Be	9	132555.8	1.8	**50.1636**	1.197	2.4	ug/L	28	Standard
	Al	27	656563.9	0.3	**3.5811**	0.082	2.3	ug/L	2187	Standard
	Sc	45	39718.7	2.6				ug/L	39299	Standard
	Ti	47	361.0	6.1	**1.0373**	0.094	9.0	ug/L	82	Standard
	V	51	441795.6	0.5	**50.2335**	0.778	1.5	ug/L	1876	Standard
	Cr	52	422557.2	1.3	**50.7476**	1.254	2.5	ug/L	8221	Standard
	Cr	53	51485.7	0.6	**49.4905**	0.854	1.7	ug/L	1083	Standard
	Mn	55	770539.9	0.7	**55.0724**	0.311	0.6	ug/L	2738	Standard
	Co	59	534234.3	1.1	**50.3725**	0.899	1.8	ug/L	635	Standard
	Ni	60	116047.4	0.2	**51.0906**	0.750	1.5	ug/L	261	Standard
	Cu	65	122146.4	0.7	**52.1708**	0.504	1.0	ug/L	660	Standard
	Zn	66	73538.4	0.8	**51.9538**	0.232	0.4	ug/L	558	Standard
>	Ge	72	822368.1	1.3				ug/L	807251	Standard
	As	75	72628.3	0.9	**51.8395**	1.076	2.1	ug/L	-43	Standard
	Se	82	6416.3	1.6	**50.8985**	1.386	2.7	ug/L	18	Standard
	Se-1	77	4798.8	2.0	**51.2880**	1.661	3.2	ug/L	127	Standard
>	Ga	71	131.7	15.3				mg/L	32	Standard
	Rb	85	3140.3	2.7				ug/L	27	Standard
	Y	89	559413.8	0.8				ug/L	534994	Standard
>	Rh	103	36.7	15.7				ug/L	20	Standard
	Mo	98	138.1	11.1	**0.0066**	0.003	50.2	ug/L	285	Standard
	Ag	107	373549.8	1.2	**52.1527**	0.491	0.9	ug/L	129	Standard
	Cd	111	107750.7	1.5	**52.2982**	0.714	1.4	mg/L	6	Standard
	Cd	114	270117.7	1.9	**50.1782**	0.729	1.5	ug/L	46	Standard
>	In	115	681902.1	0.5				ug/L	679215	Standard
	Sn	118	357.7	0.6	**0.0658**	0.001	2.0	ug/L	411	Standard
	Sb	123	274141.5	2.0	**50.1466**	0.748	1.5	ug/L	497	Standard
	Ba	135	116777.1	2.1	**54.5671**	0.905	1.7	ug/L	43	Standard
	Ce	140	4539.0	5.2				ug/L	22	Standard
>	Tb	159	1011202.7	0.5				ug/L	983965	Standard
	Ho	165	85.0	21.2				ug/L	10	Standard
	Tl	203	438111.3	1.4	**52.6423**	0.253	0.5	ug/L	248	Standard
	Tl	205	1042071.2	0.6	**52.5321**	0.737	1.4	ug/L	620	Standard
	Pb	206	353213.8	1.4	**52.0614**	0.179	0.3	ug/L	503	Standard
	Pb	207	306914.2	1.7	**50.1593**	0.362	0.7	ug/L	406	Standard
	Pb	208	370941.3	1.1	**51.9836**	0.127	0.2	ug/L	497	Standard
	U	238	270196.5	1.3	**51.4328**	0.303	0.6	ug/L	17	Standard
>	Bi	209	582660.3	1.0				ug/L	559221	Standard

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	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	115.0	7.5	**0.8800**	0.082	9.3	mg/L	33	Standard
	K	39	48.3	33.3	**0.1705**	0.111	64.9	mg/L	18	Standard
	Ca	43	80.0	12.5	**-0.8780**	13.602	1549.2	mg/L	72	Standard
	Fe	54	50.2	25.6	**0.0860**	0.075	86.7	mg/L	29	Standard
	Fe	57	336.7	12.8	**-1.2206**	0.990	81.1	mg/L	382	Standard
>	**Sc-1**	45	39718.7	2.6				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	2.0	0.0				ug/L	3	Standard
	Br	81	3260.4	3.6				ug/L	2287	Standard
	P	31	335.0	138.3				ug/L	80	Standard
	S	34	23.3	32.7				ug/L	45	Standard
	Sr	88	153.3	10.5				ug/L	178	Standard
	C	12	26.7	57.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	118.7	49.7				mg/L	16	Standard
	Ho-1	165	85.0	21.2				mg/L	10	Standard
	Er	166	96.7	39.2				mg/L	17	Standard
	I	127	11646.2	8.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.856	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.873	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1703114714S WG607550-05
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.396
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.191
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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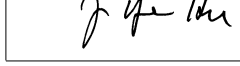

Method 6020 - Summary Report

Sample ID: L1703114715SD WG607550-06
Sample Date/Time: Monday, March 27, 2017 12:17:50
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	272919.9	1.7				ug/L	262785	Standard
	Be	9	133470.3	1.0	**51.4781**	1.041	2.0	ug/L	28	Standard
	Al	27	656434.7	1.8	**3.6481**	0.034	0.9	ug/L	2187	Standard
	Sc	45	39867.4	1.3				ug/L	39299	Standard
	Ti	47	371.0	9.9	**1.0761**	0.132	12.3	ug/L	82	Standard
	V	51	439904.5	1.9	**50.1198**	0.723	1.4	ug/L	1876	Standard
	Cr	52	421359.6	1.9	**50.7025**	0.727	1.4	ug/L	8221	Standard
	Cr	53	52326.9	2.6	**50.4226**	1.359	2.7	ug/L	1083	Standard
	Mn	55	767387.2	0.9	**54.9645**	0.308	0.6	ug/L	2738	Standard
	Co	59	537363.1	0.8	**50.7733**	0.218	0.4	ug/L	635	Standard
	Ni	60	115229.9	0.9	**50.8351**	0.247	0.5	ug/L	261	Standard
	Cu	65	121189.1	0.5	**51.8707**	0.066	0.1	ug/L	660	Standard
	Zn	66	73191.7	1.1	**51.8193**	0.452	0.9	ug/L	558	Standard
>	Ge	72	820558.6	0.5				ug/L	807251	Standard
	As	75	72177.7	1.7	**51.6210**	0.638	1.2	ug/L	-43	Standard
	Se	82	6460.6	0.6	**51.3519**	0.208	0.4	ug/L	18	Standard
	Se-1	77	4722.7	1.9	**50.5542**	0.943	1.9	ug/L	127	Standard
>	Ga	71	165.0	16.0				mg/L	32	Standard
	Rb	85	3338.7	2.8				ug/L	27	Standard
	Y	89	554318.1	0.8				ug/L	534994	Standard
>	Rh	103	40.0	33.1				ug/L	20	Standard
	Mo	98	130.3	15.0	**0.0049**	0.004	85.7	ug/L	285	Standard
	Ag	107	371606.3	1.3	**51.9967**	0.390	0.8	ug/L	129	Standard
	Cd	111	106278.3	1.1	**51.6987**	0.431	0.8	mg/L	6	Standard
	Cd	114	270573.2	2.1	**50.3735**	0.657	1.3	ug/L	46	Standard
>	In	115	680385.9	0.8				ug/L	679215	Standard
	Sn	118	330.7	6.2	**0.0435**	0.017	38.9	ug/L	411	Standard
	Sb	123	278751.2	1.0	**51.1063**	0.270	0.5	ug/L	497	Standard
	Ba	135	116402.2	2.1	**54.5168**	1.145	2.1	ug/L	43	Standard
	Ce	140	4519.0	2.2				ug/L	22	Standard
>	Tb	159	1010613.2	0.9				ug/L	983965	Standard
	Ho	165	120.0	22.0				ug/L	10	Standard
	Tl	203	432329.5	1.5	**51.9191**	0.463	0.9	ug/L	248	Standard
	Tl	205	1037750.2	0.2	**52.2841**	0.463	0.9	ug/L	620	Standard
	Pb	206	351799.2	1.5	**51.8248**	0.447	0.9	ug/L	503	Standard
	Pb	207	304874.5	1.5	**49.7996**	0.390	0.8	ug/L	406	Standard
	Pb	208	367345.6	1.9	**51.4493**	0.605	1.2	ug/L	497	Standard
	U	238	269573.5	2.3	**51.2841**	0.868	1.7	ug/L	17	Standard
>	Bi	209	582967.1	0.7				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0106**	1.800	16937.1	mg/L	2	Standard
	Mg	24	118.3	20.8	**0.9138**	0.285	31.2	mg/L	33	Standard
	K	39	76.7	29.4	**0.3567**	0.156	43.8	mg/L	18	Standard
	Ca	43	61.7	23.4	**-27.6932**	19.625	70.9	mg/L	72	Standard
	Fe	54	50.0	19.9	**0.0833**	0.054	65.0	mg/L	29	Standard
	Fe	57	393.3	11.5	**-0.1729**	0.853	493.4	mg/L	382	Standard
>	**Sc-1**	45	39867.4	1.3				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	3.3	62.4				ug/L	3	Standard
	Br	81	26469.9	8.9				ug/L	2287	Standard
	P	31	76.7	10.0				ug/L	80	Standard
	S	34	35.0	37.8				ug/L	45	Standard
	Sr	88	160.0	26.7				ug/L	178	Standard
	C	12	46.7	44.6				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	85.7	40.4				mg/L	16	Standard
	Ho-1	165	120.0	22.0				mg/L	10	Standard
	Er	166	90.0	11.1				mg/L	17	Standard
	I	127	10567.0	8.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.857	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.649	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.172
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.246
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114715SD WG607550-06
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Method 6020 - Summary Report

Sample ID: L1703121501
Sample Date/Time: Monday, March 27, 2017 12:20:56
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	282375.6	1.3				ug/L	262785	Standard
	Be	9	220.0	96.5	**0.0812**	0.080	98.7	ug/L	28	Standard
	Al	27	15320971.5	2.9	**82.4161**	1.404	1.7	ug/L	2187	Standard
	Sc	45	41284.5	3.3				ug/L	39299	Standard
	Ti	47	1053.7	25.5	**3.6421**	1.079	29.6	ug/L	82	Standard
	V	51	11679.5	4.6	**1.1419**	0.089	7.8	ug/L	1876	Standard
	Cr	52	24728.2	2.2	**2.0646**	0.129	6.3	ug/L	8221	Standard
	Cr	53	8474.0	9.2	**7.3835**	0.636	8.6	ug/L	1083	Standard
	Mn	55	682460.5	2.0	**49.3490**	0.701	1.4	ug/L	2738	Standard
	Co	59	5529.0	9.1	**0.4732**	0.059	12.5	ug/L	635	Standard
	Ni	60	5971.2	1.2	**2.5595**	0.072	2.8	ug/L	261	Standard
	Cu	65	22458.0	2.2	**9.4598**	0.072	0.8	ug/L	660	Standard
	Zn	66	35654.6	2.1	**25.2669**	0.080	0.3	ug/L	558	Standard
>	**Ge**	72	812553.6	2.0				ug/L	807251	Standard
	As	75	28620.7	1.8	**20.7028**	0.288	1.4	ug/L	-43	Standard
	Se	82	2704.2	3.8	**21.6593**	0.503	2.3	ug/L	18	Standard
	Se-1	77	629.3	7.0	**5.6106**	0.379	6.8	ug/L	127	Standard
>	**Ga**	71	821.7	2.9				mg/L	32	Standard
	Rb	85	103594.8	2.9				ug/L	27	Standard
	Y	89	565079.8	3.2				ug/L	534994	Standard
>	**Rh**	103	73.3	34.3				ug/L	20	Standard
	Mo	98	6250.7	1.0	**1.3903**	0.016	1.2	ug/L	285	Standard
	Ag	107	305.3	37.7	**0.0242**	0.017	68.5	ug/L	129	Standard
	Cd	111	76.3	42.7	**0.0288**	0.016	56.4	mg/L	6	Standard
	Cd	114	38033.4	3.2	**7.0721**	0.225	3.2	ug/L	46	Standard
>	**In**	115	680402.3	1.1				ug/L	679215	Standard
	Sn	118	298025.4	1.7	**252.5320**	3.136	1.2	ug/L	411	Standard
	Sb	123	2425.6	4.5	**0.4138**	0.015	3.7	ug/L	497	Standard
	Ba	135	131252.1	1.6	**61.4693**	0.340	0.6	ug/L	43	Standard
	Ce	140	4834.1	4.5				ug/L	22	Standard
>	**Tb**	159	1016923.9	2.4				ug/L	983965	Standard
	Ho	165	273.3	5.3				ug/L	10	Standard
	Tl	203	981.7	17.8	**0.0935**	0.025	27.3	ug/L	248	Standard
	Tl	205	2291.8	13.9	**0.0869**	0.020	23.3	ug/L	620	Standard
	Pb	206	3047.3	2.1	**0.3862**	0.013	3.4	ug/L	503	Standard
	Pb	207	2569.9	0.6	**0.3622**	0.013	3.5	ug/L	406	Standard
	Pb	208	3294.5	6.4	**0.4042**	0.044	10.8	ug/L	497	Standard
	U	238	528.7	6.0	**0.1020**	0.009	9.0	ug/L	17	Standard
>	**Bi**	209	567693.1	3.0				ug/L	559221	Standard

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⌈	**Na**	23	101.7	30.0	**58.8715**	15.952	27.1	mg/L	2	Standard
|	**Mg**	24	6988.3	3.0	**82.3066**	4.107	5.0	mg/L	33	Standard
|	**K**	39	760.0	14.2	**4.7032**	0.693	14.7	mg/L	18	Standard
|	**Ca**	43	125.0	14.4	**56.8601**	23.583	41.5	mg/L	72	Standard
|	**Fe**	54	119.3	19.2	**0.4590**	0.132	28.7	mg/L	29	Standard
|	**Fe**	57	581.7	10.6	**3.0465**	0.830	27.2	mg/L	382	Standard
⌊>	**Sc-1**	45	41284.5	3.3				mg/L	39299	Standard
	Cl	35	5.3	114.6				ug/L	4	Standard
	Kr	83	3.7	56.8				ug/L	3	Standard
	Br	81	1334689.1	4.0				ug/L	2287	Standard
	P	31	68.3	37.5				ug/L	80	Standard
	S	34	33.3	37.7				ug/L	45	Standard
	Sr	88	211.7	1.4				ug/L	178	Standard
	C	12	80.0	33.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	33.3	17.3				mg/L	3	Standard
	Dy	164	286.5	5.7				mg/L	16	Standard
	Ho-1	165	273.3	5.3				mg/L	10	Standard
	Er	166	213.3	11.8				mg/L	17	Standard
	I	127	97088.7	3.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.455	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.657	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.175
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.515
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703121502
Sample Date/Time: Monday, March 27, 2017 12:24:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	287487.4	1.8				ug/L	262785	Standard
	Be	9	88.3	11.8	**0.0311**	0.004	12.6	ug/L	28	Standard
	Al	27	15971709.4	1.6	**84.4177**	2.027	2.4	ug/L	2187	Standard
	Sc	45	40071.3	1.8				ug/L	39299	Standard
	Ti	47	681.7	37.0	**2.2365**	0.931	41.6	ug/L	82	Standard
	V	51	4847.4	6.8	**0.3496**	0.039	11.1	ug/L	1876	Standard
	Cr	52	19174.8	0.7	**1.3671**	0.014	1.0	ug/L	8221	Standard
	Cr	53	8911.0	2.7	**7.7955**	0.251	3.2	ug/L	1083	Standard
	Mn	55	471941.2	0.7	**33.9596**	0.212	0.6	ug/L	2738	Standard
	Co	59	4240.3	1.6	**0.3480**	0.007	2.1	ug/L	635	Standard
	Ni	60	4935.5	2.6	**2.0893**	0.062	3.0	ug/L	261	Standard
	Cu	65	13597.4	0.5	**5.5888**	0.027	0.5	ug/L	660	Standard
	Zn	66	25284.4	2.4	**17.7316**	0.456	2.6	ug/L	558	Standard
>	**Ge**	72	815155.8	0.2				ug/L	807251	Standard
	As	75	18253.5	1.1	**13.1778**	0.151	1.1	ug/L	-43	Standard
	Se	82	2186.0	1.3	**17.4416**	0.210	1.2	ug/L	18	Standard
	Se-1	77	684.7	2.8	**6.2042**	0.196	3.2	ug/L	127	Standard
>	**Ga**	71	415.0	10.5				mg/L	32	Standard
	Rb	85	106904.4	3.0				ug/L	27	Standard
	Y	89	563477.6	1.3				ug/L	534994	Standard
>	**Rh**	103	95.0	5.3				ug/L	20	Standard
	Mo	98	6140.1	1.3	**1.3732**	0.003	0.3	ug/L	285	Standard
	Ag	107	148.0	7.6	**0.0022**	0.002	69.2	ug/L	129	Standard
	Cd	111	32.7	20.2	**0.0076**	0.003	40.9	mg/L	6	Standard
	Cd	114	31952.1	2.8	**5.9737**	0.141	2.4	ug/L	46	Standard
>	**In**	115	676516.2	1.5				ug/L	679215	Standard
	Sn	118	255630.8	1.6	**217.8637**	5.344	2.5	ug/L	411	Standard
	Sb	123	1495.9	8.7	**0.2452**	0.028	11.2	ug/L	497	Standard
	Ba	135	27620.8	1.0	**12.9978**	0.283	2.2	ug/L	43	Standard
	Ce	140	3733.8	16.1				ug/L	22	Standard
>	**Tb**	159	1013067.7	0.4				ug/L	983965	Standard
	Ho	165	185.0	14.3				ug/L	10	Standard
	Tl	203	798.4	10.7	**0.0692**	0.012	16.7	ug/L	248	Standard
	Tl	205	2038.5	7.7	**0.0720**	0.009	12.8	ug/L	620	Standard
	Pb	206	1968.8	3.0	**0.2187**	0.006	3.0	ug/L	503	Standard
	Pb	207	1610.8	1.9	**0.1974**	0.007	3.7	ug/L	406	Standard
	Pb	208	1977.7	2.4	**0.2100**	0.004	2.1	ug/L	497	Standard
	U	238	308.0	9.4	**0.0580**	0.005	9.2	ug/L	17	Standard
>	**Bi**	209	575138.3	1.3				ug/L	559221	Standard

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⌈	**Na**	23	68.3	48.7	**40.4652**	19.470	48.1	mg/L	2	Standard
|	**Mg**	24	7206.7	3.7	**87.3981**	2.458	2.8	mg/L	33	Standard
|	**K**	39	766.7	4.7	**4.8927**	0.220	4.5	mg/L	18	Standard
|	**Ca**	43	143.3	31.5	**87.6514**	60.603	69.1	mg/L	72	Standard
|	**Fe**	54	131.1	22.5	**0.5462**	0.174	31.8	mg/L	29	Standard
|	**Fe**	57	556.7	8.2	**2.9025**	0.690	23.8	mg/L	382	Standard
⌊>	**Sc-1**	45	40071.3	1.8				mg/L	39299	Standard
	Cl	35	2.7	43.3				ug/L	4	Standard
	Kr	83	4.0	75.0				ug/L	3	Standard
	Br	81	1081655.8	3.0				ug/L	2287	Standard
	P	31	86.7	12.0				ug/L	80	Standard
	S	34	35.0	28.6				ug/L	45	Standard
	Sr	88	168.3	4.5				ug/L	178	Standard
	C	12	93.3	27.0				mg/L	33	Standard
	N	14	10.0					mg/L	0	Standard
	Hg	202	23.3	24.7				mg/L	3	Standard
	Dy	164	181.1	28.6				mg/L	16	Standard
	Ho-1	165	185.0	14.3				mg/L	10	Standard
	Er	166	186.7	11.2				mg/L	17	Standard
	I	127	89879.2	1.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		109.400	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.979	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.603
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.846
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703121502PS WG607752-01
Sample Date/Time: Monday, March 27, 2017 12:27:07
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	292700.6	1.6				ug/L	262785	Standard
	Be	9	142421.4	2.0	**51.2095**	0.838	1.6	ug/L	28	Standard
	Al	27	15770062.6	2.0	**81.8505**	1.174	1.4	ug/L	2187	Standard
	Sc	45	39986.0	1.0				ug/L	39299	Standard
	Ti	47	452.3	11.9	**1.3884**	0.184	13.2	ug/L	82	Standard
	V	51	446882.9	0.7	**51.3446**	0.560	1.1	ug/L	1876	Standard
	Cr	52	430422.2	0.5	**52.2551**	0.536	1.0	ug/L	8221	Standard
	Cr	53	60421.9	1.4	**58.8691**	0.404	0.7	ug/L	1083	Standard
	Mn	55	1163909.9	0.5	**84.1566**	1.341	1.6	ug/L	2738	Standard
	Co	59	541285.6	0.7	**51.5693**	0.541	1.0	ug/L	635	Standard
	Ni	60	118023.6	0.3	**52.5037**	0.492	0.9	ug/L	261	Standard
	Cu	65	132152.9	1.1	**57.0612**	0.565	1.0	ug/L	660	Standard
	Zn	66	97973.7	0.6	**70.0965**	0.818	1.2	ug/L	558	Standard
>	Ge	72	813857.1	1.0				ug/L	807251	Standard
	As	75	93384.4	0.6	**67.3300**	0.721	1.1	ug/L	-43	Standard
	Se	82	8865.4	1.0	**71.0782**	0.677	1.0	ug/L	18	Standard
	Se-1	77	5572.4	0.5	**60.4049**	0.632	1.0	ug/L	127	Standard
>	Ga	71	525.0	2.5				mg/L	32	Standard
	Rb	85	105623.5	0.3				ug/L	27	Standard
	Y	89	560362.7	1.7				ug/L	534994	Standard
>	Rh	103	106.7	33.3				ug/L	20	Standard
	Mo	98	6040.8	1.7	**1.3388**	0.013	1.0	ug/L	285	Standard
	Ag	107	358564.2	1.2	**50.0290**	0.165	0.3	ug/L	129	Standard
	Cd	111	106716.1	0.6	**51.7662**	0.261	0.5	mg/L	6	Standard
	Cd	114	303200.7	0.8	**56.2987**	0.917	1.6	ug/L	46	Standard
>	In	115	682316.3	1.0				ug/L	679215	Standard
	Sn	118	248361.4	0.5	**209.8334**	2.375	1.1	ug/L	411	Standard
	Sb	123	291829.9	0.6	**53.3565**	0.424	0.8	ug/L	497	Standard
	Ba	135	138300.0	0.3	**64.5952**	0.588	0.9	ug/L	43	Standard
	Ce	140	3342.0	1.9				ug/L	22	Standard
>	Tb	159	1029101.4	0.6				ug/L	983965	Standard
	Ho	165	213.3	16.5				ug/L	10	Standard
	Tl	203	439776.4	0.5	**52.8497**	0.447	0.8	ug/L	248	Standard
	Tl	205	1049124.7	0.9	**52.8912**	0.810	1.5	ug/L	620	Standard
	Pb	206	359097.9	1.1	**52.9344**	0.066	0.1	ug/L	503	Standard
	Pb	207	323427.5	0.3	**52.8704**	0.467	0.9	ug/L	406	Standard
	Pb	208	387890.1	0.8	**54.3666**	0.214	0.4	ug/L	497	Standard
	U	238	302451.4	1.0	**57.5775**	0.257	0.4	ug/L	17	Standard
>	Bi	209	582630.5	1.2				ug/L	559221	Standard

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⌈	**Na**	23	60.0	30.0	**35.7256**	11.348	31.8	mg/L	2	Standard
|	**Mg**	24	7016.6	2.4	**85.2652**	1.586	1.9	mg/L	33	Standard
|	**K**	39	778.4	6.3	**4.9807**	0.328	6.6	mg/L	18	Standard
|	**Ca**	43	150.0	6.7	**98.3086**	15.522	15.8	mg/L	72	Standard
|	**Fe**	54	104.5	17.1	**0.3946**	0.096	24.4	mg/L	29	Standard
|	**Fe**	57	590.0	6.6	**3.5763**	0.853	23.8	mg/L	382	Standard
⌊>	**Sc-1**	45	39986.0	1.0				mg/L	39299	Standard
	Cl	35	5.3	57.3				ug/L	4	Standard
	Kr	83	4.7	75.3				ug/L	3	Standard
	Br	81	1078939.9	1.5				ug/L	2287	Standard
	P	31	86.7	18.5				ug/L	80	Standard
	S	34	31.7	9.1				ug/L	45	Standard
	Sr	88	185.0	16.2				ug/L	178	Standard
	C	12	60.0	44.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	23.3	65.5				mg/L	3	Standard
	Dy	164	235.0	21.6				mg/L	16	Standard
	Ho-1	165	213.3	16.5				mg/L	10	Standard
	Er	166	173.3	29.6				mg/L	17	Standard
	I	127	87842.3	2.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		111.384	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.818	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.457
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.186
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1703121502SDL WG607752-02
Sample Date/Time: Monday, March 27, 2017 12:30:13
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	268246.8	3.1				ug/L	262785	Standard
	Be	9	101.7	57.0	**0.0383**	0.022	57.6	ug/L	28	Standard
	Al	27	3059084.5	1.1	**17.3265**	0.336	1.9	ug/L	2187	Standard
	Sc	45	37725.2	0.7				ug/L	39299	Standard
	Ti	47	255.0	78.2	**0.6995**	0.764	109.3	ug/L	82	Standard
	V	51	2980.4	5.4	**0.1521**	0.017	10.9	ug/L	1876	Standard
	Cr	52	9866.9	1.6	**0.2798**	0.007	2.4	ug/L	8221	Standard
	Cr	53	3672.1	2.8	**2.7968**	0.096	3.4	ug/L	1083	Standard
	Mn	55	90495.5	1.3	**6.7039**	0.096	1.4	ug/L	2738	Standard
	Co	59	1134.4	8.0	**0.0578**	0.009	15.9	ug/L	635	Standard
	Ni	60	1223.7	6.7	**0.4650**	0.032	6.9	ug/L	261	Standard
	Cu	65	3349.0	2.3	**1.2217**	0.025	2.0	ug/L	660	Standard
	Zn	66	6221.9	2.3	**4.2586**	0.091	2.1	ug/L	558	Standard
>	Ge	72	775394.1	1.2				ug/L	807251	Standard
	As	75	3463.0	2.7	**2.6666**	0.043	1.6	ug/L	-43	Standard
	Se	82	433.9	5.2	**3.5800**	0.157	4.4	ug/L	18	Standard
	Se-1	77	258.3	4.8	**1.6334**	0.176	10.8	ug/L	127	Standard
>	Ga	71	121.7	9.5				mg/L	32	Standard
	Rb	85	20026.6	1.3				ug/L	27	Standard
	Y	89	519701.4	0.8				ug/L	534994	Standard
>	Rh	103	36.7	7.9				ug/L	20	Standard
	Mo	98	1166.9	2.9	**0.2565**	0.010	3.8	ug/L	285	Standard
	Ag	107	279.7	19.3	**0.0231**	0.008	35.6	ug/L	129	Standard
	Cd	111	27.8	68.2	**0.0060**	0.010	163.7	mg/L	6	Standard
	Cd	114	6051.0	4.5	**1.1882**	0.053	4.4	ug/L	46	Standard
>	In	115	639469.0	0.6				ug/L	679215	Standard
	Sn	118	49110.8	0.3	**44.0838**	0.267	0.6	ug/L	411	Standard
	Sb	123	1286.4	14.2	**0.2200**	0.036	16.2	ug/L	497	Standard
	Ba	135	5354.3	0.9	**2.6498**	0.041	1.5	ug/L	43	Standard
	Ce	140	686.7	16.0				ug/L	22	Standard
>	Tb	159	957926.2	1.2				ug/L	983965	Standard
	Ho	165	56.7	41.7				ug/L	10	Standard
	Tl	203	912.4	10.2	**0.0854**	0.011	12.5	ug/L	248	Standard
	Tl	205	2190.2	5.0	**0.0822**	0.005	5.9	ug/L	620	Standard
	Pb	206	1391.1	4.7	**0.1370**	0.008	6.1	ug/L	503	Standard
	Pb	207	1222.0	7.4	**0.1374**	0.014	10.2	ug/L	406	Standard
	Pb	208	1477.7	3.3	**0.1436**	0.005	3.7	ug/L	497	Standard
	U	238	130.3	50.9	**0.0242**	0.013	53.2	ug/L	17	Standard
>	Bi	209	562489.2	0.8				ug/L	559221	Standard

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⌈	**Na**	23	13.3	43.3	**7.6085**	3.781	49.7	mg/L	2	Standard
|	**Mg**	24	1471.7	3.9	**18.5448**	0.875	4.7	mg/L	33	Standard
|	**K**	39	201.7	10.0	**1.2577**	0.141	11.2	mg/L	18	Standard
|	**Ca**	43	73.3	14.2	**-4.8138**	16.268	338.0	mg/L	72	Standard
|	**Fe**	54	31.2	19.6	**-0.0140**	0.036	259.6	mg/L	29	Standard
|	**Fe**	57	426.7	11.7	**0.9299**	0.979	105.3	mg/L	382	Standard
⌊>	**Sc-1**	45	37725.2	0.7				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	203551.5	0.6				ug/L	2287	Standard
	P	31	55.0	39.6				ug/L	80	Standard
	S	34	25.0	34.6				ug/L	45	Standard
	Sr	88	156.7	14.4				ug/L	178	Standard
	C	12	33.3	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	73.8	28.8				mg/L	16	Standard
	Ho-1	165	56.7	41.7				mg/L	10	Standard
	Er	166	60.0	72.6				mg/L	17	Standard
	I	127	22767.1	3.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.079	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.054	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	94.148
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.584
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703121502SDL WG607752-02
Sample Date/Time: Monday, March 27, 2017 12:33:18
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	264968.6	0.9				ug/L	262785	Standard
	Be	9	46.7	86.6	**0.0172**	0.016	91.9	ug/L	28	Standard
	Al	27	549263.8	0.7	**3.1434**	0.039	1.2	ug/L	2187	Standard
	Sc	45	37245.7	2.1				ug/L	39299	Standard
	Ti	47	60.3	24.0	**-0.0515**	0.057	110.1	ug/L	82	Standard
	V	51	2194.2	5.3	**0.0613**	0.014	23.2	ug/L	1876	Standard
	Cr	52	8117.5	2.0	**0.0699**	0.018	26.0	ug/L	8221	Standard
	Cr	53	1540.1	4.5	**0.6047**	0.067	11.1	ug/L	1083	Standard
	Mn	55	20636.4	1.9	**1.4170**	0.035	2.5	ug/L	2738	Standard
	Co	59	447.7	4.6	**-0.0102**	0.002	21.8	ug/L	635	Standard
	Ni	60	452.0	4.0	**0.1077**	0.008	7.3	ug/L	261	Standard
	Cu	65	1177.4	1.5	**0.2412**	0.010	4.0	ug/L	660	Standard
	Zn	66	2295.5	2.1	**1.3200**	0.032	2.4	ug/L	558	Standard
>	Ge	72	762900.0	0.3				ug/L	807251	Standard
	As	75	693.5	11.1	**0.5812**	0.059	10.1	ug/L	-43	Standard
	Se	82	99.2	21.0	**0.7750**	0.179	23.1	ug/L	18	Standard
	Se-1	77	145.0	10.6	**0.3414**	0.188	55.1	ug/L	127	Standard
>	Ga	71	50.0	70.0				mg/L	32	Standard
	Rb	85	4037.2	2.1				ug/L	27	Standard
	Y	89	508488.6	0.6				ug/L	534994	Standard
>	Rh	103	13.3	78.1				ug/L	20	Standard
	Mo	98	274.9	7.0	**0.0422**	0.004	10.1	ug/L	285	Standard
	Ag	107	126.0	7.6	**0.0003**	0.002	497.3	ug/L	129	Standard
	Cd	111	3.3	16.7	**-0.0067**	0.000	4.2	mg/L	6	Standard
	Cd	114	1248.4	3.3	**0.2386**	0.008	3.3	ug/L	46	Standard
>	In	115	634486.2	0.8				ug/L	679215	Standard
	Sn	118	10498.6	1.3	**9.3117**	0.051	0.6	ug/L	411	Standard
	Sb	123	266.0	23.7	**0.0213**	0.013	58.9	ug/L	497	Standard
	Ba	135	1174.4	4.5	**0.5706**	0.024	4.1	ug/L	43	Standard
	Ce	140	143.3	16.1				ug/L	22	Standard
>	Tb	159	942485.6	0.9				ug/L	983965	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	553.0	2.4	**0.0414**	0.001	3.5	ug/L	248	Standard
	Tl	205	1288.4	8.9	**0.0358**	0.006	17.1	ug/L	620	Standard
	Pb	206	725.7	4.1	**0.0364**	0.005	12.8	ug/L	503	Standard
	Pb	207	655.3	5.8	**0.0425**	0.007	16.1	ug/L	406	Standard
	Pb	208	767.3	1.5	**0.0415**	0.002	3.9	ug/L	497	Standard
	U	238	16.0	10.8	**0.0018**	0.000	19.1	ug/L	17	Standard
>	Bi	209	556998.4	0.3				ug/L	559221	Standard

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⌈	**Na**	23	6.7	43.3	**3.3583**	2.011	59.9	mg/L	2	Standard
|	**Mg**	24	350.0	17.4	**4.0532**	0.726	17.9	mg/L	33	Standard
|	**K**	39	90.0	14.7	**0.4854**	0.092	18.9	mg/L	18	Standard
|	**Ca**	43	61.7	30.7	**-20.9722**	30.391	144.9	mg/L	72	Standard
|	**Fe**	54	14.5	102.8	**-0.1149**	0.091	79.3	mg/L	29	Standard
|	**Fe**	57	360.0	11.4	**-0.3195**	0.905	283.4	mg/L	382	Standard
⌊>	**Sc-1**	45	37245.7	2.1				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.7	15.7				ug/L	3	Standard
	Br	81	46166.9	1.5				ug/L	2287	Standard
	P	31	85.0	11.8				ug/L	80	Standard
	S	34	40.0	54.5				ug/L	45	Standard
	Sr	88	146.7	11.0				ug/L	178	Standard
	C	12	6.7	86.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	28.9	72.6				mg/L	16	Standard
	Ho-1	165	11.7	24.7				mg/L	10	Standard
	Er	166	23.3	89.2				mg/L	17	Standard
	I	127	10011.6	1.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		100.831	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.506	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.415
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.603
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 12:36:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269141.4	1.6				ug/L	262785	Standard
	Be	9	128643.8	1.0	**50.3061**	0.320	0.6	ug/L	28	Standard
	Al	27	8787026.8	1.9	**49.5943**	0.197	0.4	ug/L	2187	Standard
	Sc	45	40474.0	2.1				ug/L	39299	Standard
	Ti	47	27263.5	1.9	**100.9836**	1.247	1.2	ug/L	82	Standard
	V	51	429211.3	1.1	**49.3088**	0.390	0.8	ug/L	1876	Standard
	Cr	52	407654.0	1.5	**49.4381**	0.092	0.2	ug/L	8221	Standard
	Cr	53	49788.3	0.7	**48.3378**	0.573	1.2	ug/L	1083	Standard
	Mn	55	692525.6	1.4	**49.9993**	0.165	0.3	ug/L	2738	Standard
	Co	59	524885.6	0.4	**50.0123**	0.700	1.4	ug/L	635	Standard
	Ni	60	111027.7	1.0	**49.3884**	0.361	0.7	ug/L	261	Standard
	Cu	65	115018.6	1.2	**49.6282**	0.502	1.0	ug/L	660	Standard
	Zn	66	69675.5	0.7	**49.7279**	0.655	1.3	ug/L	558	Standard
>	Ge	72	813820.6	1.7				ug/L	807251	Standard
	As	75	68732.9	1.2	**49.5744**	0.759	1.5	ug/L	-43	Standard
	Se	82	6246.5	0.7	**50.0723**	1.152	2.3	ug/L	18	Standard
	Se-1	77	4650.7	0.5	**50.1965**	0.952	1.9	ug/L	127	Standard
>	Ga	71	65.0	38.5				mg/L	32	Standard
	Rb	85	415.0	6.4				ug/L	27	Standard
	Y	89	547397.9	1.7				ug/L	534994	Standard
>	Rh	103	53.3	14.3				ug/L	20	Standard
	Mo	98	449020.0	1.2	**101.9722**	0.770	0.8	ug/L	285	Standard
	Ag	107	361562.2	1.2	**50.7721**	0.315	0.6	ug/L	129	Standard
	Cd	111	104592.3	1.8	**51.0592**	0.606	1.2	mg/L	6	Standard
	Cd	114	273104.1	1.0	**51.0302**	0.207	0.4	ug/L	46	Standard
>	In	115	677949.2	0.7				ug/L	679215	Standard
	Sn	118	60679.6	0.3	**51.4156**	0.209	0.4	ug/L	411	Standard
	Sb	123	272278.7	0.7	**50.0996**	0.400	0.8	ug/L	497	Standard
	Ba	135	105426.9	0.7	**49.5523**	0.419	0.8	ug/L	43	Standard
	Ce	140	320.0	21.5				ug/L	22	Standard
>	Tb	159	998736.2	1.6				ug/L	983965	Standard
	Ho	165	16.7	75.5				ug/L	10	Standard
	Tl	203	412211.1	0.3	**49.9094**	0.247	0.5	ug/L	248	Standard
	Tl	205	990891.4	0.7	**50.3289**	0.363	0.7	ug/L	620	Standard
	Pb	206	335484.2	0.6	**49.8244**	0.154	0.3	ug/L	503	Standard
	Pb	207	304608.2	1.4	**50.1646**	0.577	1.2	ug/L	406	Standard
	Pb	208	353904.5	0.6	**49.9728**	0.081	0.2	ug/L	497	Standard
	U	238	270338.5	0.6	**51.8569**	0.688	1.3	ug/L	17	Standard
>	Bi	209	578242.1	0.7				ug/L	559221	Standard

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	Na	23	11.7	65.5	**6.0349**	4.655	77.1	mg/L	2	Standard
	Mg	24	470.0	13.6	**5.1553**	0.889	17.2	mg/L	33	Standard
	K	39	666.7	11.8	**4.1971**	0.581	13.9	mg/L	18	Standard
	Ca	43	56.7	35.7	**-36.0757**	27.976	77.5	mg/L	72	Standard
	Fe	54	925.9	4.5	**5.0336**	0.196	3.9	mg/L	29	Standard
	Fe	57	596.7	7.8	**3.5763**	1.110	31.0	mg/L	382	Standard
>	**Sc-1**	45	40474.0	2.1				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	6548.1	10.6				ug/L	2287	Standard
	P	31	66.7	8.7				ug/L	80	Standard
	S	34	35.0	14.3				ug/L	45	Standard
	Sr	88	153.3	21.7				ug/L	178	Standard
	C	12	23.3	99.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.5	107.6				mg/L	16	Standard
	Ho-1	165	16.7	75.5				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	3373.7	4.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.612		
	Al	27	99.189		
	Sc	45			
	Ti	47	100.984		
	V	51	98.618		
	Cr	52	98.876		
	Cr	53			
	Mn	55	99.999		
	Co	59	100.025		
	Ni	60	98.777		
	Cu	65	99.256		
	Zn	66	99.456		
>	Ge	72		100.814	
	As	75	99.149		
	Se	82	100.145		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.972		
Ag	107	101.544		
Cd	111	102.118		
Cd	114			
In	115			99.814
Sn	118	102.831		
Sb	123	100.199		
Ba	135	99.105		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.819		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.946		
U	238	103.714		
Bi	209			103.401
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 12:39:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	259658.2	3.8				ug/L	262785	Standard
	Be	9	58.3	13.1	**0.0224**	0.002	10.2	ug/L	28	Standard
	Al	27	2126.8	8.0	**0.0063**	0.001	23.8	ug/L	2187	Standard
	Sc	45	39292.6	4.7				ug/L	39299	Standard
	Ti	47	47.3	8.5	**-0.1076**	0.012	11.1	ug/L	82	Standard
	V	51	1424.1	6.3	**-0.0375**	0.015	40.0	ug/L	1876	Standard
	Cr	52	6396.7	1.4	**-0.1777**	0.019	10.9	ug/L	8221	Standard
	Cr	53	833.4	4.4	**-0.1627**	0.070	42.8	ug/L	1083	Standard
	Mn	55	2583.6	3.9	**0.0170**	0.015	85.5	ug/L	2738	Standard
	Co	59	410.0	2.0	**-0.0151**	0.002	11.5	ug/L	635	Standard
	Ni	60	229.0	12.8	**-0.0010**	0.014	1383.8	ug/L	261	Standard
	Cu	65	712.7	3.6	**0.0178**	0.004	23.7	ug/L	660	Standard
	Zn	66	683.0	3.2	**0.0687**	0.005	7.9	ug/L	558	Standard
>	Ge	72	782301.2	3.7				ug/L	807251	Standard
	As	75	-18.4	128.5	**0.0341**	0.018	52.4	ug/L	-43	Standard
	Se	82	25.7	14.0	**0.1401**	0.029	20.5	ug/L	18	Standard
	Se-1	77	107.7	18.3	**-0.1294**	0.242	187.3	ug/L	127	Standard
>	Ga	71	26.7	28.6				mg/L	32	Standard
	Rb	85	36.7	28.4				ug/L	27	Standard
	Y	89	532065.9	5.3				ug/L	534994	Standard
>	Rh	103	8.3	69.3				ug/L	20	Standard
	Mo	98	380.7	28.6	**0.0663**	0.031	46.2	ug/L	285	Standard
	Ag	107	171.7	16.4	**0.0066**	0.005	81.3	ug/L	129	Standard
	Cd	111	13.5	101.5	**-0.0013**	0.007	561.9	mg/L	6	Standard
	Cd	114	49.8	20.7	**-0.0010**	0.002	229.0	ug/L	46	Standard
>	In	115	651745.7	4.5				ug/L	679215	Standard
	Sn	118	381.0	16.9	**0.0996**	0.046	46.7	ug/L	411	Standard
	Sb	123	599.4	18.8	**0.0836**	0.019	22.7	ug/L	497	Standard
	Ba	135	60.0	20.5	**0.0102**	0.008	73.7	ug/L	43	Standard
	Ce	140	25.0	20.0				ug/L	22	Standard
>	Tb	159	948601.4	3.7				ug/L	983965	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	114.7	17.0	**-0.0137**	0.003	22.0	ug/L	248	Standard
	Tl	205	248.3	23.3	**-0.0190**	0.004	19.4	ug/L	620	Standard
	Pb	206	579.7	7.1	**0.0138**	0.009	61.8	ug/L	503	Standard
	Pb	207	479.3	6.5	**0.0121**	0.004	30.0	ug/L	406	Standard
	Pb	208	580.0	2.2	**0.0139**	0.004	27.3	ug/L	497	Standard
	U	238	41.0	16.9	**0.0067**	0.001	18.8	ug/L	17	Standard
>	Bi	209	558669.4	4.2				ug/L	559221	Standard

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⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	36.7	39.4	**-0.0737**	0.193	262.2	mg/L	33	Standard
|	**K**	39	20.0	43.3	**-0.0190**	0.054	283.6	mg/L	18	Standard
|	**Ca**	43	66.7	11.5	**-18.5527**	15.257	82.2	mg/L	72	Standard
|	**Fe**	54	43.1	18.1	**0.0477**	0.044	93.1	mg/L	29	Standard
|	**Fe**	57	323.3	9.8	**-1.4206**	0.628	44.2	mg/L	382	Standard
⌊>	**Sc-1**	45	39292.6	4.7				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.7	83.3				ug/L	3	Standard
	Br	81	4384.0	5.9				ug/L	2287	Standard
	P	31	78.3	26.6				ug/L	80	Standard
	S	34	50.0	17.3				ug/L	45	Standard
	Sr	88	156.7	8.0				ug/L	178	Standard
	C	12	26.7	114.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	19.5	51.4				mg/L	16	Standard
	Ho-1	165	3.3	86.6				mg/L	10	Standard
	Er	166	10.0	173.2				mg/L	17	Standard
	I	127	5697.7	3.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.909	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.956
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	99.901
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703114702
Sample Date/Time: Monday, March 27, 2017 12:42:37
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	277150.4	1.1				ug/L	262785	Standard
	Be	9	100.0	18.0	**0.0368**	0.007	18.8	ug/L	28	Standard
	Al	27	521448.5	1.0	**2.8523**	0.007	0.2	ug/L	2187	Standard
	Sc	45	41157.5	1.6				ug/L	39299	Standard
	Ti	47	443.7	3.8	**1.3558**	0.051	3.7	ug/L	82	Standard
	V	51	3093.3	6.2	**0.1477**	0.020	13.8	ug/L	1876	Standard
	Cr	52	10841.2	2.4	**0.3387**	0.035	10.3	ug/L	8221	Standard
	Cr	53	1656.8	4.6	**0.6171**	0.074	12.0	ug/L	1083	Standard
	Mn	55	44626.6	1.2	**3.0522**	0.014	0.4	ug/L	2738	Standard
	Co	59	1286.1	6.8	**0.0667**	0.007	10.5	ug/L	635	Standard
	Ni	60	917.4	3.9	**0.3012**	0.013	4.3	ug/L	261	Standard
	Cu	65	1816.1	2.7	**0.4835**	0.016	3.4	ug/L	660	Standard
	Zn	66	3269.4	2.9	**1.9084**	0.046	2.4	ug/L	558	Standard
>	**Ge**	72	814592.6	1.1				ug/L	807251	Standard
	As	75	73.2	49.4	**0.1010**	0.026	25.9	ug/L	-43	Standard
	Se	82	22.2	7.8	**0.1034**	0.015	15.0	ug/L	18	Standard
	Se-1	77	136.7	9.3	**0.1407**	0.153	108.5	ug/L	127	Standard
>	**Ga**	71	175.0	24.7				mg/L	32	Standard
	Rb	85	3882.2	2.7				ug/L	27	Standard
	Y	89	553624.4	1.5				ug/L	534994	Standard
>	**Rh**	103	8.3	124.9				ug/L	20	Standard
	Mo	98	191.9	21.5	**0.0193**	0.009	46.1	ug/L	285	Standard
	Ag	107	174.3	26.2	**0.0060**	0.006	102.2	ug/L	129	Standard
	Cd	111	45.1	28.8	**0.0137**	0.006	44.8	mg/L	6	Standard
	Cd	114	197.4	24.1	**0.0264**	0.009	32.6	ug/L	46	Standard
>	**In**	115	672725.1	1.1				ug/L	679215	Standard
	Sn	118	406.7	4.2	**0.1120**	0.018	15.9	ug/L	411	Standard
	Sb	123	418.2	14.1	**0.0466**	0.011	24.0	ug/L	497	Standard
	Ba	135	7986.8	0.4	**3.7655**	0.054	1.4	ug/L	43	Standard
	Ce	140	7275.1	3.0				ug/L	22	Standard
>	**Tb**	159	1004713.1	0.4				ug/L	983965	Standard
	Ho	165	98.3	17.9				ug/L	10	Standard
	Tl	203	399.0	18.7	**0.0196**	0.009	44.4	ug/L	248	Standard
	Tl	205	955.0	9.9	**0.0158**	0.005	28.8	ug/L	620	Standard
	Pb	206	1339.4	4.5	**0.1213**	0.008	6.6	ug/L	503	Standard
	Pb	207	1123.7	5.4	**0.1135**	0.009	8.0	ug/L	406	Standard
	Pb	208	1320.7	5.3	**0.1135**	0.010	8.7	ug/L	497	Standard
	U	238	148.3	25.1	**0.0267**	0.007	26.0	ug/L	17	Standard
>	**Bi**	209	584849.4	0.5				ug/L	559221	Standard

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⌈	**Na**	23	3.3	173.2	**0.9668**	3.493	361.3	mg/L	2	Standard
|	**Mg**	24	100.0	22.9	**0.6548**	0.280	42.8	mg/L	33	Standard
|	**K**	39	40.0	45.1	**0.1059**	0.120	113.6	mg/L	18	Standard
|	**Ca**	43	50.0	26.5	**-46.6079**	17.579	37.7	mg/L	72	Standard
|	**Fe**	54	66.1	4.4	**0.1646**	0.022	13.2	mg/L	29	Standard
|	**Fe**	57	343.3	28.6	**-1.3282**	1.893	142.5	mg/L	382	Standard
⌊>	**Sc-1**	45	41157.5	1.6				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.7	41.7				ug/L	3	Standard
	Br	81	7942.1	1.0				ug/L	2287	Standard
	P	31	93.3	27.5				ug/L	80	Standard
	S	34	41.7	34.6				ug/L	45	Standard
	Sr	88	185.0	16.4				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	173.2				mg/L	3	Standard
	Dy	164	148.4	33.3				mg/L	16	Standard
	Ho-1	165	98.3	17.9				mg/L	10	Standard
	Er	166	103.3	14.8				mg/L	17	Standard
	I	127	8382.3	7.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.467	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.909	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	99.044
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	104.583
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114702
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Method 6020 - Summary Report

Sample ID: L1703114705
Sample Date/Time: Monday, March 27, 2017 12:45:42
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278098.5	2.7				ug/L	262785	Standard
	Be	9	46.7	22.3	**0.0165**	0.004	24.6	ug/L	28	Standard
	Al	27	502225.0	0.9	**2.7385**	0.056	2.0	ug/L	2187	Standard
	Sc	45	40883.4	2.7				ug/L	39299	Standard
	Ti	47	363.7	12.8	**1.0529**	0.153	14.5	ug/L	82	Standard
	V	51	2684.2	6.0	**0.0998**	0.023	23.5	ug/L	1876	Standard
	Cr	52	10032.7	1.5	**0.2346**	0.028	11.9	ug/L	8221	Standard
	Cr	53	1816.8	2.1	**0.7700**	0.066	8.5	ug/L	1083	Standard
	Mn	55	31686.1	0.9	**2.1079**	0.026	1.2	ug/L	2738	Standard
	Co	59	770.0	2.7	**0.0174**	0.003	17.7	ug/L	635	Standard
	Ni	60	848.0	3.0	**0.2691**	0.005	1.9	ug/L	261	Standard
	Cu	65	1554.7	1.4	**0.3681**	0.020	5.5	ug/L	660	Standard
	Zn	66	3517.4	2.8	**2.0782**	0.045	2.2	ug/L	558	Standard
>	Ge	72	817398.6	1.7				ug/L	807251	Standard
	As	75	50.5	35.4	**0.0846**	0.013	15.7	ug/L	-43	Standard
	Se	82	24.1	26.6	**0.1186**	0.054	45.3	ug/L	18	Standard
	Se-1	77	131.7	9.2	**0.0812**	0.157	192.9	ug/L	127	Standard
>	Ga	71	123.3	16.4				mg/L	32	Standard
	Rb	85	3423.7	2.5				ug/L	27	Standard
	Y	89	555721.2	1.7				ug/L	534994	Standard
>	Rh	103	8.3	91.7				ug/L	20	Standard
	Mo	98	124.6	12.2	**0.0037**	0.003	92.0	ug/L	285	Standard
	Ag	107	128.0	5.5	**-0.0007**	0.001	145.1	ug/L	129	Standard
	Cd	111	11.2	36.2	**-0.0030**	0.002	67.0	mg/L	6	Standard
	Cd	114	84.6	28.1	**0.0051**	0.004	88.4	ug/L	46	Standard
>	In	115	679247.2	0.3				ug/L	679215	Standard
	Sn	118	512.3	5.6	**0.1983**	0.024	12.1	ug/L	411	Standard
	Sb	123	246.9	34.9	**0.0143**	0.016	110.6	ug/L	497	Standard
	Ba	135	7765.7	1.5	**3.6250**	0.054	1.5	ug/L	43	Standard
	Ce	140	5379.3	7.0				ug/L	22	Standard
>	Tb	159	996331.5	0.7				ug/L	983965	Standard
	Ho	165	86.7	13.3				ug/L	10	Standard
	Tl	203	233.7	10.2	**-0.0002**	0.003	1428.9	ug/L	248	Standard
	Tl	205	520.0	15.3	**-0.0061**	0.004	65.3	ug/L	620	Standard
	Pb	206	929.7	2.3	**0.0607**	0.003	5.4	ug/L	503	Standard
	Pb	207	791.0	3.5	**0.0589**	0.005	7.9	ug/L	406	Standard
	Pb	208	904.7	2.1	**0.0550**	0.002	4.5	ug/L	497	Standard
	U	238	40.3	22.4	**0.0062**	0.002	27.6	ug/L	17	Standard
>	Bi	209	586277.5	0.1				ug/L	559221	Standard

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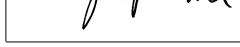

⌈	**Na**	23	1.7	173.2	**-0.0769**	1.685	2192.4	mg/L	2	Standard
|	**Mg**	24	80.0	18.8	**0.4209**	0.168	40.0	mg/L	33	Standard
|	**K**	39	48.3	53.1	**0.1579**	0.162	102.4	mg/L	18	Standard
|	**Ca**	43	43.3	46.6	**-54.7512**	30.025	54.8	mg/L	72	Standard
|	**Fe**	54	44.6	40.4	**0.0458**	0.099	216.4	mg/L	29	Standard
|	**Fe**	57	351.7	15.7	**-1.1199**	1.216	108.6	mg/L	382	Standard
⌊>	**Sc-1**	45	40883.4	2.7				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	6147.9	4.0				ug/L	2287	Standard
	P	31	78.3	14.7				ug/L	80	Standard
	S	34	35.0	24.7				ug/L	45	Standard
	Sr	88	178.3	15.9				ug/L	178	Standard
	C	12	16.7	124.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	107.1	16.6				mg/L	16	Standard
	Ho-1	165	86.7	13.3				mg/L	10	Standard
	Er	166	60.0	16.7				mg/L	17	Standard
	I	127	8906.0	8.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.828	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.257	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	100.005
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.838
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114708
Sample Date/Time: Monday, March 27, 2017 12:48:48
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	276182.8	0.3				ug/L	262785	Standard
	Be	9	50.0	17.3	**0.0178**	0.003	18.7	ug/L	28	Standard
	Al	27	559188.6	1.6	**3.0699**	0.044	1.4	ug/L	2187	Standard
	Sc	45	40987.1	4.6				ug/L	39299	Standard
	Ti	47	779.4	4.5	**2.5613**	0.127	5.0	ug/L	82	Standard
	V	51	4006.8	4.7	**0.2467**	0.025	10.0	ug/L	1876	Standard
	Cr	52	10940.3	1.2	**0.3319**	0.011	3.4	ug/L	8221	Standard
	Cr	53	1538.4	2.8	**0.4790**	0.060	12.5	ug/L	1083	Standard
	Mn	55	43935.3	1.5	**2.9578**	0.053	1.8	ug/L	2738	Standard
	Co	59	1193.0	2.9	**0.0563**	0.003	6.1	ug/L	635	Standard
	Ni	60	930.7	6.8	**0.3015**	0.028	9.3	ug/L	261	Standard
	Cu	65	1692.1	6.7	**0.4196**	0.051	12.1	ug/L	660	Standard
	Zn	66	3427.1	3.0	**1.9880**	0.089	4.5	ug/L	558	Standard
>	**Ge**	72	826196.5	1.6				ug/L	807251	Standard
	As	75	88.8	23.6	**0.1112**	0.014	12.8	ug/L	-43	Standard
	Se	82	29.2	21.5	**0.1562**	0.048	30.5	ug/L	18	Standard
	Se-1	77	116.0	2.3	**-0.1066**	0.045	41.9	ug/L	127	Standard
>	**Ga**	71	313.3	6.4				mg/L	32	Standard
	Rb	85	4835.8	2.6				ug/L	27	Standard
	Y	89	561641.0	1.2				ug/L	534994	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	102.7	13.7	**-0.0014**	0.003	231.2	ug/L	285	Standard
	Ag	107	166.0	8.3	**0.0045**	0.002	44.1	ug/L	129	Standard
	Cd	111	11.9	22.2	**-0.0027**	0.001	48.8	mg/L	6	Standard
	Cd	114	92.4	12.5	**0.0064**	0.002	31.9	ug/L	46	Standard
>	**In**	115	683626.0	0.6				ug/L	679215	Standard
	Sn	118	407.7	10.8	**0.1073**	0.039	36.3	ug/L	411	Standard
	Sb	123	255.1	21.5	**0.0156**	0.010	65.7	ug/L	497	Standard
	Ba	135	8091.5	3.0	**3.7536**	0.115	3.1	ug/L	43	Standard
	Ce	140	9536.3	3.6				ug/L	22	Standard
>	**Tb**	159	1012507.1	0.4				ug/L	983965	Standard
	Ho	165	88.3	3.3				ug/L	10	Standard
	Tl	203	135.0	12.9	**-0.0120**	0.002	17.7	ug/L	248	Standard
	Tl	205	308.3	6.8	**-0.0167**	0.001	6.5	ug/L	620	Standard
	Pb	206	1335.7	3.5	**0.1203**	0.006	5.3	ug/L	503	Standard
	Pb	207	1088.7	3.8	**0.1073**	0.007	6.2	ug/L	406	Standard
	Pb	208	1301.4	1.1	**0.1103**	0.002	2.1	ug/L	497	Standard
	U	238	71.7	6.4	**0.0121**	0.001	7.7	ug/L	17	Standard
>	**Bi**	209	586362.8	0.4				ug/L	559221	Standard

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⌈	**Na**	23	6.7	43.3	**2.9614**	1.838	62.1	mg/L	2	Standard
|	**Mg**	24	96.7	20.9	**0.6264**	0.285	45.5	mg/L	33	Standard
|	**K**	39	33.3	56.8	**0.0653**	0.129	197.1	mg/L	18	Standard
|	**Ca**	43	58.3	24.7	**-35.0540**	15.986	45.6	mg/L	72	Standard
|	**Fe**	54	56.2	25.8	**0.1134**	0.093	82.1	mg/L	29	Standard
|	**Fe**	57	343.3	7.3	**-1.3174**	0.232	17.6	mg/L	382	Standard
⌊>	**Sc-1**	45	40987.1	4.6				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	7551.9	7.2				ug/L	2287	Standard
	P	31	73.3	33.6				ug/L	80	Standard
	S	34	46.7	16.4				ug/L	45	Standard
	Sr	88	155.0	6.5				ug/L	178	Standard
	C	12	40.0	25.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	216.0	11.9				mg/L	16	Standard
	Ho-1	165	88.3	3.3				mg/L	10	Standard
	Er	166	83.3	18.3				mg/L	17	Standard
	I	127	8138.9	5.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.099	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		102.347	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.649
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.854
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703114720
Sample Date/Time: Monday, March 27, 2017 12:51:53
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277215.4	2.1				ug/L	262785	Standard
	Be	9	45.0	33.3	**0.0158**	0.005	34.5	ug/L	28	Standard
	Al	27	11105.7	6.5	**0.0547**	0.004	7.3	ug/L	2187	Standard
	Sc	45	40804.9	1.9				ug/L	39299	Standard
	Ti	47	51.7	4.9	**-0.1007**	0.009	8.5	ug/L	82	Standard
	V	51	1646.1	0.6	**-0.0209**	0.001	4.5	ug/L	1876	Standard
	Cr	52	9341.5	2.2	**0.1418**	0.031	21.7	ug/L	8221	Standard
	Cr	53	1581.7	4.0	**0.5273**	0.067	12.7	ug/L	1083	Standard
	Mn	55	4405.3	5.2	**0.1377**	0.018	13.0	ug/L	2738	Standard
	Co	59	494.3	23.3	**-0.0091**	0.011	121.9	ug/L	635	Standard
	Ni	60	417.3	9.5	**0.0768**	0.018	23.9	ug/L	261	Standard
	Cu	65	3314.7	1.7	**1.1192**	0.031	2.8	ug/L	660	Standard
	Zn	66	2200.8	4.0	**1.1245**	0.071	6.3	ug/L	558	Standard
>	Ge	72	822806.1	0.5				ug/L	807251	Standard
	As	75	-0.4	7909.1	**0.0480**	0.021	43.7	ug/L	-43	Standard
	Se	82	25.3	35.0	**0.1268**	0.072	56.4	ug/L	18	Standard
	Se-1	77	130.0	11.3	**0.0513**	0.156	303.3	ug/L	127	Standard
>	Ga	71	33.3	43.3				mg/L	32	Standard
	Rb	85	106.7	25.8				ug/L	27	Standard
	Y	89	552927.0	0.8				ug/L	534994	Standard
>	Rh	103	16.7	45.8				ug/L	20	Standard
	Mo	98	108.9	45.2	**-0.0002**	0.011	7128.7	ug/L	285	Standard
	Ag	107	197.0	40.9	**0.0087**	0.011	124.6	ug/L	129	Standard
	Cd	111	25.9	96.9	**0.0040**	0.012	297.8	mg/L	6	Standard
	Cd	114	136.2	30.5	**0.0144**	0.007	51.0	ug/L	46	Standard
>	In	115	684865.1	1.1				ug/L	679215	Standard
	Sn	118	450.7	13.4	**0.1425**	0.046	32.5	ug/L	411	Standard
	Sb	123	233.8	9.0	**0.0115**	0.004	30.6	ug/L	497	Standard
	Ba	135	895.7	4.3	**0.3974**	0.013	3.4	ug/L	43	Standard
	Ce	140	85.0	27.0				ug/L	22	Standard
>	Tb	159	1011121.8	0.8				ug/L	983965	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	261.3	21.5	**0.0031**	0.007	220.9	ug/L	248	Standard
	Tl	205	633.3	6.8	**-0.0005**	0.002	454.7	ug/L	620	Standard
	Pb	206	585.0	9.7	**0.0100**	0.009	84.7	ug/L	503	Standard
	Pb	207	518.3	7.2	**0.0145**	0.006	42.9	ug/L	406	Standard
	Pb	208	598.0	6.1	**0.0121**	0.005	42.7	ug/L	497	Standard
	U	238	38.3	51.2	**0.0058**	0.004	64.1	ug/L	17	Standard
>	Bi	209	587223.5	0.3				ug/L	559221	Standard

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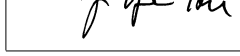

	Na	23	3.3	173.2	**0.9382**	3.443	367.0	mg/L	2	Standard
	Mg	24	83.3	21.1	**0.4664**	0.229	49.2	mg/L	33	Standard
	K	39	16.7	62.4	**-0.0432**	0.069	159.6	mg/L	18	Standard
	Ca	43	61.7	54.0	**-29.2431**	46.841	160.2	mg/L	72	Standard
	Fe	54	32.8	57.9	**-0.0197**	0.105	535.7	mg/L	29	Standard
	Fe	57	345.0	19.2	**-1.2588**	1.192	94.7	mg/L	382	Standard
>	**Sc-1**	45	40804.9	1.9				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	5.0	40.0				ug/L	3	Standard
	Br	81	3473.7	7.6				ug/L	2287	Standard
	P	31	91.7	20.7				ug/L	80	Standard
	S	34	36.7	28.4				ug/L	45	Standard
	Sr	88	146.7	7.1				ug/L	178	Standard
	C	12	33.3	124.9				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	9.7	5.7				mg/L	16	Standard
	Ho-1	165	13.3	43.3				mg/L	10	Standard
	Er	166	6.7	173.2				mg/L	17	Standard
	I	127	3158.7	5.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.491	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.927	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.832
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.007
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114720
Report Date/Time: Monday, March 27, 2017 12:54:04
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Method 6020 - Summary Report

Sample ID: L1703114723
Sample Date/Time: Monday, March 27, 2017 12:54:59
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	273917.6	1.6				ug/L	262785	Standard
	Be	9	53.3	44.3	**0.0192**	0.009	46.2	ug/L	28	Standard
	Al	27	13140.7	1.5	**0.0667**	0.002	3.4	ug/L	2187	Standard
	Sc	45	40871.7	1.7				ug/L	39299	Standard
	Ti	47	55.0	3.6	**-0.0859**	0.005	5.7	ug/L	82	Standard
	V	51	1771.8	8.2	**-0.0039**	0.019	490.8	ug/L	1876	Standard
	Cr	52	9170.1	1.3	**0.1346**	0.015	10.8	ug/L	8221	Standard
	Cr	53	1291.7	5.8	**0.2584**	0.075	29.0	ug/L	1083	Standard
	Mn	55	5590.0	2.1	**0.2275**	0.010	4.4	ug/L	2738	Standard
	Co	59	454.0	7.4	**-0.0124**	0.003	23.7	ug/L	635	Standard
	Ni	60	416.7	3.6	**0.0787**	0.005	5.9	ug/L	261	Standard
	Cu	65	3404.0	1.2	**1.1757**	0.032	2.8	ug/L	660	Standard
	Zn	66	3351.7	3.9	**1.9728**	0.068	3.4	ug/L	558	Standard
>	Ge	72	812782.3	1.3				ug/L	807251	Standard
	As	75	-41.5	145.0	**0.0186**	0.043	230.4	ug/L	-43	Standard
	Se	82	19.9	21.0	**0.0857**	0.034	39.4	ug/L	18	Standard
	Se-1	77	129.0	7.9	**0.0574**	0.096	167.4	ug/L	127	Standard
>	Ga	71	25.0	20.0				mg/L	32	Standard
	Rb	85	91.7	8.3				ug/L	27	Standard
	Y	89	554909.0	1.7				ug/L	534994	Standard
>	Rh	103	6.7	43.3				ug/L	20	Standard
	Mo	98	76.1	15.8	**-0.0074**	0.003	37.8	ug/L	285	Standard
	Ag	107	142.7	8.7	**0.0013**	0.002	144.3	ug/L	129	Standard
	Cd	111	20.6	18.4	**0.0015**	0.002	114.0	mg/L	6	Standard
	Cd	114	117.2	8.6	**0.0110**	0.002	15.3	ug/L	46	Standard
>	In	115	684184.5	0.9				ug/L	679215	Standard
	Sn	118	479.0	0.8	**0.1671**	0.005	3.3	ug/L	411	Standard
	Sb	123	174.5	17.4	**0.0008**	0.006	712.5	ug/L	497	Standard
	Ba	135	886.0	3.1	**0.3935**	0.015	3.8	ug/L	43	Standard
	Ce	140	126.7	17.8				ug/L	22	Standard
>	Tb	159	1002778.6	1.2				ug/L	983965	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	159.7	3.4	**-0.0090**	0.001	6.9	ug/L	248	Standard
	Tl	205	403.3	6.2	**-0.0119**	0.002	12.9	ug/L	620	Standard
	Pb	206	569.3	1.8	**0.0080**	0.001	13.2	ug/L	503	Standard
	Pb	207	492.7	2.2	**0.0106**	0.001	11.4	ug/L	406	Standard
	Pb	208	601.0	1.9	**0.0129**	0.003	19.5	ug/L	497	Standard
	U	238	24.0	18.2	**0.0031**	0.001	25.4	ug/L	17	Standard
>	Bi	209	585067.1	1.4				ug/L	559221	Standard

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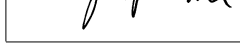

⌈	**Na**	23	1.7	173.2	**-0.0711**	1.695	2383.2	mg/L	2	Standard
|	**Mg**	24	98.3	5.9	**0.6422**	0.085	13.2	mg/L	33	Standard
|	**K**	39	13.3	57.3	**-0.0659**	0.048	73.2	mg/L	18	Standard
|	**Ca**	43	53.3	75.2	**-41.4010**	56.321	136.0	mg/L	72	Standard
|	**Fe**	54	31.1	52.1	**-0.0282**	0.094	331.7	mg/L	29	Standard
|	**Fe**	57	346.7	19.9	**-1.2245**	1.347	110.0	mg/L	382	Standard
⌊>	**Sc-1**	45	40871.7	1.7				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.3	17.3				ug/L	3	Standard
	Br	81	4724.1	5.5				ug/L	2287	Standard
	P	31	83.3	30.2				ug/L	80	Standard
	S	34	40.0	21.7				ug/L	45	Standard
	Sr	88	156.7	28.8				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.7	118.3				mg/L	16	Standard
	Ho-1	165	13.3	57.3				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	2583.6	1.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.237	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.685	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.732
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.622
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703114723
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Method 6020 - Summary Report

Sample ID: L1703126601
Sample Date/Time: Monday, March 27, 2017 12:58:05
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	273937.7	1.0				ug/L	262785	Standard
	Be	9	111.7	9.3	**0.0417**	0.004	9.2	ug/L	28	Standard
	Al	27	479866.8	1.6	**2.6553**	0.042	1.6	ug/L	2187	Standard
	Sc	45	40719.6	1.1				ug/L	39299	Standard
	Ti	47	147.7	9.1	**0.2603**	0.052	19.9	ug/L	82	Standard
	V	51	1398.7	13.4	**-0.0467**	0.022	47.8	ug/L	1876	Standard
	Cr	52	10052.7	5.7	**0.2475**	0.078	31.5	ug/L	8221	Standard
	Cr	53	5821.1	3.6	**4.7698**	0.206	4.3	ug/L	1083	Standard
	Mn	55	157940.9	0.4	**11.3115**	0.119	1.1	ug/L	2738	Standard
	Co	59	7717.0	2.2	**0.6831**	0.013	2.0	ug/L	635	Standard
	Ni	60	894.4	1.9	**0.2931**	0.010	3.5	ug/L	261	Standard
	Cu	65	2046.1	0.9	**0.5877**	0.012	2.1	ug/L	660	Standard
	Zn	66	3448.4	1.1	**2.0496**	0.011	0.5	ug/L	558	Standard
>	Ge	72	810585.4	0.7				ug/L	807251	Standard
	As	75	45.2	111.9	**0.0811**	0.037	45.2	ug/L	-43	Standard
	Se	82	45.5	13.9	**0.2921**	0.052	17.8	ug/L	18	Standard
	Se-1	77	336.3	7.2	**2.3710**	0.291	12.3	ug/L	127	Standard
>	Ga	71	41.7	25.0				mg/L	32	Standard
	Rb	85	17954.0	2.2				ug/L	27	Standard
	Y	89	546978.2	2.9				ug/L	534994	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	92.7	13.0	**-0.0032**	0.003	79.4	ug/L	285	Standard
	Ag	107	140.7	8.9	**0.0014**	0.002	142.9	ug/L	129	Standard
	Cd	111	25.5	35.3	**0.0043**	0.005	108.8	mg/L	6	Standard
	Cd	114	95.0	18.4	**0.0073**	0.003	43.1	ug/L	46	Standard
>	In	115	669208.4	1.3				ug/L	679215	Standard
	Sn	118	372.7	2.9	**0.0845**	0.013	15.9	ug/L	411	Standard
	Sb	123	190.1	14.5	**0.0044**	0.005	121.0	ug/L	497	Standard
	Ba	135	18616.8	1.7	**8.8486**	0.123	1.4	ug/L	43	Standard
	Ce	140	3213.7	0.2				ug/L	22	Standard
>	Tb	159	1008596.9	0.2				ug/L	983965	Standard
	Ho	165	131.7	11.0				ug/L	10	Standard
	Tl	203	991.0	6.4	**0.0912**	0.008	8.4	ug/L	248	Standard
	Tl	205	2436.9	2.5	**0.0909**	0.003	3.3	ug/L	620	Standard
	Pb	206	890.0	4.4	**0.0559**	0.006	10.3	ug/L	503	Standard
	Pb	207	736.0	3.1	**0.0509**	0.004	7.1	ug/L	406	Standard
	Pb	208	936.0	6.5	**0.0604**	0.008	14.0	ug/L	497	Standard
	U	238	86.7	7.9	**0.0151**	0.001	8.5	ug/L	17	Standard
>	Bi	209	581803.3	0.1				ug/L	559221	Standard

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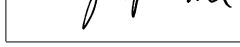

⌈	**Na**	23	3.3	173.2	**0.9556**	3.474	363.5	mg/L	2	Standard
|	**Mg**	24	1948.5	4.4	**22.8596**	0.880	3.8	mg/L	33	Standard
|	**K**	39	200.0	9.0	**1.1436**	0.121	10.6	mg/L	18	Standard
|	**Ca**	43	56.7	25.5	**-36.2362**	20.866	57.6	mg/L	72	Standard
|	**Fe**	54	49.7	26.4	**0.0767**	0.076	98.7	mg/L	29	Standard
|	**Fe**	57	348.3	14.4	**-1.1744**	0.976	83.1	mg/L	382	Standard
⌊>	**Sc-1**	45	40719.6	1.1				mg/L	39299	Standard
	Cl	35	4.7	24.7				ug/L	4	Standard
	Kr	83	5.3	65.8				ug/L	3	Standard
	Br	81	15134.3	9.2				ug/L	2287	Standard
	P	31	58.3	27.6				ug/L	80	Standard
	S	34	31.7	77.9				ug/L	45	Standard
	Sr	88	166.7	10.5				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	191.6	17.8				mg/L	16	Standard
	Ho-1	165	131.7	11.0				mg/L	10	Standard
	Er	166	106.7	19.5				mg/L	17	Standard
	I	127	62135.8	6.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.244	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.413	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.527
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.038
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703126601
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Method 6020 - Summary Report

Sample ID: L1703126602
Sample Date/Time: Monday, March 27, 2017 13:01:10
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	278598.5	1.7				ug/L	262785	Standard
	Be	9	268.3	20.6	**0.1001**	0.021	20.6	ug/L	28	Standard
	Al	27	9363291.2	1.1	**51.0583**	0.367	0.7	ug/L	2187	Standard
	Sc	45	40490.7	1.0				ug/L	39299	Standard
	Ti	47	215.3	4.7	**0.5124**	0.036	7.1	ug/L	82	Standard
	V	51	1773.4	27.8	**-0.0033**	0.057	1703.8	ug/L	1876	Standard
	Cr	52	10894.9	0.5	**0.3516**	0.004	1.0	ug/L	8221	Standard
	Cr	53	8307.3	11.2	**7.2415**	0.908	12.5	ug/L	1083	Standard
	Mn	55	5513131.0	0.5	**400.7898**	2.963	0.7	ug/L	2738	Standard
	Co	59	38478.5	0.8	**3.6280**	0.029	0.8	ug/L	635	Standard
	Ni	60	13557.1	1.2	**5.9591**	0.088	1.5	ug/L	261	Standard
	Cu	65	1968.5	3.2	**0.5537**	0.026	4.7	ug/L	660	Standard
	Zn	66	14431.9	1.5	**9.9868**	0.132	1.3	ug/L	558	Standard
>	**Ge**	72	810737.6	0.2				ug/L	807251	Standard
	As	75	379.5	9.4	**0.3227**	0.026	8.0	ug/L	-43	Standard
	Se	82	128.2	8.8	**0.9582**	0.092	9.6	ug/L	18	Standard
	Se-1	77	546.3	6.8	**4.7058**	0.407	8.6	ug/L	127	Standard
>	**Ga**	71	235.0	4.3				mg/L	32	Standard
	Rb	85	44284.6	2.1				ug/L	27	Standard
	Y	89	606533.8	0.5				ug/L	534994	Standard
>	**Rh**	103	30.0	50.0				ug/L	20	Standard
	Mo	98	87.7	20.9	**-0.0044**	0.004	96.0	ug/L	285	Standard
	Ag	107	123.7	8.7	**-0.0010**	0.002	150.4	ug/L	129	Standard
	Cd	111	118.2	5.7	**0.0500**	0.003	6.6	mg/L	6	Standard
	Cd	114	393.9	14.3	**0.0638**	0.011	16.8	ug/L	46	Standard
>	**In**	115	669947.3	0.2				ug/L	679215	Standard
	Sn	118	350.7	6.3	**0.0651**	0.019	29.0	ug/L	411	Standard
	Sb	123	170.7	12.9	**0.0008**	0.004	533.4	ug/L	497	Standard
	Ba	135	116569.1	1.0	**55.4446**	0.529	1.0	ug/L	43	Standard
	Ce	140	43112.9	0.4				ug/L	22	Standard
>	**Tb**	159	1022700.1	0.1				ug/L	983965	Standard
	Ho	165	3902.2	3.4				ug/L	10	Standard
	Tl	203	1047.0	13.2	**0.0981**	0.017	16.9	ug/L	248	Standard
	Tl	205	2531.9	7.6	**0.0959**	0.010	10.4	ug/L	620	Standard
	Pb	206	2184.2	4.4	**0.2476**	0.013	5.2	ug/L	503	Standard
	Pb	207	1827.8	5.7	**0.2303**	0.017	7.5	ug/L	406	Standard
	Pb	208	2217.4	6.8	**0.2409**	0.021	8.5	ug/L	497	Standard
	U	238	216.3	52.7	**0.0398**	0.022	54.2	ug/L	17	Standard
>	**Bi**	209	581011.4	1.0				ug/L	559221	Standard

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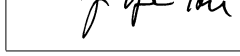

⌈	**Na**	23	33.3	31.2	**19.0605**	6.089	31.9	mg/L	2	Standard
|	**Mg**	24	2716.9	2.5	**32.2786**	0.949	2.9	mg/L	33	Standard
|	**K**	39	296.7	19.4	**1.7817**	0.388	21.8	mg/L	18	Standard
|	**Ca**	43	73.3	33.6	**-12.6326**	34.060	269.6	mg/L	72	Standard
|	**Fe**	54	315.9	3.7	**1.5831**	0.083	5.3	mg/L	29	Standard
|	**Fe**	57	493.3	5.6	**1.5999**	0.452	28.2	mg/L	382	Standard
⌊>	**Sc-1**	45	40490.7	1.0				mg/L	39299	Standard
	Cl	35	3.3	34.6				ug/L	4	Standard
	Kr	83	3.7	68.6				ug/L	3	Standard
	Br	81	57606.1	4.2				ug/L	2287	Standard
	P	31	86.7	24.0				ug/L	80	Standard
	S	34	30.0	60.1				ug/L	45	Standard
	Sr	88	143.3	5.3				ug/L	178	Standard
	C	12	63.3	32.9				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	16.7	34.6				mg/L	3	Standard
	Dy	164	5500.5	1.7				mg/L	16	Standard
	Ho-1	165	3902.2	3.4				mg/L	10	Standard
	Er	166	3560.4	4.2				mg/L	17	Standard
	I	127	204617.6	1.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.018	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.432	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.635
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.897
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: March 28, 2017

Method 6020 - Summary Report

Sample ID: L1703126801 WG607550-02
Sample Date/Time: Monday, March 27, 2017 13:04:15
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	279480.9	1.0				ug/L	262785	Standard
	Be	9	736.7	8.4	**0.2763**	0.026	9.3	ug/L	28	Standard
	Al	27	8790433.4	0.2	**47.7819**	0.399	0.8	ug/L	2187	Standard
	Sc	45	40686.2	1.3				ug/L	39299	Standard
	Ti	47	432.0	15.1	**1.3201**	0.240	18.2	ug/L	82	Standard
	V	51	2518.1	16.2	**0.0828**	0.047	56.6	ug/L	1876	Standard
	Cr	52	11518.4	0.6	**0.4291**	0.013	3.1	ug/L	8221	Standard
	Cr	53	8485.7	4.8	**7.4195**	0.389	5.2	ug/L	1083	Standard
	Mn	55	1654048.1	0.5	**120.1152**	0.415	0.3	ug/L	2738	Standard
	Co	59	126754.7	0.8	**12.0787**	0.047	0.4	ug/L	635	Standard
	Ni	60	20008.9	1.3	**8.8453**	0.078	0.9	ug/L	261	Standard
	Cu	65	4003.9	0.8	**1.4406**	0.020	1.4	ug/L	660	Standard
	Zn	66	28224.6	0.4	**19.9545**	0.038	0.2	ug/L	558	Standard
>	Ge	72	810765.0	0.5				ug/L	807251	Standard
	As	75	203.7	6.6	**0.1956**	0.010	5.3	ug/L	-43	Standard
	Se	82	93.4	7.2	**0.6782**	0.053	7.7	ug/L	18	Standard
	Se-1	77	558.0	6.8	**4.8360**	0.425	8.8	ug/L	127	Standard
>	Ga	71	241.7	14.1				mg/L	32	Standard
	Rb	85	49087.7	0.9				ug/L	27	Standard
	Y	89	621633.0	0.9				ug/L	534994	Standard
>	Rh	103	43.3	24.0				ug/L	20	Standard
	Mo	98	82.5	4.3	**-0.0055**	0.001	15.2	ug/L	285	Standard
	Ag	107	145.3	16.9	**0.0021**	0.004	168.3	ug/L	129	Standard
	Cd	111	344.6	2.3	**0.1625**	0.005	3.4	mg/L	6	Standard
	Cd	114	899.2	7.5	**0.1600**	0.014	9.0	ug/L	46	Standard
>	In	115	667657.8	0.9				ug/L	679215	Standard
	Sn	118	405.3	5.2	**0.1134**	0.017	15.3	ug/L	411	Standard
	Sb	123	159.7	4.8	**-0.0012**	0.001	126.2	ug/L	497	Standard
	Ba	135	62334.0	0.5	**29.7418**	0.134	0.5	ug/L	43	Standard
	Ce	140	101089.5	1.6				ug/L	22	Standard
>	Tb	159	1006480.8	0.8				ug/L	983965	Standard
	Ho	165	5646.1	2.8				ug/L	10	Standard
	Tl	203	1343.1	2.5	**0.1343**	0.005	3.5	ug/L	248	Standard
	Tl	205	3198.7	1.5	**0.1300**	0.002	1.4	ug/L	620	Standard
	Pb	206	952.4	4.7	**0.0658**	0.008	12.4	ug/L	503	Standard
	Pb	207	816.7	3.9	**0.0647**	0.005	7.6	ug/L	406	Standard
	Pb	208	952.7	2.6	**0.0633**	0.003	4.3	ug/L	497	Standard
	U	238	193.3	8.5	**0.0356**	0.003	8.1	ug/L	17	Standard
>	Bi	209	579481.2	1.0				ug/L	559221	Standard

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⌈	**Na**	23	13.3	43.3	**6.9976**	3.587	51.3	mg/L	2	Standard
|	**Mg**	24	2370.2	3.5	**27.9461**	0.702	2.5	mg/L	33	Standard
|	**K**	39	323.3	13.2	**1.9455**	0.294	15.1	mg/L	18	Standard
|	**Ca**	43	88.3	8.6	**8.1423**	11.449	140.6	mg/L	72	Standard
|	**Fe**	54	71.2	8.1	**0.1971**	0.028	14.3	mg/L	29	Standard
|	**Fe**	57	446.7	6.7	**0.6768**	0.511	75.5	mg/L	382	Standard
⌊>	**Sc-1**	45	40686.2	1.3				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	1.7	34.6				ug/L	3	Standard
	Br	81	26226.0	3.5				ug/L	2287	Standard
	P	31	70.0	42.9				ug/L	80	Standard
	S	34	31.7	50.8				ug/L	45	Standard
	Sr	88	191.7	4.0				ug/L	178	Standard
	C	12	80.0	21.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	390.0	21.0				mg/L	3	Standard
	Dy	164	8804.1	4.0				mg/L	16	Standard
	Ho-1	165	5646.1	2.8				mg/L	10	Standard
	Er	166	5050.8	2.9				mg/L	17	Standard
	I	127	402244.3	5.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.354	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.435	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.298
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.623
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703126802
Sample Date/Time: Monday, March 27, 2017 13:07:21
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277515.4	1.4				ug/L	262785	Standard
	Be	9	205.0	8.8	**0.0765**	0.007	9.2	ug/L	28	Standard
	Al	27	10480902.8	0.4	**57.3828**	1.082	1.9	ug/L	2187	Standard
	Sc	45	39976.0	0.5				ug/L	39299	Standard
	Ti	47	160.3	56.5	**0.3094**	0.333	107.5	ug/L	82	Standard
	V	51	1341.1	9.0	**-0.0522**	0.016	29.8	ug/L	1876	Standard
	Cr	52	8141.9	5.6	**0.0174**	0.067	387.3	ug/L	8221	Standard
	Cr	53	5882.8	21.7	**4.8805**	1.341	27.5	ug/L	1083	Standard
	Mn	55	8356655.1	0.9	**612.0088**	11.388	1.9	ug/L	2738	Standard
	Co	59	157719.0	0.6	**15.1533**	0.253	1.7	ug/L	635	Standard
	Ni	60	5736.8	0.6	**2.4781**	0.016	0.7	ug/L	261	Standard
	Cu	65	1976.5	1.7	**0.5633**	0.014	2.4	ug/L	660	Standard
	Zn	66	5497.3	1.6	**3.5582**	0.023	0.6	ug/L	558	Standard
>	Ge	72	804989.5	1.1				ug/L	807251	Standard
	As	75	451.9	13.3	**0.3775**	0.045	11.8	ug/L	-43	Standard
	Se	82	70.4	1.2	**0.4967**	0.002	0.5	ug/L	18	Standard
	Se-1	77	517.3	10.1	**4.4284**	0.640	14.5	ug/L	127	Standard
>	Ga	71	198.3	23.4				mg/L	32	Standard
	Rb	85	36594.1	2.0				ug/L	27	Standard
	Y	89	602001.5	0.3				ug/L	534994	Standard
>	Rh	103	41.7	36.7				ug/L	20	Standard
	Mo	98	189.3	3.6	**0.0191**	0.002	8.9	ug/L	285	Standard
	Ag	107	130.0	4.8	**-0.0001**	0.001	1421.9	ug/L	129	Standard
	Cd	111	60.1	7.9	**0.0214**	0.002	10.6	mg/L	6	Standard
	Cd	114	189.1	22.8	**0.0252**	0.008	31.8	ug/L	46	Standard
>	In	115	667447.3	0.6				ug/L	679215	Standard
	Sn	118	343.0	8.9	**0.0595**	0.025	41.5	ug/L	411	Standard
	Sb	123	167.9	21.6	**0.0004**	0.007	1878.8	ug/L	497	Standard
	Ba	135	166169.7	1.2	**79.3395**	0.453	0.6	ug/L	43	Standard
	Ce	140	192223.6	1.9				ug/L	22	Standard
>	Tb	159	1012681.7	0.5				ug/L	983965	Standard
	Ho	165	3340.4	3.6				ug/L	10	Standard
	Tl	203	1106.7	4.4	**0.1069**	0.006	6.0	ug/L	248	Standard
	Tl	205	2603.6	4.7	**0.1011**	0.007	6.7	ug/L	620	Standard
	Pb	206	665.7	6.2	**0.0241**	0.006	25.2	ug/L	503	Standard
	Pb	207	577.7	2.6	**0.0262**	0.003	10.1	ug/L	406	Standard
	Pb	208	680.7	3.1	**0.0258**	0.003	12.9	ug/L	497	Standard
	U	238	174.7	12.3	**0.0323**	0.004	13.0	ug/L	17	Standard
>	Bi	209	574007.3	0.4				ug/L	559221	Standard

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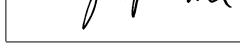

	Na	23	13.3	21.7	**7.1084**	1.738	24.5	mg/L	2	Standard
	Mg	24	3473.7	0.2	**41.9554**	0.196	0.5	mg/L	33	Standard
	K	39	315.0	12.7	**1.9253**	0.256	13.3	mg/L	18	Standard
	Ca	43	98.3	48.9	**24.6948**	68.838	278.8	mg/L	72	Standard
	Fe	54	1886.1	3.0	**10.5968**	0.270	2.5	mg/L	29	Standard
	Fe	57	886.7	10.5	**9.2519**	1.723	18.6	mg/L	382	Standard
>	**Sc-1**	45	39976.0	0.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	25872.1	5.7				ug/L	2287	Standard
	P	31	96.7	35.2				ug/L	80	Standard
	S	34	43.3	46.6				ug/L	45	Standard
	Sr	88	170.0	10.6				ug/L	178	Standard
	C	12	43.3	35.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	20.0	132.3				mg/L	3	Standard
	Dy	164	4960.9	2.9				mg/L	16	Standard
	Ho-1	165	3340.4	3.6				mg/L	10	Standard
	Er	166	3270.4	3.8				mg/L	17	Standard
	I	127	256400.0	5.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.606	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.720	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.267
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.644
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703126803S WG607550-07
Sample Date/Time: Monday, March 27, 2017 13:10:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277690.4	1.7				ug/L	262785	Standard
	Be	9	135962.4	1.7	**51.5300**	0.626	1.2	ug/L	28	Standard
	Al	27	8289443.4	1.7	**45.3476**	0.387	0.9	ug/L	2187	Standard
	Sc	45	40642.8	1.0				ug/L	39299	Standard
	Ti	47	584.3	15.2	**1.8909**	0.321	17.0	ug/L	82	Standard
	V	51	433206.2	0.7	**50.0392**	0.333	0.7	ug/L	1876	Standard
	Cr	52	408153.1	0.5	**49.7752**	0.330	0.7	ug/L	8221	Standard
	Cr	53	55807.6	0.6	**54.6018**	0.531	1.0	ug/L	1083	Standard
	Mn	55	2683041.2	0.9	**195.2858**	2.587	1.3	ug/L	2738	Standard
	Co	59	631797.0	0.8	**60.5301**	0.433	0.7	ug/L	635	Standard
	Ni	60	129461.7	0.4	**57.9179**	0.469	0.8	ug/L	261	Standard
	Cu	65	117727.6	0.3	**51.0795**	0.142	0.3	ug/L	660	Standard
	Zn	66	96935.8	0.4	**69.7293**	0.378	0.5	ug/L	558	Standard
>	Ge	72	809404.4	0.5				ug/L	807251	Standard
	As	75	71799.2	0.4	**52.0599**	0.186	0.4	ug/L	-43	Standard
	Se	82	6384.7	1.1	**51.4487**	0.559	1.1	ug/L	18	Standard
	Se-1	77	4988.5	2.2	**54.2327**	1.200	2.2	ug/L	127	Standard
>	Ga	71	273.3	29.4				mg/L	32	Standard
	Rb	85	48158.1	1.0				ug/L	27	Standard
	Y	89	618397.5	1.5				ug/L	534994	Standard
>	Rh	103	48.3	15.8				ug/L	20	Standard
	Mo	98	106.4	8.1	**0.0001**	0.002	1897.3	ug/L	285	Standard
	Ag	107	356028.8	0.6	**51.0383**	0.351	0.7	ug/L	129	Standard
	Cd	111	104454.0	0.7	**52.0566**	0.404	0.8	mg/L	6	Standard
	Cd	114	262771.6	1.3	**50.1233**	0.645	1.3	ug/L	46	Standard
>	In	115	664111.7	0.0				ug/L	679215	Standard
	Sn	118	416.3	10.6	**0.1248**	0.038	30.7	ug/L	411	Standard
	Sb	123	274482.4	0.3	**51.5574**	0.192	0.4	ug/L	497	Standard
	Ba	135	165642.2	0.7	**79.4868**	0.561	0.7	ug/L	43	Standard
	Ce	140	100713.6	0.5				ug/L	22	Standard
>	Tb	159	1015581.9	0.6				ug/L	983965	Standard
	Ho	165	5654.4	5.3				ug/L	10	Standard
	Tl	203	434549.0	0.8	**52.1389**	0.520	1.0	ug/L	248	Standard
	Tl	205	1038424.5	1.0	**52.2685**	0.780	1.5	ug/L	620	Standard
	Pb	206	350819.1	0.6	**51.6326**	0.254	0.5	ug/L	503	Standard
	Pb	207	306025.0	0.6	**49.9427**	0.432	0.9	ug/L	406	Standard
	Pb	208	368472.9	0.4	**51.5621**	0.420	0.8	ug/L	497	Standard
	U	238	281125.9	1.0	**53.4365**	0.707	1.3	ug/L	17	Standard
>	Bi	209	583524.8	0.5				ug/L	559221	Standard

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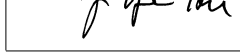

⌈	**Na**	23	33.3	34.6	**18.9769**	6.790	35.8	mg/L	2	Standard
|	**Mg**	24	2350.2	4.2	**27.7486**	1.430	5.2	mg/L	33	Standard
|	**K**	39	353.3	12.7	**2.1398**	0.281	13.1	mg/L	18	Standard
|	**Ca**	43	43.3	46.6	**-54.8272**	28.612	52.2	mg/L	72	Standard
|	**Fe**	54	74.4	12.2	**0.2157**	0.047	22.0	mg/L	29	Standard
|	**Fe**	57	398.3	4.8	**-0.2238**	0.313	139.7	mg/L	382	Standard
⌊>	**Sc-1**	45	40642.8	1.0				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	26813.7	3.2				ug/L	2287	Standard
	P	31	83.3	29.6				ug/L	80	Standard
	S	34	51.7	22.3				ug/L	45	Standard
	Sr	88	176.7	17.1				ug/L	178	Standard
	C	12	36.7	68.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	356.7	11.3				mg/L	3	Standard
	Dy	164	8605.1	0.4				mg/L	16	Standard
	Ho-1	165	5654.4	5.3				mg/L	10	Standard
	Er	166	4817.4	5.9				mg/L	17	Standard
	I	127	450966.7	5.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.672	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.267	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.776
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.346
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 13:13:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	268832.6	1.4				ug/L	262785	Standard
	Be	9	126129.6	2.2	**49.3748**	0.731	1.5	ug/L	28	Standard
	Al	27	8491369.8	1.6	**47.9868**	0.924	1.9	ug/L	2187	Standard
	Sc	45	39245.8	2.2				ug/L	39299	Standard
	Ti	47	26758.6	1.6	**101.1515**	0.968	1.0	ug/L	82	Standard
	V	51	412827.7	0.5	**48.3978**	0.184	0.4	ug/L	1876	Standard
	Cr	52	394588.9	0.6	**48.8277**	0.160	0.3	ug/L	8221	Standard
	Cr	53	48602.8	0.2	**48.1513**	0.310	0.6	ug/L	1083	Standard
	Mn	55	671301.9	1.1	**49.4621**	0.286	0.6	ug/L	2738	Standard
	Co	59	502724.2	1.0	**48.8790**	0.202	0.4	ug/L	635	Standard
	Ni	60	106900.2	1.3	**48.5263**	0.414	0.9	ug/L	261	Standard
	Cu	65	110099.7	2.2	**48.4708**	0.674	1.4	ug/L	660	Standard
	Zn	66	67176.6	2.0	**48.9159**	0.578	1.2	ug/L	558	Standard
>	Ge	72	797382.2	0.8				ug/L	807251	Standard
	As	75	67645.9	0.8	**49.7910**	0.412	0.8	ug/L	-43	Standard
	Se	82	6200.6	1.3	**50.7170**	0.492	1.0	ug/L	18	Standard
	Se-1	77	4608.7	1.3	**50.7757**	0.785	1.5	ug/L	127	Standard
>	Ga	71	43.3	13.3				mg/L	32	Standard
	Rb	85	395.0	12.1				ug/L	27	Standard
	Y	89	542167.6	1.4				ug/L	534994	Standard
>	Rh	103	10.0	86.6				ug/L	20	Standard
	Mo	98	439065.9	0.4	**100.4647**	1.120	1.1	ug/L	285	Standard
	Ag	107	355367.2	1.6	**50.2746**	0.417	0.8	ug/L	129	Standard
	Cd	111	102091.2	0.7	**50.2137**	0.130	0.3	mg/L	6	Standard
	Cd	114	267540.8	1.1	**50.3653**	0.323	0.6	ug/L	46	Standard
>	In	115	672913.4	0.9				ug/L	679215	Standard
	Sn	118	59218.2	0.8	**50.5510**	0.638	1.3	ug/L	411	Standard
	Sb	123	266500.9	0.8	**49.4038**	0.480	1.0	ug/L	497	Standard
	Ba	135	103069.4	0.2	**48.8082**	0.476	1.0	ug/L	43	Standard
	Ce	140	306.7	21.7				ug/L	22	Standard
>	Tb	159	992921.5	0.7				ug/L	983965	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	409404.0	0.8	**49.5901**	0.420	0.8	ug/L	248	Standard
	Tl	205	989109.8	0.3	**50.2607**	0.485	1.0	ug/L	620	Standard
	Pb	206	331026.7	0.2	**49.1839**	0.485	1.0	ug/L	503	Standard
	Pb	207	301817.8	0.5	**49.7268**	0.362	0.7	ug/L	406	Standard
	Pb	208	352511.8	0.9	**49.7976**	0.505	1.0	ug/L	497	Standard
	U	238	273303.3	0.5	**52.4460**	0.443	0.8	ug/L	17	Standard
>	Bi	209	578001.2	0.8				ug/L	559221	Standard

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	Na	23	10.0	50.0	**5.1497**	2.986	58.0	mg/L	2	Standard
	Mg	24	506.7	17.8	**5.7639**	0.975	16.9	mg/L	33	Standard
	K	39	645.0	8.6	**4.1869**	0.448	10.7	mg/L	18	Standard
	Ca	43	45.0	11.1	**-50.2367**	8.453	16.8	mg/L	72	Standard
	Fe	54	862.5	10.1	**4.8363**	0.607	12.6	mg/L	29	Standard
	Fe	57	601.7	10.0	**4.0286**	1.381	34.3	mg/L	382	Standard
>	**Sc-1**	45	39245.8	2.2				mg/L	39299	Standard
	Cl	35	4.7	99.0				ug/L	4	Standard
	Kr	83	2.3	89.2				ug/L	3	Standard
	Br	81	3120.3	13.9				ug/L	2287	Standard
	P	31	81.7	25.5				ug/L	80	Standard
	S	34	46.7	40.6				ug/L	45	Standard
	Sr	88	158.3	12.8				ug/L	178	Standard
	C	12	16.7	91.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	15.7	134.1				mg/L	16	Standard
	Ho-1	165	10.0	132.3				mg/L	10	Standard
	Er	166	20.0	100.0				mg/L	17	Standard
	I	127	10085.5	48.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.750		
	Al	27	95.974		
	Sc	45			
	Ti	47	101.152		
	V	51	96.796		
	Cr	52	97.655		
	Cr	53			
	Mn	55	98.924		
	Co	59	97.758		
	Ni	60	97.053		
	Cu	65	96.942		
	Zn	66	97.832		
>	Ge	72		98.777	
	As	75	99.582		
	Se	82	101.434		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	100.465	
|	Ag	107	100.549	
|	Cd	111	100.427	
|	Cd	114		
|>	In	115		99.072
|	Sn	118	101.102	
|	Sb	123	98.808	
⌊	Ba	135	97.616	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.180	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.595	
|	U	238	104.892	
⌊>	Bi	209		103.358
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 13:16:38
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	264373.5	1.3				ug/L	262785	Standard
	Be	9	65.0	27.7	**0.0246**	0.007	28.1	ug/L	28	Standard
	Al	27	2543.6	34.1	**0.0084**	0.005	57.1	ug/L	2187	Standard
	Sc	45	39810.6	2.1				ug/L	39299	Standard
	Ti	47	47.3	18.9	**-0.1097**	0.034	30.8	ug/L	82	Standard
	V	51	1313.9	7.5	**-0.0529**	0.011	20.4	ug/L	1876	Standard
	Cr	52	6153.9	0.8	**-0.2187**	0.003	1.5	ug/L	8221	Standard
	Cr	53	743.4	6.5	**-0.2662**	0.049	18.5	ug/L	1083	Standard
	Mn	55	2615.6	5.5	**0.0168**	0.012	69.3	ug/L	2738	Standard
	Co	59	353.7	4.1	**-0.0211**	0.001	6.2	ug/L	635	Standard
	Ni	60	264.0	9.8	**0.0138**	0.012	87.2	ug/L	261	Standard
	Cu	65	661.0	3.0	**-0.0090**	0.010	115.8	ug/L	660	Standard
	Zn	66	660.7	2.6	**0.0461**	0.012	25.5	ug/L	558	Standard
>	Ge	72	791578.3	0.5				ug/L	807251	Standard
	As	75	-22.7	110.3	**0.0314**	0.019	59.1	ug/L	-43	Standard
	Se	82	24.6	15.6	**0.1285**	0.030	23.7	ug/L	18	Standard
	Se-1	77	96.3	4.2	**-0.2757**	0.050	18.0	ug/L	127	Standard
>	Ga	71	28.3	44.4				mg/L	32	Standard
	Rb	85	46.7	44.6				ug/L	27	Standard
	Y	89	534652.0	2.6				ug/L	534994	Standard
>	Rh	103	10.0	86.6				ug/L	20	Standard
	Mo	98	408.1	13.5	**0.0699**	0.013	19.3	ug/L	285	Standard
	Ag	107	206.3	38.5	**0.0109**	0.011	103.2	ug/L	129	Standard
	Cd	111	19.8	92.5	**0.0014**	0.009	637.4	mg/L	6	Standard
	Cd	114	97.9	61.6	**0.0079**	0.011	143.8	ug/L	46	Standard
>	In	115	665618.3	0.8				ug/L	679215	Standard
	Sn	118	325.0	2.6	**0.0448**	0.006	12.7	ug/L	411	Standard
	Sb	123	362.7	17.3	**0.0369**	0.011	30.8	ug/L	497	Standard
	Ba	135	95.3	37.7	**0.0262**	0.017	64.6	ug/L	43	Standard
	Ce	140	41.7	70.3				ug/L	22	Standard
>	Tb	159	973159.1	1.2				ug/L	983965	Standard
	Ho	165	25.0	60.0				ug/L	10	Standard
	Tl	203	159.7	49.6	**-0.0088**	0.010	108.7	ug/L	248	Standard
	Tl	205	300.0	46.8	**-0.0169**	0.007	42.0	ug/L	620	Standard
	Pb	206	603.0	12.9	**0.0139**	0.011	82.1	ug/L	503	Standard
	Pb	207	485.0	8.4	**0.0102**	0.007	66.6	ug/L	406	Standard
	Pb	208	625.0	10.1	**0.0171**	0.009	51.2	ug/L	497	Standard
	U	238	60.7	66.8	**0.0102**	0.008	75.8	ug/L	17	Standard
>	Bi	209	579012.1	1.0				ug/L	559221	Standard

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	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	28.3	27.0	**-0.1876**	0.090	47.9	mg/L	33	Standard
	K	39	13.3	78.1	**-0.0643**	0.067	103.5	mg/L	18	Standard
	Ca	43	45.0	40.1	**-51.4226**	25.146	48.9	mg/L	72	Standard
	Fe	54	43.1	13.6	**0.0447**	0.035	78.7	mg/L	29	Standard
	Fe	57	366.7	9.6	**-0.6706**	0.733	109.3	mg/L	382	Standard
>	**Sc-1**	45	39810.6	2.1				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	2916.9	4.5				ug/L	2287	Standard
	P	31	96.7	25.5				ug/L	80	Standard
	S	34	41.7	30.2				ug/L	45	Standard
	Sr	88	170.0	11.8				ug/L	178	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	16.0	35.2				mg/L	16	Standard
	Ho-1	165	25.0	60.0				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	7230.1	2.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.059	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.998
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.539
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1703126804SD WG607550-08
Sample Date/Time: Monday, March 27, 2017 13:19:44
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	279078.5	0.7				ug/L	262785	Standard
	Be	9	137751.8	1.7	**51.9459**	0.756	1.5	ug/L	28	Standard
	Al	27	8770756.8	0.6	**47.7418**	0.246	0.5	ug/L	2187	Standard
	Sc	45	42061.6	0.9				ug/L	39299	Standard
	Ti	47	473.3	14.2	**1.4673**	0.253	17.2	ug/L	82	Standard
	V	51	439208.9	1.1	**50.4400**	0.863	1.7	ug/L	1876	Standard
	Cr	52	417051.5	0.9	**50.5817**	0.887	1.8	ug/L	8221	Standard
	Cr	53	55019.7	1.1	**53.4975**	0.958	1.8	ug/L	1083	Standard
	Mn	55	2781837.6	1.2	**201.2862**	1.982	1.0	ug/L	2738	Standard
	Co	59	645396.6	1.2	**61.4730**	0.861	1.4	ug/L	635	Standard
	Ni	60	131661.0	1.2	**58.5594**	0.949	1.6	ug/L	261	Standard
	Cu	65	118690.8	0.7	**51.1987**	0.716	1.4	ug/L	660	Standard
	Zn	66	98376.3	0.3	**70.3579**	0.871	1.2	ug/L	558	Standard
>	Ge	72	814193.3	1.0				ug/L	807251	Standard
	As	75	72382.5	0.6	**52.1754**	0.320	0.6	ug/L	-43	Standard
	Se	82	6559.8	1.4	**52.5560**	1.106	2.1	ug/L	18	Standard
	Se-1	77	5107.9	0.9	**55.2354**	1.077	1.9	ug/L	127	Standard
>	Ga	71	260.0	17.3				mg/L	32	Standard
	Rb	85	49062.7	1.9				ug/L	27	Standard
	Y	89	627277.3	1.0				ug/L	534994	Standard
>	Rh	103	45.0	33.3				ug/L	20	Standard
	Mo	98	178.3	12.8	**0.0162**	0.005	33.1	ug/L	285	Standard
	Ag	107	358624.1	0.9	**50.6999**	0.207	0.4	ug/L	129	Standard
	Cd	111	106090.9	0.7	**52.1428**	0.330	0.6	mg/L	6	Standard
	Cd	114	267214.0	3.0	**50.2625**	1.247	2.5	ug/L	46	Standard
>	In	115	673406.9	0.6				ug/L	679215	Standard
	Sn	118	433.3	6.8	**0.1344**	0.023	17.5	ug/L	411	Standard
	Sb	123	276515.8	1.5	**51.2208**	0.510	1.0	ug/L	497	Standard
	Ba	135	167369.7	0.2	**79.2086**	0.486	0.6	ug/L	43	Standard
	Ce	140	103718.9	1.7				ug/L	22	Standard
>	Tb	159	1010230.2	0.8				ug/L	983965	Standard
	Ho	165	5729.4	2.5				ug/L	10	Standard
	Tl	203	434625.3	0.6	**52.1752**	0.397	0.8	ug/L	248	Standard
	Tl	205	1040998.6	2.1	**52.4245**	1.192	2.3	ug/L	620	Standard
	Pb	206	352043.2	1.1	**51.8409**	0.623	1.2	ug/L	503	Standard
	Pb	207	304061.7	0.5	**49.6476**	0.324	0.7	ug/L	406	Standard
	Pb	208	363377.4	1.3	**50.8748**	0.737	1.4	ug/L	497	Standard
	U	238	280432.7	1.9	**53.3324**	1.110	2.1	ug/L	17	Standard
>	Bi	209	583213.6	0.2				ug/L	559221	Standard

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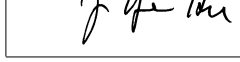

	Na	23	21.7	13.3	**11.5653**	1.772	15.3	mg/L	2	Standard
	Mg	24	2433.5	3.5	**27.7625**	1.229	4.4	mg/L	33	Standard
	K	39	346.7	9.3	**2.0211**	0.196	9.7	mg/L	18	Standard
	Ca	43	65.0	68.4	**-27.6120**	60.423	218.8	mg/L	72	Standard
	Fe	54	55.7	18.4	**0.1000**	0.057	57.4	mg/L	29	Standard
	Fe	57	463.3	15.6	**0.7059**	1.301	184.3	mg/L	382	Standard
>	**Sc-1**	45	42061.6	0.9				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	4.3	48.0				ug/L	3	Standard
	Br	81	26546.6	3.2				ug/L	2287	Standard
	P	31	76.7	30.8				ug/L	80	Standard
	S	34	43.3	43.7				ug/L	45	Standard
	Sr	88	138.3	16.3				ug/L	178	Standard
	C	12	43.3	26.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	340.0	10.6				mg/L	3	Standard
	Dy	164	8759.3	3.7				mg/L	16	Standard
	Ho-1	165	5729.4	2.5				mg/L	10	Standard
	Er	166	5010.8	7.7				mg/L	17	Standard
	I	127	470401.5	6.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.200	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.860	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.145
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.290
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703126805
Sample Date/Time: Monday, March 27, 2017 13:22:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277401.4	0.3				ug/L	262785	Standard
	Be	9	113.3	14.2	**0.0418**	0.006	14.4	ug/L	28	Standard
	Al	27	462117.6	1.6	**2.5247**	0.035	1.4	ug/L	2187	Standard
	Sc	45	41104.0	1.5				ug/L	39299	Standard
	Ti	47	157.3	18.4	**0.2906**	0.110	37.8	ug/L	82	Standard
	V	51	1272.4	2.4	**-0.0629**	0.002	3.1	ug/L	1876	Standard
	Cr	52	10255.5	3.5	**0.2585**	0.018	7.0	ug/L	8221	Standard
	Cr	53	6174.6	6.3	**5.0612**	0.480	9.5	ug/L	1083	Standard
	Mn	55	147608.2	0.9	**10.4472**	0.265	2.5	ug/L	2738	Standard
	Co	59	7335.8	0.1	**0.6393**	0.015	2.4	ug/L	635	Standard
	Ni	60	928.7	3.7	**0.3041**	0.019	6.2	ug/L	261	Standard
	Cu	65	2072.1	0.4	**0.5895**	0.016	2.7	ug/L	660	Standard
	Zn	66	2967.0	0.9	**1.6794**	0.059	3.5	ug/L	558	Standard
>	Ge	72	819415.1	2.2				ug/L	807251	Standard
	As	75	47.7	106.6	**0.0828**	0.037	44.1	ug/L	-43	Standard
	Se	82	44.4	10.0	**0.2798**	0.043	15.3	ug/L	18	Standard
	Se-1	77	346.0	3.6	**2.4379**	0.184	7.6	ug/L	127	Standard
>	Ga	71	43.3	24.0				mg/L	32	Standard
	Rb	85	17017.9	2.8				ug/L	27	Standard
	Y	89	561774.0	1.1				ug/L	534994	Standard
>	Rh	103	8.3	69.3				ug/L	20	Standard
	Mo	98	104.8	17.2	**-0.0008**	0.004	512.8	ug/L	285	Standard
	Ag	107	166.0	9.5	**0.0046**	0.002	47.6	ug/L	129	Standard
	Cd	111	25.2	20.4	**0.0038**	0.002	63.4	mg/L	6	Standard
	Cd	114	132.1	16.0	**0.0139**	0.004	27.5	ug/L	46	Standard
>	In	115	679968.5	0.6				ug/L	679215	Standard
	Sn	118	357.0	9.1	**0.0661**	0.029	43.9	ug/L	411	Standard
	Sb	123	176.7	13.1	**0.0014**	0.004	314.4	ug/L	497	Standard
	Ba	135	17519.8	1.6	**8.1938**	0.129	1.6	ug/L	43	Standard
	Ce	140	2791.9	7.6				ug/L	22	Standard
>	Tb	159	1011624.8	0.6				ug/L	983965	Standard
	Ho	165	131.7	26.7				ug/L	10	Standard
	Tl	203	945.4	1.7	**0.0834**	0.002	1.8	ug/L	248	Standard
	Tl	205	2286.8	6.4	**0.0810**	0.007	8.6	ug/L	620	Standard
	Pb	206	845.0	6.2	**0.0468**	0.007	14.9	ug/L	503	Standard
	Pb	207	709.0	3.1	**0.0442**	0.003	6.8	ug/L	406	Standard
	Pb	208	831.0	2.1	**0.0434**	0.003	6.7	ug/L	497	Standard
	U	238	128.3	2.0	**0.0226**	0.001	2.4	ug/L	17	Standard
>	Bi	209	593547.3	0.5				ug/L	559221	Standard

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⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	1696.8	2.4	**19.6531**	0.581	3.0	mg/L	33	Standard
|	**K**	39	150.0	21.9	**0.8087**	0.199	24.6	mg/L	18	Standard
|	**Ca**	43	55.0	15.7	**-39.4713**	11.458	29.0	mg/L	72	Standard
|	**Fe**	54	56.3	26.1	**0.1107**	0.084	75.9	mg/L	29	Standard
|	**Fe**	57	376.7	9.4	**-0.7035**	0.763	108.4	mg/L	382	Standard
⌊>	**Sc-1**	45	41104.0	1.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.3	62.4				ug/L	3	Standard
	Br	81	13245.8	1.1				ug/L	2287	Standard
	P	31	68.3	22.4				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	180.0	12.7				ug/L	178	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	174.1	23.9				mg/L	16	Standard
	Ho-1	165	131.7	26.7				mg/L	10	Standard
	Er	166	123.3	32.8				mg/L	17	Standard
	I	127	59720.9	3.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.562	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.507	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.111
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.138
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703126807
Sample Date/Time: Monday, March 27, 2017 13:25:55
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274477.2	0.7				ug/L	262785	Standard
	Be	9	66.7	17.3	**0.0243**	0.004	18.2	ug/L	28	Standard
	Al	27	10760.5	2.7	**0.0534**	0.001	2.7	ug/L	2187	Standard
	Sc	45	40238.4	0.9				ug/L	39299	Standard
	Ti	47	49.7	6.2	**-0.1046**	0.013	12.5	ug/L	82	Standard
	V	51	1597.4	10.5	**-0.0230**	0.022	95.7	ug/L	1876	Standard
	Cr	52	9535.3	0.9	**0.1866**	0.028	15.0	ug/L	8221	Standard
	Cr	53	1851.8	8.6	**0.8251**	0.170	20.6	ug/L	1083	Standard
	Mn	55	6066.5	0.8	**0.2646**	0.010	3.7	ug/L	2738	Standard
	Co	59	427.7	2.6	**-0.0147**	0.002	11.2	ug/L	635	Standard
	Ni	60	429.0	5.5	**0.0853**	0.009	10.7	ug/L	261	Standard
	Cu	65	2912.3	1.8	**0.9691**	0.039	4.0	ug/L	660	Standard
	Zn	66	2709.9	3.0	**1.5222**	0.087	5.7	ug/L	558	Standard
>	Ge	72	808319.4	1.4				ug/L	807251	Standard
	As	75	-94.1	64.7	**-0.0196**	0.043	218.9	ug/L	-43	Standard
	Se	82	13.2	23.8	**0.0324**	0.027	82.6	ug/L	18	Standard
	Se-1	77	139.3	6.0	**0.1812**	0.085	46.9	ug/L	127	Standard
>	Ga	71	41.7	30.2				mg/L	32	Standard
	Rb	85	106.7	38.2				ug/L	27	Standard
	Y	89	551264.5	1.7				ug/L	534994	Standard
>	Rh	103	3.3	86.6				ug/L	20	Standard
	Mo	98	67.2	11.2	**-0.0094**	0.002	19.4	ug/L	285	Standard
	Ag	107	165.3	10.3	**0.0045**	0.003	56.2	ug/L	129	Standard
	Cd	111	18.2	19.3	**0.0004**	0.002	363.4	mg/L	6	Standard
	Cd	114	125.8	10.5	**0.0127**	0.003	20.7	ug/L	46	Standard
>	In	115	680676.6	1.0				ug/L	679215	Standard
	Sn	118	467.0	5.5	**0.1589**	0.019	12.2	ug/L	411	Standard
	Sb	123	151.3	24.7	**-0.0032**	0.007	218.8	ug/L	497	Standard
	Ba	135	230.7	9.3	**0.0887**	0.011	12.2	ug/L	43	Standard
	Ce	140	105.0	12.6				ug/L	22	Standard
>	Tb	159	1013580.9	0.6				ug/L	983965	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	315.0	15.5	**0.0090**	0.006	60.9	ug/L	248	Standard
	Tl	205	780.0	12.8	**0.0064**	0.005	72.2	ug/L	620	Standard
	Pb	206	586.3	7.4	**0.0093**	0.006	66.3	ug/L	503	Standard
	Pb	207	516.3	1.4	**0.0133**	0.001	3.8	ug/L	406	Standard
	Pb	208	626.0	2.7	**0.0151**	0.002	13.9	ug/L	497	Standard
	U	238	35.3	65.4	**0.0052**	0.004	83.6	ug/L	17	Standard
>	Bi	209	593305.7	0.8				ug/L	559221	Standard

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⌈	**Na**	23	3.3	173.2	**0.9893**	3.532	357.0	mg/L	2	Standard
|	**Mg**	24	31.7	39.7	**-0.1501**	0.154	102.5	mg/L	33	Standard
|	**K**	39	23.3	32.7	**0.0010**	0.049	4704.3	mg/L	18	Standard
|	**Ca**	43	53.3	28.6	**-40.2636**	20.925	52.0	mg/L	72	Standard
|	**Fe**	54	26.1	44.7	**-0.0552**	0.065	117.3	mg/L	29	Standard
|	**Fe**	57	321.7	19.7	**-1.5999**	1.249	78.1	mg/L	382	Standard
⌊>	**Sc-1**	45	40238.4	0.9				mg/L	39299	Standard
	Cl	35	4.0	86.6				ug/L	4	Standard
	Kr	83	1.3	114.6				ug/L	3	Standard
	Br	81	3120.3	16.2				ug/L	2287	Standard
	P	31	81.7	25.5				ug/L	80	Standard
	S	34	51.7	39.1				ug/L	45	Standard
	Sr	88	133.3	31.9				ug/L	178	Standard
	C	12	40.0	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	15.5	41.6				mg/L	16	Standard
	Ho-1	165	6.7	114.6				mg/L	10	Standard
	Er	166	23.3	65.5				mg/L	17	Standard
	I	127	4754.1	17.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.450	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.132	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.215
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.095
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703130401
Sample Date/Time: Monday, March 27, 2017 13:29:00
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270410.0	0.5				ug/L	262785	Standard
	Be	9	66.7	24.1	**0.0247**	0.006	25.0	ug/L	28	Standard
	Al	27	19062139.1	0.2	**107.0942**	0.298	0.3	ug/L	2187	Standard
	Sc	45	40898.5	1.6				ug/L	39299	Standard
	Ti	47	967.4	16.3	**3.3310**	0.613	18.4	ug/L	82	Standard
	V	51	4662.0	4.8	**0.3330**	0.028	8.3	ug/L	1876	Standard
	Cr	52	12738.0	3.1	**0.5860**	0.060	10.2	ug/L	8221	Standard
	Cr	53	1678.4	1.5	**0.6519**	0.035	5.4	ug/L	1083	Standard
	Mn	55	92253.4	1.2	**6.5530**	0.043	0.7	ug/L	2738	Standard
	Co	59	1615.1	4.0	**0.0993**	0.005	5.2	ug/L	635	Standard
	Ni	60	1684.8	2.7	**0.6490**	0.017	2.6	ug/L	261	Standard
	Cu	65	5343.9	0.9	**2.0321**	0.026	1.3	ug/L	660	Standard
	Zn	66	3834.5	1.9	**2.3373**	0.053	2.3	ug/L	558	Standard
>	Ge	72	808121.2	0.7				ug/L	807251	Standard
	As	75	168.9	26.2	**0.1706**	0.031	18.3	ug/L	-43	Standard
	Se	82	89.2	3.4	**0.6467**	0.028	4.4	ug/L	18	Standard
	Se-1	77	162.7	5.6	**0.4428**	0.113	25.5	ug/L	127	Standard
>	Ga	71	335.0	2.6				mg/L	32	Standard
	Rb	85	6024.5	2.5				ug/L	27	Standard
	Y	89	546199.4	0.8				ug/L	534994	Standard
>	Rh	103	31.7	39.7				ug/L	20	Standard
	Mo	98	523.8	2.2	**0.0969**	0.002	2.6	ug/L	285	Standard
	Ag	107	174.7	38.0	**0.0065**	0.010	149.3	ug/L	129	Standard
	Cd	111	35.3	41.7	**0.0092**	0.007	80.8	mg/L	6	Standard
	Cd	114	118.1	11.0	**0.0118**	0.003	21.1	ug/L	46	Standard
>	In	115	663819.1	1.0				ug/L	679215	Standard
	Sn	118	380.0	11.2	**0.0932**	0.034	36.4	ug/L	411	Standard
	Sb	123	380.5	1.6	**0.0405**	0.002	4.5	ug/L	497	Standard
	Ba	135	19766.6	0.8	**9.4735**	0.163	1.7	ug/L	43	Standard
	Ce	140	8809.2	4.3				ug/L	22	Standard
>	Tb	159	990391.5	0.4				ug/L	983965	Standard
	Ho	165	186.7	19.4				ug/L	10	Standard
	Tl	203	198.3	10.0	**-0.0040**	0.003	62.4	ug/L	248	Standard
	Tl	205	481.7	1.2	**-0.0077**	0.000	6.0	ug/L	620	Standard
	Pb	206	1928.5	2.2	**0.2116**	0.005	2.2	ug/L	503	Standard
	Pb	207	1602.8	2.4	**0.1950**	0.005	2.4	ug/L	406	Standard
	Pb	208	1957.7	3.2	**0.2061**	0.007	3.4	ug/L	497	Standard
	U	238	1694.8	3.6	**0.3242**	0.014	4.3	ug/L	17	Standard
>	Bi	209	577292.5	0.7				ug/L	559221	Standard

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⌈	**Na**	23	30.0	44.1	**16.8632**	7.712	45.7	mg/L	2	Standard
|	**Mg**	24	1623.4	3.6	**18.8723**	0.512	2.7	mg/L	33	Standard
|	**K**	39	73.3	14.2	**0.3208**	0.063	19.8	mg/L	18	Standard
|	**Ca**	43	71.7	26.4	**-15.5675**	27.525	176.8	mg/L	72	Standard
|	**Fe**	54	63.1	43.5	**0.1513**	0.160	105.9	mg/L	29	Standard
|	**Fe**	57	433.3	12.3	**0.3840**	0.968	252.1	mg/L	382	Standard
⌊>	**Sc-1**	45	40898.5	1.6				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	1.7	124.9				ug/L	3	Standard
	Br	81	8765.9	4.5				ug/L	2287	Standard
	P	31	75.0	6.7				ug/L	80	Standard
	S	34	46.7	34.4				ug/L	45	Standard
	Sr	88	168.3	14.0				ug/L	178	Standard
	C	12	60.0	28.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	291.7	2.3				mg/L	16	Standard
	Ho-1	165	186.7	19.4				mg/L	10	Standard
	Er	166	243.3	13.2				mg/L	17	Standard
	I	127	13616.1	4.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.902	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.108	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

Sample ID: L1703130401
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.733
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.232
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1703130402
Sample Date/Time: Monday, March 27, 2017 13:32:05
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	273934.5	1.5				ug/L	262785	Standard
	Be	9	55.0	9.1	**0.0199**	0.002	8.3	ug/L	28	Standard
	Al	27	9278458.2	1.7	**51.4526**	0.244	0.5	ug/L	2187	Standard
	Sc	45	40913.5	0.3				ug/L	39299	Standard
	Ti	47	767.0	34.1	**2.6017**	0.963	37.0	ug/L	82	Standard
	V	51	5691.5	2.6	**0.4588**	0.019	4.1	ug/L	1876	Standard
	Cr	52	11598.1	3.2	**0.4572**	0.035	7.6	ug/L	8221	Standard
	Cr	53	1633.4	7.9	**0.6221**	0.123	19.8	ug/L	1083	Standard
	Mn	55	41792.2	1.5	**2.9003**	0.042	1.5	ug/L	2738	Standard
	Co	59	1948.5	3.8	**0.1331**	0.006	4.7	ug/L	635	Standard
	Ni	60	1573.1	4.0	**0.6056**	0.024	4.0	ug/L	261	Standard
	Cu	65	4346.6	1.7	**1.6141**	0.021	1.3	ug/L	660	Standard
	Zn	66	3600.1	1.0	**2.1922**	0.027	1.2	ug/L	558	Standard
>	Ge	72	800510.9	0.8				ug/L	807251	Standard
	As	75	1397.7	1.4	**1.0720**	0.014	1.3	ug/L	-43	Standard
	Se	82	78.2	5.1	**0.5639**	0.030	5.4	ug/L	18	Standard
	Se-1	77	160.0	8.4	**0.4288**	0.138	32.3	ug/L	127	Standard
>	Ga	71	250.0	9.2				mg/L	32	Standard
	Rb	85	6923.3	4.7				ug/L	27	Standard
	Y	89	542358.3	0.6				ug/L	534994	Standard
>	Rh	103	138.3	30.3				ug/L	20	Standard
	Mo	98	7975.9	2.1	**1.8275**	0.020	1.1	ug/L	285	Standard
	Ag	107	121.0	10.3	**-0.0012**	0.002	159.9	ug/L	129	Standard
	Cd	111	50.7	22.0	**0.0169**	0.006	33.2	mg/L	6	Standard
	Cd	114	198.6	7.2	**0.0272**	0.003	11.4	ug/L	46	Standard
>	In	115	663172.2	1.0				ug/L	679215	Standard
	Sn	118	489.0	2.5	**0.1886**	0.012	6.6	ug/L	411	Standard
	Sb	123	548.3	6.7	**0.0722**	0.008	10.9	ug/L	497	Standard
	Ba	135	211774.5	0.9	**101.7845**	1.800	1.8	ug/L	43	Standard
	Ce	140	9928.3	13.0				ug/L	22	Standard
>	Tb	159	976791.9	0.6				ug/L	983965	Standard
	Ho	165	115.0	34.5				ug/L	10	Standard
	Tl	203	231.7	3.6	**0.0004**	0.001	281.7	ug/L	248	Standard
	Tl	205	555.0	10.4	**-0.0035**	0.003	91.3	ug/L	620	Standard
	Pb	206	2074.5	3.1	**0.2383**	0.012	5.0	ug/L	503	Standard
	Pb	207	1709.4	2.6	**0.2171**	0.007	3.1	ug/L	406	Standard
	Pb	208	2036.7	2.2	**0.2218**	0.005	2.1	ug/L	497	Standard
	U	238	2872.9	1.1	**0.5592**	0.007	1.3	ug/L	17	Standard
>	Bi	209	568400.0	0.7				ug/L	559221	Standard

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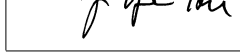

⌈	**Na**	23	33.3	17.3	**18.8821**	3.379	17.9	mg/L	2	Standard
|	**Mg**	24	2238.5	4.6	**26.2157**	1.127	4.3	mg/L	33	Standard
|	**K**	39	90.0	9.6	**0.4283**	0.055	12.8	mg/L	18	Standard
|	**Ca**	43	100.0	26.5	**23.5928**	36.357	154.1	mg/L	72	Standard
|	**Fe**	54	47.7	46.8	**0.0640**	0.126	196.4	mg/L	29	Standard
|	**Fe**	57	433.3	11.1	**0.3808**	0.873	229.1	mg/L	382	Standard
⌊>	**Sc-1**	45	40913.5	0.3				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	4.0	43.3				ug/L	3	Standard
	Br	81	18381.2	4.8				ug/L	2287	Standard
	P	31	61.7	16.9				ug/L	80	Standard
	S	34	60.0	22.0				ug/L	45	Standard
	Sr	88	195.0	19.4				ug/L	178	Standard
	C	12	50.0	52.9				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	167.1	14.6				mg/L	16	Standard
	Ho-1	165	115.0	34.5				mg/L	10	Standard
	Er	166	130.0	27.7				mg/L	17	Standard
	I	127	35144.1	5.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.243	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.165	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.638
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.641
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703130403
Sample Date/Time: Monday, March 27, 2017 13:35:10
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	280304.3	1.1				ug/L	262785	Standard
	Be	9	776.7	3.5	**0.2904**	0.012	4.0	ug/L	28	Standard
	Al	27	8571423.4	1.5	**46.4513**	0.360	0.8	ug/L	2187	Standard
	Sc	45	44165.9	1.0				ug/L	39299	Standard
	Ti	47	17254.5	0.8	**63.0859**	0.986	1.6	ug/L	82	Standard
	V	51	62208.1	0.6	**6.8871**	0.056	0.8	ug/L	1876	Standard
	Cr	52	54392.8	0.4	**5.6530**	0.046	0.8	ug/L	8221	Standard
	Cr	53	7877.0	2.2	**6.6967**	0.145	2.2	ug/L	1083	Standard
	Mn	55	853189.3	0.1	**60.9456**	0.524	0.9	ug/L	2738	Standard
	Co	59	26471.8	0.2	**2.4406**	0.018	0.8	ug/L	635	Standard
	Ni	60	14342.1	0.9	**6.2144**	0.093	1.5	ug/L	261	Standard
	Cu	65	17251.5	0.6	**7.1008**	0.094	1.3	ug/L	660	Standard
	Zn	66	39749.4	0.6	**27.8552**	0.367	1.3	ug/L	558	Standard
>	Ge	72	823080.2	0.8				ug/L	807251	Standard
	As	75	1464.1	4.0	**1.0911**	0.038	3.5	ug/L	-43	Standard
	Se	82	338.9	6.4	**2.6146**	0.158	6.0	ug/L	18	Standard
	Se-1	77	386.0	5.4	**2.8566**	0.200	7.0	ug/L	127	Standard
>	Ga	71	8637.5	1.4				mg/L	32	Standard
	Rb	85	111680.1	0.4				ug/L	27	Standard
	Y	89	610759.3	1.1				ug/L	534994	Standard
>	Rh	103	41.7	30.2				ug/L	20	Standard
	Mo	98	1149.6	0.8	**0.2356**	0.002	0.9	ug/L	285	Standard
	Ag	107	285.7	6.4	**0.0214**	0.003	12.8	ug/L	129	Standard
	Cd	111	184.9	8.4	**0.0815**	0.007	9.1	mg/L	6	Standard
	Cd	114	500.0	11.2	**0.0824**	0.011	12.8	ug/L	46	Standard
>	In	115	680561.9	0.5				ug/L	679215	Standard
	Sn	118	498.7	7.8	**0.1859**	0.033	17.6	ug/L	411	Standard
	Sb	123	1099.6	3.6	**0.1707**	0.008	4.8	ug/L	497	Standard
	Ba	135	102979.4	0.5	**48.2146**	0.102	0.2	ug/L	43	Standard
	Ce	140	206540.0	1.3				ug/L	22	Standard
>	Tb	159	1019959.9	1.4				ug/L	983965	Standard
	Ho	165	3567.1	5.2				ug/L	10	Standard
	Tl	203	914.7	4.1	**0.0811**	0.004	4.4	ug/L	248	Standard
	Tl	205	2215.2	2.5	**0.0788**	0.004	5.0	ug/L	620	Standard
	Pb	206	20753.2	1.1	**2.9673**	0.054	1.8	ug/L	503	Standard
	Pb	207	17249.8	1.1	**2.7345**	0.042	1.6	ug/L	406	Standard
	Pb	208	21018.7	1.7	**2.8587**	0.060	2.1	ug/L	497	Standard
	U	238	906.0	3.8	**0.1698**	0.005	3.1	ug/L	17	Standard
>	Bi	209	586652.2	1.3				ug/L	559221	Standard

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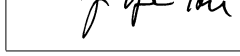

	Na	23	18.3	87.7	**9.0568**	8.866	97.9	mg/L	2	Standard
	Mg	24	935.0	8.8	**9.8221**	0.990	10.1	mg/L	33	Standard
	K	39	188.3	10.7	**0.9719**	0.111	11.4	mg/L	18	Standard
	Ca	43	70.0	32.7	**-25.4980**	29.011	113.8	mg/L	72	Standard
	Fe	54	778.9	4.3	**3.8338**	0.161	4.2	mg/L	29	Standard
	Fe	57	566.7	6.6	**2.1008**	0.728	34.6	mg/L	382	Standard
>	**Sc-1**	45	44165.9	1.0				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	3.0	88.2				ug/L	3	Standard
	Br	81	22516.8	8.1				ug/L	2287	Standard
	P	31	73.3	17.2				ug/L	80	Standard
	S	34	28.3	71.3				ug/L	45	Standard
	Sr	88	193.3	5.4				ug/L	178	Standard
	C	12	53.3	28.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	5840.6	0.8				mg/L	16	Standard
	Ho-1	165	3567.1	5.2				mg/L	10	Standard
	Er	166	3003.6	2.7				mg/L	17	Standard
	I	127	12875.5	2.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.667	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.961	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.198
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.905
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 13:38:17
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270751.5	1.8				ug/L	262785	Standard
	Be	9	128907.8	1.1	**50.1103**	0.357	0.7	ug/L	28	Standard
	Al	27	8596667.4	0.9	**48.2402**	0.724	1.5	ug/L	2187	Standard
	Sc	45	40642.8	2.2				ug/L	39299	Standard
	Ti	47	27397.1	1.1	**101.6318**	1.271	1.3	ug/L	82	Standard
	V	51	424578.7	1.0	**48.8442**	0.425	0.9	ug/L	1876	Standard
	Cr	52	403385.2	1.0	**48.9834**	0.360	0.7	ug/L	8221	Standard
	Cr	53	50372.0	2.6	**48.9779**	0.711	1.5	ug/L	1083	Standard
	Mn	55	682968.2	1.1	**49.3786**	0.318	0.6	ug/L	2738	Standard
	Co	59	516199.8	1.6	**49.2460**	0.087	0.2	ug/L	635	Standard
	Ni	60	109903.2	1.2	**48.9556**	0.410	0.8	ug/L	261	Standard
	Cu	65	113942.8	0.7	**49.2342**	0.680	1.4	ug/L	660	Standard
	Zn	66	69563.7	1.0	**49.7157**	0.464	0.9	ug/L	558	Standard
>	Ge	72	812676.0	1.7				ug/L	807251	Standard
	As	75	68609.2	0.6	**49.5556**	0.631	1.3	ug/L	-43	Standard
	Se	82	6360.3	2.5	**51.0489**	1.226	2.4	ug/L	18	Standard
	Se-1	77	4648.4	0.9	**50.2426**	0.954	1.9	ug/L	127	Standard
>	Ga	71	85.0	21.2				mg/L	32	Standard
	Rb	85	440.0	5.2				ug/L	27	Standard
	Y	89	556104.2	1.3				ug/L	534994	Standard
>	Rh	103	30.0	33.3				ug/L	20	Standard
	Mo	98	452077.2	0.5	**102.3733**	0.512	0.5	ug/L	285	Standard
	Ag	107	361508.2	0.3	**50.6202**	0.194	0.4	ug/L	129	Standard
	Cd	111	105077.0	0.7	**51.1521**	0.580	1.1	mg/L	6	Standard
	Cd	114	271982.1	0.1	**50.6763**	0.357	0.7	ug/L	46	Standard
>	In	115	679907.2	0.6				ug/L	679215	Standard
	Sn	118	59799.8	1.4	**50.5211**	0.848	1.7	ug/L	411	Standard
	Sb	123	269068.9	0.1	**49.3662**	0.311	0.6	ug/L	497	Standard
	Ba	135	104646.5	0.2	**49.0439**	0.344	0.7	ug/L	43	Standard
	Ce	140	341.7	10.4				ug/L	22	Standard
>	Tb	159	1003610.8	1.1				ug/L	983965	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	415281.3	0.4	**49.7913**	0.169	0.3	ug/L	248	Standard
	Tl	205	993400.6	0.2	**49.9652**	0.233	0.5	ug/L	620	Standard
	Pb	206	338002.2	0.2	**49.7102**	0.216	0.4	ug/L	503	Standard
	Pb	207	306874.9	0.3	**50.0474**	0.279	0.6	ug/L	406	Standard
	Pb	208	355811.5	0.6	**49.7528**	0.136	0.3	ug/L	497	Standard
	U	238	276151.2	0.6	**52.4536**	0.189	0.4	ug/L	17	Standard
>	Bi	209	583921.0	0.6				ug/L	559221	Standard

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	Na	23	11.7	65.5	**5.9946**	4.696	78.3	mg/L	2	Standard
	Mg	24	476.7	1.6	**5.2004**	0.046	0.9	mg/L	33	Standard
	K	39	698.3	6.0	**4.3826**	0.343	7.8	mg/L	18	Standard
	Ca	43	58.3	30.1	**-33.5173**	26.147	78.0	mg/L	72	Standard
	Fe	54	870.2	8.8	**4.6952**	0.353	7.5	mg/L	29	Standard
	Fe	57	610.0	8.2	**3.7696**	1.002	26.6	mg/L	382	Standard
>	**Sc-1**	45	40642.8	2.2				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.0	115.5				ug/L	3	Standard
	Br	81	2840.3	8.6				ug/L	2287	Standard
	P	31	71.7	4.0				ug/L	80	Standard
	S	34	35.0	62.3				ug/L	45	Standard
	Sr	88	136.7	17.3				ug/L	178	Standard
	C	12	16.7	69.3				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	25.9	80.2				mg/L	16	Standard
	Ho-1	165	6.7	114.6				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	3428.7	6.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.221		
	Al	27	96.480		
	Sc	45			
	Ti	47	101.632		
	V	51	97.688		
	Cr	52	97.967		
	Cr	53			
	Mn	55	98.757		
	Co	59	98.492		
	Ni	60	97.911		
	Cu	65	98.468		
	Zn	66	99.431		
>	Ge	72		100.672	
	As	75	99.111		
	Se	82	102.098		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	102.373	
|	Ag	107	101.240	
|	Cd	111	102.304	
|	Cd	114		
|>	In	115		100.102
|	Sn	118	101.042	
|	Sb	123	98.732	
⌊	Ba	135	98.088	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	99.583	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.506	
|	U	238	104.907	
⌊>	Bi	209		104.417
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 13:41:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269188.7	0.9				ug/L	262785	Standard
	Be	9	95.0	65.7	**0.0358**	0.024	67.0	ug/L	28	Standard
	Al	27	9620.1	100.4	**0.0478**	0.054	112.6	ug/L	2187	Standard
	Sc	45	40828.3	2.0				ug/L	39299	Standard
	Ti	47	48.3	15.7	**-0.1092**	0.027	24.5	ug/L	82	Standard
	V	51	1737.0	10.2	**-0.0064**	0.019	298.1	ug/L	1876	Standard
	Cr	52	6795.5	1.9	**-0.1521**	0.011	7.1	ug/L	8221	Standard
	Cr	53	733.4	9.1	**-0.2895**	0.064	22.0	ug/L	1083	Standard
	Mn	55	3506.1	48.1	**0.0779**	0.121	155.0	ug/L	2738	Standard
	Co	59	508.3	41.2	**-0.0069**	0.020	285.3	ug/L	635	Standard
	Ni	60	282.0	6.4	**0.0197**	0.007	36.2	ug/L	261	Standard
	Cu	65	745.7	7.7	**0.0228**	0.022	97.2	ug/L	660	Standard
	Zn	66	723.7	7.9	**0.0832**	0.037	44.7	ug/L	558	Standard
>	Ge	72	805531.9	0.8				ug/L	807251	Standard
	As	75	-8.6	340.4	**0.0420**	0.021	50.8	ug/L	-43	Standard
	Se	82	22.7	36.6	**0.1099**	0.068	61.9	ug/L	18	Standard
	Se-1	77	103.3	11.9	**-0.2160**	0.143	66.3	ug/L	127	Standard
>	Ga	71	33.3	45.8				mg/L	32	Standard
	Rb	85	51.7	34.0				ug/L	27	Standard
	Y	89	542619.7	1.2				ug/L	534994	Standard
>	Rh	103	16.7	45.8				ug/L	20	Standard
	Mo	98	386.3	21.0	**0.0630**	0.018	28.1	ug/L	285	Standard
	Ag	107	207.3	10.6	**0.0105**	0.003	29.7	ug/L	129	Standard
	Cd	111	12.2	80.8	**-0.0025**	0.005	196.5	mg/L	6	Standard
	Cd	114	92.0	38.2	**0.0065**	0.007	102.1	ug/L	46	Standard
>	In	115	678660.9	1.2				ug/L	679215	Standard
	Sn	118	297.0	8.5	**0.0158**	0.024	153.1	ug/L	411	Standard
	Sb	123	356.6	9.8	**0.0346**	0.007	20.4	ug/L	497	Standard
	Ba	135	92.3	46.3	**0.0240**	0.020	84.6	ug/L	43	Standard
	Ce	140	45.0	58.8				ug/L	22	Standard
>	Tb	159	990487.2	1.3				ug/L	983965	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	98.3	52.9	**-0.0164**	0.006	37.7	ug/L	248	Standard
	Tl	205	245.0	48.0	**-0.0199**	0.006	29.4	ug/L	620	Standard
	Pb	206	630.3	12.3	**0.0169**	0.011	64.7	ug/L	503	Standard
	Pb	207	513.3	7.5	**0.0138**	0.006	40.5	ug/L	406	Standard
	Pb	208	732.7	28.9	**0.0310**	0.029	92.3	ug/L	497	Standard
	U	238	86.0	45.6	**0.0148**	0.007	49.4	ug/L	17	Standard
>	Bi	209	585611.5	1.0				ug/L	559221	Standard

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	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	35.0	24.7	**-0.1147**	0.111	96.9	mg/L	33	Standard
	K	39	20.0	25.0	**-0.0229**	0.030	130.1	mg/L	18	Standard
	Ca	43	28.3	36.7	**-76.0859**	14.795	19.4	mg/L	72	Standard
	Fe	54	42.9	24.5	**0.0377**	0.061	160.9	mg/L	29	Standard
	Fe	57	298.3	11.9	**-2.1289**	0.703	33.0	mg/L	382	Standard
>	**Sc-1**	45	40828.3	2.0				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.3	24.7				ug/L	3	Standard
	Br	81	2730.2	1.6				ug/L	2287	Standard
	P	31	105.0	45.4				ug/L	80	Standard
	S	34	63.3	19.9				ug/L	45	Standard
	Sr	88	160.0	13.6				ug/L	178	Standard
	C	12	26.7	43.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	12.4	50.0				mg/L	16	Standard
	Ho-1	165	8.3	91.7				mg/L	10	Standard
	Er	166	20.0	50.0				mg/L	17	Standard
	I	127	5922.8	5.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.787	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.918
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.719
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 23 WG607689-02
Sample Date/Time: Monday, March 27, 2017 13:54:11
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	255634.0	1.9				ug/L	262785	Standard
	Be	9	51.7	77.6	**0.0199**	0.016	81.1	ug/L	28	Standard
	Al	27	6497.0	82.6	**0.0320**	0.031	96.2	ug/L	2187	Standard
	Sc	45	38562.3	1.1				ug/L	39299	Standard
	Ti	47	45.7	16.4	**-0.1141**	0.031	26.7	ug/L	82	Standard
	V	51	1865.1	13.5	**0.0148**	0.031	209.2	ug/L	1876	Standard
	Cr	52	7507.2	2.1	**-0.0370**	0.021	56.6	ug/L	8221	Standard
	Cr	53	740.0	11.8	**-0.2616**	0.095	36.2	ug/L	1083	Standard
	Mn	55	2582.6	28.2	**0.0164**	0.056	340.7	ug/L	2738	Standard
	Co	59	420.3	28.2	**-0.0141**	0.012	85.1	ug/L	635	Standard
	Ni	60	311.0	7.9	**0.0368**	0.013	34.3	ug/L	261	Standard
	Cu	65	847.7	3.0	**0.0781**	0.013	16.7	ug/L	660	Standard
	Zn	66	985.4	1.6	**0.2938**	0.020	6.8	ug/L	558	Standard
>	Ge	72	783761.1	1.1				ug/L	807251	Standard
	As	75	-9.2	91.4	**0.0413**	0.006	15.4	ug/L	-43	Standard
	Se	82	21.9	23.3	**0.1085**	0.044	40.2	ug/L	18	Standard
	Se-1	77	117.0	5.9	**-0.0274**	0.064	234.7	ug/L	127	Standard
>	Ga	71	33.3	17.3				mg/L	32	Standard
	Rb	85	55.0	48.1				ug/L	27	Standard
	Y	89	520731.3	1.2				ug/L	534994	Standard
>	Rh	103	20.0	25.0				ug/L	20	Standard
	Mo	98	91.7	42.5	**-0.0026**	0.010	361.0	ug/L	285	Standard
	Ag	107	145.0	27.4	**0.0028**	0.006	216.3	ug/L	129	Standard
	Cd	111	12.2	103.6	**-0.0021**	0.007	310.0	mg/L	6	Standard
	Cd	114	47.0	63.0	**-0.0015**	0.006	404.7	ug/L	46	Standard
>	In	115	645911.4	0.8				ug/L	679215	Standard
	Sn	118	236.3	8.4	**-0.0257**	0.020	76.3	ug/L	411	Standard
	Sb	123	128.0	11.5	**-0.0063**	0.003	47.8	ug/L	497	Standard
	Ba	135	76.3	33.7	**0.0184**	0.013	71.2	ug/L	43	Standard
	Ce	140	38.3	94.4				ug/L	22	Standard
>	Tb	159	941174.7	0.4				ug/L	983965	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	79.3	51.9	**-0.0182**	0.005	28.6	ug/L	248	Standard
	Tl	205	208.3	52.9	**-0.0212**	0.006	27.5	ug/L	620	Standard
	Pb	206	464.3	9.9	**-0.0042**	0.007	171.9	ug/L	503	Standard
	Pb	207	415.3	6.6	**0.0011**	0.005	453.9	ug/L	406	Standard
	Pb	208	504.3	11.6	**0.0026**	0.009	338.6	ug/L	497	Standard
	U	238	47.7	147.8	**0.0080**	0.014	174.2	ug/L	17	Standard
>	Bi	209	559410.9	0.3				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0037**	1.812	49244.4	mg/L	2	Standard
	Mg	24	28.3	56.7	**-0.1771**	0.201	113.6	mg/L	33	Standard
	K	39	15.0	66.7	**-0.0493**	0.067	136.7	mg/L	18	Standard
	Ca	43	43.3	35.3	**-51.5461**	23.175	45.0	mg/L	72	Standard
	Fe	54	11.3	52.6	**-0.1365**	0.035	25.5	mg/L	29	Standard
	Fe	57	351.7	18.9	**-0.7355**	1.378	187.4	mg/L	382	Standard
>	**Sc-1**	45	38562.3	1.1				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	3.7	31.5				ug/L	3	Standard
	Br	81	2510.2	0.8				ug/L	2287	Standard
	P	31	80.0	16.5				ug/L	80	Standard
	S	34	31.7	63.8				ug/L	45	Standard
	Sr	88	173.3	8.3				ug/L	178	Standard
	C	12	0.0					mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	19.7	88.7				mg/L	16	Standard
	Ho-1	165	8.3	34.6				mg/L	10	Standard
	Er	166	6.7	86.6				mg/L	17	Standard
	I	127	2825.3	4.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.279	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.090	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.097
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.034
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 23 WG607689-03
Sample Date/Time: Monday, March 27, 2017 13:57:16
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270930.3	2.6				ug/L	262785	Standard
	Be	9	128748.0	0.5	**50.0334**	1.304	2.6	ug/L	28	Standard
	Al	27	11160.8	6.6	**0.0564**	0.003	5.7	ug/L	2187	Standard
	Sc	45	40848.3	2.3				ug/L	39299	Standard
	Ti	47	41.3	29.6	**-0.1384**	0.044	32.1	ug/L	82	Standard
	V	51	436706.7	0.6	**49.7340**	0.347	0.7	ug/L	1876	Standard
	Cr	52	416226.8	0.8	**50.0554**	0.826	1.7	ug/L	8221	Standard
	Cr	53	51156.2	1.3	**49.2467**	0.389	0.8	ug/L	1083	Standard
	Mn	55	708409.3	0.3	**50.7054**	0.474	0.9	ug/L	2738	Standard
	Co	59	534704.9	0.5	**50.5016**	0.607	1.2	ug/L	635	Standard
	Ni	60	115894.2	0.4	**51.1078**	0.518	1.0	ug/L	261	Standard
	Cu	65	119702.7	0.6	**51.2118**	0.867	1.7	ug/L	660	Standard
	Zn	66	72219.4	0.5	**51.1041**	0.589	1.2	ug/L	558	Standard
>	Ge	72	820959.4	1.1				ug/L	807251	Standard
	As	75	70824.7	0.6	**50.6340**	0.429	0.8	ug/L	-43	Standard
	Se	82	6468.2	1.6	**51.3856**	0.288	0.6	ug/L	18	Standard
	Se-1	77	4618.4	1.8	**49.3925**	1.458	3.0	ug/L	127	Standard
>	Ga	71	30.0	44.1				mg/L	32	Standard
	Rb	85	60.0	14.4				ug/L	27	Standard
	Y	89	562397.9	1.8				ug/L	534994	Standard
>	Rh	103	41.7	34.6				ug/L	20	Standard
	Mo	98	96.4	9.6	**-0.0031**	0.002	69.6	ug/L	285	Standard
	Ag	107	370285.3	1.0	**51.0121**	0.613	1.2	ug/L	129	Standard
	Cd	111	106788.6	0.7	**51.1448**	0.551	1.1	mg/L	6	Standard
	Cd	114	271418.6	1.5	**49.7545**	0.902	1.8	ug/L	46	Standard
>	In	115	691071.7	0.4				ug/L	679215	Standard
	Sn	118	681.0	0.9	**0.3317**	0.004	1.3	ug/L	411	Standard
	Sb	123	277404.8	0.5	**50.0729**	0.267	0.5	ug/L	497	Standard
	Ba	135	106079.0	0.4	**48.9115**	0.327	0.7	ug/L	43	Standard
	Ce	140	136.7	18.4				ug/L	22	Standard
>	Tb	159	995030.3	0.8				ug/L	983965	Standard
	Ho	165	36.7	20.8				ug/L	10	Standard
	Tl	203	432766.9	0.4	**51.6136**	0.621	1.2	ug/L	248	Standard
	Tl	205	1028932.1	1.0	**51.4792**	0.869	1.7	ug/L	620	Standard
	Pb	206	349785.2	1.3	**51.1749**	1.090	2.1	ug/L	503	Standard
	Pb	207	303062.7	0.6	**49.1619**	0.655	1.3	ug/L	406	Standard
	Pb	208	360810.8	1.1	**50.1870**	0.937	1.9	ug/L	497	Standard
	U	238	270430.2	1.1	**51.0972**	1.017	2.0	ug/L	17	Standard
>	Bi	209	587074.2	1.0				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0425**	1.745	4101.9	mg/L	2	Standard
	Mg	24	25.0	20.0	**-0.2364**	0.055	23.1	mg/L	33	Standard
	K	39	21.7	35.3	**-0.0125**	0.046	367.4	mg/L	18	Standard
	Ca	43	55.0	9.1	**-38.8424**	8.292	21.3	mg/L	72	Standard
	Fe	54	27.2	32.2	**-0.0501**	0.051	102.3	mg/L	29	Standard
	Fe	57	370.0	19.6	**-0.7866**	1.408	179.0	mg/L	382	Standard
>	**Sc-1**	45	40848.3	2.3				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	4250.6	10.6				ug/L	2287	Standard
	P	31	60.0	14.4				ug/L	80	Standard
	S	34	58.3	47.2				ug/L	45	Standard
	Sr	88	151.7	23.8				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	3	Standard
	Dy	164	13.2	41.7				mg/L	16	Standard
	Ho-1	165	36.7	20.8				mg/L	10	Standard
	Er	166	3.3	173.2				mg/L	17	Standard
	I	127	2758.6	4.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.100	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.698	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.746
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.981
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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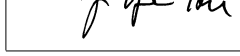

Method 6020 - Summary Report

Sample ID: F BLANK WG607689-04
Sample Date/Time: Monday, March 27, 2017 14:00:22
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270405.3	1.6				ug/L	262785	Standard
	Be	9	70.0	35.7	**0.0260**	0.010	37.6	ug/L	28	Standard
	Al	27	11834.6	0.7	**0.0603**	0.001	1.0	ug/L	2187	Standard
	Sc	45	42375.9	1.5				ug/L	39299	Standard
	Ti	47	51.0	7.8	**-0.1030**	0.015	14.1	ug/L	82	Standard
	V	51	1887.2	5.1	**0.0066**	0.009	141.1	ug/L	1876	Standard
	Cr	52	9376.2	2.6	**0.1461**	0.020	13.4	ug/L	8221	Standard
	Cr	53	1046.7	3.6	**0.0026**	0.029	1136.2	ug/L	1083	Standard
	Mn	55	4361.6	1.9	**0.1346**	0.003	2.4	ug/L	2738	Standard
	Co	59	473.3	9.7	**-0.0111**	0.004	35.6	ug/L	635	Standard
	Ni	60	404.7	6.4	**0.0712**	0.010	13.7	ug/L	261	Standard
	Cu	65	1554.7	1.8	**0.3636**	0.007	1.8	ug/L	660	Standard
	Zn	66	4923.1	2.7	**3.0633**	0.074	2.4	ug/L	558	Standard
>	Ge	72	822628.3	0.9				ug/L	807251	Standard
	As	75	-16.6	390.2	**0.0365**	0.046	125.9	ug/L	-43	Standard
	Se	82	16.4	63.6	**0.0552**	0.082	147.8	ug/L	18	Standard
	Se-1	77	108.0	4.0	**-0.1895**	0.037	19.8	ug/L	127	Standard
>	Ga	71	35.0	28.6				mg/L	32	Standard
	Rb	85	65.0	30.8				ug/L	27	Standard
	Y	89	562377.4	1.9				ug/L	534994	Standard
>	Rh	103	26.7	43.3				ug/L	20	Standard
	Mo	98	55.8	13.7	**-0.0121**	0.002	15.1	ug/L	285	Standard
	Ag	107	203.0	25.6	**0.0095**	0.008	79.0	ug/L	129	Standard
	Cd	111	23.6	42.5	**0.0030**	0.005	167.5	mg/L	6	Standard
	Cd	114	131.0	33.5	**0.0134**	0.008	61.9	ug/L	46	Standard
>	In	115	688569.7	1.5				ug/L	679215	Standard
	Sn	118	397.0	4.2	**0.0959**	0.017	17.5	ug/L	411	Standard
	Sb	123	912.9	8.8	**0.1345**	0.016	11.9	ug/L	497	Standard
	Ba	135	242.3	8.0	**0.0928**	0.009	10.0	ug/L	43	Standard
	Ce	140	96.7	24.4				ug/L	22	Standard
>	Tb	159	1001023.2	1.2				ug/L	983965	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	160.0	21.7	**-0.0091**	0.004	45.6	ug/L	248	Standard
	Tl	205	440.0	22.4	**-0.0103**	0.005	47.3	ug/L	620	Standard
	Pb	206	637.3	8.6	**0.0173**	0.008	48.5	ug/L	503	Standard
	Pb	207	545.7	7.1	**0.0184**	0.006	31.2	ug/L	406	Standard
	Pb	208	631.0	8.4	**0.0163**	0.008	47.0	ug/L	497	Standard
	U	238	80.3	38.6	**0.0137**	0.006	42.9	ug/L	17	Standard
>	Bi	209	590111.5	0.7				ug/L	559221	Standard

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⌈	**Na**	23	3.3	173.2	**0.8515**	3.293	386.7	mg/L	2	Standard
|	**Mg**	24	41.7	27.7	**-0.0529**	0.142	267.7	mg/L	33	Standard
|	**K**	39	21.7	13.3	**-0.0169**	0.017	103.7	mg/L	18	Standard
|	**Ca**	43	38.3	19.9	**-64.2486**	9.549	14.9	mg/L	72	Standard
|	**Fe**	54	34.2	14.0	**-0.0180**	0.029	159.5	mg/L	29	Standard
|	**Fe**	57	348.3	11.6	**-1.4374**	0.661	46.0	mg/L	382	Standard
⌊>	**Sc-1**	45	42375.9	1.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	1.7	124.9				ug/L	3	Standard
	Br	81	3680.4	6.9				ug/L	2287	Standard
	P	31	78.3	55.0				ug/L	80	Standard
	S	34	45.0	29.4				ug/L	45	Standard
	Sr	88	138.3	2.1				ug/L	178	Standard
	C	12	20.0	50.0				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	5.4	109.8				mg/L	16	Standard
	Ho-1	165	21.7	35.3				mg/L	10	Standard
	Er	166	26.7	21.7				mg/L	17	Standard
	I	127	2406.9	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.900	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.905	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	101.377
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	105.524
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG607689-04
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Method 6020 - Summary Report

Sample ID: L1703137005 WG607689-01
Sample Date/Time: Monday, March 27, 2017 14:03:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277668.7	2.3				ug/L	262785	Standard
	Be	9	70.0	32.7	**0.0254**	0.009	36.7	ug/L	28	Standard
	Al	27	30020707.2	1.8	**164.2945**	3.831	2.3	ug/L	2187	Standard
	Sc	45	41867.8	2.1				ug/L	39299	Standard
	Ti	47	146.3	16.7	**0.2568**	0.094	36.5	ug/L	82	Standard
	V	51	2041.7	23.8	**0.0279**	0.054	193.2	ug/L	1876	Standard
	Cr	52	14226.7	2.3	**0.7701**	0.058	7.5	ug/L	8221	Standard
	Cr	53	7753.7	10.6	**6.7153**	0.885	13.2	ug/L	1083	Standard
	Mn	55	8744.9	0.8	**0.4595**	0.011	2.4	ug/L	2738	Standard
	Co	59	972.7	4.2	**0.0376**	0.004	10.9	ug/L	635	Standard
	Ni	60	2188.5	4.2	**0.8747**	0.050	5.7	ug/L	261	Standard
	Cu	65	2764.9	3.1	**0.9039**	0.048	5.3	ug/L	660	Standard
	Zn	66	5162.5	1.9	**3.2976**	0.104	3.1	ug/L	558	Standard
>	Ge	72	808797.4	0.9				ug/L	807251	Standard
	As	75	49.6	239.0	**0.0839**	0.086	102.1	ug/L	-43	Standard
	Se	82	123.2	8.0	**0.9211**	0.085	9.2	ug/L	18	Standard
	Se-1	77	679.7	10.4	**6.2128**	0.842	13.6	ug/L	127	Standard
>	Ga	71	48.3	76.3				mg/L	32	Standard
	Rb	85	29443.6	2.6				ug/L	27	Standard
	Y	89	545895.5	0.9				ug/L	534994	Standard
>	Rh	103	43.3	53.3				ug/L	20	Standard
	Mo	98	231.8	5.2	**0.0291**	0.003	10.2	ug/L	285	Standard
	Ag	107	836.4	2.2	**0.1012**	0.002	2.0	ug/L	129	Standard
	Cd	111	31.7	17.6	**0.0074**	0.003	38.1	mg/L	6	Standard
	Cd	114	143.3	15.7	**0.0166**	0.004	26.4	ug/L	46	Standard
>	In	115	664690.5	0.6				ug/L	679215	Standard
	Sn	118	373.7	3.2	**0.0875**	0.009	10.4	ug/L	411	Standard
	Sb	123	276.8	20.6	**0.0210**	0.011	51.8	ug/L	497	Standard
	Ba	135	79385.1	1.0	**38.0517**	0.372	1.0	ug/L	43	Standard
	Ce	140	1113.4	3.2				ug/L	22	Standard
>	Tb	159	993863.6	2.0				ug/L	983965	Standard
	Ho	165	131.7	15.3				ug/L	10	Standard
	Tl	203	907.4	6.1	**0.0838**	0.008	9.3	ug/L	248	Standard
	Tl	205	2135.2	12.8	**0.0784**	0.015	19.6	ug/L	620	Standard
	Pb	206	957.7	7.2	**0.0693**	0.010	13.8	ug/L	503	Standard
	Pb	207	829.0	8.4	**0.0694**	0.011	16.1	ug/L	406	Standard
	Pb	208	947.0	1.8	**0.0652**	0.003	4.8	ug/L	497	Standard
	U	238	3877.5	2.3	**0.7555**	0.010	1.4	ug/L	17	Standard
>	Bi	209	568144.1	1.1				ug/L	559221	Standard

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⌈	**Na**	23	58.3	9.9	**33.0421**	3.166	9.6	mg/L	2	Standard
|	**Mg**	24	4277.3	1.4	**49.4404**	1.591	3.2	mg/L	33	Standard
|	**K**	39	233.3	6.9	**1.3167**	0.072	5.4	mg/L	18	Standard
|	**Ca**	43	78.3	14.7	**-8.8570**	17.123	193.3	mg/L	72	Standard
|	**Fe**	54	47.6	21.8	**0.0565**	0.054	95.4	mg/L	29	Standard
|	**Fe**	57	541.7	12.5	**2.1673**	1.084	50.0	mg/L	382	Standard
⌊>	**Sc-1**	45	41867.8	2.1				mg/L	39299	Standard
	Cl	35	4.0	132.3				ug/L	4	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	12451.8	3.7				ug/L	2287	Standard
	P	31	81.7	40.8				ug/L	80	Standard
	S	34	43.3	48.0				ug/L	45	Standard
	Sr	88	186.7	15.2				ug/L	178	Standard
	C	12	63.3	50.8				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	202.5	17.3				mg/L	16	Standard
	Ho-1	165	131.7	15.3				mg/L	10	Standard
	Er	166	156.7	30.2				mg/L	17	Standard
	I	127	17710.3	1.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		105.664	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.192	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.862
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.596
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1703137005S WG607689-05
Sample Date/Time: Monday, March 27, 2017 14:06:33
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	283650.7	1.0				ug/L	262785	Standard
	Be	9	136682.1	0.9	**50.7144**	0.544	1.1	ug/L	28	Standard
	Al	27	30273655.5	1.3	**162.1621**	3.215	2.0	ug/L	2187	Standard
	Sc	45	41989.8	1.9				ug/L	39299	Standard
	Ti	47	206.7	42.4	**0.4855**	0.319	65.7	ug/L	82	Standard
	V	51	429788.8	0.4	**50.0525**	0.750	1.5	ug/L	1876	Standard
	Cr	52	409346.7	0.4	**50.3393**	0.458	0.9	ug/L	8221	Standard
	Cr	53	58564.6	1.3	**57.8344**	1.539	2.7	ug/L	1083	Standard
	Mn	55	682896.0	0.9	**49.9767**	0.583	1.2	ug/L	2738	Standard
	Co	59	511615.7	0.7	**49.4079**	0.718	1.5	ug/L	635	Standard
	Ni	60	111038.7	0.2	**50.0691**	0.769	1.5	ug/L	261	Standard
	Cu	65	113173.8	0.8	**49.4982**	0.858	1.7	ug/L	660	Standard
	Zn	66	74175.5	0.8	**53.6919**	0.701	1.3	ug/L	558	Standard
>	Ge	72	802900.9	1.3				ug/L	807251	Standard
	As	75	70959.9	0.3	**51.8729**	0.585	1.1	ug/L	-43	Standard
	Se	82	6474.2	0.6	**52.5998**	0.801	1.5	ug/L	18	Standard
	Se-1	77	5334.9	1.2	**58.5767**	0.125	0.2	ug/L	127	Standard
>	Ga	71	46.7	76.0				mg/L	32	Standard
	Rb	85	30039.8	2.9				ug/L	27	Standard
	Y	89	548845.4	2.3				ug/L	534994	Standard
>	Rh	103	55.0	9.1				ug/L	20	Standard
	Mo	98	238.8	2.4	**0.0311**	0.001	2.6	ug/L	285	Standard
	Ag	107	349295.1	1.3	**50.3010**	0.931	1.9	ug/L	129	Standard
	Cd	111	102864.0	0.9	**51.4983**	0.875	1.7	mg/L	6	Standard
	Cd	114	262048.1	1.2	**50.2079**	0.116	0.2	ug/L	46	Standard
>	In	115	661157.8	1.0				ug/L	679215	Standard
	Sn	118	396.3	6.4	**0.1091**	0.025	22.7	ug/L	411	Standard
	Sb	123	272535.1	1.6	**51.4265**	1.179	2.3	ug/L	497	Standard
	Ba	135	182760.0	0.8	**88.1025**	1.324	1.5	ug/L	43	Standard
	Ce	140	1215.0	5.2				ug/L	22	Standard
>	Tb	159	1002307.2	0.8				ug/L	983965	Standard
	Ho	165	121.7	37.1				ug/L	10	Standard
	Tl	203	426272.4	1.8	**52.2270**	1.075	2.1	ug/L	248	Standard
	Tl	205	1013064.6	0.6	**52.0687**	0.676	1.3	ug/L	620	Standard
	Pb	206	340117.1	0.6	**51.1147**	0.474	0.9	ug/L	503	Standard
	Pb	207	296189.7	0.5	**49.3579**	0.476	1.0	ug/L	406	Standard
	Pb	208	351742.7	0.4	**50.2597**	0.596	1.2	ug/L	497	Standard
	U	238	280246.4	0.4	**54.3946**	0.619	1.1	ug/L	17	Standard
>	Bi	209	571467.6	0.8				ug/L	559221	Standard

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⌈	**Na**	23	71.7	33.0	**40.6165**	13.288	32.7	mg/L	2	Standard
|	**Mg**	24	4349.0	1.4	**50.1273**	1.540	3.1	mg/L	33	Standard
|	**K**	39	205.0	9.8	**1.1372**	0.146	12.8	mg/L	18	Standard
|	**Ca**	43	100.0	18.0	**20.3491**	26.347	129.5	mg/L	72	Standard
|	**Fe**	54	35.4	13.5	**-0.0103**	0.023	224.9	mg/L	29	Standard
|	**Fe**	57	496.7	4.8	**1.3282**	0.346	26.0	mg/L	382	Standard
⌊>	**Sc-1**	45	41989.8	1.9				mg/L	39299	Standard
	Cl	35	4.7	65.5				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	14890.6	2.0				ug/L	2287	Standard
	P	31	106.7	2.7				ug/L	80	Standard
	S	34	41.7	13.9				ug/L	45	Standard
	Sr	88	143.3	25.7				ug/L	178	Standard
	C	12	60.0	44.1				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	10.0	173.2				mg/L	3	Standard
	Dy	164	174.4	24.8				mg/L	16	Standard
	Ho-1	165	121.7	37.1				mg/L	10	Standard
	Er	166	116.7	21.6				mg/L	17	Standard
	I	127	23575.1	7.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.940	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.461	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.341
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.190
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1703137005SD WG607689-06
Sample Date/Time: Monday, March 27, 2017 14:09:38
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	284528.4	0.6				ug/L	262785	Standard
	Be	9	134460.7	1.0	**49.7369**	0.787	1.6	ug/L	28	Standard
	Al	27	29656817.7	0.7	**158.3507**	0.743	0.5	ug/L	2187	Standard
	Sc	45	40657.8	2.4				ug/L	39299	Standard
	Ti	47	137.0	10.9	**0.2245**	0.056	25.0	ug/L	82	Standard
	V	51	428245.1	0.8	**49.7805**	0.403	0.8	ug/L	1876	Standard
	Cr	52	407299.2	0.4	**49.9917**	0.179	0.4	ug/L	8221	Standard
	Cr	53	59647.2	1.0	**58.8070**	0.585	1.0	ug/L	1083	Standard
	Mn	55	789086.6	0.6	**57.6729**	0.336	0.6	ug/L	2738	Standard
	Co	59	500586.3	1.4	**48.2541**	0.677	1.4	ug/L	635	Standard
	Ni	60	109089.7	0.8	**49.0980**	0.380	0.8	ug/L	261	Standard
	Cu	65	111886.3	0.4	**48.8413**	0.170	0.3	ug/L	660	Standard
	Zn	66	77736.6	1.0	**56.1895**	0.591	1.1	ug/L	558	Standard
>	Ge	72	804268.4	0.0				ug/L	807251	Standard
	As	75	70381.7	0.8	**51.3582**	0.416	0.8	ug/L	-43	Standard
	Se	82	6458.0	1.4	**52.3728**	0.747	1.4	ug/L	18	Standard
	Se-1	77	5458.0	1.7	**59.8544**	1.048	1.8	ug/L	127	Standard
>	Ga	71	55.0	9.1				mg/L	32	Standard
	Rb	85	29814.3	2.0				ug/L	27	Standard
	Y	89	553996.1	1.5				ug/L	534994	Standard
>	Rh	103	46.7	16.4				ug/L	20	Standard
	Mo	98	308.8	10.3	**0.0473**	0.008	15.9	ug/L	285	Standard
	Ag	107	345241.7	0.4	**49.6628**	0.314	0.6	ug/L	129	Standard
	Cd	111	102749.2	0.4	**51.3839**	0.255	0.5	mg/L	6	Standard
	Cd	114	257721.9	1.2	**49.3297**	0.575	1.2	ug/L	46	Standard
>	In	115	661824.4	0.3				ug/L	679215	Standard
	Sn	118	379.0	8.9	**0.0936**	0.030	31.9	ug/L	411	Standard
	Sb	123	267920.2	0.2	**50.4981**	0.062	0.1	ug/L	497	Standard
	Ba	135	178502.3	0.4	**85.9553**	0.230	0.3	ug/L	43	Standard
	Ce	140	1158.4	0.2				ug/L	22	Standard
>	Tb	159	998219.6	1.1				ug/L	983965	Standard
	Ho	165	130.0	32.9				ug/L	10	Standard
	Tl	203	418564.7	0.2	**51.1073**	0.149	0.3	ug/L	248	Standard
	Tl	205	995968.3	1.4	**51.0133**	0.570	1.1	ug/L	620	Standard
	Pb	206	336349.0	0.3	**50.3765**	0.280	0.6	ug/L	503	Standard
	Pb	207	291479.6	1.2	**48.4065**	0.544	1.1	ug/L	406	Standard
	Pb	208	347654.7	0.1	**49.5051**	0.174	0.4	ug/L	497	Standard
	U	238	278910.4	0.5	**53.9507**	0.270	0.5	ug/L	17	Standard
>	Bi	209	573389.2	0.3				ug/L	559221	Standard

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⌈	**Na**	23	58.3	35.7	**34.1135**	12.812	37.6	mg/L	2	Standard
|	**Mg**	24	4375.6	3.1	**52.0946**	1.400	2.7	mg/L	33	Standard
|	**K**	39	261.7	19.9	**1.5508**	0.378	24.4	mg/L	18	Standard
|	**Ca**	43	91.7	8.3	**12.8601**	10.377	80.7	mg/L	72	Standard
|	**Fe**	54	31.1	32.8	**-0.0286**	0.055	191.7	mg/L	29	Standard
|	**Fe**	57	526.7	11.0	**2.1799**	0.905	41.5	mg/L	382	Standard
⌊>	**Sc-1**	45	40657.8	2.4				mg/L	39299	Standard
	Cl	35	4.7	89.2				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	12188.2	1.7				ug/L	2287	Standard
	P	31	68.3	25.7				ug/L	80	Standard
	S	34	56.7	20.4				ug/L	45	Standard
	Sr	88	198.3	12.9				ug/L	178	Standard
	C	12	56.7	71.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	160.8	22.6				mg/L	16	Standard
	Ho-1	165	130.0	32.9				mg/L	10	Standard
	Er	166	123.3	20.4				mg/L	17	Standard
	I	127	20562.3	2.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.274	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		99.631	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.440
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	102.534
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1703137005SD WG607689-06
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Method 6020 - Summary Report

Sample ID: L1703131301
Sample Date/Time: Monday, March 27, 2017 14:12:43
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	273086.1	1.7				ug/L	262785	Standard
	Be	9	103.3	22.9	**0.0386**	0.009	23.1	ug/L	28	Standard
	Al	27	10251609.7	0.6	**57.0359**	0.812	1.4	ug/L	2187	Standard
	Sc	45	40457.3	3.3				ug/L	39299	Standard
	Ti	47	1146.4	19.5	**4.0620**	0.851	20.9	ug/L	82	Standard
	V	51	3087.0	10.8	**0.1551**	0.038	24.6	ug/L	1876	Standard
	Cr	52	8617.1	4.1	**0.0880**	0.042	47.5	ug/L	8221	Standard
	Cr	53	4527.4	18.7	**3.5613**	0.844	23.7	ug/L	1083	Standard
	Mn	55	25187471.6	0.6	**1864.8068**	19.411	1.0	ug/L	2738	Standard
	Co	59	1983.8	2.9	**0.1376**	0.005	4.0	ug/L	635	Standard
	Ni	60	3145.0	2.7	**1.3254**	0.036	2.7	ug/L	261	Standard
	Cu	65	2281.8	0.3	**0.7082**	0.007	1.1	ug/L	660	Standard
	Zn	66	4199.2	2.7	**2.6469**	0.095	3.6	ug/L	558	Standard
>	**Ge**	72	796359.6	0.5				ug/L	807251	Standard
	As	75	43336.9	0.9	**31.9569**	0.422	1.3	ug/L	-43	Standard
	Se	82	481.7	1.8	**3.8764**	0.090	2.3	ug/L	18	Standard
	Se-1	77	432.3	12.1	**3.5237**	0.583	16.6	ug/L	127	Standard
>	**Ga**	71	311.7	12.9				mg/L	32	Standard
	Rb	85	4840.8	2.9				ug/L	27	Standard
	Y	89	542563.4	1.6				ug/L	534994	Standard
>	**Rh**	103	60.0	16.7				ug/L	20	Standard
	Mo	98	2800.5	3.0	**0.6325**	0.017	2.8	ug/L	285	Standard
	Ag	107	167.0	13.2	**0.0056**	0.003	57.0	ug/L	129	Standard
	Cd	111	27.4	31.5	**0.0054**	0.004	81.8	mg/L	6	Standard
	Cd	114	124.2	22.1	**0.0133**	0.005	40.1	ug/L	46	Standard
>	**In**	115	656342.9	0.5				ug/L	679215	Standard
	Sn	118	340.7	1.6	**0.0626**	0.006	9.0	ug/L	411	Standard
	Sb	123	264.9	10.6	**0.0193**	0.005	26.6	ug/L	497	Standard
	Ba	135	494099.8	1.1	**239.9444**	1.290	0.5	ug/L	43	Standard
	Ce	140	5557.7	3.6				ug/L	22	Standard
>	**Tb**	159	995098.5	1.0				ug/L	983965	Standard
	Ho	165	270.0	14.7				ug/L	10	Standard
	Tl	203	887.7	15.2	**0.0798**	0.017	21.5	ug/L	248	Standard
	Tl	205	2178.5	15.7	**0.0789**	0.018	23.0	ug/L	620	Standard
	Pb	206	1581.1	0.2	**0.1602**	0.001	0.8	ug/L	503	Standard
	Pb	207	1342.4	1.1	**0.1523**	0.002	1.4	ug/L	406	Standard
	Pb	208	1657.0	4.0	**0.1639**	0.011	6.5	ug/L	497	Standard
	U	238	114.0	8.6	**0.0205**	0.002	9.8	ug/L	17	Standard
>	**Bi**	209	576664.6	0.7				ug/L	559221	Standard

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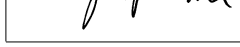

⌈	**Na**	23	71.7	33.0	**42.5227**	14.948	35.2	mg/L	2	Standard
|	**Mg**	24	2573.6	3.7	**30.6056**	1.941	6.3	mg/L	33	Standard
|	**K**	39	121.7	10.3	**0.6436**	0.109	16.9	mg/L	18	Standard
|	**Ca**	43	143.3	17.2	**85.7454**	28.927	33.7	mg/L	72	Standard
|	**Fe**	54	4398.0	4.2	**24.6786**	0.375	1.5	mg/L	29	Standard
|	**Fe**	57	1703.4	5.1	**24.5283**	1.793	7.3	mg/L	382	Standard
⌊>	**Sc-1**	45	40457.3	3.3				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	3.3	17.3				ug/L	3	Standard
	Br	81	246410.1	4.4				ug/L	2287	Standard
	P	31	88.3	27.9				ug/L	80	Standard
	S	34	51.7	11.2				ug/L	45	Standard
	Sr	88	130.0	16.8				ug/L	178	Standard
	C	12	40.0	43.3				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	348.5	12.1				mg/L	16	Standard
	Ho-1	165	270.0	14.7				mg/L	10	Standard
	Er	166	240.0	33.3				mg/L	17	Standard
	I	127	413965.7	10.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.920	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.651	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.633
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.119
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703131301PS WG607753-01
Sample Date/Time: Monday, March 27, 2017 14:15:49
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	270888.1	2.9				ug/L	262785	Standard
	Be	9	132633.0	1.1	**51.5677**	2.053	4.0	ug/L	28	Standard
	Al	27	10103387.1	1.6	**56.7066**	2.511	4.4	ug/L	2187	Standard
	Sc	45	40806.6	2.4				ug/L	39299	Standard
	Ti	47	1249.7	34.9	**4.4173**	1.682	38.1	ug/L	82	Standard
	V	51	421909.5	1.4	**49.0821**	1.306	2.7	ug/L	1876	Standard
	Cr	52	399457.5	1.0	**49.0483**	1.008	2.1	ug/L	8221	Standard
	Cr	53	51298.4	0.7	**50.4727**	1.030	2.0	ug/L	1083	Standard
	Mn	55	26057054.8	1.1	**1911.7411**	47.396	2.5	ug/L	2738	Standard
	Co	59	513657.5	1.2	**49.5551**	1.162	2.3	ug/L	635	Standard
	Ni	60	111016.6	0.9	**50.0064**	1.061	2.1	ug/L	261	Standard
	Cu	65	113838.8	1.5	**49.7417**	1.404	2.8	ug/L	660	Standard
	Zn	66	80854.2	1.3	**58.5103**	1.572	2.7	ug/L	558	Standard
>	Ge	72	803785.5	1.4				ug/L	807251	Standard
	As	75	115623.4	1.6	**84.4123**	2.390	2.8	ug/L	-43	Standard
	Se	82	7093.5	1.3	**57.5820**	1.490	2.6	ug/L	18	Standard
	Se-1	77	5076.9	1.1	**55.6257**	1.391	2.5	ug/L	127	Standard
>	Ga	71	298.3	12.1				mg/L	32	Standard
	Rb	85	4954.1	5.2				ug/L	27	Standard
	Y	89	556304.0	0.8				ug/L	534994	Standard
>	Rh	103	78.3	22.4				ug/L	20	Standard
	Mo	98	2913.3	3.4	**0.6477**	0.031	4.7	ug/L	285	Standard
	Ag	107	322754.9	2.3	**46.0360**	1.724	3.7	ug/L	129	Standard
	Cd	111	104828.4	1.2	**51.9748**	1.249	2.4	mg/L	6	Standard
	Cd	114	264435.3	1.9	**50.1836**	1.509	3.0	ug/L	46	Standard
>	In	115	667687.1	1.5				ug/L	679215	Standard
	Sn	118	360.7	6.5	**0.0750**	0.024	32.6	ug/L	411	Standard
	Sb	123	280295.7	1.1	**52.3817**	1.373	2.6	ug/L	497	Standard
	Ba	135	602983.5	1.0	**287.9284**	7.238	2.5	ug/L	43	Standard
	Ce	140	6062.9	7.4				ug/L	22	Standard
>	Tb	159	1022845.2	0.6				ug/L	983965	Standard
	Ho	165	330.0	7.6				ug/L	10	Standard
	Tl	203	432897.4	1.6	**51.5941**	1.054	2.0	ug/L	248	Standard
	Tl	205	1037845.9	1.9	**51.8903**	1.262	2.4	ug/L	620	Standard
	Pb	206	352367.7	1.3	**51.5148**	0.888	1.7	ug/L	503	Standard
	Pb	207	316793.2	1.2	**51.3569**	0.890	1.7	ug/L	406	Standard
	Pb	208	370733.7	2.2	**51.5331**	1.372	2.7	ug/L	497	Standard
	U	238	298285.4	1.7	**56.3191**	1.192	2.1	ug/L	17	Standard
>	Bi	209	587469.0	0.6				ug/L	559221	Standard

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	Na	23	70.0	18.9	**40.9958**	8.393	20.5	mg/L	2	Standard
	Mg	24	2441.9	1.3	**28.7407**	1.015	3.5	mg/L	33	Standard
	K	39	103.3	14.8	**0.5148**	0.084	16.3	mg/L	18	Standard
	Ca	43	130.0	6.7	**66.2293**	16.443	24.8	mg/L	72	Standard
	Fe	54	4304.3	3.3	**23.9655**	1.370	5.7	mg/L	29	Standard
	Fe	57	1760.1	5.1	**25.2913**	1.266	5.0	mg/L	382	Standard
>	**Sc-1**	45	40806.6	2.4				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	260326.6	4.2				ug/L	2287	Standard
	P	31	80.0	22.5				ug/L	80	Standard
	S	34	56.7	39.8				ug/L	45	Standard
	Sr	88	141.7	10.2				ug/L	178	Standard
	C	12	63.3	39.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	357.2	21.1				mg/L	16	Standard
	Ho-1	165	330.0	7.6				mg/L	10	Standard
	Er	166	336.7	12.4				mg/L	17	Standard
	I	127	431285.5	9.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.084	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.571	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.303
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.051
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703131301SDL WG607753-02
Sample Date/Time: Monday, March 27, 2017 14:18:54
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	256347.2	1.0				ug/L	262785	Standard
	Be	9	85.0	20.4	**0.0336**	0.007	20.1	ug/L	28	Standard
	Al	27	1721951.0	1.1	**10.2004**	0.200	2.0	ug/L	2187	Standard
	Sc	45	37103.7	0.4				ug/L	39299	Standard
	Ti	47	191.3	11.9	**0.4679**	0.083	17.8	ug/L	82	Standard
	V	51	1483.9	1.6	**-0.0259**	0.004	16.7	ug/L	1876	Standard
	Cr	52	5160.9	1.2	**-0.3196**	0.014	4.4	ug/L	8221	Standard
	Cr	53	1368.4	5.2	**0.4251**	0.086	20.2	ug/L	1083	Standard
	Mn	55	4946454.9	0.5	**382.5154**	3.963	1.0	ug/L	2738	Standard
	Co	59	645.7	5.9	**0.0100**	0.003	33.6	ug/L	635	Standard
	Ni	60	787.7	2.2	**0.2676**	0.005	1.8	ug/L	261	Standard
	Cu	65	1070.4	4.6	**0.1921**	0.024	12.5	ug/L	660	Standard
	Zn	66	1879.1	3.2	**1.0014**	0.033	3.3	ug/L	558	Standard
>	Ge	72	762175.5	1.0				ug/L	807251	Standard
	As	75	8854.6	0.8	**6.8604**	0.085	1.2	ug/L	-43	Standard
	Se	82	111.6	1.9	**0.8823**	0.014	1.6	ug/L	18	Standard
	Se-1	77	169.3	7.3	**0.6299**	0.129	20.4	ug/L	127	Standard
>	Ga	71	91.7	33.3				mg/L	32	Standard
	Rb	85	968.4	9.0				ug/L	27	Standard
	Y	89	511218.1	1.8				ug/L	534994	Standard
>	Rh	103	26.7	54.1				ug/L	20	Standard
	Mo	98	552.6	2.5	**0.1085**	0.003	3.1	ug/L	285	Standard
	Ag	107	491.3	8.2	**0.0545**	0.005	9.4	ug/L	129	Standard
	Cd	111	16.3	79.8	**-0.0000**	0.007	18774.2	mg/L	6	Standard
	Cd	114	53.2	68.1	**-0.0002**	0.007	3330.9	ug/L	46	Standard
>	In	115	639507.9	1.1				ug/L	679215	Standard
	Sn	118	190.0	3.3	**-0.0655**	0.006	9.5	ug/L	411	Standard
	Sb	123	1075.1	8.6	**0.1789**	0.020	11.0	ug/L	497	Standard
	Ba	135	99526.5	1.0	**49.5914**	0.397	0.8	ug/L	43	Standard
	Ce	140	1163.4	3.4				ug/L	22	Standard
>	Tb	159	952656.1	1.6				ug/L	983965	Standard
	Ho	165	48.3	39.2				ug/L	10	Standard
	Tl	203	767.7	2.6	**0.0660**	0.002	2.5	ug/L	248	Standard
	Tl	205	1786.8	6.5	**0.0597**	0.006	9.4	ug/L	620	Standard
	Pb	206	1195.4	7.5	**0.1042**	0.012	11.5	ug/L	503	Standard
	Pb	207	1022.0	6.5	**0.1008**	0.010	9.6	ug/L	406	Standard
	Pb	208	1187.4	4.8	**0.0987**	0.007	6.8	ug/L	497	Standard
	U	238	41.0	59.1	**0.0065**	0.005	71.3	ug/L	17	Standard
>	Bi	209	571441.1	0.9				ug/L	559221	Standard

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⌈	**Na**	23	16.7	62.4	**9.9535**	6.893	69.3	mg/L	2	Standard
|	**Mg**	24	510.0	12.7	**6.1880**	0.876	14.2	mg/L	33	Standard
|	**K**	39	41.7	6.9	**0.1444**	0.020	13.5	mg/L	18	Standard
|	**Ca**	43	51.7	11.2	**-36.3445**	8.558	23.5	mg/L	72	Standard
|	**Fe**	54	899.8	7.5	**5.3493**	0.428	8.0	mg/L	29	Standard
|	**Fe**	57	610.0	2.2	**4.8620**	0.321	6.6	mg/L	382	Standard
⌊>	**Sc-1**	45	37103.7	0.4				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	4.3	26.6				ug/L	3	Standard
	Br	81	51540.9	1.6				ug/L	2287	Standard
	P	31	58.3	30.1				ug/L	80	Standard
	S	34	40.0	12.5				ug/L	45	Standard
	Sr	88	170.0	15.6				ug/L	178	Standard
	C	12	46.7	65.5				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	46.6	42.9				mg/L	16	Standard
	Ho-1	165	48.3	39.2				mg/L	10	Standard
	Er	166	70.0	0.0				mg/L	17	Standard
	I	127	101692.0	2.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		97.550	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		94.416	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.154
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.185
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703131301SDL WG607753-02
Sample Date/Time: Monday, March 27, 2017 14:21:59
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	249109.6	1.1				ug/L	262785	Standard
	Be	9	55.0	71.0	**0.0219**	0.016	73.8	ug/L	28	Standard
	Al	27	341280.9	0.6	**2.0754**	0.023	1.1	ug/L	2187	Standard
	Sc	45	37107.1	1.4				ug/L	39299	Standard
	Ti	47	71.0	17.3	**-0.0040**	0.049	1222.9	ug/L	82	Standard
	V	51	1052.7	10.9	**-0.0767**	0.015	19.2	ug/L	1876	Standard
	Cr	52	4650.7	1.5	**-0.3762**	0.009	2.4	ug/L	8221	Standard
	Cr	53	781.7	8.7	**-0.1816**	0.076	42.0	ug/L	1083	Standard
	Mn	55	847502.7	0.8	**66.5463**	0.316	0.5	ug/L	2738	Standard
	Co	59	409.3	6.1	**-0.0133**	0.003	20.6	ug/L	635	Standard
	Ni	60	329.3	5.7	**0.0523**	0.009	17.4	ug/L	261	Standard
	Cu	65	707.7	3.5	**0.0298**	0.013	42.7	ug/L	660	Standard
	Zn	66	2084.5	0.3	**1.1879**	0.003	0.3	ug/L	558	Standard
>	Ge	72	748925.8	0.4				ug/L	807251	Standard
	As	75	1719.5	2.4	**1.3944**	0.030	2.1	ug/L	-43	Standard
	Se	82	37.2	21.8	**0.2499**	0.070	28.0	ug/L	18	Standard
	Se-1	77	114.7	7.3	**0.0075**	0.099	1315.2	ug/L	127	Standard
>	Ga	71	55.0	15.7				mg/L	32	Standard
	Rb	85	231.7	32.5				ug/L	27	Standard
	Y	89	496427.4	1.3				ug/L	534994	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	132.1	7.7	**0.0077**	0.002	31.3	ug/L	285	Standard
	Ag	107	239.3	28.0	**0.0176**	0.010	57.7	ug/L	129	Standard
	Cd	111	24.2	117.2	**0.0043**	0.015	348.0	mg/L	6	Standard
	Cd	114	54.1	66.2	**0.0002**	0.007	4302.2	ug/L	46	Standard
>	In	115	630240.2	0.2				ug/L	679215	Standard
	Sn	118	158.3	12.9	**-0.0920**	0.018	20.1	ug/L	411	Standard
	Sb	123	262.1	11.5	**0.0209**	0.006	28.8	ug/L	497	Standard
	Ba	135	19527.9	1.2	**9.8576**	0.132	1.3	ug/L	43	Standard
	Ce	140	235.0	14.0				ug/L	22	Standard
>	Tb	159	923639.3	1.3				ug/L	983965	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	589.3	12.1	**0.0452**	0.009	19.2	ug/L	248	Standard
	Tl	205	1430.1	6.7	**0.0425**	0.005	11.2	ug/L	620	Standard
	Pb	206	637.7	6.8	**0.0218**	0.006	28.9	ug/L	503	Standard
	Pb	207	544.0	10.5	**0.0224**	0.009	42.0	ug/L	406	Standard
	Pb	208	650.0	3.6	**0.0233**	0.003	13.7	ug/L	497	Standard
	U	238	23.0	128.7	**0.0031**	0.006	188.1	ug/L	17	Standard
>	Bi	209	563011.7	0.4				ug/L	559221	Standard

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	Na	23	1.7	173.2	**0.0634**	1.928	3039.3	mg/L	2	Standard
	Mg	24	128.3	35.1	**1.1545**	0.591	51.2	mg/L	33	Standard
	K	39	18.3	41.7	**-0.0209**	0.056	267.7	mg/L	18	Standard
	Ca	43	40.0	37.5	**-54.0466**	23.875	44.2	mg/L	72	Standard
	Fe	54	187.8	8.6	**0.9563**	0.112	11.7	mg/L	29	Standard
	Fe	57	405.0	13.4	**0.6231**	1.022	164.0	mg/L	382	Standard
>	**Sc-1**	45	37107.1	1.4				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	12565.2	0.6				ug/L	2287	Standard
	P	31	51.7	14.8				ug/L	80	Standard
	S	34	46.7	37.6				ug/L	45	Standard
	Sr	88	156.7	24.0				ug/L	178	Standard
	C	12	23.3	24.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	32.7	45.9				mg/L	16	Standard
	Ho-1	165	10.0	50.0				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	28054.3	2.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.796	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.775	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	92.789
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.678
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 14:25:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	264675.0	4.7				ug/L	262785	Standard
	Be	9	125778.3	1.7	**50.0982**	2.855	5.7	ug/L	28	Standard
	Al	27	8590286.5	0.6	**49.3643**	1.957	4.0	ug/L	2187	Standard
	Sc	45	40611.0	2.7				ug/L	39299	Standard
	Ti	47	27297.6	0.5	**102.4141**	2.618	2.6	ug/L	82	Standard
	V	51	422019.9	0.7	**49.1003**	1.120	2.3	ug/L	1876	Standard
	Cr	52	403215.0	0.8	**49.5291**	1.222	2.5	ug/L	8221	Standard
	Cr	53	49490.7	0.8	**48.6777**	1.735	3.6	ug/L	1083	Standard
	Mn	55	681004.0	0.3	**49.8060**	1.630	3.3	ug/L	2738	Standard
	Co	59	515287.5	1.6	**49.7178**	1.238	2.5	ug/L	635	Standard
	Ni	60	110464.2	0.9	**49.7661**	1.230	2.5	ug/L	261	Standard
	Cu	65	114347.6	1.0	**49.9724**	1.341	2.7	ug/L	660	Standard
	Zn	66	68943.8	0.3	**49.8357**	1.365	2.7	ug/L	558	Standard
>	**Ge**	72	803878.6	3.0				ug/L	807251	Standard
	As	75	68445.3	1.1	**49.9920**	1.106	2.2	ug/L	-43	Standard
	Se	82	6283.7	1.1	**51.0103**	1.516	3.0	ug/L	18	Standard
	Se-1	77	4647.0	1.7	**50.7970**	0.728	1.4	ug/L	127	Standard
>	**Ga**	71	70.0	14.3				mg/L	32	Standard
	Rb	85	426.7	2.4				ug/L	27	Standard
	Y	89	539333.3	1.9				ug/L	534994	Standard
>	**Rh**	103	41.7	48.5				ug/L	20	Standard
	Mo	98	445048.4	0.5	**100.7796**	0.614	0.6	ug/L	285	Standard
	Ag	107	359655.3	0.4	**50.3606**	0.459	0.9	ug/L	129	Standard
	Cd	111	104760.1	0.4	**50.9977**	0.611	1.2	mg/L	6	Standard
	Cd	114	271440.5	0.6	**50.5743**	0.434	0.9	ug/L	46	Standard
>	**In**	115	679939.5	1.1				ug/L	679215	Standard
	Sn	118	60191.3	0.5	**50.8525**	0.517	1.0	ug/L	411	Standard
	Sb	123	275235.5	0.8	**50.5010**	0.896	1.8	ug/L	497	Standard
	Ba	135	105271.5	0.9	**49.3402**	0.962	1.9	ug/L	43	Standard
	Ce	140	301.7	21.9				ug/L	22	Standard
>	**Tb**	159	987405.0	1.5				ug/L	983965	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	414227.3	1.0	**50.0788**	0.928	1.9	ug/L	248	Standard
	Tl	205	991601.3	1.3	**50.2933**	1.222	2.4	ug/L	620	Standard
	Pb	206	338664.8	1.2	**50.2260**	1.190	2.4	ug/L	503	Standard
	Pb	207	306637.0	1.0	**50.4268**	1.034	2.1	ug/L	406	Standard
	Pb	208	349103.7	0.5	**49.2213**	0.822	1.7	ug/L	497	Standard
	U	238	276666.6	0.8	**52.9908**	1.026	1.9	ug/L	17	Standard
>	**Bi**	209	579176.5	1.4				ug/L	559221	Standard

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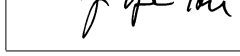

	Na	23	13.3	21.7	**6.9763**	1.676	24.0	mg/L	2	Standard
	Mg	24	401.7	7.3	**4.3051**	0.408	9.5	mg/L	33	Standard
	K	39	676.7	8.0	**4.2416**	0.340	8.0	mg/L	18	Standard
	Ca	43	55.0	55.3	**-39.2083**	40.092	102.3	mg/L	72	Standard
	Fe	54	890.2	9.6	**4.8238**	0.589	12.2	mg/L	29	Standard
	Fe	57	571.7	4.5	**3.0484**	0.242	7.9	mg/L	382	Standard
>	**Sc-1**	45	40611.0	2.7				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	2.0	100.0				ug/L	3	Standard
	Br	81	3290.4	8.2				ug/L	2287	Standard
	P	31	80.0	25.0				ug/L	80	Standard
	S	34	55.0	39.6				ug/L	45	Standard
	Sr	88	138.3	19.9				ug/L	178	Standard
	C	12	16.7	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	23.2	49.2				mg/L	16	Standard
	Ho-1	165	11.7	107.9				mg/L	10	Standard
	Er	166	3.3	173.2				mg/L	17	Standard
	I	127	4510.7	8.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.196		
	Al	27	98.729		
	Sc	45			
	Ti	47	102.414		
	V	51	98.201		
	Cr	52	99.058		
	Cr	53			
	Mn	55	99.612		
	Co	59	99.436		
	Ni	60	99.532		
	Cu	65	99.945		
	Zn	66	99.671		
>	Ge	72		99.582	
	As	75	99.984		
	Se	82	102.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.780		
Ag	107	100.721		
Cd	111	101.995		
Cd	114			
In	115			100.107
Sn	118	101.705		
Sb	123	101.002		
Ba	135	98.680		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.158		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.443		
U	238	105.982		
Bi	209			103.568
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 14:28:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	263730.5	0.7				ug/L	262785	Standard
	Be	9	63.3	57.1	**0.0241**	0.015	60.2	ug/L	28	Standard
	Al	27	4948.1	108.5	**0.0224**	0.031	138.7	ug/L	2187	Standard
	Sc	45	40577.6	0.2				ug/L	39299	Standard
	Ti	47	41.3	23.0	**-0.1345**	0.036	26.9	ug/L	82	Standard
	V	51	1466.7	12.6	**-0.0367**	0.023	61.3	ug/L	1876	Standard
	Cr	52	6226.3	3.3	**-0.2187**	0.031	14.1	ug/L	8221	Standard
	Cr	53	688.3	15.9	**-0.3310**	0.105	31.8	ug/L	1083	Standard
	Mn	55	5518.2	91.8	**0.2293**	0.376	163.8	ug/L	2738	Standard
	Co	59	446.3	37.4	**-0.0125**	0.016	131.7	ug/L	635	Standard
	Ni	60	264.3	13.9	**0.0125**	0.017	137.2	ug/L	261	Standard
	Cu	65	710.0	5.5	**0.0091**	0.019	206.0	ug/L	660	Standard
	Zn	66	609.3	7.2	**0.0028**	0.034	1199.3	ug/L	558	Standard
>	Ge	72	801096.2	0.9				ug/L	807251	Standard
	As	75	-3.5	466.6	**0.0458**	0.012	25.8	ug/L	-43	Standard
	Se	82	23.8	18.8	**0.1202**	0.038	31.7	ug/L	18	Standard
	Se-1	77	108.7	6.1	**-0.1503**	0.064	42.8	ug/L	127	Standard
>	Ga	71	38.3	7.5				mg/L	32	Standard
	Rb	85	33.3	17.3				ug/L	27	Standard
	Y	89	546630.6	1.5				ug/L	534994	Standard
>	Rh	103	16.7	75.5				ug/L	20	Standard
	Mo	98	376.8	16.9	**0.0613**	0.014	23.6	ug/L	285	Standard
	Ag	107	323.7	32.5	**0.0270**	0.015	55.1	ug/L	129	Standard
	Cd	111	31.8	110.2	**0.0072**	0.017	239.0	mg/L	6	Standard
	Cd	114	149.6	84.8	**0.0174**	0.024	137.1	ug/L	46	Standard
>	In	115	675509.4	0.3				ug/L	679215	Standard
	Sn	118	324.0	3.1	**0.0398**	0.008	20.3	ug/L	411	Standard
	Sb	123	580.3	22.8	**0.0762**	0.025	32.4	ug/L	497	Standard
	Ba	135	168.3	104.4	**0.0601**	0.083	138.2	ug/L	43	Standard
	Ce	140	16.7	91.7				ug/L	22	Standard
>	Tb	159	973287.9	0.3				ug/L	983965	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	232.0	72.8	**-0.0003**	0.020	7166.8	ug/L	248	Standard
	Tl	205	530.0	81.0	**-0.0055**	0.022	392.7	ug/L	620	Standard
	Pb	206	619.0	17.2	**0.0155**	0.016	101.2	ug/L	503	Standard
	Pb	207	543.3	19.9	**0.0190**	0.018	92.9	ug/L	406	Standard
	Pb	208	641.3	18.8	**0.0187**	0.017	90.6	ug/L	497	Standard
	U	238	103.0	109.5	**0.0181**	0.021	118.2	ug/L	17	Standard
>	Bi	209	583893.6	0.6				ug/L	559221	Standard

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	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	25.0	20.0	**-0.2338**	0.060	25.8	mg/L	33	Standard
	K	39	21.7	13.3	**-0.0108**	0.019	174.1	mg/L	18	Standard
	Ca	43	35.0	14.3	**-66.5587**	6.942	10.4	mg/L	72	Standard
	Fe	54	29.5	43.3	**-0.0366**	0.072	197.4	mg/L	29	Standard
	Fe	57	371.7	12.5	**-0.7130**	0.887	124.4	mg/L	382	Standard
>	**Sc-1**	45	40577.6	0.2				mg/L	39299	Standard
	Cl	35	4.0	86.6				ug/L	4	Standard
	Kr	83	3.0	33.3				ug/L	3	Standard
	Br	81	2953.6	8.0				ug/L	2287	Standard
	P	31	88.3	11.8				ug/L	80	Standard
	S	34	46.7	24.7				ug/L	45	Standard
	Sr	88	150.0	17.3				ug/L	178	Standard
	C	12	20.0	100.0				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	31.9	75.0				mg/L	16	Standard
	Ho-1	165	6.7	86.6				mg/L	10	Standard
	Er	166	30.0	66.7				mg/L	17	Standard
	I	127	6156.3	7.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.238	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.454
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.412
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703133902
Sample Date/Time: Monday, March 27, 2017 14:31:18
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	360024.9	1.9				ug/L	262785	Standard
	Be	9	213.3	5.9	**0.0612**	0.004	6.6	ug/L	28	Standard
	Al	27	183162520.1	4.0	**772.7342**	16.590	2.1	ug/L	2187	Standard
	Sc	45	43928.6	1.1				ug/L	39299	Standard
	Ti	47	354.7	3.1	**1.0768**	0.035	3.3	ug/L	82	Standard
	V	51	-3964.4	36.7	**-0.6835**	0.174	25.5	ug/L	1876	Standard
	Cr	52	15839.3	7.2	**1.0327**	0.150	14.6	ug/L	8221	Standard
	Cr	53	45507.4	23.6	**45.7962**	11.022	24.1	ug/L	1083	Standard
	Mn	55	3309668.1	2.0	**248.7156**	5.581	2.2	ug/L	2738	Standard
	Co	59	119377.8	1.0	**11.7615**	0.163	1.4	ug/L	635	Standard
	Ni	60	20002.5	1.2	**9.1468**	0.092	1.0	ug/L	261	Standard
	Cu	65	3827.2	2.8	**1.4202**	0.048	3.3	ug/L	660	Standard
	Zn	66	26235.4	2.0	**19.1618**	0.418	2.2	ug/L	558	Standard
>	**Ge**	72	784135.6	1.1				ug/L	807251	Standard
	As	75	4953.9	7.4	**3.7510**	0.238	6.3	ug/L	-43	Standard
	Se	82	1927.9	3.4	**15.9840**	0.487	3.0	ug/L	18	Standard
	Se-1	77	6744.2	22.4	**76.2146**	17.194	22.6	ug/L	127	Standard
>	**Ga**	71	276.7	16.3				mg/L	32	Standard
	Rb	85	16705.9	3.4				ug/L	27	Standard
	Y	89	564311.6	1.5				ug/L	534994	Standard
>	**Rh**	103	1193.4	1.3				ug/L	20	Standard
	Mo	98	449.5	3.1	**0.0837**	0.004	4.7	ug/L	285	Standard
	Ag	107	206.3	7.4	**0.0121**	0.002	18.3	ug/L	129	Standard
	Cd	111	497.4	4.9	**0.2491**	0.013	5.4	mg/L	6	Standard
	Cd	114	1244.4	7.3	**0.2358**	0.016	6.8	ug/L	46	Standard
>	**In**	115	639429.9	1.2				ug/L	679215	Standard
	Sn	118	333.3	3.2	**0.0639**	0.008	12.5	ug/L	411	Standard
	Sb	123	474.0	16.2	**0.0614**	0.014	22.6	ug/L	497	Standard
	Ba	135	9565037.0	1.5	**4768.4144**	60.224	1.3	ug/L	43	Standard
	Ce	140	1720.1	5.1				ug/L	22	Standard
>	**Tb**	159	1013536.4	1.7				ug/L	983965	Standard
	Ho	165	118.3	19.1				ug/L	10	Standard
	Tl	203	830.0	25.5	**0.0837**	0.029	34.5	ug/L	248	Standard
	Tl	205	1900.1	21.0	**0.0752**	0.023	30.5	ug/L	620	Standard
	Pb	206	870.4	6.7	**0.0683**	0.010	14.8	ug/L	503	Standard
	Pb	207	725.7	3.9	**0.0633**	0.006	9.0	ug/L	406	Standard
	Pb	208	870.0	2.6	**0.0657**	0.004	6.2	ug/L	497	Standard
	U	238	2780.9	0.6	**0.5916**	0.004	0.7	ug/L	17	Standard
>	**Bi**	209	520091.1	0.4				ug/L	559221	Standard

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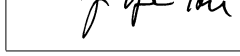

⌈	**Na**	23	291.7	2.0	**161.4810**	4.807	3.0	mg/L	2	Standard
|	**Mg**	24	37638.5	7.0	**418.2713**	25.459	6.1	mg/L	33	Standard
|	**K**	39	210.0	28.1	**1.1064**	0.340	30.7	mg/L	18	Standard
|	**Ca**	43	318.3	15.3	**297.3956**	60.933	20.5	mg/L	72	Standard
|	**Fe**	54	159.1	19.5	**0.6255**	0.161	25.7	mg/L	29	Standard
|	**Fe**	57	1143.4	12.3	**12.1944**	2.367	19.4	mg/L	382	Standard
⌊>	**Sc-1**	45	43928.6	1.1				mg/L	39299	Standard
	Cl	35	3.3	34.6				ug/L	4	Standard
	Kr	83	3.3	45.8				ug/L	3	Standard
	Br	81	1025055.2	2.4				ug/L	2287	Standard
	P	31	115.0	37.1				ug/L	80	Standard
	S	34	48.3	31.6				ug/L	45	Standard
	Sr	88	611.7	7.6				ug/L	178	Standard
	C	12	130.0	7.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	115.7	10.7				mg/L	16	Standard
	Ho-1	165	118.3	19.1				mg/L	10	Standard
	Er	166	160.0	12.5				mg/L	17	Standard
	I	127	456779.0	12.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		137.004	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.137	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.142
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.003
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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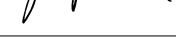

Method 6020 - Summary Report

Sample ID: L1703133904
Sample Date/Time: Monday, March 27, 2017 14:34:24
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	377049.2	2.6				ug/L	262785	Standard
	Be	9	140.0	9.4	**0.0379**	0.005	12.0	ug/L	28	Standard
	Al	27	186960582.0	3.1	**754.0326**	41.616	5.5	ug/L	2187	Standard
	Sc	45	46133.5	3.1				ug/L	39299	Standard
	Ti	47	397.0	5.2	**1.1892**	0.040	3.3	ug/L	82	Standard
	V	51	-4638.0	10.3	**-0.7474**	0.075	10.1	ug/L	1876	Standard
	Cr	52	17068.6	2.7	**1.1197**	0.089	7.9	ug/L	8221	Standard
	Cr	53	55459.7	2.5	**54.2088**	2.674	4.9	ug/L	1083	Standard
	Mn	55	3319918.1	2.8	**241.4627**	11.598	4.8	ug/L	2738	Standard
	Co	59	117913.4	3.6	**11.2425**	0.626	5.6	ug/L	635	Standard
	Ni	60	20327.6	2.4	**8.9935**	0.347	3.9	ug/L	261	Standard
	Cu	65	3975.9	5.3	**1.4306**	0.130	9.1	ug/L	660	Standard
	Zn	66	23385.4	2.3	**16.4660**	0.590	3.6	ug/L	558	Standard
>	**Ge**	72	810898.0	3.7				ug/L	807251	Standard
	As	75	4652.2	0.9	**3.4148**	0.114	3.4	ug/L	-43	Standard
	Se	82	1812.2	1.5	**14.5340**	0.489	3.4	ug/L	18	Standard
	Se-1	77	8631.8	5.1	**94.8232**	7.445	7.9	ug/L	127	Standard
>	**Ga**	71	491.7	12.7				mg/L	32	Standard
	Rb	85	16472.3	2.1				ug/L	27	Standard
	Y	89	565432.8	0.9				ug/L	534994	Standard
>	**Rh**	103	1208.4	10.6				ug/L	20	Standard
	Mo	98	421.3	15.9	**0.0738**	0.016	21.1	ug/L	285	Standard
	Ag	107	231.3	66.9	**0.0147**	0.022	150.8	ug/L	129	Standard
	Cd	111	373.1	16.2	**0.1789**	0.031	17.4	mg/L	6	Standard
	Cd	114	1048.7	4.9	**0.1908**	0.012	6.1	ug/L	46	Standard
>	**In**	115	659825.1	1.3				ug/L	679215	Standard
	Sn	118	359.0	12.7	**0.0771**	0.040	51.8	ug/L	411	Standard
	Sb	123	380.0	43.4	**0.0408**	0.031	76.2	ug/L	497	Standard
	Ba	135	9552337.6	2.4	**4615.8101**	150.750	3.3	ug/L	43	Standard
	Ce	140	2151.8	1.9				ug/L	22	Standard
>	**Tb**	159	1045744.7	2.2				ug/L	983965	Standard
	Ho	165	128.3	25.0				ug/L	10	Standard
	Tl	203	553.0	17.5	**0.0440**	0.013	29.4	ug/L	248	Standard
	Tl	205	1336.7	19.3	**0.0410**	0.015	36.2	ug/L	620	Standard
	Pb	206	912.7	9.7	**0.0703**	0.013	19.1	ug/L	503	Standard
	Pb	207	749.7	12.6	**0.0634**	0.018	28.5	ug/L	406	Standard
	Pb	208	874.3	4.4	**0.0619**	0.005	8.6	ug/L	497	Standard
	U	238	2976.3	4.5	**0.6130**	0.036	5.9	ug/L	17	Standard
>	**Bi**	209	537677.2	3.0				ug/L	559221	Standard

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⌈	**Na**	23	255.0	7.1	**134.5134**	13.655	10.2	mg/L	2	Standard
|	**Mg**	24	40009.5	3.8	**424.1346**	29.050	6.8	mg/L	33	Standard
|	**K**	39	250.0	10.0	**1.2798**	0.171	13.3	mg/L	18	Standard
|	**Ca**	43	261.7	2.2	**207.8928**	6.055	2.9	mg/L	72	Standard
|	**Fe**	54	127.4	12.5	**0.4281**	0.063	14.8	mg/L	29	Standard
|	**Fe**	57	1216.7	4.3	**12.4873**	1.290	10.3	mg/L	382	Standard
⌊>	**Sc-1**	45	46133.5	3.1				mg/L	39299	Standard
	Cl	35	4.7	89.2				ug/L	4	Standard
	Kr	83	5.3	54.1				ug/L	3	Standard
	Br	81	941974.4	3.3				ug/L	2287	Standard
	P	31	101.7	66.8				ug/L	80	Standard
	S	34	63.3	16.4				ug/L	45	Standard
	Sr	88	613.3	1.7				ug/L	178	Standard
	C	12	100.0	26.5				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	3	Standard
	Dy	164	88.8	18.1				mg/L	16	Standard
	Ho-1	165	128.3	25.0				mg/L	10	Standard
	Er	166	163.3	18.7				mg/L	17	Standard
	I	127	549301.1	7.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		143.482	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		100.452	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		97.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		96.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1703133905
Sample Date/Time: Monday, March 27, 2017 14:37:28
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	336003.3	1.0				ug/L	262785	Standard
	Be	9	646.7	4.7	**0.2013**	0.010	4.8	ug/L	28	Standard
	Al	27	44146886.1	0.6	**199.6254**	2.659	1.3	ug/L	2187	Standard
	Sc	45	47494.3	0.9				ug/L	39299	Standard
	Ti	47	551.0	6.4	**1.6599**	0.106	6.4	ug/L	82	Standard
	V	51	38.4	4164.9	**-0.2042**	0.177	86.6	ug/L	1876	Standard
	Cr	52	68119.1	0.5	**7.0332**	0.087	1.2	ug/L	8221	Standard
	Cr	53	39917.9	10.6	**36.7036**	4.103	11.2	ug/L	1083	Standard
	Mn	55	22383504.5	0.3	**1545.8215**	13.225	0.9	ug/L	2738	Standard
	Co	59	255071.2	0.7	**23.1351**	0.274	1.2	ug/L	635	Standard
	Ni	60	44202.4	1.1	**18.6763**	0.296	1.6	ug/L	261	Standard
	Cu	65	3166.3	1.9	**1.0061**	0.016	1.6	ug/L	660	Standard
	Zn	66	56979.6	1.2	**38.6649**	0.659	1.7	ug/L	558	Standard
>	**Ge**	72	853745.3	1.0				ug/L	807251	Standard
	As	75	4939.6	7.2	**3.4408**	0.247	7.2	ug/L	-43	Standard
	Se	82	365.9	6.9	**2.7255**	0.203	7.4	ug/L	18	Standard
	Se-1	77	3259.0	8.5	**33.0741**	3.032	9.2	ug/L	127	Standard
>	**Ga**	71	216.7	14.1				mg/L	32	Standard
	Rb	85	18775.0	3.1				ug/L	27	Standard
	Y	89	601301.2	1.5				ug/L	534994	Standard
>	**Rh**	103	306.7	13.9				ug/L	20	Standard
	Mo	98	709.9	2.3	**0.1316**	0.002	1.4	ug/L	285	Standard
	Ag	107	154.7	8.1	**0.0024**	0.001	61.5	ug/L	129	Standard
	Cd	111	569.4	1.3	**0.2608**	0.001	0.6	mg/L	6	Standard
	Cd	114	1335.6	7.8	**0.2311**	0.020	8.8	ug/L	46	Standard
>	**In**	115	700266.4	1.1				ug/L	679215	Standard
	Sn	118	538.7	3.9	**0.2071**	0.020	9.8	ug/L	411	Standard
	Sb	123	669.7	6.5	**0.0883**	0.007	7.8	ug/L	497	Standard
	Ba	135	3050276.8	1.1	**1388.4797**	3.392	0.2	ug/L	43	Standard
	Ce	140	41221.0	3.1				ug/L	22	Standard
>	**Tb**	159	1066359.7	0.3				ug/L	983965	Standard
	Ho	165	473.3	12.2				ug/L	10	Standard
	Tl	203	488.7	6.5	**0.0292**	0.004	13.6	ug/L	248	Standard
	Tl	205	1163.4	9.6	**0.0251**	0.006	23.6	ug/L	620	Standard
	Pb	206	1053.0	1.5	**0.0760**	0.003	4.3	ug/L	503	Standard
	Pb	207	920.0	1.6	**0.0772**	0.003	4.0	ug/L	406	Standard
	Pb	208	1071.7	3.2	**0.0756**	0.005	6.8	ug/L	497	Standard
	U	238	203.7	5.4	**0.0364**	0.002	4.9	ug/L	17	Standard
>	**Bi**	209	597143.1	0.7				ug/L	559221	Standard

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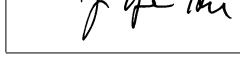

	Na	23	81.7	23.2	**41.0220**	9.668	23.6	mg/L	2	Standard
	Mg	24	9764.8	0.1	**100.0037**	0.965	1.0	mg/L	33	Standard
	K	39	200.0	16.4	**0.9597**	0.191	19.9	mg/L	18	Standard
	Ca	43	105.0	8.2	**10.4203**	11.353	108.9	mg/L	72	Standard
	Fe	54	940.9	5.9	**4.3321**	0.267	6.2	mg/L	29	Standard
	Fe	57	746.7	6.1	**4.3082**	0.661	15.3	mg/L	382	Standard
>	**Sc-1**	45	47494.3	0.9				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	163491.0	2.3				ug/L	2287	Standard
	P	31	140.0	32.7				ug/L	80	Standard
	S	34	63.3	19.9				ug/L	45	Standard
	Sr	88	303.3	1.9				ug/L	178	Standard
	C	12	313.3	27.9				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	50.0	69.3				mg/L	3	Standard
	Dy	164	548.3	18.5				mg/L	16	Standard
	Ho-1	165	473.3	12.2				mg/L	10	Standard
	Er	166	383.3	10.9				mg/L	17	Standard
	I	127	1275698.8	7.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		127.863	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.760	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		103.099
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		106.781
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1703133906
Sample Date/Time: Monday, March 27, 2017 14:40:34
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	338010.5	0.7				ug/L	262785	Standard
	Be	9	76.7	26.4	**0.0226**	0.006	27.3	ug/L	28	Standard
	Al	27	5917984.0	2.3	**26.5932**	0.548	2.1	ug/L	2187	Standard
	Sc	45	43184.8	2.0				ug/L	39299	Standard
	Ti	47	581.0	5.3	**1.8493**	0.114	6.2	ug/L	82	Standard
	V	51	3149.3	12.9	**0.1516**	0.047	31.2	ug/L	1876	Standard
	Cr	52	68128.2	0.4	**7.3560**	0.039	0.5	ug/L	8221	Standard
	Cr	53	16564.1	1.9	**15.2559**	0.292	1.9	ug/L	1083	Standard
	Mn	55	682881.4	1.0	**48.8772**	0.580	1.2	ug/L	2738	Standard
	Co	59	5691.4	4.7	**0.4824**	0.026	5.3	ug/L	635	Standard
	Ni	60	4472.0	2.2	**1.8692**	0.044	2.4	ug/L	261	Standard
	Cu	65	2526.9	3.2	**0.7835**	0.034	4.3	ug/L	660	Standard
	Zn	66	4779.4	0.4	**2.9687**	0.013	0.4	ug/L	558	Standard
>	Ge	72	820826.3	0.2				ug/L	807251	Standard
	As	75	3158.9	1.8	**2.3046**	0.036	1.5	ug/L	-43	Standard
	Se	82	450.4	4.7	**3.5097**	0.165	4.7	ug/L	18	Standard
	Se-1	77	637.0	4.3	**5.6278**	0.286	5.1	ug/L	127	Standard
>	Ga	71	276.7	14.6				mg/L	32	Standard
	Rb	85	1202544.5	1.4				ug/L	27	Standard
	Y	89	567215.6	0.4				ug/L	534994	Standard
>	Rh	103	180.0	2.8				ug/L	20	Standard
	Mo	98	4175.4	1.3	**0.9331**	0.012	1.3	ug/L	285	Standard
	Ag	107	224.3	39.7	**0.0132**	0.012	94.7	ug/L	129	Standard
	Cd	111	123.9	24.7	**0.0526**	0.015	28.0	mg/L	6	Standard
	Cd	114	355.1	20.0	**0.0563**	0.013	23.4	ug/L	46	Standard
>	In	115	671433.2	0.6				ug/L	679215	Standard
	Sn	118	555.3	2.6	**0.2404**	0.012	5.0	ug/L	411	Standard
	Sb	123	846.5	7.4	**0.1263**	0.011	8.5	ug/L	497	Standard
	Ba	135	209860.9	1.6	**99.6139**	1.563	1.6	ug/L	43	Standard
	Ce	140	7295.1	1.2				ug/L	22	Standard
>	Tb	159	1006203.2	0.8				ug/L	983965	Standard
	Ho	165	118.3	25.5				ug/L	10	Standard
	Tl	203	795.7	5.5	**0.0695**	0.005	6.6	ug/L	248	Standard
	Tl	205	2056.8	7.3	**0.0736**	0.007	9.5	ug/L	620	Standard
	Pb	206	1639.1	4.9	**0.1712**	0.010	6.0	ug/L	503	Standard
	Pb	207	1388.4	3.1	**0.1621**	0.006	3.4	ug/L	406	Standard
	Pb	208	1601.7	7.2	**0.1581**	0.015	9.3	ug/L	497	Standard
	U	238	1367.1	6.0	**0.2640**	0.014	5.2	ug/L	17	Standard
>	Bi	209	571090.8	0.8				ug/L	559221	Standard

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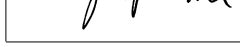

	Na	23	13.3	57.3	**6.4529**	4.220	65.4	mg/L	2	Standard
	Mg	24	10276.8	2.2	**115.8524**	3.136	2.7	mg/L	33	Standard
	K	39	3422.1	5.2	**20.7484**	1.224	5.9	mg/L	18	Standard
	Ca	43	73.3	25.8	**-19.0866**	23.622	123.8	mg/L	72	Standard
	Fe	54	130.5	21.6	**0.4902**	0.159	32.5	mg/L	29	Standard
	Fe	57	486.7	10.7	**0.8994**	0.864	96.0	mg/L	382	Standard
>	**Sc-1**	45	43184.8	2.0				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	215766.9	3.8				ug/L	2287	Standard
	P	31	76.7	30.8				ug/L	80	Standard
	S	34	56.7	10.2				ug/L	45	Standard
	Sr	88	216.7	13.1				ug/L	178	Standard
	C	12	120.0	43.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	30.0	33.3				mg/L	3	Standard
	Dy	164	153.6	20.7				mg/L	16	Standard
	Ho-1	165	118.3	25.5				mg/L	10	Standard
	Er	166	133.3	38.5				mg/L	17	Standard
	I	127	294016.5	2.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		128.626	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.682	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.854
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	102.123
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1703133907
Sample Date/Time: Monday, March 27, 2017 14:43:39
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	303493.0	1.1				ug/L	262785	Standard
	Be	9	101.7	22.2	**0.0341**	0.008	23.4	ug/L	28	Standard
	Al	27	14801855.7	1.9	**74.0897**	0.891	1.2	ug/L	2187	Standard
	Sc	45	44645.7	0.7				ug/L	39299	Standard
	Ti	47	387.3	4.7	**1.1081**	0.065	5.9	ug/L	82	Standard
	V	51	-57.0	790.8	**-0.2151**	0.050	23.5	ug/L	1876	Standard
	Cr	52	10664.1	0.5	**0.2811**	0.006	2.0	ug/L	8221	Standard
	Cr	53	11132.4	9.4	**9.7052**	1.040	10.7	ug/L	1083	Standard
	Mn	55	3858144.9	0.3	**271.5456**	1.542	0.6	ug/L	2738	Standard
	Co	59	6565.4	0.5	**0.5529**	0.004	0.7	ug/L	635	Standard
	Ni	60	3089.6	2.4	**1.2315**	0.030	2.5	ug/L	261	Standard
	Cu	65	1765.1	0.7	**0.4407**	0.004	1.0	ug/L	660	Standard
	Zn	66	6110.9	0.7	**3.8337**	0.024	0.6	ug/L	558	Standard
>	Ge	72	837225.4	0.3				ug/L	807251	Standard
	As	75	9565.6	0.3	**6.7473**	0.033	0.5	ug/L	-43	Standard
	Se	82	442.7	4.8	**3.3798**	0.166	4.9	ug/L	18	Standard
	Se-1	77	803.4	7.5	**7.2844**	0.664	9.1	ug/L	127	Standard
>	Ga	71	81.7	36.9				mg/L	32	Standard
	Rb	85	75645.0	1.2				ug/L	27	Standard
	Y	89	576868.3	0.5				ug/L	534994	Standard
>	Rh	103	115.0	11.5				ug/L	20	Standard
	Mo	98	576.5	0.9	**0.1050**	0.002	1.5	ug/L	285	Standard
	Ag	107	132.0	7.2	**-0.0003**	0.001	488.3	ug/L	129	Standard
	Cd	111	79.9	10.5	**0.0302**	0.004	12.9	mg/L	6	Standard
	Cd	114	244.3	18.7	**0.0345**	0.009	25.0	ug/L	46	Standard
>	In	115	685441.6	0.4				ug/L	679215	Standard
	Sn	118	398.7	2.9	**0.0987**	0.010	9.8	ug/L	411	Standard
	Sb	123	206.7	10.4	**0.0066**	0.004	61.0	ug/L	497	Standard
	Ba	135	814877.3	1.0	**378.9484**	4.607	1.2	ug/L	43	Standard
	Ce	140	3108.7	3.2				ug/L	22	Standard
>	Tb	159	1045970.0	1.1				ug/L	983965	Standard
	Ho	165	65.0	20.4				ug/L	10	Standard
	Tl	203	630.7	4.0	**0.0466**	0.004	7.6	ug/L	248	Standard
	Tl	205	1495.1	6.0	**0.0421**	0.005	11.0	ug/L	620	Standard
	Pb	206	809.4	4.3	**0.0421**	0.004	9.4	ug/L	503	Standard
	Pb	207	663.0	6.1	**0.0372**	0.007	18.1	ug/L	406	Standard
	Pb	208	828.7	1.2	**0.0435**	0.002	5.2	ug/L	497	Standard
	U	238	99.7	12.9	**0.0173**	0.002	13.3	ug/L	17	Standard
>	Bi	209	591237.4	0.9				ug/L	559221	Standard

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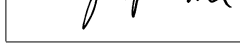

⌈	**Na**	23	26.7	47.2	**13.5620**	6.850	50.5	mg/L	2	Standard
|	**Mg**	24	3587.1	1.9	**38.7525**	0.738	1.9	mg/L	33	Standard
|	**K**	39	335.0	13.7	**1.8255**	0.258	14.2	mg/L	18	Standard
|	**Ca**	43	65.0	15.4	**-32.6939**	12.800	39.2	mg/L	72	Standard
|	**Fe**	54	3750.0	5.1	**19.0217**	0.871	4.6	mg/L	29	Standard
|	**Fe**	57	1656.8	2.4	**20.6843**	0.540	2.6	mg/L	382	Standard
⌊>	**Sc-1**	45	44645.7	0.7				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.7	68.6				ug/L	3	Standard
	Br	81	225894.8	5.5				ug/L	2287	Standard
	P	31	81.7	43.4				ug/L	80	Standard
	S	34	66.7	8.7				ug/L	45	Standard
	Sr	88	236.7	10.0				ug/L	178	Standard
	C	12	30.0	0.0				mg/L	33	Standard
	N	14	10.0	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	83.3	73.5				mg/L	16	Standard
	Ho-1	165	65.0	20.4				mg/L	10	Standard
	Er	166	70.0	65.5				mg/L	17	Standard
	I	127	197648.3	7.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		115.491	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.713	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.917
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.725
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703133908
Sample Date/Time: Monday, March 27, 2017 14:46:44
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	297385.1	0.5				ug/L	262785	Standard
	Be	9	158.3	10.2	**0.0548**	0.006	10.8	ug/L	28	Standard
	Al	27	10597017.5	0.8	**54.1333**	0.617	1.1	ug/L	2187	Standard
	Sc	45	44171.0	1.6				ug/L	39299	Standard
	Ti	47	2818.3	4.3	**9.9313**	0.537	5.4	ug/L	82	Standard
	V	51	5880.8	8.9	**0.4541**	0.068	14.9	ug/L	1876	Standard
	Cr	52	166469.2	0.5	**19.1052**	0.266	1.4	ug/L	8221	Standard
	Cr	53	25940.5	1.0	**24.0775**	0.224	0.9	ug/L	1083	Standard
	Mn	55	8804754.7	0.4	**622.5518**	5.934	1.0	ug/L	2738	Standard
	Co	59	8331.6	2.2	**0.7200**	0.024	3.4	ug/L	635	Standard
	Ni	60	61377.4	1.0	**26.5990**	0.183	0.7	ug/L	261	Standard
	Cu	65	6371.3	2.6	**2.3953**	0.039	1.6	ug/L	660	Standard
	Zn	66	13806.3	0.8	**9.2601**	0.109	1.2	ug/L	558	Standard
>	**Ge**	72	833758.2	1.3				ug/L	807251	Standard
	As	75	2652.3	3.4	**1.9132**	0.040	2.1	ug/L	-43	Standard
	Se	82	761.5	5.9	**5.8888**	0.280	4.8	ug/L	18	Standard
	Se-1	77	617.0	2.8	**5.3024**	0.116	2.2	ug/L	127	Standard
>	**Ga**	71	653.3	4.5				mg/L	32	Standard
	Rb	85	25244.4	2.6				ug/L	27	Standard
	Y	89	569550.8	0.4				ug/L	534994	Standard
>	**Rh**	103	100.0	26.5				ug/L	20	Standard
	Mo	98	2266.3	2.7	**0.4864**	0.013	2.7	ug/L	285	Standard
	Ag	107	160.3	3.7	**0.0037**	0.001	20.7	ug/L	129	Standard
	Cd	111	362.7	5.6	**0.1674**	0.010	5.8	mg/L	6	Standard
	Cd	114	1053.6	10.8	**0.1847**	0.021	11.4	ug/L	46	Standard
>	**In**	115	683044.7	0.2				ug/L	679215	Standard
	Sn	118	427.3	3.2	**0.1241**	0.011	9.1	ug/L	411	Standard
	Sb	123	377.8	0.4	**0.0380**	0.000	1.1	ug/L	497	Standard
	Ba	135	449075.7	0.5	**209.5573**	1.267	0.6	ug/L	43	Standard
	Ce	140	11517.7	5.3				ug/L	22	Standard
>	**Tb**	159	1045028.0	1.0				ug/L	983965	Standard
	Ho	165	225.0	33.6				ug/L	10	Standard
	Tl	203	823.4	7.7	**0.0701**	0.008	11.6	ug/L	248	Standard
	Tl	205	1825.1	4.3	**0.0592**	0.005	7.8	ug/L	620	Standard
	Pb	206	1866.4	3.4	**0.1977**	0.007	3.5	ug/L	503	Standard
	Pb	207	1557.1	2.1	**0.1831**	0.004	2.2	ug/L	406	Standard
	Pb	208	1874.0	0.6	**0.1898**	0.004	1.9	ug/L	497	Standard
	U	238	169.0	18.1	**0.0305**	0.006	19.5	ug/L	17	Standard
>	**Bi**	209	587241.0	0.8				ug/L	559221	Standard

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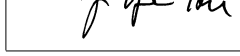

	Na	23	21.7	26.6	**10.9275**	3.060	28.0	mg/L	2	Standard
	Mg	24	3388.7	4.1	**37.0018**	2.164	5.8	mg/L	33	Standard
	K	39	211.7	13.4	**1.1133**	0.184	16.5	mg/L	18	Standard
	Ca	43	66.7	31.2	**-29.4358**	28.151	95.6	mg/L	72	Standard
	Fe	54	6791.6	1.6	**35.0016**	0.778	2.2	mg/L	29	Standard
	Fe	57	2136.8	8.9	**29.3277**	3.492	11.9	mg/L	382	Standard
>	**Sc-1**	45	44171.0	1.6				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	4.3	58.1				ug/L	3	Standard
	Br	81	375535.6	6.3				ug/L	2287	Standard
	P	31	83.3	35.2				ug/L	80	Standard
	S	34	41.7	50.0				ug/L	45	Standard
	Sr	88	198.3	20.2				ug/L	178	Standard
	C	12	30.0	57.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	13.3	114.6				mg/L	3	Standard
	Dy	164	354.2	13.5				mg/L	16	Standard
	Ho-1	165	225.0	33.6				mg/L	10	Standard
	Er	166	190.0	32.0				mg/L	17	Standard
	I	127	427142.5	8.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.167	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.284	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.564
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.011
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703133909
Sample Date/Time: Monday, March 27, 2017 14:49:50
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	300085.0	2.0				ug/L	262785	Standard
	Be	9	130.0	10.2	**0.0444**	0.005	12.2	ug/L	28	Standard
	Al	27	10425228.8	1.0	**52.7845**	0.845	1.6	ug/L	2187	Standard
	Sc	45	44278.0	2.3				ug/L	39299	Standard
	Ti	47	3145.0	12.7	**11.0565**	1.524	13.8	ug/L	82	Standard
	V	51	8093.7	9.8	**0.6973**	0.085	12.2	ug/L	1876	Standard
	Cr	52	181343.1	0.7	**20.7787**	0.275	1.3	ug/L	8221	Standard
	Cr	53	27202.7	1.1	**25.1535**	0.483	1.9	ug/L	1083	Standard
	Mn	55	8774394.9	0.1	**616.9303**	5.812	0.9	ug/L	2738	Standard
	Co	59	8931.3	0.4	**0.7711**	0.008	1.0	ug/L	635	Standard
	Ni	60	65618.5	0.9	**28.2867**	0.456	1.6	ug/L	261	Standard
	Cu	65	7295.8	0.8	**2.7702**	0.040	1.4	ug/L	660	Standard
	Zn	66	14608.4	1.1	**9.7664**	0.142	1.5	ug/L	558	Standard
>	Ge	72	838427.9	0.9				ug/L	807251	Standard
	As	75	2501.7	3.1	**1.7979**	0.062	3.4	ug/L	-43	Standard
	Se	82	722.7	4.1	**5.5555**	0.213	3.8	ug/L	18	Standard
	Se-1	77	607.7	4.3	**5.1643**	0.232	4.5	ug/L	127	Standard
>	Ga	71	816.7	5.7				mg/L	32	Standard
	Rb	85	27015.7	1.7				ug/L	27	Standard
	Y	89	579076.9	0.5				ug/L	534994	Standard
>	Rh	103	113.3	11.1				ug/L	20	Standard
	Mo	98	2204.3	1.1	**0.4739**	0.007	1.5	ug/L	285	Standard
	Ag	107	169.7	7.5	**0.0051**	0.002	33.2	ug/L	129	Standard
	Cd	111	295.5	6.6	**0.1352**	0.009	6.6	mg/L	6	Standard
	Cd	114	850.5	3.3	**0.1475**	0.005	3.4	ug/L	46	Standard
>	In	115	681100.0	0.4				ug/L	679215	Standard
	Sn	118	416.0	10.8	**0.1156**	0.039	34.0	ug/L	411	Standard
	Sb	123	417.5	5.6	**0.0455**	0.005	10.0	ug/L	497	Standard
	Ba	135	445826.1	1.0	**208.6381**	2.493	1.2	ug/L	43	Standard
	Ce	140	13646.1	1.7				ug/L	22	Standard
>	Tb	159	1046033.3	2.1				ug/L	983965	Standard
	Ho	165	258.3	12.9				ug/L	10	Standard
	Tl	203	617.0	0.7	**0.0451**	0.001	1.8	ug/L	248	Standard
	Tl	205	1476.7	4.2	**0.0413**	0.003	7.4	ug/L	620	Standard
	Pb	206	2629.6	1.6	**0.3074**	0.005	1.5	ug/L	503	Standard
	Pb	207	2210.2	0.7	**0.2873**	0.004	1.5	ug/L	406	Standard
	Pb	208	2684.8	1.3	**0.3007**	0.006	2.2	ug/L	497	Standard
	U	238	132.3	5.7	**0.0234**	0.002	6.5	ug/L	17	Standard
>	Bi	209	590400.6	0.5				ug/L	559221	Standard

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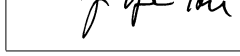

	Na	23	31.7	9.1	**16.4369**	1.213	7.4	mg/L	2	Standard
	Mg	24	3230.3	4.1	**35.1292**	0.663	1.9	mg/L	33	Standard
	K	39	245.0	10.8	**1.3056**	0.131	10.0	mg/L	18	Standard
	Ca	43	75.0	43.7	**-18.4888**	44.393	240.1	mg/L	72	Standard
	Fe	54	6447.6	6.1	**33.1191**	1.493	4.5	mg/L	29	Standard
	Fe	57	2068.5	4.0	**28.0661**	1.990	7.1	mg/L	382	Standard
>	**Sc-1**	45	44278.0	2.3				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	4.7	81.1				ug/L	3	Standard
	Br	81	364159.6	2.7				ug/L	2287	Standard
	P	31	98.3	32.7				ug/L	80	Standard
	S	34	46.7	34.4				ug/L	45	Standard
	Sr	88	190.0	4.6				ug/L	178	Standard
	C	12	46.7	44.6				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	16.7	124.9				mg/L	3	Standard
	Dy	164	396.0	8.9				mg/L	16	Standard
	Ho-1	165	258.3	12.9				mg/L	10	Standard
	Er	166	293.3	7.9				mg/L	17	Standard
	I	127	378677.0	7.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.194	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.862	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.277
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.576
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703133909
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Method 6020 - Summary Report

Sample ID: L1703133911
Sample Date/Time: Monday, March 27, 2017 14:52:55
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	296114.4	1.6				ug/L	262785	Standard
	Be	9	670.0	2.7	**0.2369**	0.006	2.7	ug/L	28	Standard
	Al	27	8265953.5	0.9	**42.4078**	0.378	0.9	ug/L	2187	Standard
	Sc	45	43557.5	2.5				ug/L	39299	Standard
	Ti	47	215.3	1.8	**0.4879**	0.012	2.4	ug/L	82	Standard
	V	51	1000.1	31.0	**-0.0964**	0.035	36.5	ug/L	1876	Standard
	Cr	52	10377.9	0.9	**0.2481**	0.019	7.5	ug/L	8221	Standard
	Cr	53	5976.2	7.6	**4.7434**	0.473	10.0	ug/L	1083	Standard
	Mn	55	8553427.5	1.6	**602.8884**	7.195	1.2	ug/L	2738	Standard
	Co	59	2833.3	1.1	**0.2072**	0.003	1.6	ug/L	635	Standard
	Ni	60	1739.4	1.1	**0.6473**	0.008	1.2	ug/L	261	Standard
	Cu	65	2335.8	0.9	**0.6827**	0.013	2.0	ug/L	660	Standard
	Zn	66	9302.5	1.3	**6.0747**	0.074	1.2	ug/L	558	Standard
>	**Ge**	72	836280.1	0.6				ug/L	807251	Standard
	As	75	714.3	2.7	**0.5491**	0.013	2.3	ug/L	-43	Standard
	Se	82	301.3	5.5	**2.2786**	0.116	5.1	ug/L	18	Standard
	Se-1	77	485.0	4.9	**3.8591**	0.264	6.8	ug/L	127	Standard
>	**Ga**	71	65.0	20.4				mg/L	32	Standard
	Rb	85	13881.4	1.8				ug/L	27	Standard
	Y	89	607537.7	0.4				ug/L	534994	Standard
>	**Rh**	103	45.0	50.9				ug/L	20	Standard
	Mo	98	49.4	19.6	**-0.0135**	0.002	16.3	ug/L	285	Standard
	Ag	107	170.3	10.0	**0.0050**	0.002	46.1	ug/L	129	Standard
	Cd	111	303.9	8.3	**0.1381**	0.013	9.6	mg/L	6	Standard
	Cd	114	751.0	9.5	**0.1279**	0.014	11.3	ug/L	46	Standard
>	**In**	115	687054.0	0.9				ug/L	679215	Standard
	Sn	118	336.7	10.2	**0.0460**	0.030	65.3	ug/L	411	Standard
	Sb	123	165.4	19.5	**-0.0010**	0.006	553.1	ug/L	497	Standard
	Ba	135	689271.3	1.2	**319.8037**	5.985	1.9	ug/L	43	Standard
	Ce	140	25598.3	0.7				ug/L	22	Standard
>	**Tb**	159	1032218.4	1.1				ug/L	983965	Standard
	Ho	165	1471.7	2.1				ug/L	10	Standard
	Tl	203	695.7	1.8	**0.0532**	0.002	3.9	ug/L	248	Standard
	Tl	205	1695.1	12.0	**0.0509**	0.010	19.4	ug/L	620	Standard
	Pb	206	770.0	2.7	**0.0348**	0.002	6.3	ug/L	503	Standard
	Pb	207	661.7	2.6	**0.0355**	0.004	11.2	ug/L	406	Standard
	Pb	208	799.0	2.2	**0.0378**	0.004	9.3	ug/L	497	Standard
	U	238	70.3	29.1	**0.0116**	0.004	31.8	ug/L	17	Standard
>	**Bi**	209	599666.9	1.2				ug/L	559221	Standard

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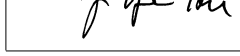

⌈	**Na**	23	18.3	41.7	**9.2380**	4.297	46.5	mg/L	2	Standard
|	**Mg**	24	2366.9	3.8	**26.0407**	1.032	4.0	mg/L	33	Standard
|	**K**	39	176.7	4.3	**0.9174**	0.022	2.4	mg/L	18	Standard
|	**Ca**	43	83.3	15.1	**-6.3302**	18.753	296.2	mg/L	72	Standard
|	**Fe**	54	611.0	5.6	**3.0113**	0.242	8.0	mg/L	29	Standard
|	**Fe**	57	580.0	11.3	**2.4814**	1.293	52.1	mg/L	382	Standard
⌊>	**Sc-1**	45	43557.5	2.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	3.3	96.4				ug/L	3	Standard
	Br	81	146761.3	3.5				ug/L	2287	Standard
	P	31	86.7	24.0				ug/L	80	Standard
	S	34	43.3	17.6				ug/L	45	Standard
	Sr	88	175.0	20.0				ug/L	178	Standard
	C	12	50.0	20.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	1741.1	4.9				mg/L	16	Standard
	Ho-1	165	1471.7	2.1				mg/L	10	Standard
	Er	166	1510.1	6.3				mg/L	17	Standard
	I	127	55324.3	4.4				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		112.683	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		103.596	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.154
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.233
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703133913
Sample Date/Time: Monday, March 27, 2017 14:56:00
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	294379.2	1.4				ug/L	262785	Standard
	Be	9	185.0	18.9	**0.0648**	0.012	18.1	ug/L	28	Standard
	Al	27	10001915.5	0.8	**51.6162**	0.318	0.6	ug/L	2187	Standard
	Sc	45	43122.9	0.9				ug/L	39299	Standard
	Ti	47	752.7	20.0	**2.4155**	0.489	20.2	ug/L	82	Standard
	V	51	3055.7	6.3	**0.1334**	0.024	18.2	ug/L	1876	Standard
	Cr	52	34567.1	1.6	**3.1471**	0.038	1.2	ug/L	8221	Standard
	Cr	53	9144.4	2.3	**7.7692**	0.177	2.3	ug/L	1083	Standard
	Mn	55	3404680.7	0.7	**239.1240**	3.308	1.4	ug/L	2738	Standard
	Co	59	25736.8	0.4	**2.3256**	0.049	2.1	ug/L	635	Standard
	Ni	60	40786.8	1.4	**17.5296**	0.288	1.6	ug/L	261	Standard
	Cu	65	2000.1	2.2	**0.5381**	0.006	1.1	ug/L	660	Standard
	Zn	66	12408.4	1.2	**8.2245**	0.215	2.6	ug/L	558	Standard
>	Ge	72	839043.2	1.8				ug/L	807251	Standard
	As	75	3651.7	0.7	**2.6004**	0.028	1.1	ug/L	-43	Standard
	Se	82	367.3	1.6	**2.7855**	0.040	1.4	ug/L	18	Standard
	Se-1	77	476.0	3.5	**3.7439**	0.097	2.6	ug/L	127	Standard
>	Ga	71	188.3	6.1				mg/L	32	Standard
	Rb	85	25960.6	1.3				ug/L	27	Standard
	Y	89	573204.4	1.4				ug/L	534994	Standard
>	Rh	103	81.7	19.7				ug/L	20	Standard
	Mo	98	278.6	8.3	**0.0383**	0.006	15.0	ug/L	285	Standard
	Ag	107	119.3	6.5	**-0.0020**	0.001	63.0	ug/L	129	Standard
	Cd	111	585.3	2.4	**0.2755**	0.003	0.9	mg/L	6	Standard
	Cd	114	1535.9	2.2	**0.2744**	0.004	1.5	ug/L	46	Standard
>	In	115	682461.8	1.7				ug/L	679215	Standard
	Sn	118	343.7	4.2	**0.0537**	0.013	24.6	ug/L	411	Standard
	Sb	123	205.5	7.8	**0.0066**	0.004	54.0	ug/L	497	Standard
	Ba	135	390771.2	0.8	**182.5457**	4.049	2.2	ug/L	43	Standard
	Ce	140	10201.8	4.4				ug/L	22	Standard
>	Tb	159	1043775.8	0.5				ug/L	983965	Standard
	Ho	165	243.3	6.3				ug/L	10	Standard
	Tl	203	598.3	10.0	**0.0427**	0.007	16.2	ug/L	248	Standard
	Tl	205	1480.1	6.8	**0.0413**	0.005	12.5	ug/L	620	Standard
	Pb	206	979.4	2.8	**0.0667**	0.004	5.6	ug/L	503	Standard
	Pb	207	832.4	3.0	**0.0644**	0.004	5.9	ug/L	406	Standard
	Pb	208	965.0	1.0	**0.0622**	0.001	2.0	ug/L	497	Standard
	U	238	43.0	17.6	**0.0066**	0.001	21.4	ug/L	17	Standard
>	Bi	209	591839.7	0.2				ug/L	559221	Standard

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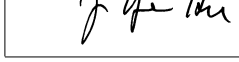

	Na	23	16.7	34.6	**8.4293**	3.345	39.7	mg/L	2	Standard
	Mg	24	3797.1	1.2	**42.5205**	0.203	0.5	mg/L	33	Standard
	K	39	231.7	12.5	**1.2655**	0.185	14.6	mg/L	18	Standard
	Ca	43	56.7	25.5	**-40.8370**	18.870	46.2	mg/L	72	Standard
	Fe	54	2175.6	3.5	**11.3490**	0.489	4.3	mg/L	29	Standard
	Fe	57	965.0	5.6	**9.4104**	1.027	10.9	mg/L	382	Standard
>	**Sc-1**	45	43122.9	0.9				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	185394.8	3.2				ug/L	2287	Standard
	P	31	100.0	10.0				ug/L	80	Standard
	S	34	43.3	24.0				ug/L	45	Standard
	Sr	88	178.3	10.6				ug/L	178	Standard
	C	12	86.7	24.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	310.2	21.2				mg/L	16	Standard
	Ho-1	165	243.3	6.3				mg/L	10	Standard
	Er	166	273.3	5.6				mg/L	17	Standard
	I	127	436790.4	9.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.023	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.938	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.478
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.833
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1703133913
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Method 6020 - Summary Report

Sample ID: L1703133915
Sample Date/Time: Monday, March 27, 2017 14:59:05
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	331715.2	0.2				ug/L	262785	Standard
	Be	9	6903.2	2.8	**2.1890**	0.066	3.0	ug/L	28	Standard
	Al	27	12770668.8	1.0	**58.4852**	0.656	1.1	ug/L	2187	Standard
	Sc	45	77675.3	1.8				ug/L	39299	Standard
	Ti	47	113168.9	2.1	**400.6135**	10.144	2.5	ug/L	82	Standard
	V	51	739289.5	0.9	**81.1255**	1.230	1.5	ug/L	1876	Standard
	Cr	52	632295.5	1.0	**73.6078**	1.142	1.6	ug/L	8221	Standard
	Cr	53	79920.2	0.5	**74.5301**	0.796	1.1	ug/L	1083	Standard
	Mn	55	11528686.9	1.2	**796.4199**	13.454	1.7	ug/L	2738	Standard
	Co	59	139068.1	1.6	**12.5936**	0.274	2.2	ug/L	635	Standard
	Ni	60	120778.5	1.4	**51.2377**	1.002	2.0	ug/L	261	Standard
	Cu	65	94130.2	1.3	**38.6635**	0.645	1.7	ug/L	660	Standard
	Zn	66	307592.7	1.5	**210.7548**	4.074	1.9	ug/L	558	Standard
>	**Ge**	72	853398.8	0.6				ug/L	807251	Standard
	As	75	10783.3	2.2	**7.4577**	0.202	2.7	ug/L	-43	Standard
	Se	82	430.3	3.7	**3.2194**	0.142	4.4	ug/L	18	Standard
	Se-1	77	520.0	1.0	**4.1242**	0.088	2.1	ug/L	127	Standard
>	**Ga**	71	99170.3	2.3				mg/L	32	Standard
	Rb	85	676370.9	2.0				ug/L	27	Standard
	Y	89	854024.2	0.4				ug/L	534994	Standard
>	**Rh**	103	78.3	9.8				ug/L	20	Standard
	Mo	98	3509.2	3.0	**0.7632**	0.015	2.0	ug/L	285	Standard
	Ag	107	945.7	3.7	**0.1127**	0.003	3.1	ug/L	129	Standard
	Cd	111	4150.0	2.6	**1.9943**	0.037	1.8	mg/L	6	Standard
	Cd	114	10667.4	3.0	**1.9596**	0.039	2.0	ug/L	46	Standard
>	**In**	115	685901.4	1.1				ug/L	679215	Standard
	Sn	118	423.0	10.2	**0.1192**	0.039	32.6	ug/L	411	Standard
	Sb	123	1126.4	6.4	**0.1739**	0.011	6.4	ug/L	497	Standard
	Ba	135	641214.8	2.2	**297.9542**	3.338	1.1	ug/L	43	Standard
	Ce	140	973245.4	2.1				ug/L	22	Standard
>	**Tb**	159	1080865.5	1.9				ug/L	983965	Standard
	Ho	165	19272.3	4.3				ug/L	10	Standard
	Tl	203	4004.5	0.9	**0.4316**	0.007	1.7	ug/L	248	Standard
	Tl	205	9854.9	4.1	**0.4423**	0.011	2.5	ug/L	620	Standard
	Pb	206	158228.1	3.2	**22.2197**	0.242	1.1	ug/L	503	Standard
	Pb	207	128168.5	3.2	**19.9539**	0.190	0.9	ug/L	406	Standard
	Pb	208	158766.5	3.4	**21.1961**	0.253	1.2	ug/L	497	Standard
	U	238	12108.8	5.3	**2.1983**	0.070	3.2	ug/L	17	Standard
>	**Bi**	209	610305.0	2.3				ug/L	559221	Standard

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	Na	23	13.3	21.7	**3.1414**	0.845	26.9	mg/L	2	Standard
	Mg	24	3687.1	1.6	**22.6781**	0.356	1.6	mg/L	33	Standard
	K	39	541.7	13.4	**1.6900**	0.277	16.4	mg/L	18	Standard
	Ca	43	75.0	23.1	**-60.8136**	11.876	19.5	mg/L	72	Standard
	Fe	54	7792.5	0.7	**22.7664**	0.305	1.3	mg/L	29	Standard
	Fe	57	2478.5	6.8	**16.7043**	1.591	9.5	mg/L	382	Standard
>	**Sc-1**	45	77675.3	1.8				mg/L	39299	Standard
	Cl	35	5.3	43.3				ug/L	4	Standard
	Kr	83	3.0	88.2				ug/L	3	Standard
	Br	81	128908.2	7.7				ug/L	2287	Standard
	P	31	170.0	11.8				ug/L	80	Standard
	S	34	35.0	37.8				ug/L	45	Standard
	Sr	88	181.7	18.3				ug/L	178	Standard
	C	12	140.0	7.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	260.0	23.4				mg/L	3	Standard
	Dy	164	28789.2	4.6				mg/L	16	Standard
	Ho-1	165	19272.3	4.3				mg/L	10	Standard
	Er	166	18227.6	2.4				mg/L	17	Standard
	I	127	178841.3	7.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.231	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.717	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		100.984
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		109.135
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1703133915
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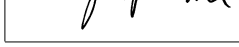

Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 15:02:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	297901.6	2.8				ug/L	262785	Standard
	Be	9	141316.0	0.7	**49.9438**	1.118	2.2	ug/L	28	Standard
	Al	27	8961192.5	1.0	**45.7115**	0.869	1.9	ug/L	2187	Standard
	Sc	45	41996.5	1.5				ug/L	39299	Standard
	Ti	47	29416.9	1.1	**103.7400**	0.521	0.5	ug/L	82	Standard
	V	51	448126.3	0.7	**49.0091**	0.051	0.1	ug/L	1876	Standard
	Cr	52	424915.4	1.2	**49.0523**	0.420	0.9	ug/L	8221	Standard
	Cr	53	53235.0	1.3	**49.2180**	0.475	1.0	ug/L	1083	Standard
	Mn	55	718842.3	0.4	**49.4094**	0.427	0.9	ug/L	2738	Standard
	Co	59	544197.4	0.9	**49.3579**	0.124	0.3	ug/L	635	Standard
	Ni	60	116616.8	1.3	**49.3825**	0.345	0.7	ug/L	261	Standard
	Cu	65	121445.5	1.6	**49.8855**	0.542	1.1	ug/L	660	Standard
	Zn	66	73179.6	1.0	**49.7177**	0.235	0.5	ug/L	558	Standard
>	Ge	72	854795.4	0.6				ug/L	807251	Standard
	As	75	72973.0	0.6	**50.1028**	0.014	0.0	ug/L	-43	Standard
	Se	82	6776.5	0.7	**51.7094**	0.684	1.3	ug/L	18	Standard
	Se-1	77	4990.5	3.6	**51.2966**	1.686	3.3	ug/L	127	Standard
>	Ga	71	93.3	12.4				mg/L	32	Standard
	Rb	85	538.3	21.4				ug/L	27	Standard
	Y	89	581815.0	1.4				ug/L	534994	Standard
>	Rh	103	38.3	19.9				ug/L	20	Standard
	Mo	98	477389.3	0.7	**104.3574**	1.370	1.3	ug/L	285	Standard
	Ag	107	387202.2	0.5	**52.3387**	0.637	1.2	ug/L	129	Standard
	Cd	111	110447.4	0.3	**51.9000**	0.454	0.9	mg/L	6	Standard
	Cd	114	285539.7	0.8	**51.3558**	0.565	1.1	ug/L	46	Standard
>	In	115	704365.0	0.8				ug/L	679215	Standard
	Sn	118	63721.7	0.2	**51.9720**	0.372	0.7	ug/L	411	Standard
	Sb	123	284945.7	0.1	**50.4658**	0.469	0.9	ug/L	497	Standard
	Ba	135	109947.2	1.0	**49.7417**	0.824	1.7	ug/L	43	Standard
	Ce	140	341.7	22.9				ug/L	22	Standard
>	Tb	159	1059609.7	1.2				ug/L	983965	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	441703.3	0.5	**50.4630**	0.768	1.5	ug/L	248	Standard
	Tl	205	1046544.9	0.8	**50.1526**	0.336	0.7	ug/L	620	Standard
	Pb	206	356717.7	0.2	**49.9883**	0.588	1.2	ug/L	503	Standard
	Pb	207	323034.0	0.6	**50.1953**	0.318	0.6	ug/L	406	Standard
	Pb	208	379565.0	0.4	**50.5726**	0.631	1.2	ug/L	497	Standard
	U	238	300644.7	1.0	**54.4100**	0.496	0.9	ug/L	17	Standard
>	Bi	209	612872.8	1.1				ug/L	559221	Standard

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⌈	**Na**	23	6.7	114.6	**2.8488**	4.444	156.0	mg/L	2	Standard
|	**Mg**	24	438.3	13.3	**4.5673**	0.657	14.4	mg/L	33	Standard
|	**K**	39	688.3	13.7	**4.1714**	0.605	14.5	mg/L	18	Standard
|	**Ca**	43	43.3	17.6	**-56.9859**	9.559	16.8	mg/L	72	Standard
|	**Fe**	54	979.2	9.9	**5.1345**	0.526	10.2	mg/L	29	Standard
|	**Fe**	57	611.7	11.2	**3.4193**	1.144	33.5	mg/L	382	Standard
⌊>	**Sc-1**	45	41996.5	1.5				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	4.3	35.3				ug/L	3	Standard
	Br	81	5234.3	21.5				ug/L	2287	Standard
	P	31	96.7	7.9				ug/L	80	Standard
	S	34	48.3	11.9				ug/L	45	Standard
	Sr	88	163.3	9.8				ug/L	178	Standard
	C	12	30.0	88.2				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	15.7	36.9				mg/L	16	Standard
	Ho-1	165	11.7	89.2				mg/L	10	Standard
	Er	166	20.0	50.0				mg/L	17	Standard
	I	127	10133.6	30.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9	99.888		
⌊	Al	27	91.423		
⌈	Sc	45			
|	Ti	47	103.740		
|	V	51	98.018		
|	Cr	52	98.105		
|	Cr	53			
|	Mn	55	98.819		
|	Co	59	98.716		
|	Ni	60	98.765		
|	Cu	65	99.771		
|	Zn	66	99.435		
|>	Ge	72		105.890	
|	As	75	100.206		
|	Se	82	103.419		
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.357		
Ag	107	104.677		
Cd	111	103.800		
Cd	114			
In	115		103.703	
Sn	118	103.944		
Sb	123	100.932		
Ba	135	99.483		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.926		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.145		
U	238	108.820		
Bi	209		109.594	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 15:05:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	291166.3	1.1				ug/L	262785	Standard
	Be	9	70.0	35.7	**0.0241**	0.009	37.3	ug/L	28	Standard
	Al	27	3802.3	75.8	**0.0137**	0.015	110.3	ug/L	2187	Standard
	Sc	45	40943.6	2.1				ug/L	39299	Standard
	Ti	47	49.7	45.9	**-0.1107**	0.084	75.8	ug/L	82	Standard
	V	51	1501.8	11.0	**-0.0401**	0.020	50.1	ug/L	1876	Standard
	Cr	52	6798.2	1.6	**-0.1837**	0.011	5.9	ug/L	8221	Standard
	Cr	53	1071.7	6.7	**0.0092**	0.068	743.9	ug/L	1083	Standard
	Mn	55	3626.8	40.2	**0.0779**	0.105	134.6	ug/L	2738	Standard
	Co	59	404.3	28.0	**-0.0182**	0.011	58.9	ug/L	635	Standard
	Ni	60	287.3	8.4	**0.0174**	0.012	67.1	ug/L	261	Standard
	Cu	65	764.7	2.1	**0.0188**	0.010	53.5	ug/L	660	Standard
	Zn	66	626.3	5.9	**-0.0044**	0.028	628.5	ug/L	558	Standard
>	Ge	72	837021.9	1.1				ug/L	807251	Standard
	As	75	-32.1	87.8	**0.0256**	0.020	77.7	ug/L	-43	Standard
	Se	82	22.4	13.9	**0.1006**	0.024	23.6	ug/L	18	Standard
	Se-1	77	116.7	5.7	**-0.1156**	0.085	73.2	ug/L	127	Standard
>	Ga	71	40.0	37.5				mg/L	32	Standard
	Rb	85	95.0	67.2				ug/L	27	Standard
	Y	89	575486.1	1.9				ug/L	534994	Standard
>	Rh	103	21.7	13.3				ug/L	20	Standard
	Mo	98	372.1	22.0	**0.0585**	0.018	31.3	ug/L	285	Standard
	Ag	107	190.3	27.2	**0.0077**	0.007	93.3	ug/L	129	Standard
	Cd	111	12.5	125.0	**-0.0024**	0.008	311.8	mg/L	6	Standard
	Cd	114	64.3	62.5	**0.0011**	0.007	670.9	ug/L	46	Standard
>	In	115	689820.4	0.0				ug/L	679215	Standard
	Sn	118	337.7	4.1	**0.0455**	0.012	25.6	ug/L	411	Standard
	Sb	123	355.9	16.1	**0.0334**	0.010	31.0	ug/L	497	Standard
	Ba	135	144.0	88.6	**0.0472**	0.059	125.0	ug/L	43	Standard
	Ce	140	105.0	112.0				ug/L	22	Standard
>	Tb	159	1028385.3	0.6				ug/L	983965	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	170.0	27.7	**-0.0082**	0.005	66.6	ug/L	248	Standard
	Tl	205	406.7	35.6	**-0.0122**	0.007	57.6	ug/L	620	Standard
	Pb	206	620.0	10.2	**0.0134**	0.009	64.9	ug/L	503	Standard
	Pb	207	518.7	13.5	**0.0128**	0.011	84.0	ug/L	406	Standard
	Pb	208	625.3	7.7	**0.0143**	0.007	45.7	ug/L	497	Standard
	U	238	66.0	71.9	**0.0108**	0.009	81.1	ug/L	17	Standard
>	Bi	209	598791.0	1.0				ug/L	559221	Standard

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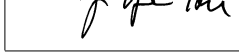

	Na	23	1.7	173.2	**-0.0757**	1.687	2228.8	mg/L	2	Standard
	Mg	24	35.0	42.9	**-0.1194**	0.170	142.7	mg/L	33	Standard
	K	39	13.3	43.3	**-0.0654**	0.039	59.5	mg/L	18	Standard
	Ca	43	35.0	37.8	**-66.8843**	18.775	28.1	mg/L	72	Standard
	Fe	54	36.4	57.4	**0.0011**	0.121	10616.2	mg/L	29	Standard
	Fe	57	336.7	17.2	**-1.4261**	1.131	79.3	mg/L	382	Standard
>	**Sc-1**	45	40943.6	2.1				mg/L	39299	Standard
	Cl	35	4.0	100.0				ug/L	4	Standard
	Kr	83	4.7	44.6				ug/L	3	Standard
	Br	81	4010.5	3.5				ug/L	2287	Standard
	P	31	83.3	27.1				ug/L	80	Standard
	S	34	55.0	9.1				ug/L	45	Standard
	Sr	88	141.7	10.2				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	19.4	3.8				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	10	Standard
	Er	166	13.3	114.6				mg/L	17	Standard
	I	127	9733.1	3.9				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.688	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.561
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.076
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW JH WG607249-02
Sample Date/Time: Monday, March 27, 2017 15:14:52
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	282116.3	3.7				ug/L	262785	Standard
	Be	9	55.0	24.1	**0.0194**	0.006	28.5	ug/L	28	Standard
	Al	27	3875.5	15.6	**0.0146**	0.003	18.6	ug/L	2187	Standard
	Sc	45	41695.6	1.4				ug/L	39299	Standard
	Ti	47	40.7	14.4	**-0.1399**	0.023	16.5	ug/L	82	Standard
	V	51	1571.1	10.9	**-0.0280**	0.023	83.1	ug/L	1876	Standard
	Cr	52	7723.6	3.1	**-0.0497**	0.043	87.0	ug/L	8221	Standard
	Cr	53	906.7	3.8	**-0.1288**	0.036	28.1	ug/L	1083	Standard
	Mn	55	3235.4	31.3	**0.0547**	0.070	127.2	ug/L	2738	Standard
	Co	59	404.0	12.9	**-0.0175**	0.004	25.6	ug/L	635	Standard
	Ni	60	307.3	4.4	**0.0291**	0.004	12.2	ug/L	261	Standard
	Cu	65	886.4	2.9	**0.0789**	0.006	7.9	ug/L	660	Standard
	Zn	66	1482.7	2.5	**0.6197**	0.008	1.2	ug/L	558	Standard
>	Ge	72	817508.9	1.9				ug/L	807251	Standard
	As	75	-23.0	60.2	**0.0317**	0.010	31.1	ug/L	-43	Standard
	Se	82	18.1	12.8	**0.0704**	0.017	23.5	ug/L	18	Standard
	Se-1	77	95.0	9.6	**-0.3244**	0.114	35.2	ug/L	127	Standard
>	Ga	71	40.0	12.5				mg/L	32	Standard
	Rb	85	73.3	23.9				ug/L	27	Standard
	Y	89	548481.1	2.9				ug/L	534994	Standard
>	Rh	103	13.3	43.3				ug/L	20	Standard
	Mo	98	94.5	30.3	**-0.0031**	0.006	200.1	ug/L	285	Standard
	Ag	107	126.7	14.9	**-0.0008**	0.002	294.9	ug/L	129	Standard
	Cd	111	8.9	69.9	**-0.0041**	0.003	72.4	mg/L	6	Standard
	Cd	114	64.1	45.5	**0.0012**	0.005	417.4	ug/L	46	Standard
>	In	115	675336.8	2.5				ug/L	679215	Standard
	Sn	118	283.3	3.2	**0.0052**	0.002	35.9	ug/L	411	Standard
	Sb	123	139.6	25.7	**-0.0053**	0.006	120.6	ug/L	497	Standard
	Ba	135	94.3	53.9	**0.0249**	0.023	92.6	ug/L	43	Standard
	Ce	140	53.3	56.5				ug/L	22	Standard
>	Tb	159	1000247.7	3.5				ug/L	983965	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	74.0	6.8	**-0.0192**	0.001	3.9	ug/L	248	Standard
	Tl	205	191.7	20.9	**-0.0225**	0.002	9.7	ug/L	620	Standard
	Pb	206	492.0	6.7	**-0.0029**	0.004	125.3	ug/L	503	Standard
	Pb	207	415.7	1.7	**-0.0015**	0.003	168.4	ug/L	406	Standard
	Pb	208	501.0	3.2	**-0.0006**	0.004	666.8	ug/L	497	Standard
	U	238	10.3	84.6	**0.0005**	0.002	313.9	ug/L	17	Standard
>	Bi	209	581522.5	2.6				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0601**	1.714	2854.5	mg/L	2	Standard
	Mg	24	31.7	24.1	**-0.1633**	0.093	56.8	mg/L	33	Standard
	K	39	11.7	49.5	**-0.0775**	0.037	48.0	mg/L	18	Standard
	Ca	43	45.0	72.9	**-54.6015**	43.816	80.2	mg/L	72	Standard
	Fe	54	41.2	68.2	**0.0217**	0.152	700.8	mg/L	29	Standard
	Fe	57	296.7	3.5	**-2.2794**	0.166	7.3	mg/L	382	Standard
>	**Sc-1**	45	41695.6	1.4				mg/L	39299	Standard
	Cl	35	3.3	69.3				ug/L	4	Standard
	Kr	83	4.0	0.0				ug/L	3	Standard
	Br	81	3337.0	7.4				ug/L	2287	Standard
	P	31	76.7	10.0				ug/L	80	Standard
	S	34	66.7	11.5				ug/L	45	Standard
	Sr	88	181.7	15.2				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	15.7	37.3				mg/L	16	Standard
	Ho-1	165	5.0	100.0				mg/L	10	Standard
	Er	166	20.0	100.0				mg/L	17	Standard
	I	127	7138.4	5.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.356	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.271	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.429
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.988
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW JH WG607249-02
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Method 6020 - Summary Report

Sample ID: LCSW JH WG607249-03
Sample Date/Time: Monday, March 27, 2017 15:17:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	283639.5	2.3				ug/L	262785	Standard
	Be	9	135441.0	0.2	**50.2695**	1.051	2.1	ug/L	28	Standard
	Al	27	8550.7	3.6	**0.0396**	0.002	5.8	ug/L	2187	Standard
	Sc	45	41622.1	1.5				ug/L	39299	Standard
	Ti	47	56.3	5.1	**-0.0879**	0.010	11.7	ug/L	82	Standard
	V	51	449038.7	1.0	**49.9317**	0.520	1.0	ug/L	1876	Standard
	Cr	52	427545.4	0.4	**50.2018**	0.079	0.2	ug/L	8221	Standard
	Cr	53	52865.4	0.6	**49.7010**	0.076	0.2	ug/L	1083	Standard
	Mn	55	717415.0	0.4	**50.1342**	0.152	0.3	ug/L	2738	Standard
	Co	59	544453.7	0.6	**50.2058**	0.288	0.6	ug/L	635	Standard
	Ni	60	118997.8	0.7	**51.2373**	0.520	1.0	ug/L	261	Standard
	Cu	65	123473.1	0.7	**51.5755**	0.340	0.7	ug/L	660	Standard
	Zn	66	73618.8	1.1	**50.8592**	0.359	0.7	ug/L	558	Standard
>	Ge	72	840785.2	0.4				ug/L	807251	Standard
	As	75	69786.7	0.4	**48.7158**	0.356	0.7	ug/L	-43	Standard
	Se	82	6662.9	0.3	**51.6871**	0.292	0.6	ug/L	18	Standard
	Se-1	77	4866.1	2.3	**50.8435**	1.152	2.3	ug/L	127	Standard
>	Ga	71	81.7	9.4				mg/L	32	Standard
	Rb	85	145.0	18.2				ug/L	27	Standard
	Y	89	570652.2	1.3				ug/L	534994	Standard
>	Rh	103	18.3	31.5				ug/L	20	Standard
	Mo	98	101.9	8.5	**-0.0020**	0.002	99.8	ug/L	285	Standard
	Ag	107	377093.0	0.7	**51.7238**	0.215	0.4	ug/L	129	Standard
	Cd	111	109156.0	0.8	**52.0510**	0.365	0.7	mg/L	6	Standard
	Cd	114	276891.7	0.3	**50.5367**	0.256	0.5	ug/L	46	Standard
>	In	115	694082.9	0.5				ug/L	679215	Standard
	Sn	118	334.3	4.4	**0.0411**	0.013	32.4	ug/L	411	Standard
	Sb	123	276749.6	0.6	**49.7376**	0.211	0.4	ug/L	497	Standard
	Ba	135	108785.8	0.8	**49.9435**	0.624	1.2	ug/L	43	Standard
	Ce	140	161.7	18.1				ug/L	22	Standard
>	Tb	159	1035101.4	0.3				ug/L	983965	Standard
	Ho	165	26.7	43.3				ug/L	10	Standard
	Tl	203	447710.0	0.1	**52.2991**	0.278	0.5	ug/L	248	Standard
	Tl	205	1062542.0	0.5	**52.0677**	0.308	0.6	ug/L	620	Standard
	Pb	206	362413.3	0.7	**51.9327**	0.652	1.3	ug/L	503	Standard
	Pb	207	313381.7	0.4	**49.7925**	0.417	0.8	ug/L	406	Standard
	Pb	208	369385.4	0.7	**50.3223**	0.394	0.8	ug/L	497	Standard
	U	238	281060.4	0.9	**52.0125**	0.608	1.2	ug/L	17	Standard
>	Bi	209	599354.4	0.5				ug/L	559221	Standard

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⌈	**Na**	23	1.7	173.2	**-0.0569**	1.720	3021.6	mg/L	2	Standard
|	**Mg**	24	31.7	9.1	**-0.1627**	0.038	23.7	mg/L	33	Standard
|	**K**	39	20.0	75.0	**-0.0255**	0.093	365.4	mg/L	18	Standard
|	**Ca**	43	43.3	24.0	**-56.4948**	13.319	23.6	mg/L	72	Standard
|	**Fe**	54	26.8	40.7	**-0.0565**	0.057	101.7	mg/L	29	Standard
|	**Fe**	57	356.7	12.7	**-1.1578**	0.913	78.8	mg/L	382	Standard
⌊>	**Sc-1**	45	41622.1	1.5				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	3.3	45.8				ug/L	3	Standard
	Br	81	3207.0	3.4				ug/L	2287	Standard
	P	31	73.3	35.0				ug/L	80	Standard
	S	34	43.3	6.7				ug/L	45	Standard
	Sr	88	136.7	21.4				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	3	Standard
	Dy	164	19.0	52.7				mg/L	16	Standard
	Ho-1	165	26.7	43.3				mg/L	10	Standard
	Er	166	20.0	86.6				mg/L	17	Standard
	I	127	4534.0	1.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		107.936	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		104.154	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.189
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.177
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW JH WG607249-03
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Method 6020 - Summary Report

Sample ID: L1703116101 WG607249-01
Sample Date/Time: Monday, March 27, 2017 15:21:03
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266117.1	1.7				ug/L	262785	Standard
	Be	9	133.3	47.5	**0.0514**	0.024	47.6	ug/L	28	Standard
	Al	27	701512.1	1.7	**3.9988**	0.006	0.2	ug/L	2187	Standard
	Sc	45	39516.5	3.1				ug/L	39299	Standard
	Ti	47	268.7	6.1	**0.7505**	0.053	7.0	ug/L	82	Standard
	V	51	4984.8	1.9	**0.3914**	0.016	4.1	ug/L	1876	Standard
	Cr	52	37619.3	0.6	**3.8556**	0.050	1.3	ug/L	8221	Standard
	Cr	53	5496.0	2.6	**4.6605**	0.085	1.8	ug/L	1083	Standard
	Mn	55	175818.6	1.2	**13.1143**	0.134	1.0	ug/L	2738	Standard
	Co	59	4198.2	2.0	**0.3620**	0.005	1.3	ug/L	635	Standard
	Ni	60	1942.5	3.6	**0.7964**	0.037	4.7	ug/L	261	Standard
	Cu	65	1198.4	2.5	**0.2387**	0.008	3.2	ug/L	660	Standard
	Zn	66	3560.1	0.2	**2.2318**	0.034	1.5	ug/L	558	Standard
>	Ge	72	779942.1	1.1				ug/L	807251	Standard
	As	75	355.3	8.0	**0.3153**	0.020	6.2	ug/L	-43	Standard
	Se	82	73.9	5.5	**0.5444**	0.036	6.6	ug/L	18	Standard
	Se-1	77	156.7	3.6	**0.4382**	0.045	10.3	ug/L	127	Standard
>	Ga	71	170.0	14.7				mg/L	32	Standard
	Rb	85	2205.2	3.1				ug/L	27	Standard
	Y	89	519687.0	2.4				ug/L	534994	Standard
>	Rh	103	21.7	35.3				ug/L	20	Standard
	Mo	98	1566.1	2.6	**0.3514**	0.006	1.8	ug/L	285	Standard
	Ag	107	203.7	26.0	**0.0116**	0.008	67.2	ug/L	129	Standard
	Cd	111	89.0	12.7	**0.0375**	0.006	15.0	mg/L	6	Standard
	Cd	114	266.0	12.2	**0.0418**	0.006	14.1	ug/L	46	Standard
>	In	115	641369.2	1.1				ug/L	679215	Standard
	Sn	118	211.3	6.4	**-0.0469**	0.010	22.1	ug/L	411	Standard
	Sb	123	1088.0	10.9	**0.1807**	0.022	12.3	ug/L	497	Standard
	Ba	135	11793.6	1.9	**5.8420**	0.075	1.3	ug/L	43	Standard
	Ce	140	10403.6	2.5				ug/L	22	Standard
>	Tb	159	962492.4	1.2				ug/L	983965	Standard
	Ho	165	200.0	11.5				ug/L	10	Standard
	Tl	203	569.7	16.8	**0.0433**	0.012	27.1	ug/L	248	Standard
	Tl	205	1341.7	17.4	**0.0384**	0.012	31.4	ug/L	620	Standard
	Pb	206	1075.7	5.0	**0.0900**	0.008	8.5	ug/L	503	Standard
	Pb	207	932.4	5.3	**0.0895**	0.008	8.9	ug/L	406	Standard
	Pb	208	1092.7	7.9	**0.0888**	0.012	13.5	ug/L	497	Standard
	U	238	171.3	26.7	**0.0326**	0.009	27.5	ug/L	17	Standard
>	Bi	209	558433.9	0.4				ug/L	559221	Standard

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⌈	**Na**	23	5.0	100.0	**2.0425**	3.035	148.6	mg/L	2	Standard
|	**Mg**	24	921.7	12.4	**10.8865**	1.558	14.3	mg/L	33	Standard
|	**K**	39	21.7	58.1	**-0.0055**	0.089	1635.4	mg/L	18	Standard
|	**Ca**	43	33.3	45.8	**-67.6472**	21.614	32.0	mg/L	72	Standard
|	**Fe**	54	99.3	13.4	**0.3712**	0.065	17.5	mg/L	29	Standard
|	**Fe**	57	326.7	7.1	**-1.4027**	0.260	18.5	mg/L	382	Standard
⌊>	**Sc-1**	45	39516.5	3.1				mg/L	39299	Standard
	Cl	35	2.7	114.6				ug/L	4	Standard
	Kr	83	5.7	27.0				ug/L	3	Standard
	Br	81	27528.3	3.0				ug/L	2287	Standard
	P	31	63.3	18.2				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	148.3	13.6				ug/L	178	Standard
	C	12	16.7	34.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	383.6	10.9				mg/L	16	Standard
	Ho-1	165	200.0	11.5				mg/L	10	Standard
	Er	166	203.3	20.5				mg/L	17	Standard
	I	127	39421.4	7.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		101.268	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		96.617	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.428
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.859
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116101 WG607249-01
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Method 6020 - Summary Report

Sample ID: L1703116102S WG607249-04
Sample Date/Time: Monday, March 27, 2017 15:24:09
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	268344.1	1.6				ug/L	262785	Standard
	Be	9	26643.4	1.2	**10.4497**	0.189	1.8	ug/L	28	Standard
	Al	27	730728.0	1.4	**4.1317**	0.088	2.1	ug/L	2187	Standard
	Sc	45	38498.9	0.7				ug/L	39299	Standard
	Ti	47	226.0	7.2	**0.5743**	0.062	10.8	ug/L	82	Standard
	V	51	88148.6	0.8	**10.2674**	0.138	1.3	ug/L	1876	Standard
	Cr	52	113787.3	0.3	**13.5025**	0.126	0.9	ug/L	8221	Standard
	Cr	53	14755.5	2.0	**14.0441**	0.243	1.7	ug/L	1083	Standard
	Mn	55	318958.6	0.2	**23.6293**	0.173	0.7	ug/L	2738	Standard
	Co	59	104750.9	0.5	**10.2363**	0.084	0.8	ug/L	635	Standard
	Ni	60	23561.3	1.7	**10.7131**	0.238	2.2	ug/L	261	Standard
	Cu	65	24238.4	0.3	**10.5352**	0.074	0.7	ug/L	660	Standard
	Zn	66	17497.4	0.2	**12.5348**	0.041	0.3	ug/L	558	Standard
>	Ge	72	789987.4	0.5				ug/L	807251	Standard
	As	75	14511.2	1.1	**10.8188**	0.135	1.2	ug/L	-43	Standard
	Se	82	1406.8	2.5	**11.5569**	0.289	2.5	ug/L	18	Standard
	Se-1	77	1108.4	3.4	**11.2840**	0.386	3.4	ug/L	127	Standard
>	Ga	71	143.3	8.1				mg/L	32	Standard
	Rb	85	2171.8	3.8				ug/L	27	Standard
	Y	89	531208.3	0.4				ug/L	534994	Standard
>	Rh	103	25.0	20.0				ug/L	20	Standard
	Mo	98	1537.8	1.8	**0.3435**	0.008	2.3	ug/L	285	Standard
	Ag	107	70722.7	0.2	**10.4479**	0.031	0.3	ug/L	129	Standard
	Cd	111	21231.6	0.4	**10.9130**	0.057	0.5	mg/L	6	Standard
	Cd	114	54636.5	1.9	**10.7465**	0.170	1.6	ug/L	46	Standard
>	In	115	643528.6	0.5				ug/L	679215	Standard
	Sn	118	193.7	8.0	**-0.0633**	0.013	20.9	ug/L	411	Standard
	Sb	123	53046.3	0.3	**10.2580**	0.066	0.6	ug/L	497	Standard
	Ba	135	31968.7	1.1	**15.8167**	0.243	1.5	ug/L	43	Standard
	Ce	140	11160.8	1.8				ug/L	22	Standard
>	Tb	159	961330.0	0.6				ug/L	983965	Standard
	Ho	165	268.3	2.2				ug/L	10	Standard
	Tl	203	83289.6	1.0	**10.2439**	0.070	0.7	ug/L	248	Standard
	Tl	205	198495.1	0.8	**10.2382**	0.087	0.9	ug/L	620	Standard
	Pb	206	67401.9	1.2	**10.1306**	0.091	0.9	ug/L	503	Standard
	Pb	207	58969.5	1.2	**9.8306**	0.068	0.7	ug/L	406	Standard
	Pb	208	69673.0	1.3	**9.9586**	0.085	0.9	ug/L	497	Standard
	U	238	52681.1	0.8	**10.2860**	0.043	0.4	ug/L	17	Standard
>	Bi	209	567985.7	0.5				ug/L	559221	Standard

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	Na	23	1.7	173.2	**0.0015**	1.82´125014.8		mg/L	2	Standard
	Mg	24	970.0	6.4	**11.7875**	0.836	7.1	mg/L	33	Standard
	K	39	15.0	57.7	**-0.0487**	0.060	123.2	mg/L	18	Standard
	Ca	43	46.7	16.4	**-46.5764**	11.567	24.8	mg/L	72	Standard
	Fe	54	68.4	19.9	**0.2039**	0.082	40.2	mg/L	29	Standard
	Fe	57	361.7	14.0	**-0.5384**	0.953	177.0	mg/L	382	Standard
>	**Sc-1**	45	38498.9	0.7				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	25337.8	2.5				ug/L	2287	Standard
	P	31	66.7	21.7				ug/L	80	Standard
	S	34	43.3	29.0				ug/L	45	Standard
	Sr	88	163.3	22.1				ug/L	178	Standard
	C	12	30.0	33.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	368.5	12.0				mg/L	16	Standard
	Ho-1	165	268.3	2.2				mg/L	10	Standard
	Er	166	240.0	14.4				mg/L	17	Standard
	I	127	43161.6	6.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.116	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.861	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.746
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.567
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116103SD WG607249-05
Sample Date/Time: Monday, March 27, 2017 15:27:15
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	271827.1	1.5				ug/L	262785	Standard
	Be	9	27022.4	2.0	**10.4607**	0.101	1.0	ug/L	28	Standard
	Al	27	815665.0	0.4	**4.5534**	0.074	1.6	ug/L	2187	Standard
	Sc	45	39508.1	2.0				ug/L	39299	Standard
	Ti	47	260.7	7.6	**0.7102**	0.073	10.3	ug/L	82	Standard
	V	51	89567.4	0.2	**10.4707**	0.026	0.3	ug/L	1876	Standard
	Cr	52	121330.5	0.2	**14.5146**	0.069	0.5	ug/L	8221	Standard
	Cr	53	16015.1	1.7	**15.3844**	0.207	1.3	ug/L	1083	Standard
	Mn	55	352333.9	0.5	**26.2066**	0.105	0.4	ug/L	2738	Standard
	Co	59	106873.9	0.4	**10.4795**	0.077	0.7	ug/L	635	Standard
	Ni	60	23938.6	1.6	**10.9218**	0.168	1.5	ug/L	261	Standard
	Cu	65	24182.3	1.0	**10.5458**	0.134	1.3	ug/L	660	Standard
	Zn	66	17711.0	0.6	**12.7368**	0.140	1.1	ug/L	558	Standard
>	Ge	72	787394.5	0.5				ug/L	807251	Standard
	As	75	14777.6	0.4	**11.0525**	0.053	0.5	ug/L	-43	Standard
	Se	82	1451.4	1.8	**11.9661**	0.273	2.3	ug/L	18	Standard
	Se-1	77	1173.4	1.5	**12.0722**	0.267	2.2	ug/L	127	Standard
>	Ga	71	178.3	18.2				mg/L	32	Standard
	Rb	85	2525.2	3.7				ug/L	27	Standard
	Y	89	520496.1	0.6				ug/L	534994	Standard
>	Rh	103	21.7	35.3				ug/L	20	Standard
	Mo	98	1694.2	1.7	**0.3795**	0.007	1.9	ug/L	285	Standard
	Ag	107	70973.5	1.6	**10.4494**	0.110	1.1	ug/L	129	Standard
	Cd	111	21267.7	1.1	**10.8961**	0.224	2.1	mg/L	6	Standard
	Cd	114	53900.2	1.6	**10.5659**	0.121	1.1	ug/L	46	Standard
>	In	115	645711.4	1.2				ug/L	679215	Standard
	Sn	118	204.7	3.4	**-0.0540**	0.007	12.6	ug/L	411	Standard
	Sb	123	53206.7	1.0	**10.2543**	0.063	0.6	ug/L	497	Standard
	Ba	135	34385.7	2.9	**16.9575**	0.545	3.2	ug/L	43	Standard
	Ce	140	13297.5	0.3				ug/L	22	Standard
>	Tb	159	961049.5	0.5				ug/L	983965	Standard
	Ho	165	260.0	8.8				ug/L	10	Standard
	Tl	203	84529.5	1.3	**10.3796**	0.118	1.1	ug/L	248	Standard
	Tl	205	202997.6	0.9	**10.4537**	0.092	0.9	ug/L	620	Standard
	Pb	206	68864.8	0.8	**10.3349**	0.077	0.7	ug/L	503	Standard
	Pb	207	59710.8	0.9	**9.9386**	0.064	0.6	ug/L	406	Standard
	Pb	208	70697.9	0.9	**10.0894**	0.075	0.7	ug/L	497	Standard
	U	238	53572.2	1.2	**10.4427**	0.110	1.1	ug/L	17	Standard
>	Bi	209	568929.7	0.3				ug/L	559221	Standard

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	Na	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
	Mg	24	1096.7	5.4	**13.0486**	0.942	7.2	mg/L	33	Standard
	K	39	35.0	14.3	**0.0824**	0.037	45.4	mg/L	18	Standard
	Ca	43	53.3	35.5	**-38.5358**	28.219	73.2	mg/L	72	Standard
	Fe	54	84.9	28.8	**0.2907**	0.150	51.6	mg/L	29	Standard
	Fe	57	333.3	8.3	**-1.2723**	0.401	31.5	mg/L	382	Standard
>	**Sc-1**	45	39508.1	2.0				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	28366.5	2.9				ug/L	2287	Standard
	P	31	76.7	22.9				ug/L	80	Standard
	S	34	38.3	32.8				ug/L	45	Standard
	Sr	88	168.3	31.8				ug/L	178	Standard
	C	12	30.0	57.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	460.7	8.2				mg/L	16	Standard
	Ho-1	165	260.0	8.8				mg/L	10	Standard
	Er	166	263.3	31.8				mg/L	17	Standard
	I	127	42304.1	5.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.441	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.540	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	95.067
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.736
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703116103SD WG607249-05
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Method 6020 - Summary Report

Sample ID: L1703116104
Sample Date/Time: Monday, March 27, 2017 15:30:20
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	265686.1	1.3				ug/L	262785	Standard
	Be	9	45.0	11.1	**0.0166**	0.002	10.6	ug/L	28	Standard
	Al	27	265672.4	1.0	**1.5133**	0.030	2.0	ug/L	2187	Standard
	Sc	45	38219.8	0.2				ug/L	39299	Standard
	Ti	47	71.7	10.5	**-0.0097**	0.028	284.9	ug/L	82	Standard
	V	51	1509.1	9.1	**-0.0250**	0.017	67.4	ug/L	1876	Standard
	Cr	52	5957.5	3.7	**-0.2237**	0.033	14.8	ug/L	8221	Standard
	Cr	53	935.0	6.8	**-0.0455**	0.073	160.1	ug/L	1083	Standard
	Mn	55	168028.6	0.8	**12.6670**	0.159	1.3	ug/L	2738	Standard
	Co	59	392.7	13.1	**-0.0163**	0.005	33.0	ug/L	635	Standard
	Ni	60	306.3	3.6	**0.0369**	0.006	16.4	ug/L	261	Standard
	Cu	65	769.4	3.4	**0.0484**	0.014	28.6	ug/L	660	Standard
	Zn	66	1928.8	0.6	**1.0222**	0.016	1.5	ug/L	558	Standard
>	Ge	72	771354.7	0.6				ug/L	807251	Standard
	As	75	57.2	17.8	**0.0918**	0.008	8.7	ug/L	-43	Standard
	Se	82	33.4	15.9	**0.2085**	0.044	20.9	ug/L	18	Standard
	Se-1	77	118.3	7.1	**0.0107**	0.106	989.5	ug/L	127	Standard
>	Ga	71	38.3	15.1				mg/L	32	Standard
	Rb	85	805.0	11.3				ug/L	27	Standard
	Y	89	514219.0	0.8				ug/L	534994	Standard
>	Rh	103	13.3	21.7				ug/L	20	Standard
	Mo	98	83.4	9.4	**-0.0043**	0.002	45.0	ug/L	285	Standard
	Ag	107	122.7	10.1	**-0.0002**	0.002	914.8	ug/L	129	Standard
	Cd	111	7.6	40.5	**-0.0045**	0.002	35.7	mg/L	6	Standard
	Cd	114	41.3	42.3	**-0.0025**	0.003	140.0	ug/L	46	Standard
>	In	115	634498.3	0.4				ug/L	679215	Standard
	Sn	118	201.0	2.8	**-0.0541**	0.005	8.5	ug/L	411	Standard
	Sb	123	160.2	3.9	**0.0005**	0.001	247.6	ug/L	497	Standard
	Ba	135	9654.1	2.1	**4.8309**	0.113	2.3	ug/L	43	Standard
	Ce	140	511.7	14.7				ug/L	22	Standard
>	Tb	159	923871.5	0.9				ug/L	983965	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	546.3	6.3	**0.0408**	0.004	9.1	ug/L	248	Standard
	Tl	205	1376.7	9.2	**0.0407**	0.006	15.0	ug/L	620	Standard
	Pb	206	556.3	1.3	**0.0106**	0.000	3.2	ug/L	503	Standard
	Pb	207	465.3	3.6	**0.0102**	0.003	32.2	ug/L	406	Standard
	Pb	208	613.7	7.5	**0.0193**	0.007	35.4	ug/L	497	Standard
	U	238	21.0	17.2	**0.0028**	0.001	25.2	ug/L	17	Standard
>	Bi	209	555012.6	0.9				ug/L	559221	Standard

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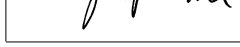

	Na	23	3.3	86.6	**1.0820**	1.846	170.6	mg/L	2	Standard
	Mg	24	128.3	19.2	**1.1070**	0.317	28.6	mg/L	33	Standard
	K	39	25.0	52.9	**0.0209**	0.091	437.0	mg/L	18	Standard
	Ca	43	26.7	108.3	**-75.8902**	43.229	57.0	mg/L	72	Standard
	Fe	54	186.3	13.7	**0.9125**	0.151	16.6	mg/L	29	Standard
	Fe	57	390.0	18.2	**0.0860**	1.419	1649.1	mg/L	382	Standard
>	**Sc-1**	45	38219.8	0.2				mg/L	39299	Standard
	Cl	35	3.3	69.3				ug/L	4	Standard
	Kr	83	3.0	0.0				ug/L	3	Standard
	Br	81	9066.1	6.3				ug/L	2287	Standard
	P	31	55.0	27.3				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	156.7	19.5				ug/L	178	Standard
	C	12	26.7	43.3				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	5.9	201.6				mg/L	16	Standard
	Ho-1	165	10.0	86.6				mg/L	10	Standard
	Er	166	16.7	69.3				mg/L	17	Standard
	I	127	15828.3	2.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.104	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.553	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	93.416
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.248
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116105
Sample Date/Time: Monday, March 27, 2017 15:33:25
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	278041.6	1.4				ug/L	262785	Standard
	Be	9	110.0	31.8	**0.0403**	0.013	31.4	ug/L	28	Standard
	Al	27	3693336.2	2.9	**20.1729**	0.377	1.9	ug/L	2187	Standard
	Sc	45	39115.5	4.5				ug/L	39299	Standard
	Ti	47	148.3	15.5	**0.2834**	0.095	33.6	ug/L	82	Standard
	V	51	682.6	28.9	**-0.1268**	0.023	18.5	ug/L	1876	Standard
	Cr	52	7695.6	4.0	**-0.0110**	0.032	288.3	ug/L	8221	Standard
	Cr	53	5994.5	8.2	**5.1548**	0.433	8.4	ug/L	1083	Standard
	Mn	55	295153.9	0.8	**22.0721**	0.340	1.5	ug/L	2738	Standard
	Co	59	2652.2	2.4	**0.2075**	0.009	4.4	ug/L	635	Standard
	Ni	60	2653.2	2.8	**1.1230**	0.020	1.8	ug/L	261	Standard
	Cu	65	1094.4	1.6	**0.1902**	0.011	6.0	ug/L	660	Standard
	Zn	66	3687.8	1.3	**2.3195**	0.040	1.7	ug/L	558	Standard
>	Ge	72	782262.8	1.3				ug/L	807251	Standard
	As	75	402.5	11.3	**0.3500**	0.035	10.0	ug/L	-43	Standard
	Se	82	175.3	4.7	**1.3897**	0.079	5.7	ug/L	18	Standard
	Se-1	77	454.0	6.7	**3.8601**	0.284	7.4	ug/L	127	Standard
>	Ga	71	78.3	25.8				mg/L	32	Standard
	Rb	85	1970.1	4.8				ug/L	27	Standard
	Y	89	531986.3	1.5				ug/L	534994	Standard
>	Rh	103	33.3	22.9				ug/L	20	Standard
	Mo	98	56.0	7.2	**-0.0111**	0.001	7.8	ug/L	285	Standard
	Ag	107	128.7	14.3	**0.0005**	0.003	546.1	ug/L	129	Standard
	Cd	111	28.6	17.3	**0.0064**	0.003	43.1	mg/L	6	Standard
	Cd	114	79.8	10.9	**0.0051**	0.002	38.5	ug/L	46	Standard
>	In	115	641700.8	1.6				ug/L	679215	Standard
	Sn	118	194.3	2.5	**-0.0622**	0.003	4.2	ug/L	411	Standard
	Sb	123	206.3	19.5	**0.0091**	0.008	84.5	ug/L	497	Standard
	Ba	135	13513.4	0.7	**6.6941**	0.072	1.1	ug/L	43	Standard
	Ce	140	2151.8	0.7				ug/L	22	Standard
>	Tb	159	959890.7	1.9				ug/L	983965	Standard
	Ho	165	75.0	30.6				ug/L	10	Standard
	Tl	203	598.7	7.6	**0.0469**	0.007	14.3	ug/L	248	Standard
	Tl	205	1385.1	11.7	**0.0406**	0.009	23.2	ug/L	620	Standard
	Pb	206	665.0	6.1	**0.0266**	0.007	26.6	ug/L	503	Standard
	Pb	207	567.7	1.5	**0.0270**	0.000	1.8	ug/L	406	Standard
	Pb	208	676.3	4.7	**0.0277**	0.004	15.2	ug/L	497	Standard
	U	238	32.3	33.9	**0.0050**	0.002	43.0	ug/L	17	Standard
>	Bi	209	559501.1	1.2				ug/L	559221	Standard

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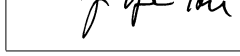

	Na	23	10.0	50.0	**5.1745**	3.090	59.7	mg/L	2	Standard
	Mg	24	3750.5	2.5	**46.4306**	2.937	6.3	mg/L	33	Standard
	K	39	16.7	17.3	**-0.0397**	0.015	36.9	mg/L	18	Standard
	Ca	43	43.3	46.6	**-52.7419**	29.292	55.5	mg/L	72	Standard
	Fe	54	22.6	25.0	**-0.0716**	0.027	37.8	mg/L	29	Standard
	Fe	57	346.7	12.6	**-0.9157**	1.097	119.8	mg/L	382	Standard
>	**Sc-1**	45	39115.5	4.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	4.0	66.1				ug/L	3	Standard
	Br	81	79461.3	3.0				ug/L	2287	Standard
	P	31	91.7	19.2				ug/L	80	Standard
	S	34	31.7	50.8				ug/L	45	Standard
	Sr	88	168.3	16.4				ug/L	178	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	105.8	8.6				mg/L	16	Standard
	Ho-1	165	75.0	30.6				mg/L	10	Standard
	Er	166	86.7	40.5				mg/L	17	Standard
	I	127	76865.6	9.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.806	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.905	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	94.477
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.050
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116105PS WG607276-03
Sample Date/Time: Monday, March 27, 2017 15:36:31
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	284117.4	0.2				ug/L	262785	Standard
	Be	9	141665.9	0.6	**52.4748**	0.279	0.5	ug/L	28	Standard
	Al	27	3700784.9	2.1	**19.7828**	0.387	2.0	ug/L	2187	Standard
	Sc	45	39357.7	1.9				ug/L	39299	Standard
	Ti	47	128.0	7.5	**0.2007**	0.039	19.5	ug/L	82	Standard
	V	51	432422.6	0.7	**51.3088**	0.575	1.1	ug/L	1876	Standard
	Cr	52	408171.7	0.7	**51.1535**	0.404	0.8	ug/L	8221	Standard
	Cr	53	56234.2	1.0	**56.5460**	0.712	1.3	ug/L	1083	Standard
	Mn	55	975562.2	0.8	**72.8160**	0.444	0.6	ug/L	2738	Standard
	Co	59	532717.9	0.1	**52.4139**	0.258	0.5	ug/L	635	Standard
	Ni	60	115508.6	0.8	**53.0672**	0.587	1.1	ug/L	261	Standard
	Cu	65	120236.9	0.1	**53.5971**	0.264	0.5	ug/L	660	Standard
	Zn	66	80764.7	0.9	**59.6069**	0.533	0.9	ug/L	558	Standard
>	Ge	72	788047.0	0.4				ug/L	807251	Standard
	As	75	75870.2	1.6	**56.4985**	0.905	1.6	ug/L	-43	Standard
	Se	82	7324.4	0.8	**60.6344**	0.601	1.0	ug/L	18	Standard
	Se-1	77	5580.0	1.2	**62.5107**	0.525	0.8	ug/L	127	Standard
>	Ga	71	110.0	13.6				mg/L	32	Standard
	Rb	85	2130.1	2.5				ug/L	27	Standard
	Y	89	533422.8	0.9				ug/L	534994	Standard
>	Rh	103	36.7	28.4				ug/L	20	Standard
	Mo	98	62.2	14.0	**-0.0097**	0.002	21.8	ug/L	285	Standard
	Ag	107	304637.0	1.8	**45.1533**	0.975	2.2	ug/L	129	Standard
	Cd	111	108258.3	0.7	**55.7838**	0.228	0.4	mg/L	6	Standard
	Cd	114	274147.7	0.4	**54.0701**	0.477	0.9	ug/L	46	Standard
>	In	115	642317.2	0.6				ug/L	679215	Standard
	Sn	118	199.7	3.2	**-0.0576**	0.005	8.4	ug/L	411	Standard
	Sb	123	281230.9	0.2	**54.6205**	0.365	0.7	ug/L	497	Standard
	Ba	135	119944.9	0.3	**59.5079**	0.499	0.8	ug/L	43	Standard
	Ce	140	2048.5	3.6				ug/L	22	Standard
>	Tb	159	969123.2	1.4				ug/L	983965	Standard
	Ho	165	125.0	26.2				ug/L	10	Standard
	Tl	203	425203.2	0.6	**52.8338**	0.151	0.3	ug/L	248	Standard
	Tl	205	1006485.8	1.1	**52.4615**	0.333	0.6	ug/L	620	Standard
	Pb	206	345344.7	1.2	**52.6375**	0.483	0.9	ug/L	503	Standard
	Pb	207	311351.2	1.5	**52.6232**	0.607	1.2	ug/L	406	Standard
	Pb	208	364776.5	1.2	**52.8624**	0.488	0.9	ug/L	497	Standard
	U	238	286938.7	1.6	**56.4796**	0.630	1.1	ug/L	17	Standard
>	Bi	209	563464.8	0.8				ug/L	559221	Standard

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⌈	**Na**	23	6.7	86.6	**3.1424**	3.631	115.5	mg/L	2	Standard
|	**Mg**	24	3820.5	1.0	**46.9387**	0.779	1.7	mg/L	33	Standard
|	**K**	39	36.7	20.8	**0.0946**	0.055	58.2	mg/L	18	Standard
|	**Ca**	43	56.7	20.4	**-33.8148**	14.991	44.3	mg/L	72	Standard
|	**Fe**	54	26.1	69.3	**-0.0527**	0.102	192.7	mg/L	29	Standard
|	**Fe**	57	351.7	11.9	**-0.8790**	0.887	101.0	mg/L	382	Standard
⌊>	**Sc-1**	45	39357.7	1.9				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	79297.1	3.4				ug/L	2287	Standard
	P	31	75.0	29.1				ug/L	80	Standard
	S	34	45.0	44.4				ug/L	45	Standard
	Sr	88	170.0	10.2				ug/L	178	Standard
	C	12	46.7	68.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	132.7	17.1				mg/L	16	Standard
	Ho-1	165	125.0	26.2				mg/L	10	Standard
	Er	166	83.3	59.2				mg/L	17	Standard
	I	127	78609.0	6.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		108.118	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		97.621	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	94.568
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	100.759
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116105SDL WG607276-04
Sample Date/Time: Monday, March 27, 2017 15:39:36
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274633.4	0.9				ug/L	262785	Standard
	Be	9	68.3	27.7	**0.0249**	0.007	28.0	ug/L	28	Standard
	Al	27	626249.0	1.6	**3.4584**	0.065	1.9	ug/L	2187	Standard
	Sc	45	37960.8	0.9				ug/L	39299	Standard
	Ti	47	53.0	19.1	**-0.0855**	0.039	45.3	ug/L	82	Standard
	V	51	1696.4	7.0	**-0.0049**	0.015	304.0	ug/L	1876	Standard
	Cr	52	7525.2	0.6	**-0.0318**	0.006	19.0	ug/L	8221	Standard
	Cr	53	2285.2	2.9	**1.3356**	0.075	5.6	ug/L	1083	Standard
	Mn	55	59778.4	0.1	**4.3326**	0.010	0.2	ug/L	2738	Standard
	Co	59	811.4	3.3	**0.0248**	0.003	11.8	ug/L	635	Standard
	Ni	60	744.0	1.6	**0.2382**	0.005	2.2	ug/L	261	Standard
	Cu	65	700.7	3.1	**0.0127**	0.011	85.1	ug/L	660	Standard
	Zn	66	2227.2	2.5	**1.2271**	0.048	3.9	ug/L	558	Standard
>	Ge	72	781431.2	0.3				ug/L	807251	Standard
	As	75	80.3	43.4	**0.1085**	0.026	24.0	ug/L	-43	Standard
	Se	82	45.5	15.4	**0.3064**	0.059	19.2	ug/L	18	Standard
	Se-1	77	178.3	10.8	**0.6855**	0.227	33.1	ug/L	127	Standard
>	Ga	71	40.0	25.0				mg/L	32	Standard
	Rb	85	431.7	11.1				ug/L	27	Standard
	Y	89	512800.7	2.0				ug/L	534994	Standard
>	Rh	103	18.3	68.6				ug/L	20	Standard
	Mo	98	31.5	11.1	**-0.0169**	0.001	4.9	ug/L	285	Standard
	Ag	107	318.3	8.3	**0.0291**	0.004	12.8	ug/L	129	Standard
	Cd	111	11.0	15.8	**-0.0027**	0.001	32.4	mg/L	6	Standard
	Cd	114	30.8	48.9	**-0.0046**	0.003	66.3	ug/L	46	Standard
>	In	115	635741.6	0.5				ug/L	679215	Standard
	Sn	118	156.0	10.1	**-0.0954**	0.014	14.2	ug/L	411	Standard
	Sb	123	1743.6	19.3	**0.3111**	0.064	20.7	ug/L	497	Standard
	Ba	135	2664.6	3.1	**1.3166**	0.037	2.8	ug/L	43	Standard
	Ce	140	431.7	5.7				ug/L	22	Standard
>	Tb	159	946521.2	1.0				ug/L	983965	Standard
	Ho	165	33.3	22.9				ug/L	10	Standard
	Tl	203	595.7	2.4	**0.0451**	0.002	4.5	ug/L	248	Standard
	Tl	205	1550.1	3.0	**0.0477**	0.003	5.7	ug/L	620	Standard
	Pb	206	631.7	5.7	**0.0197**	0.005	27.0	ug/L	503	Standard
	Pb	207	543.7	8.7	**0.0212**	0.008	35.8	ug/L	406	Standard
	Pb	208	614.0	2.4	**0.0170**	0.002	12.4	ug/L	497	Standard
	U	238	73.3	23.9	**0.0128**	0.003	27.1	ug/L	17	Standard
>	Bi	209	569987.9	0.6				ug/L	559221	Standard

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	Na	23	3.3	86.6	**1.0959**	1.858	169.6	mg/L	2	Standard
	Mg	24	748.4	7.7	**9.1066**	0.784	8.6	mg/L	33	Standard
	K	39	10.0		**-0.0822**	0.001	0.8	mg/L	18	Standard
	Ca	43	43.3	35.3	**-50.7714**	22.290	43.9	mg/L	72	Standard
	Fe	54	17.6	64.8	**-0.0974**	0.069	70.4	mg/L	29	Standard
	Fe	57	321.7	23.3	**-1.2315**	1.554	126.2	mg/L	382	Standard
>	**Sc-1**	45	37960.8	0.9				mg/L	39299	Standard
	Cl	35	0.7	173.2				ug/L	4	Standard
	Kr	83	0.7	173.2				ug/L	3	Standard
	Br	81	18080.8	2.9				ug/L	2287	Standard
	P	31	101.7	10.2				ug/L	80	Standard
	S	34	41.7	30.2				ug/L	45	Standard
	Sr	88	161.7	4.7				ug/L	178	Standard
	C	12	20.0	50.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	32.7	71.1				mg/L	16	Standard
	Ho-1	165	33.3	22.9				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	22376.5	2.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.509	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.802	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	93.599
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	101.925
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 15:42:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	285930.1	3.7				ug/L	262785	Standard
	Be	9	132898.7	1.4	**48.9521**	1.642	3.4	ug/L	28	Standard
	Al	27	8846628.5	1.0	**47.0303**	1.234	2.6	ug/L	2187	Standard
	Sc	45	41364.7	2.5				ug/L	39299	Standard
	Ti	47	28371.5	0.6	**103.8595**	1.562	1.5	ug/L	82	Standard
	V	51	433083.4	0.5	**49.1682**	0.975	2.0	ug/L	1876	Standard
	Cr	52	413894.9	0.7	**49.6085**	0.822	1.7	ug/L	8221	Standard
	Cr	53	50666.3	1.6	**48.6095**	0.837	1.7	ug/L	1083	Standard
	Mn	55	698146.0	0.6	**49.8109**	0.744	1.5	ug/L	2738	Standard
	Co	59	527082.8	0.7	**49.6233**	0.701	1.4	ug/L	635	Standard
	Ni	60	113414.3	1.1	**49.8515**	0.535	1.1	ug/L	261	Standard
	Cu	65	117531.1	1.1	**50.1146**	0.778	1.6	ug/L	660	Standard
	Zn	66	71167.8	0.4	**50.1991**	1.155	2.3	ug/L	558	Standard
>	Ge	72	823658.1	2.1				ug/L	807251	Standard
	As	75	70521.9	0.5	**50.2680**	1.294	2.6	ug/L	-43	Standard
	Se	82	6531.3	1.4	**51.7435**	1.776	3.4	ug/L	18	Standard
	Se-1	77	4730.4	0.0	**50.4582**	1.084	2.1	ug/L	127	Standard
>	Ga	71	65.0	7.7				mg/L	32	Standard
	Rb	85	460.0	18.0				ug/L	27	Standard
	Y	89	555822.0	1.0				ug/L	534994	Standard
>	Rh	103	28.3	10.2				ug/L	20	Standard
	Mo	98	458439.2	0.5	**102.8322**	1.005	1.0	ug/L	285	Standard
	Ag	107	374648.4	1.1	**51.9617**	0.262	0.5	ug/L	129	Standard
	Cd	111	107587.1	1.4	**51.8747**	0.511	1.0	mg/L	6	Standard
	Cd	114	277347.7	1.6	**51.1810**	0.190	0.4	ug/L	46	Standard
>	In	115	686443.9	1.3				ug/L	679215	Standard
	Sn	118	61242.5	0.6	**51.2539**	0.660	1.3	ug/L	411	Standard
	Sb	123	278574.3	0.6	**50.6259**	0.331	0.7	ug/L	497	Standard
	Ba	135	106305.3	0.5	**49.3490**	0.385	0.8	ug/L	43	Standard
	Ce	140	318.3	3.3				ug/L	22	Standard
>	Tb	159	997875.9	0.3				ug/L	983965	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	425572.5	0.8	**50.5126**	0.822	1.6	ug/L	248	Standard
	Tl	205	1012377.0	0.2	**50.4052**	0.394	0.8	ug/L	620	Standard
	Pb	206	345448.4	0.4	**50.2930**	0.494	1.0	ug/L	503	Standard
	Pb	207	313991.1	0.3	**50.6921**	0.577	1.1	ug/L	406	Standard
	Pb	208	359002.0	0.5	**49.6939**	0.691	1.4	ug/L	497	Standard
	U	238	284160.2	0.2	**53.4301**	0.459	0.9	ug/L	17	Standard
>	Bi	209	589900.3	0.9				ug/L	559221	Standard

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	Na	23	13.3	86.6	**6.9375**	6.919	99.7	mg/L	2	Standard
	Mg	24	420.0	6.0	**4.4270**	0.171	3.9	mg/L	33	Standard
	K	39	663.3	12.3	**4.0695**	0.416	10.2	mg/L	18	Standard
	Ca	43	55.0	15.7	**-40.0404**	10.265	25.6	mg/L	72	Standard
	Fe	54	950.7	2.6	**5.0594**	0.129	2.5	mg/L	29	Standard
	Fe	57	605.0	5.8	**3.4676**	0.455	13.1	mg/L	382	Standard
>	**Sc-1**	45	41364.7	2.5				mg/L	39299	Standard
	Cl	35	3.3	91.7				ug/L	4	Standard
	Kr	83	5.3	21.7				ug/L	3	Standard
	Br	81	3673.8	10.2				ug/L	2287	Standard
	P	31	81.7	12.7				ug/L	80	Standard
	S	34	65.0	26.6				ug/L	45	Standard
	Sr	88	143.3	5.3				ug/L	178	Standard
	C	12	26.7	78.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	8.7	112.2				mg/L	16	Standard
	Ho-1	165	8.3	69.3				mg/L	10	Standard
	Er	166	26.7	57.3				mg/L	17	Standard
	I	127	3983.9	8.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	97.904		
	Al	27	94.061		
	Sc	45			
	Ti	47	103.860		
	V	51	98.336		
	Cr	52	99.217		
	Cr	53			
	Mn	55	99.622		
	Co	59	99.247		
	Ni	60	99.703		
	Cu	65	100.229		
	Zn	66	100.398		
>	Ge	72		102.032	
	As	75	100.536		
	Se	82	103.487		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85		
⌈	Y	89		
⌊>	Rh	103		
⌈	Mo	98	102.832	
|	Ag	107	103.923	
|	Cd	111	103.749	
|	Cd	114		
|>	In	115		101.064
|	Sn	118	102.508	
|	Sb	123	101.252	
⌊	Ba	135	98.698	
⌈	Ce	140		
⌊>	Tb	159		
⌈	Ho	165		
|	Tl	203	101.025	
|	Tl	205		
|	Pb	206		
|	Pb	207		
|	Pb	208	99.388	
|	U	238	106.860	
⌊>	Bi	209		105.486
⌈	Na	23		
|	Mg	24		
|	K	39		
|	Ca	43		
|	Fe	54		
|	Fe	57		
⌊>	Sc-1	45		
	Cl	35		
	Kr	83		
	Br	81		
	P	31		
	S	34		
	Sr	88		
	C	12		
	N	14		
	Hg	202		
	Dy	164		
	Ho-1	165		
	Er	166		
	I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 15:45:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269224.2	0.7				ug/L	262785	Standard
	Be	9	78.3	26.6	**0.0294**	0.008	27.4	ug/L	28	Standard
	Al	27	2561.9	23.8	**0.0083**	0.003	40.3	ug/L	2187	Standard
	Sc	45	40148.2	2.9				ug/L	39299	Standard
	Ti	47	27.7	11.0	**-0.1861**	0.012	6.3	ug/L	82	Standard
	V	51	1714.8	3.6	**-0.0078**	0.008	97.3	ug/L	1876	Standard
	Cr	52	6898.2	2.3	**-0.1347**	0.018	13.5	ug/L	8221	Standard
	Cr	53	830.0	1.6	**-0.1881**	0.014	7.5	ug/L	1083	Standard
	Mn	55	2584.9	3.4	**0.0121**	0.007	55.1	ug/L	2738	Standard
	Co	59	396.0	12.6	**-0.0174**	0.005	27.8	ug/L	635	Standard
	Ni	60	259.0	10.4	**0.0100**	0.012	120.2	ug/L	261	Standard
	Cu	65	702.7	2.2	**0.0057**	0.006	112.2	ug/L	660	Standard
	Zn	66	605.3	2.3	**-0.0003**	0.010	3012.4	ug/L	558	Standard
>	Ge	72	801349.0	0.2				ug/L	807251	Standard
	As	75	-21.1	112.2	**0.0328**	0.017	53.0	ug/L	-43	Standard
	Se	82	21.2	14.8	**0.0980**	0.025	25.7	ug/L	18	Standard
	Se-1	77	106.7	4.8	**-0.1729**	0.058	33.4	ug/L	127	Standard
>	Ga	71	38.3	7.5				mg/L	32	Standard
	Rb	85	38.3	15.1				ug/L	27	Standard
	Y	89	551896.2	2.1				ug/L	534994	Standard
>	Rh	103	18.3	41.7				ug/L	20	Standard
	Mo	98	341.3	17.6	**0.0542**	0.014	26.3	ug/L	285	Standard
	Ag	107	174.0	15.4	**0.0062**	0.004	63.9	ug/L	129	Standard
	Cd	111	14.9	51.0	**-0.0010**	0.004	355.1	mg/L	6	Standard
	Cd	114	84.6	73.6	**0.0053**	0.012	220.5	ug/L	46	Standard
>	In	115	667658.5	0.6				ug/L	679215	Standard
	Sn	118	326.0	4.3	**0.0449**	0.012	27.6	ug/L	411	Standard
	Sb	123	801.1	12.9	**0.1187**	0.019	16.0	ug/L	497	Standard
	Ba	135	108.0	38.7	**0.0321**	0.020	61.0	ug/L	43	Standard
	Ce	140	25.0	52.9				ug/L	22	Standard
>	Tb	159	976665.1	0.2				ug/L	983965	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	209.0	66.8	**-0.0032**	0.016	513.8	ug/L	248	Standard
	Tl	205	468.3	46.1	**-0.0087**	0.010	120.7	ug/L	620	Standard
	Pb	206	634.7	15.9	**0.0177**	0.014	76.6	ug/L	503	Standard
	Pb	207	561.0	17.6	**0.0218**	0.015	68.6	ug/L	406	Standard
	Pb	208	648.0	5.4	**0.0196**	0.004	18.9	ug/L	497	Standard
	U	238	88.3	76.6	**0.0152**	0.013	82.4	ug/L	17	Standard
>	Bi	209	583885.2	1.3				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0598**	1.715	2866.7	mg/L	2	Standard
	Mg	24	35.0	14.3	**-0.1093**	0.054	49.7	mg/L	33	Standard
	K	39	11.7	65.5	**-0.0755**	0.049	65.6	mg/L	18	Standard
	Ca	43	43.3	17.6	**-54.0391**	11.711	21.7	mg/L	72	Standard
	Fe	54	24.8	60.0	**-0.0609**	0.089	145.5	mg/L	29	Standard
	Fe	57	316.7	10.2	**-1.6840**	0.641	38.0	mg/L	382	Standard
>	**Sc-1**	45	40148.2	2.9				mg/L	39299	Standard
	Cl	35	1.3	173.2				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	3290.4	9.6				ug/L	2287	Standard
	P	31	78.3	14.7				ug/L	80	Standard
	S	34	40.0	62.5				ug/L	45	Standard
	Sr	88	130.0	13.9				ug/L	178	Standard
	C	12	16.7	124.9				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	6.2	193.4				mg/L	16	Standard
	Ho-1	165	11.7	24.7				mg/L	10	Standard
	Er	166	10.0	100.0				mg/L	17	Standard
	I	127	6553.1	2.1				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.269	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	98.299
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.411
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116107
Sample Date/Time: Monday, March 27, 2017 15:48:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	251939.2	1.1				ug/L	262785	Standard
	Be	9	73.3	25.8	**0.0294**	0.008	26.3	ug/L	28	Standard
	Al	27	296221.3	1.4	**1.7804**	0.044	2.5	ug/L	2187	Standard
	Sc	45	37406.1	0.4				ug/L	39299	Standard
	Ti	47	36.7	11.4	**-0.1436**	0.016	10.9	ug/L	82	Standard
	V	51	1618.2	9.0	**-0.0072**	0.020	276.2	ug/L	1876	Standard
	Cr	52	6286.3	1.5	**-0.1621**	0.022	13.5	ug/L	8221	Standard
	Cr	53	845.0	4.3	**-0.1197**	0.046	38.4	ug/L	1083	Standard
	Mn	55	619732.3	0.9	**48.2751**	0.810	1.7	ug/L	2738	Standard
	Co	59	1057.7	13.4	**0.0531**	0.015	29.0	ug/L	635	Standard
	Ni	60	363.3	8.7	**0.0676**	0.017	24.6	ug/L	261	Standard
	Cu	65	607.3	6.7	**-0.0195**	0.021	106.6	ug/L	660	Standard
	Zn	66	1750.1	1.8	**0.9165**	0.011	1.2	ug/L	558	Standard
>	**Ge**	72	754249.0	1.1				ug/L	807251	Standard
	As	75	2.1	712.7	**0.0500**	0.012	23.8	ug/L	-43	Standard
	Se	82	18.4	34.8	**0.0856**	0.057	66.5	ug/L	18	Standard
	Se-1	77	114.7	4.1	**-0.0017**	0.068	3911.1	ug/L	127	Standard
>	**Ga**	71	31.7	50.8				mg/L	32	Standard
	Rb	85	491.7	6.0				ug/L	27	Standard
	Y	89	505904.0	0.3				ug/L	534994	Standard
>	**Rh**	103	15.0	66.7				ug/L	20	Standard
	Mo	98	112.0	49.3	**0.0032**	0.014	440.0	ug/L	285	Standard
	Ag	107	177.3	54.1	**0.0086**	0.015	175.3	ug/L	129	Standard
	Cd	111	18.9	128.3	**0.0017**	0.013	773.4	mg/L	6	Standard
	Cd	114	57.1	58.0	**0.0009**	0.007	727.1	ug/L	46	Standard
>	**In**	115	623781.8	1.1				ug/L	679215	Standard
	Sn	118	169.0	8.7	**-0.0805**	0.014	17.7	ug/L	411	Standard
	Sb	123	160.9	21.6	**0.0012**	0.007	604.0	ug/L	497	Standard
	Ba	135	9647.7	1.7	**4.9108**	0.060	1.2	ug/L	43	Standard
	Ce	140	45.0	50.9				ug/L	22	Standard
>	**Tb**	159	923941.1	1.1				ug/L	983965	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	250.7	12.7	**0.0034**	0.004	121.6	ug/L	248	Standard
	Tl	205	641.7	9.9	**0.0017**	0.003	197.4	ug/L	620	Standard
	Pb	206	489.0	9.8	**-0.0001**	0.007	5207.2	ug/L	503	Standard
	Pb	207	411.3	15.3	**0.0007**	0.011	1530.1	ug/L	406	Standard
	Pb	208	481.3	7.5	**-0.0005**	0.005	1188.4	ug/L	497	Standard
	U	238	24.7	148.6	**0.0035**	0.007	209.8	ug/L	17	Standard
>	**Bi**	209	557013.6	0.7				ug/L	559221	Standard

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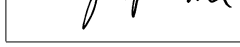

⌈	**Na**	23	3.3	86.6	**1.1257**	1.884	167.4	mg/L	2	Standard
|	**Mg**	24	101.7	15.0	**0.7942**	0.202	25.4	mg/L	33	Standard
|	**K**	39	31.7	32.9	**0.0714**	0.073	101.8	mg/L	18	Standard
|	**Ca**	43	36.7	28.4	**-59.8357**	15.854	26.5	mg/L	72	Standard
|	**Fe**	54	41.1	25.4	**0.0480**	0.064	132.8	mg/L	29	Standard
|	**Fe**	57	356.7	8.6	**-0.4279**	0.596	139.3	mg/L	382	Standard
⌊>	**Sc-1**	45	37406.1	0.4				mg/L	39299	Standard
	Cl	35	2.7	43.3				ug/L	4	Standard
	Kr	83	3.0	66.7				ug/L	3	Standard
	Br	81	4900.8	2.1				ug/L	2287	Standard
	P	31	88.3	25.5				ug/L	80	Standard
	S	34	38.3	30.1				ug/L	45	Standard
	Sr	88	153.3	1.9				ug/L	178	Standard
	C	12	20.0	50.0				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	-0.8	34.6				mg/L	16	Standard
	Ho-1	165	15.0	66.7				mg/L	10	Standard
	Er	166	16.7	34.6				mg/L	17	Standard
	I	127	15172.6	4.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		95.873	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		93.434	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	91.839
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	99.605
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703116109
Sample Date/Time: Monday, March 27, 2017 15:52:02
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	250417.8	1.6				ug/L	262785	Standard
	Be	9	35.0	24.7	**0.0135**	0.004	27.8	ug/L	28	Standard
	Al	27	77005.5	5.1	**0.4609**	0.018	3.9	ug/L	2187	Standard
	Sc	45	37259.1	1.1				ug/L	39299	Standard
	Ti	47	29.3	17.5	**-0.1709**	0.021	12.1	ug/L	82	Standard
	V	51	1579.6	4.6	**-0.0088**	0.008	95.1	ug/L	1876	Standard
	Cr	52	6546.4	1.9	**-0.1128**	0.012	10.6	ug/L	8221	Standard
	Cr	53	791.7	5.4	**-0.1628**	0.042	26.0	ug/L	1083	Standard
	Mn	55	55989.4	3.7	**4.2728**	0.164	3.8	ug/L	2738	Standard
	Co	59	490.7	7.1	**-0.0044**	0.004	84.4	ug/L	635	Standard
	Ni	60	457.0	4.6	**0.1163**	0.010	8.2	ug/L	261	Standard
	Cu	65	699.3	1.7	**0.0291**	0.007	25.5	ug/L	660	Standard
	Zn	66	1365.1	2.5	**0.6354**	0.028	4.4	ug/L	558	Standard
>	Ge	72	741738.4	0.6				ug/L	807251	Standard
	As	75	-40.3	29.3	**0.0164**	0.009	56.7	ug/L	-43	Standard
	Se	82	16.8	55.8	**0.0734**	0.083	113.3	ug/L	18	Standard
	Se-1	77	104.3	4.5	**-0.1046**	0.060	57.0	ug/L	127	Standard
>	Ga	71	30.0	28.9				mg/L	32	Standard
	Rb	85	348.3	3.6				ug/L	27	Standard
	Y	89	493111.1	0.8				ug/L	534994	Standard
>	Rh	103	15.0	57.7				ug/L	20	Standard
	Mo	98	39.2	7.8	**-0.0147**	0.001	5.3	ug/L	285	Standard
	Ag	107	102.7	13.2	**-0.0027**	0.002	71.9	ug/L	129	Standard
	Cd	111	15.6	31.6	**-0.0000**	0.003	28716.3	mg/L	6	Standard
	Cd	114	44.3	16.9	**-0.0016**	0.001	94.2	ug/L	46	Standard
>	In	115	614213.6	1.0				ug/L	679215	Standard
	Sn	118	148.7	10.1	**-0.0973**	0.013	13.3	ug/L	411	Standard
	Sb	123	88.9	20.8	**-0.0130**	0.004	27.5	ug/L	497	Standard
	Ba	135	7076.7	3.0	**3.6529**	0.079	2.2	ug/L	43	Standard
	Ce	140	30.0	33.3				ug/L	22	Standard
>	Tb	159	912609.3	1.1				ug/L	983965	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	213.7	3.1	**-0.0010**	0.001	57.4	ug/L	248	Standard
	Tl	205	585.0	22.4	**-0.0010**	0.007	643.5	ug/L	620	Standard
	Pb	206	427.0	7.0	**-0.0090**	0.004	41.2	ug/L	503	Standard
	Pb	207	354.7	7.4	**-0.0084**	0.004	43.6	ug/L	406	Standard
	Pb	208	407.0	2.1	**-0.0107**	0.002	17.7	ug/L	497	Standard
	U	238	3.7	31.5	**-0.0007**	0.000	33.5	ug/L	17	Standard
>	Bi	209	550971.1	1.6				ug/L	559221	Standard

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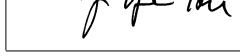

⌈	**Na**	23	1.7	173.2	**0.0514**	1.907	3711.4	mg/L	2	Standard
|	**Mg**	24	73.3	27.6	**0.4290**	0.274	63.8	mg/L	33	Standard
|	**K**	39	26.7	39.0	**0.0367**	0.072	196.9	mg/L	18	Standard
|	**Ca**	43	36.7	28.4	**-59.6393**	15.891	26.6	mg/L	72	Standard
|	**Fe**	54	67.6	18.6	**0.2118**	0.073	34.7	mg/L	29	Standard
|	**Fe**	57	318.3	14.2	**-1.1910**	0.858	72.0	mg/L	382	Standard
⌊>	**Sc-1**	45	37259.1	1.1				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	4297.3	1.6				ug/L	2287	Standard
	P	31	83.3	35.2				ug/L	80	Standard
	S	34	58.3	17.8				ug/L	45	Standard
	Sr	88	150.0	35.3				ug/L	178	Standard
	C	12	13.3	43.3				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	6.0	201.4				mg/L	16	Standard
	Ho-1	165	11.7	65.5				mg/L	10	Standard
	Er	166	13.3	173.2				mg/L	17	Standard
	I	127	9913.3	6.2				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		95.294	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		91.884	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	90.430
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	98.525
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 15:55:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269950.3	0.5				ug/L	262785	Standard
	Be	9	129085.9	0.9	**50.3239**	0.294	0.6	ug/L	28	Standard
	Al	27	8632690.3	0.4	**48.5803**	0.464	1.0	ug/L	2187	Standard
	Sc	45	40654.5	2.2				ug/L	39299	Standard
	Ti	47	27861.6	1.1	**104.6918**	0.880	0.8	ug/L	82	Standard
	V	51	427096.8	0.7	**49.7739**	0.742	1.5	ug/L	1876	Standard
	Cr	52	407473.3	0.7	**50.1437**	0.756	1.5	ug/L	8221	Standard
	Cr	53	49984.0	0.6	**49.2419**	0.705	1.4	ug/L	1083	Standard
	Mn	55	687422.0	0.6	**50.3466**	0.551	1.1	ug/L	2738	Standard
	Co	59	520915.9	0.7	**50.3434**	0.623	1.2	ug/L	635	Standard
	Ni	60	111010.5	0.4	**50.0906**	0.451	0.9	ug/L	261	Standard
	Cu	65	115884.8	0.7	**50.7262**	0.580	1.1	ug/L	660	Standard
	Zn	66	69899.5	0.4	**50.6074**	0.269	0.5	ug/L	558	Standard
>	Ge	72	802283.5	0.8				ug/L	807251	Standard
	As	75	69371.8	1.0	**50.7472**	0.265	0.5	ug/L	-43	Standard
	Se	82	6481.5	0.5	**52.6962**	0.544	1.0	ug/L	18	Standard
	Se-1	77	4650.4	0.5	**50.9275**	0.676	1.3	ug/L	127	Standard
>	Ga	71	81.7	19.7				mg/L	32	Standard
	Rb	85	480.0	4.8				ug/L	27	Standard
	Y	89	542874.9	1.9				ug/L	534994	Standard
>	Rh	103	21.7	26.6				ug/L	20	Standard
	Mo	98	450659.9	0.4	**103.6022**	0.567	0.5	ug/L	285	Standard
	Ag	107	364764.6	0.5	**51.8515**	0.164	0.3	ug/L	129	Standard
	Cd	111	105527.2	0.3	**52.1507**	0.377	0.7	mg/L	6	Standard
	Cd	114	273314.9	0.4	**51.6973**	0.290	0.6	ug/L	46	Standard
>	In	115	669749.0	0.8				ug/L	679215	Standard
	Sn	118	60914.9	0.6	**52.2526**	0.569	1.1	ug/L	411	Standard
	Sb	123	273713.5	0.6	**50.9808**	0.217	0.4	ug/L	497	Standard
	Ba	135	104718.6	0.7	**49.8251**	0.744	1.5	ug/L	43	Standard
	Ce	140	305.0	16.1				ug/L	22	Standard
>	Tb	159	976617.1	0.0				ug/L	983965	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	414029.7	0.3	**50.4565**	0.137	0.3	ug/L	248	Standard
	Tl	205	988905.7	0.5	**50.5555**	0.184	0.4	ug/L	620	Standard
	Pb	206	337981.6	0.8	**50.5240**	0.400	0.8	ug/L	503	Standard
	Pb	207	306067.8	0.3	**50.7355**	0.099	0.2	ug/L	406	Standard
	Pb	208	350540.1	0.4	**49.8209**	0.206	0.4	ug/L	497	Standard
	U	238	279063.2	0.3	**53.8770**	0.126	0.2	ug/L	17	Standard
>	Bi	209	574485.8	0.1				ug/L	559221	Standard

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	Na	23	8.3	91.7	**4.0366**	4.676	115.8	mg/L	2	Standard
	Mg	24	503.3	4.0	**5.5231**	0.338	6.1	mg/L	33	Standard
	K	39	678.3	1.5	**4.2490**	0.119	2.8	mg/L	18	Standard
	Ca	43	40.0	45.1	**-59.7998**	24.610	41.2	mg/L	72	Standard
	Fe	54	903.9	2.8	**4.8904**	0.246	5.0	mg/L	29	Standard
	Fe	57	595.0	2.9	**3.4817**	0.362	10.4	mg/L	382	Standard
>	**Sc-1**	45	40654.5	2.2				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	2.7	57.3				ug/L	3	Standard
	Br	81	2910.3	8.1				ug/L	2287	Standard
	P	31	105.0	46.9				ug/L	80	Standard
	S	34	53.3	21.7				ug/L	45	Standard
	Sr	88	136.7	11.2				ug/L	178	Standard
	C	12	33.3	17.3				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	26.0	44.9				mg/L	16	Standard
	Ho-1	165	5.0	0.0				mg/L	10	Standard
	Er	166	13.3	43.3				mg/L	17	Standard
	I	127	3202.0	3.3				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.648		
	Al	27	97.161		
	Sc	45			
	Ti	47	104.692		
	V	51	99.548		
	Cr	52	100.287		
	Cr	53			
	Mn	55	100.693		
	Co	59	100.687		
	Ni	60	100.181		
	Cu	65	101.452		
	Zn	66	101.215		
>	Ge	72		99.385	
	As	75	101.494		
	Se	82	105.392		
	Se-1	77			
>	Ga	71			

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⌊	Rb	85			
⌈	Y	89			
⌊>	Rh	103			
⌈	Mo	98	103.602		
|	Ag	107	103.703		
|	Cd	111	104.301		
|	Cd	114			
|>	In	115		98.606	
|	Sn	118	104.505		
|	Sb	123	101.962		
⌊	Ba	135	99.650		
⌈	Ce	140			
⌊>	Tb	159			
⌈	Ho	165			
|	Tl	203	100.913		
|	Tl	205			
|	Pb	206			
|	Pb	207			
|	Pb	208	99.642		
|	U	238	107.754		
⌊>	Bi	209		102.730	
⌈	Na	23			
|	Mg	24			
|	K	39			
|	Ca	43			
|	Fe	54			
|	Fe	57			
⌊>	Sc-1	45			
	Cl	35			
	Kr	83			
	Br	81			
	P	31			
	S	34			
	Sr	88			
	C	12			
	N	14			
	Hg	202			
	Dy	164			
	Ho-1	165			
	Er	166			
	I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 15:58:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266409.0	2.0				ug/L	262785	Standard
	Be	9	66.7	26.3	**0.0251**	0.007	28.4	ug/L	28	Standard
	Al	27	2588.6	21.1	**0.0086**	0.003	36.8	ug/L	2187	Standard
	Sc	45	39255.8	2.3				ug/L	39299	Standard
	Ti	47	39.3	14.5	**-0.1367**	0.022	15.9	ug/L	82	Standard
	V	51	1415.8	5.5	**-0.0367**	0.010	27.5	ug/L	1876	Standard
	Cr	52	6356.0	2.7	**-0.1733**	0.024	13.9	ug/L	8221	Standard
	Cr	53	745.0	11.9	**-0.2458**	0.096	38.9	ug/L	1083	Standard
	Mn	55	2590.2	3.6	**0.0196**	0.007	37.7	ug/L	2738	Standard
	Co	59	413.0	3.7	**-0.0143**	0.002	11.6	ug/L	635	Standard
	Ni	60	264.0	3.7	**0.0167**	0.004	26.5	ug/L	261	Standard
	Cu	65	657.3	1.7	**-0.0036**	0.006	161.9	ug/L	660	Standard
	Zn	66	521.3	1.8	**-0.0477**	0.009	18.0	ug/L	558	Standard
>	Ge	72	772861.7	0.4				ug/L	807251	Standard
	As	75	-44.0	47.7	**0.0149**	0.016	108.2	ug/L	-43	Standard
	Se	82	15.4	53.3	**0.0557**	0.069	124.5	ug/L	18	Standard
	Se-1	77	101.7	2.5	**-0.1870**	0.026	14.1	ug/L	127	Standard
>	Ga	71	26.7	10.8				mg/L	32	Standard
	Rb	85	51.7	20.1				ug/L	27	Standard
	Y	89	526439.7	1.9				ug/L	534994	Standard
>	Rh	103	11.7	89.2				ug/L	20	Standard
	Mo	98	392.3	24.8	**0.0681**	0.024	35.2	ug/L	285	Standard
	Ag	107	200.7	15.8	**0.0106**	0.004	40.9	ug/L	129	Standard
	Cd	111	20.2	51.0	**0.0018**	0.005	287.6	mg/L	6	Standard
	Cd	114	124.6	46.0	**0.0134**	0.011	81.1	ug/L	46	Standard
>	In	115	653235.0	1.2				ug/L	679215	Standard
	Sn	118	325.3	7.3	**0.0504**	0.020	39.4	ug/L	411	Standard
	Sb	123	498.2	19.3	**0.0640**	0.017	27.0	ug/L	497	Standard
	Ba	135	90.0	9.7	**0.0245**	0.004	17.2	ug/L	43	Standard
	Ce	140	16.7	62.4				ug/L	22	Standard
>	Tb	159	946371.8	2.3				ug/L	983965	Standard
	Ho	165	21.7	26.6				ug/L	10	Standard
	Tl	203	126.3	40.5	**-0.0126**	0.006	48.4	ug/L	248	Standard
	Tl	205	336.7	51.2	**-0.0149**	0.009	57.9	ug/L	620	Standard
	Pb	206	574.7	5.2	**0.0112**	0.004	32.9	ug/L	503	Standard
	Pb	207	491.3	8.4	**0.0126**	0.006	49.0	ug/L	406	Standard
	Pb	208	588.0	5.2	**0.0134**	0.005	36.4	ug/L	497	Standard
	U	238	80.3	38.3	**0.0142**	0.006	40.8	ug/L	17	Standard
>	Bi	209	569093.4	1.3				ug/L	559221	Standard

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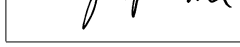

⌈	**Na**	23	0.0		**-1.0498**	0.000	0.0	mg/L	2	Standard
|	**Mg**	24	33.3	34.6	**-0.1219**	0.136	111.9	mg/L	33	Standard
|	**K**	39	13.3	78.1	**-0.0611**	0.073	119.0	mg/L	18	Standard
|	**Ca**	43	25.0	20.0	**-79.3326**	7.967	10.0	mg/L	72	Standard
|	**Fe**	54	36.2	15.6	**0.0083**	0.035	416.9	mg/L	29	Standard
|	**Fe**	57	346.7	4.6	**-0.9658**	0.250	25.9	mg/L	382	Standard
⌊>	**Sc-1**	45	39255.8	2.3				mg/L	39299	Standard
	Cl	35	2.0	173.2				ug/L	4	Standard
	Kr	83	2.3	107.9				ug/L	3	Standard
	Br	81	2890.3	2.7				ug/L	2287	Standard
	P	31	96.7	23.3				ug/L	80	Standard
	S	34	56.7	35.7				ug/L	45	Standard
	Sr	88	130.0	26.9				ug/L	178	Standard
	C	12	40.0	90.1				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	19.5	102.5				mg/L	16	Standard
	Ho-1	165	21.7	26.6				mg/L	10	Standard
	Er	166	10.0					mg/L	17	Standard
	I	127	6061.2	6.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6			
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		95.740	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.175
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.765
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, March 27, 2017 16:01:22
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	263245.7	1.1				ug/L	262785	Standard
	Be	9	550.0	2.4	**0.2187**	0.007	3.3	ug/L	28	Standard
	Al	27	1601.8	5.3	**0.0031**	0.001	17.2	ug/L	2187	Standard
	Sc	45	39581.7	3.0				ug/L	39299	Standard
	Ti	47	34.0	14.7	**-0.1585**	0.020	12.6	ug/L	82	Standard
	V	51	4678.0	2.2	**0.3550**	0.014	3.8	ug/L	1876	Standard
	Cr	52	14253.7	1.0	**0.8405**	0.013	1.5	ug/L	8221	Standard
	Cr	53	1608.4	9.2	**0.6421**	0.162	25.3	ug/L	1083	Standard
	Mn	55	8344.3	1.3	**0.4534**	0.004	0.9	ug/L	2738	Standard
	Co	59	4161.9	1.6	**0.3588**	0.005	1.5	ug/L	635	Standard
	Ni	60	3497.7	3.5	**1.5210**	0.047	3.1	ug/L	261	Standard
	Cu	65	2408.5	2.3	**0.7880**	0.029	3.7	ug/L	660	Standard
	Zn	66	8815.9	1.3	**6.1861**	0.053	0.9	ug/L	558	Standard
>	Ge	72	779199.7	0.7				ug/L	807251	Standard
	As	75	476.9	6.5	**0.4071**	0.023	5.7	ug/L	-43	Standard
	Se	82	61.5	10.8	**0.4412**	0.056	12.7	ug/L	18	Standard
	Se-1	77	130.3	3.9	**0.1357**	0.070	51.7	ug/L	127	Standard
>	Ga	71	25.0	20.0				mg/L	32	Standard
	Rb	85	45.0	57.7				ug/L	27	Standard
	Y	89	525049.1	2.4				ug/L	534994	Standard
>	Rh	103	11.7	107.9				ug/L	20	Standard
	Mo	98	92.9	15.6	**-0.0028**	0.003	121.9	ug/L	285	Standard
	Ag	107	2778.3	1.4	**0.3838**	0.002	0.5	ug/L	129	Standard
	Cd	111	485.6	9.6	**0.2361**	0.024	10.3	mg/L	6	Standard
	Cd	114	1306.5	3.4	**0.2410**	0.007	2.7	ug/L	46	Standard
>	In	115	657572.7	0.9				ug/L	679215	Standard
	Sn	118	195.0	5.6	**-0.0658**	0.009	13.5	ug/L	411	Standard
	Sb	123	2194.7	1.2	**0.3855**	0.004	0.9	ug/L	497	Standard
	Ba	135	1460.4	1.6	**0.6886**	0.015	2.2	ug/L	43	Standard
	Ce	140	20.0	50.0				ug/L	22	Standard
>	Tb	159	957421.5	1.0				ug/L	983965	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	694.0	1.3	**0.0570**	0.003	4.7	ug/L	248	Standard
	Tl	205	1605.1	7.9	**0.0503**	0.006	12.0	ug/L	620	Standard
	Pb	206	1759.8	2.4	**0.1891**	0.002	0.9	ug/L	503	Standard
	Pb	207	1464.7	3.0	**0.1747**	0.008	4.8	ug/L	406	Standard
	Pb	208	1807.0	2.9	**0.1873**	0.003	1.5	ug/L	497	Standard
	U	238	2077.8	4.0	**0.4019**	0.020	5.0	ug/L	17	Standard
>	Bi	209	571590.7	1.9				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0501**	1.732	3457.4	mg/L	2	Standard
	Mg	24	30.0	57.7	**-0.1643**	0.214	130.5	mg/L	33	Standard
	K	39	13.3	78.1	**-0.0631**	0.069	110.1	mg/L	18	Standard
	Ca	43	46.7	24.7	**-48.1748**	18.640	38.7	mg/L	72	Standard
	Fe	54	42.9	44.3	**0.0471**	0.118	251.3	mg/L	29	Standard
	Fe	57	373.3	8.2	**-0.4892**	0.802	164.0	mg/L	382	Standard
>	**Sc-1**	45	39581.7	3.0				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	2.0	86.6				ug/L	3	Standard
	Br	81	2710.2	2.6				ug/L	2287	Standard
	P	31	96.7	10.8				ug/L	80	Standard
	S	34	56.7	25.5				ug/L	45	Standard
	Sr	88	146.7	11.0				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	26.3	22.5				mg/L	16	Standard
	Ho-1	165	6.7	43.3				mg/L	10	Standard
	Er	166	6.7	86.6				mg/L	17	Standard
	I	127	3998.9	2.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	109.359		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	88.739		
	Cr	52	105.059		
	Cr	53			
	Mn	55	90.672		
	Co	59	89.697		
	Ni	60	95.063		
	Cu	65	98.498		
	Zn	66	98.977		
>	Ge	72		96.525	
	As	75	101.787		
	Se	82	110.303		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98			
Ag	107	95.939		
Cd	111	98.371		
Cd	114			
In	115		96.814	
Sn	118			
Sb	123	96.385		
Ba	135	91.818		
Ce	140			
Tb	159			
Ho	165			
Tl	203	71.207		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.670		
U	238	100.479		
Bi	209		102.212	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703131302
Sample Date/Time: Monday, March 27, 2017 16:04:28
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	272171.8	2.1				ug/L	262785	Standard
	Be	9	103.3	58.5	**0.0390**	0.024	60.8	ug/L	28	Standard
	Al	27	9941741.8	1.4	**55.5137**	1.832	3.3	ug/L	2187	Standard
	Sc	45	40310.2	0.8				ug/L	39299	Standard
	Ti	47	272.3	6.5	**0.7506**	0.077	10.2	ug/L	82	Standard
	V	51	1001.9	22.0	**-0.0899**	0.025	28.1	ug/L	1876	Standard
	Cr	52	7686.3	3.6	**-0.0230**	0.042	182.4	ug/L	8221	Standard
	Cr	53	5009.2	23.0	**4.0862**	1.193	29.2	ug/L	1083	Standard
	Mn	55	23955176.8	0.2	**1785.3110**	14.554	0.8	ug/L	2738	Standard
	Co	59	1820.4	6.0	**0.1229**	0.011	9.3	ug/L	635	Standard
	Ni	60	2983.3	2.3	**1.2609**	0.040	3.2	ug/L	261	Standard
	Cu	65	1763.4	2.5	**0.4835**	0.023	4.8	ug/L	660	Standard
	Zn	66	4722.7	2.3	**3.0546**	0.065	2.1	ug/L	558	Standard
>	Ge	72	791132.6	0.9				ug/L	807251	Standard
	As	75	32599.9	0.9	**24.2093**	0.152	0.6	ug/L	-43	Standard
	Se	82	605.3	3.3	**4.9220**	0.125	2.5	ug/L	18	Standard
	Se-1	77	365.0	5.6	**2.7890**	0.235	8.4	ug/L	127	Standard
>	Ga	71	95.0	34.5				mg/L	32	Standard
	Rb	85	2496.9	4.2				ug/L	27	Standard
	Y	89	537130.5	1.9				ug/L	534994	Standard
>	Rh	103	55.0	9.1				ug/L	20	Standard
	Mo	98	2657.5	8.8	**0.6061**	0.057	9.4	ug/L	285	Standard
	Ag	107	232.0	72.8	**0.0154**	0.025	160.6	ug/L	129	Standard
	Cd	111	78.9	60.7	**0.0318**	0.024	76.8	mg/L	6	Standard
	Cd	114	216.1	35.2	**0.0315**	0.015	47.1	ug/L	46	Standard
>	In	115	649120.2	1.9				ug/L	679215	Standard
	Sn	118	395.3	6.0	**0.1147**	0.024	21.2	ug/L	411	Standard
	Sb	123	502.3	26.7	**0.0656**	0.026	39.4	ug/L	497	Standard
	Ba	135	419655.9	0.9	**206.0878**	2.199	1.1	ug/L	43	Standard
	Ce	140	253.3	13.1				ug/L	22	Standard
>	Tb	159	992143.3	1.5				ug/L	983965	Standard
	Ho	165	50.0	30.0				ug/L	10	Standard
	Tl	203	952.0	9.2	**0.0881**	0.011	12.6	ug/L	248	Standard
	Tl	205	2301.8	7.8	**0.0857**	0.009	10.6	ug/L	620	Standard
	Pb	206	1026.4	13.1	**0.0780**	0.018	23.1	ug/L	503	Standard
	Pb	207	909.7	8.0	**0.0813**	0.010	12.0	ug/L	406	Standard
	Pb	208	1061.3	6.6	**0.0800**	0.008	9.6	ug/L	497	Standard
	U	238	98.7	56.7	**0.0175**	0.011	59.9	ug/L	17	Standard
>	Bi	209	573960.3	1.7				ug/L	559221	Standard

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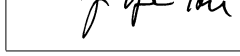

⌈	**Na**	23	70.0	7.1	**41.4665**	3.351	8.1	mg/L	2	Standard
|	**Mg**	24	2341.8	2.0	**27.8765**	0.794	2.8	mg/L	33	Standard
|	**K**	39	155.0	12.9	**0.8628**	0.138	16.0	mg/L	18	Standard
|	**Ca**	43	101.7	33.5	**27.9280**	47.250	169.2	mg/L	72	Standard
|	**Fe**	54	3721.7	2.2	**20.9313**	0.307	1.5	mg/L	29	Standard
|	**Fe**	57	1455.1	5.9	**19.9205**	1.840	9.2	mg/L	382	Standard
⌊>	**Sc-1**	45	40310.2	0.8				mg/L	39299	Standard
	Cl	35	2.7	86.6				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	297340.4	4.9				ug/L	2287	Standard
	P	31	98.3	2.9				ug/L	80	Standard
	S	34	48.3	33.3				ug/L	45	Standard
	Sr	88	190.0	9.5				ug/L	178	Standard
	C	12	36.7	15.7				mg/L	33	Standard
	N	14	6.7	86.6				mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	64.4	8.6				mg/L	16	Standard
	Ho-1	165	50.0	30.0				mg/L	10	Standard
	Er	166	46.7	24.7				mg/L	17	Standard
	I	127	327258.7	8.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.572	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.003	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.569
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.636
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1703131303
Sample Date/Time: Monday, March 27, 2017 16:07:34
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	273685.2	1.8				ug/L	262785	Standard
	Be	9	186.7	13.2	**0.0706**	0.010	13.9	ug/L	28	Standard
	Al	27	2698766.8	1.2	**14.9791**	0.366	2.4	ug/L	2187	Standard
	Sc	45	39688.6	0.3				ug/L	39299	Standard
	Ti	47	945.4	6.2	**3.2781**	0.231	7.0	ug/L	82	Standard
	V	51	6692.9	4.2	**0.5758**	0.032	5.6	ug/L	1876	Standard
	Cr	52	11740.2	1.1	**0.4745**	0.012	2.6	ug/L	8221	Standard
	Cr	53	2001.8	4.3	**0.9924**	0.081	8.1	ug/L	1083	Standard
	Mn	55	7149415.8	0.4	**526.1563**	1.863	0.4	ug/L	2738	Standard
	Co	59	22734.0	1.0	**2.1473**	0.020	0.9	ug/L	635	Standard
	Ni	60	14940.4	1.5	**6.6599**	0.112	1.7	ug/L	261	Standard
	Cu	65	3800.5	0.9	**1.3722**	0.014	1.0	ug/L	660	Standard
	Zn	66	9974.6	0.5	**6.8540**	0.036	0.5	ug/L	558	Standard
>	**Ge**	72	800932.6	0.3				ug/L	807251	Standard
	As	75	1089.9	3.3	**0.8462**	0.028	3.3	ug/L	-43	Standard
	Se	82	99.4	9.9	**0.7362**	0.081	11.0	ug/L	18	Standard
	Se-1	77	130.7	8.2	**0.0979**	0.117	119.4	ug/L	127	Standard
>	**Ga**	71	360.0	2.4				mg/L	32	Standard
	Rb	85	9409.6	1.9				ug/L	27	Standard
	Y	89	556575.6	1.0				ug/L	534994	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	290.7	9.4	**0.0427**	0.006	15.0	ug/L	285	Standard
	Ag	107	201.7	11.0	**0.0103**	0.003	31.4	ug/L	129	Standard
	Cd	111	297.0	10.6	**0.1394**	0.016	11.4	mg/L	6	Standard
	Cd	114	842.3	5.5	**0.1497**	0.009	6.0	ug/L	46	Standard
>	**In**	115	665254.3	0.2				ug/L	679215	Standard
	Sn	118	413.0	2.6	**0.1213**	0.009	7.3	ug/L	411	Standard
	Sb	123	263.0	8.5	**0.0183**	0.004	23.0	ug/L	497	Standard
	Ba	135	42812.7	1.0	**20.4947**	0.181	0.9	ug/L	43	Standard
	Ce	140	15457.9	2.3				ug/L	22	Standard
>	**Tb**	159	993052.2	0.3				ug/L	983965	Standard
	Ho	165	1013.4	7.0				ug/L	10	Standard
	Tl	203	365.7	15.7	**0.0146**	0.007	45.5	ug/L	248	Standard
	Tl	205	863.4	20.2	**0.0101**	0.008	83.8	ug/L	620	Standard
	Pb	206	4006.2	0.5	**0.4993**	0.002	0.4	ug/L	503	Standard
	Pb	207	3283.4	0.7	**0.4527**	0.003	0.7	ug/L	406	Standard
	Pb	208	3934.2	1.2	**0.4656**	0.007	1.4	ug/L	497	Standard
	U	238	158.0	12.1	**0.0278**	0.004	12.8	ug/L	17	Standard
>	**Bi**	209	599334.8	0.2				ug/L	559221	Standard

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⌈	**Na**	23	18.3	41.7	**10.2624**	4.728	46.1	mg/L	2	Standard
|	**Mg**	24	323.3	10.3	**3.4493**	0.420	12.2	mg/L	33	Standard
|	**K**	39	31.7	36.5	**0.0588**	0.077	130.8	mg/L	18	Standard
|	**Ca**	43	51.7	5.6	**-41.4914**	4.206	10.1	mg/L	72	Standard
|	**Fe**	54	381.0	11.4	**1.9947**	0.254	12.7	mg/L	29	Standard
|	**Fe**	57	475.0	13.1	**1.4390**	1.228	85.3	mg/L	382	Standard
⌊>	**Sc-1**	45	39688.6	0.3				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.3	65.5				ug/L	3	Standard
	Br	81	44736.1	5.3				ug/L	2287	Standard
	P	31	93.3	48.6				ug/L	80	Standard
	S	34	48.3	66.5				ug/L	45	Standard
	Sr	88	143.3	8.1				ug/L	178	Standard
	C	12	56.7	27.0				mg/L	33	Standard
	N	14	6.7	173.2				mg/L	0	Standard
	Hg	202	50.0	0.0				mg/L	3	Standard
	Dy	164	1674.7	8.7				mg/L	16	Standard
	Ho-1	165	1013.4	7.0				mg/L	10	Standard
	Er	166	946.7	7.0				mg/L	17	Standard
	I	127	99680.3	2.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.148	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		99.217	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.945
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.173
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703131304
Sample Date/Time: Monday, March 27, 2017 16:10:39
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269087.8	2.5				ug/L	262785	Standard
	Be	9	148.3	15.2	**0.0567**	0.007	13.0	ug/L	28	Standard
	Al	27	2680374.0	0.9	**15.1354**	0.488	3.2	ug/L	2187	Standard
	Sc	45	39690.3	2.2				ug/L	39299	Standard
	Ti	47	295.3	34.1	**0.8299**	0.388	46.7	ug/L	82	Standard
	V	51	1811.5	12.6	**0.0044**	0.026	589.6	ug/L	1876	Standard
	Cr	52	8824.6	0.8	**0.1123**	0.010	8.7	ug/L	8221	Standard
	Cr	53	1530.1	7.5	**0.5231**	0.108	20.7	ug/L	1083	Standard
	Mn	55	6990091.8	0.6	**516.4514**	5.382	1.0	ug/L	2738	Standard
	Co	59	21991.9	0.5	**2.0838**	0.013	0.6	ug/L	635	Standard
	Ni	60	14563.3	1.3	**6.5149**	0.096	1.5	ug/L	261	Standard
	Cu	65	2280.5	4.4	**0.7058**	0.048	6.7	ug/L	660	Standard
	Zn	66	8483.4	1.1	**5.7875**	0.090	1.6	ug/L	558	Standard
>	Ge	72	797819.9	0.5				ug/L	807251	Standard
	As	75	351.8	7.7	**0.3068**	0.020	6.5	ug/L	-43	Standard
	Se	82	95.1	11.2	**0.7041**	0.087	12.4	ug/L	18	Standard
	Se-1	77	136.3	6.8	**0.1679**	0.103	61.4	ug/L	127	Standard
>	Ga	71	48.3	39.2				mg/L	32	Standard
	Rb	85	5421.0	3.2				ug/L	27	Standard
	Y	89	552506.7	0.3				ug/L	534994	Standard
>	Rh	103	23.3	65.5				ug/L	20	Standard
	Mo	98	103.6	12.1	**-0.0004**	0.003	652.5	ug/L	285	Standard
	Ag	107	139.3	8.8	**0.0014**	0.002	127.6	ug/L	129	Standard
	Cd	111	288.5	4.2	**0.1359**	0.005	3.9	mg/L	6	Standard
	Cd	114	781.5	3.7	**0.1389**	0.005	3.7	ug/L	46	Standard
>	In	115	661634.2	0.5				ug/L	679215	Standard
	Sn	118	379.0	7.4	**0.0936**	0.024	25.2	ug/L	411	Standard
	Sb	123	206.4	19.6	**0.0079**	0.008	98.5	ug/L	497	Standard
	Ba	135	40075.3	0.8	**19.2880**	0.075	0.4	ug/L	43	Standard
	Ce	140	3995.5	3.5				ug/L	22	Standard
>	Tb	159	997233.0	1.5				ug/L	983965	Standard
	Ho	165	341.7	1.7				ug/L	10	Standard
	Tl	203	321.3	5.1	**0.0098**	0.002	16.0	ug/L	248	Standard
	Tl	205	895.0	3.9	**0.0121**	0.002	17.5	ug/L	620	Standard
	Pb	206	675.3	2.2	**0.0222**	0.002	7.9	ug/L	503	Standard
	Pb	207	577.0	4.2	**0.0230**	0.003	14.6	ug/L	406	Standard
	Pb	208	695.7	0.4	**0.0247**	0.001	5.7	ug/L	497	Standard
	U	238	81.3	0.7	**0.0138**	0.000	0.9	ug/L	17	Standard
>	Bi	209	593609.6	1.0				ug/L	559221	Standard

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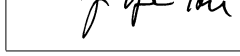

⌈	**Na**	23	18.3	83.3	**10.2652**	9.339	91.0	mg/L	2	Standard
|	**Mg**	24	331.7	7.1	**3.5481**	0.205	5.8	mg/L	33	Standard
|	**K**	39	30.0	16.7	**0.0481**	0.037	76.6	mg/L	18	Standard
|	**Ca**	43	55.0	24.1	**-36.7072**	18.768	51.1	mg/L	72	Standard
|	**Fe**	54	122.6	4.9	**0.5045**	0.050	10.0	mg/L	29	Standard
|	**Fe**	57	420.0	13.5	**0.3874**	1.198	309.3	mg/L	382	Standard
⌊>	**Sc-1**	45	39690.3	2.2				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	3.7	56.8				ug/L	3	Standard
	Br	81	41092.4	4.9				ug/L	2287	Standard
	P	31	80.0	28.6				ug/L	80	Standard
	S	34	63.3	39.7				ug/L	45	Standard
	Sr	88	133.3	15.2				ug/L	178	Standard
	C	12	26.7	86.6				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	484.4	31.1				mg/L	16	Standard
	Ho-1	165	341.7	1.7				mg/L	10	Standard
	Er	166	326.7	15.7				mg/L	17	Standard
	I	127	86863.3	1.6				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		102.399	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		98.832	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.412
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.149
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1703137001
Sample Date/Time: Monday, March 27, 2017 16:13:45
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	271217.6	0.6				ug/L	262785	Standard
	Be	9	83.3	21.1	**0.0311**	0.007	22.4	ug/L	28	Standard
	Al	27	7402154.4	0.4	**41.4598**	0.356	0.9	ug/L	2187	Standard
	Sc	45	40062.9	0.5				ug/L	39299	Standard
	Ti	47	124.3	10.5	**0.1737**	0.047	27.3	ug/L	82	Standard
	V	51	2083.3	15.1	**0.0329**	0.036	110.0	ug/L	1876	Standard
	Cr	52	10183.8	3.2	**0.2652**	0.040	15.2	ug/L	8221	Standard
	Cr	53	1916.8	7.1	**0.8865**	0.140	15.7	ug/L	1083	Standard
	Mn	55	19816.9	17.4	**1.2648**	0.247	19.6	ug/L	2738	Standard
	Co	59	703.7	3.5	**0.0117**	0.003	23.1	ug/L	635	Standard
	Ni	60	1303.4	1.8	**0.4768**	0.008	1.8	ug/L	261	Standard
	Cu	65	2690.2	2.5	**0.8698**	0.025	2.9	ug/L	660	Standard
	Zn	66	5521.7	1.1	**3.5535**	0.066	1.8	ug/L	558	Standard
>	**Ge**	72	809579.0	0.5				ug/L	807251	Standard
	As	75	59.0	54.1	**0.0909**	0.023	25.3	ug/L	-43	Standard
	Se	82	116.1	3.1	**0.8628**	0.034	3.9	ug/L	18	Standard
	Se-1	77	214.7	2.6	**1.0184**	0.050	4.9	ug/L	127	Standard
>	**Ga**	71	41.7	45.4				mg/L	32	Standard
	Rb	85	6789.9	1.5				ug/L	27	Standard
	Y	89	558507.0	1.4				ug/L	534994	Standard
>	**Rh**	103	31.7	50.8				ug/L	20	Standard
	Mo	98	213.4	7.7	**0.0241**	0.004	15.7	ug/L	285	Standard
	Ag	107	148.7	8.2	**0.0024**	0.002	73.8	ug/L	129	Standard
	Cd	111	75.1	4.1	**0.0284**	0.002	5.8	mg/L	6	Standard
	Cd	114	219.4	9.9	**0.0305**	0.004	13.9	ug/L	46	Standard
>	**In**	115	674851.3	0.6				ug/L	679215	Standard
	Sn	118	395.3	8.4	**0.1011**	0.027	26.9	ug/L	411	Standard
	Sb	123	279.6	8.2	**0.0207**	0.004	19.6	ug/L	497	Standard
	Ba	135	62558.5	0.4	**29.5312**	0.289	1.0	ug/L	43	Standard
	Ce	140	800.0	6.0				ug/L	22	Standard
>	**Tb**	159	1001402.8	0.5				ug/L	983965	Standard
	Ho	165	248.3	5.1				ug/L	10	Standard
	Tl	203	440.0	5.1	**0.0240**	0.003	10.6	ug/L	248	Standard
	Tl	205	1035.0	10.5	**0.0193**	0.005	25.8	ug/L	620	Standard
	Pb	206	686.7	3.6	**0.0243**	0.003	11.3	ug/L	503	Standard
	Pb	207	589.0	4.8	**0.0253**	0.005	21.1	ug/L	406	Standard
	Pb	208	681.3	5.2	**0.0231**	0.005	21.4	ug/L	497	Standard
	U	238	136.7	13.0	**0.0242**	0.004	14.7	ug/L	17	Standard
>	**Bi**	209	590975.4	0.9				ug/L	559221	Standard

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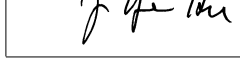

⌈	**Na**	23	25.0	20.0	**14.2332**	3.137	22.0	mg/L	2	Standard
|	**Mg**	24	120.0	27.3	**0.9286**	0.395	42.6	mg/L	33	Standard
|	**K**	39	160.0	3.1	**0.9013**	0.032	3.6	mg/L	18	Standard
|	**Ca**	43	55.0	24.1	**-37.3746**	19.301	51.6	mg/L	72	Standard
|	**Fe**	54	37.9	30.5	**0.0134**	0.066	493.7	mg/L	29	Standard
|	**Fe**	57	396.7	11.7	**-0.1488**	0.853	573.2	mg/L	382	Standard
⌊>	**Sc-1**	45	40062.9	0.5				mg/L	39299	Standard
	Cl	35	1.3	86.6				ug/L	4	Standard
	Kr	83	1.0	100.0				ug/L	3	Standard
	Br	81	5574.4	6.2				ug/L	2287	Standard
	P	31	61.7	18.7				ug/L	80	Standard
	S	34	31.7	18.2				ug/L	45	Standard
	Sr	88	158.3	24.5				ug/L	178	Standard
	C	12	36.7	56.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	259.9	16.4				mg/L	16	Standard
	Ho-1	165	248.3	5.1				mg/L	10	Standard
	Er	166	280.0	30.9				mg/L	17	Standard
	I	127	5902.8	14.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		103.209	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
| >	Ge	72		100.288	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.358
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.678
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703137002
Sample Date/Time: Monday, March 27, 2017 16:16:50
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	274447.9	4.3				ug/L	262785	Standard
	Be	9	41.7	42.1	**0.0146**	0.006	41.7	ug/L	28	Standard
	Al	27	5236549.1	1.1	**29.0255**	1.514	5.2	ug/L	2187	Standard
	Sc	45	40587.6	0.3				ug/L	39299	Standard
	Ti	47	138.0	5.1	**0.2196**	0.041	18.8	ug/L	82	Standard
	V	51	2182.6	6.3	**0.0412**	0.007	17.3	ug/L	1876	Standard
	Cr	52	9553.3	2.4	**0.1728**	0.012	6.9	ug/L	8221	Standard
	Cr	53	1396.7	4.6	**0.3523**	0.073	20.6	ug/L	1083	Standard
	Mn	55	7100.7	1.3	**0.3333**	0.016	4.9	ug/L	2738	Standard
	Co	59	722.0	5.8	**0.0127**	0.005	37.3	ug/L	635	Standard
	Ni	60	1166.7	3.9	**0.4095**	0.019	4.7	ug/L	261	Standard
	Cu	65	1947.8	3.2	**0.5367**	0.048	9.0	ug/L	660	Standard
	Zn	66	4755.1	1.4	**2.9609**	0.156	5.3	ug/L	558	Standard
>	Ge	72	819349.5	3.4				ug/L	807251	Standard
	As	75	42.0	47.5	**0.0781**	0.014	17.7	ug/L	-43	Standard
	Se	82	121.0	2.4	**0.8908**	0.012	1.3	ug/L	18	Standard
	Se-1	77	195.7	3.4	**0.7835**	0.132	16.8	ug/L	127	Standard
>	Ga	71	51.7	14.8				mg/L	32	Standard
	Rb	85	4315.6	1.5				ug/L	27	Standard
	Y	89	554518.0	1.5				ug/L	534994	Standard
>	Rh	103	30.0	16.7				ug/L	20	Standard
	Mo	98	272.2	18.8	**0.0377**	0.013	33.2	ug/L	285	Standard
	Ag	107	113.3	6.6	**-0.0026**	0.001	41.5	ug/L	129	Standard
	Cd	111	26.0	18.9	**0.0043**	0.003	59.3	mg/L	6	Standard
	Cd	114	136.9	23.8	**0.0150**	0.006	42.9	ug/L	46	Standard
>	In	115	675040.9	1.8				ug/L	679215	Standard
	Sn	118	364.7	3.2	**0.0748**	0.006	8.4	ug/L	411	Standard
	Sb	123	229.6	19.7	**0.0115**	0.009	78.1	ug/L	497	Standard
	Ba	135	37865.9	1.5	**17.8665**	0.488	2.7	ug/L	43	Standard
	Ce	140	961.7	13.2				ug/L	22	Standard
>	Tb	159	997239.4	1.0				ug/L	983965	Standard
	Ho	165	136.7	18.0				ug/L	10	Standard
	Tl	203	282.0	9.8	**0.0056**	0.003	53.6	ug/L	248	Standard
	Tl	205	661.7	12.6	**0.0011**	0.005	419.6	ug/L	620	Standard
	Pb	206	738.0	7.4	**0.0329**	0.009	26.7	ug/L	503	Standard
	Pb	207	571.7	1.9	**0.0234**	0.001	3.1	ug/L	406	Standard
	Pb	208	710.0	1.4	**0.0281**	0.002	7.7	ug/L	497	Standard
	U	238	1599.1	4.6	**0.3018**	0.018	6.1	ug/L	17	Standard
>	Bi	209	585277.6	1.7				ug/L	559221	Standard

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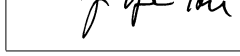

⌈	**Na**	23	23.3	32.7	**13.0303**	4.650	35.7	mg/L	2	Standard
|	**Mg**	24	100.0	13.2	**0.6700**	0.163	24.4	mg/L	33	Standard
|	**K**	39	190.0	15.8	**1.0821**	0.191	17.6	mg/L	18	Standard
|	**Ca**	43	56.7	33.4	**-36.0960**	26.681	73.9	mg/L	72	Standard
|	**Fe**	54	34.2	14.6	**-0.0101**	0.028	282.4	mg/L	29	Standard
|	**Fe**	57	416.7	15.2	**0.1359**	1.218	896.2	mg/L	382	Standard
⌊>	**Sc-1**	45	40587.6	0.3				mg/L	39299	Standard
	Cl	35	0.0					ug/L	4	Standard
	Kr	83	3.0	88.2				ug/L	3	Standard
	Br	81	11104.1	7.3				ug/L	2287	Standard
	P	31	91.7	27.5				ug/L	80	Standard
	S	34	36.7	7.9				ug/L	45	Standard
	Sr	88	183.3	11.0				ug/L	178	Standard
	C	12	26.7	21.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	194.3	15.9				mg/L	16	Standard
	Ho-1	165	136.7	18.0				mg/L	10	Standard
	Er	166	120.0	16.7				mg/L	17	Standard
	I	127	10315.2	3.7				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		104.438	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		101.499	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	99.385
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	104.659
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1703137003
Sample Date/Time: Monday, March 27, 2017 16:19:56
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	277165.3	3.0				ug/L	262785	Standard
	Be	9	91.7	16.7	**0.0336**	0.005	16.0	ug/L	28	Standard
	Al	27	8635461.3	3.8	**47.3475**	1.942	4.1	ug/L	2187	Standard
	Sc	45	41954.7	1.4				ug/L	39299	Standard
	Ti	47	112.7	6.7	**0.1219**	0.031	25.4	ug/L	82	Standard
	V	51	2400.8	5.4	**0.0642**	0.018	27.5	ug/L	1876	Standard
	Cr	52	12881.8	2.3	**0.5686**	0.053	9.4	ug/L	8221	Standard
	Cr	53	1741.8	8.6	**0.6776**	0.160	23.6	ug/L	1083	Standard
	Mn	55	195526.0	1.2	**13.7760**	0.325	2.4	ug/L	2738	Standard
	Co	59	1401.4	2.3	**0.0758**	0.002	2.7	ug/L	635	Standard
	Ni	60	1249.4	1.8	**0.4414**	0.016	3.6	ug/L	261	Standard
	Cu	65	4351.6	1.2	**1.5566**	0.043	2.7	ug/L	660	Standard
	Zn	66	26165.6	1.1	**18.1126**	0.417	2.3	ug/L	558	Standard
>	Ge	72	826361.1	1.2				ug/L	807251	Standard
	As	75	60.7	83.4	**0.0915**	0.036	39.4	ug/L	-43	Standard
	Se	82	236.5	5.6	**1.7957**	0.120	6.7	ug/L	18	Standard
	Se-1	77	277.7	5.5	**1.6586**	0.183	11.0	ug/L	127	Standard
>	Ga	71	40.0	43.3				mg/L	32	Standard
	Rb	85	10226.8	1.7				ug/L	27	Standard
	Y	89	558852.0	1.8				ug/L	534994	Standard
>	Rh	103	48.3	57.0				ug/L	20	Standard
	Mo	98	133.7	11.7	**0.0057**	0.004	68.0	ug/L	285	Standard
	Ag	107	131.0	8.0	**-0.0003**	0.002	660.2	ug/L	129	Standard
	Cd	111	237.8	9.2	**0.1074**	0.011	10.7	mg/L	6	Standard
	Cd	114	611.8	11.1	**0.1033**	0.014	13.3	ug/L	46	Standard
>	In	115	680415.1	1.5				ug/L	679215	Standard
	Sn	118	366.7	6.0	**0.0742**	0.022	29.9	ug/L	411	Standard
	Sb	123	187.7	14.7	**0.0034**	0.005	160.1	ug/L	497	Standard
	Ba	135	41816.0	1.2	**19.5734**	0.355	1.8	ug/L	43	Standard
	Ce	140	466.7	7.1				ug/L	22	Standard
>	Tb	159	1005113.2	1.0				ug/L	983965	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	234.3	14.4	**-0.0004**	0.004	868.9	ug/L	248	Standard
	Tl	205	593.3	4.2	**-0.0028**	0.001	34.0	ug/L	620	Standard
	Pb	206	712.0	3.5	**0.0278**	0.004	14.7	ug/L	503	Standard
	Pb	207	596.3	3.3	**0.0263**	0.003	12.9	ug/L	406	Standard
	Pb	208	720.7	4.4	**0.0284**	0.005	18.9	ug/L	497	Standard
	U	238	79.7	10.1	**0.0135**	0.002	12.2	ug/L	17	Standard
>	Bi	209	592329.9	1.2				ug/L	559221	Standard

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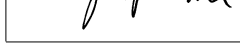

	Na	23	8.3	34.6	**3.8268**	1.736	45.4	mg/L	2	Standard
	Mg	24	171.7	24.8	**1.4687**	0.509	34.7	mg/L	33	Standard
	K	39	90.0	14.7	**0.4143**	0.086	20.7	mg/L	18	Standard
	Ca	43	43.3	43.7	**-56.6499**	26.555	46.9	mg/L	72	Standard
	Fe	54	32.8	74.9	**-0.0232**	0.135	583.0	mg/L	29	Standard
	Fe	57	365.0	17.2	**-1.0707**	1.089	101.7	mg/L	382	Standard
>	**Sc-1**	45	41954.7	1.4				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	7091.7	5.1				ug/L	2287	Standard
	P	31	83.3	34.1				ug/L	80	Standard
	S	34	41.7	25.0				ug/L	45	Standard
	Sr	88	131.7	28.8				ug/L	178	Standard
	C	12	53.3	10.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	39.2	75.9				mg/L	16	Standard
	Ho-1	165	23.3	32.7				mg/L	10	Standard
	Er	166	16.7	91.7				mg/L	17	Standard
	I	127	14278.4	0.8				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.472	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.367	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	100.177
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	105.921
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1703137003
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Method 6020 - Summary Report

Sample ID: L1703137004
Sample Date/Time: Monday, March 27, 2017 16:23:01
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	280139.6	3.3				ug/L	262785	Standard
	Be	9	51.7	34.0	**0.0182**	0.007	36.1	ug/L	28	Standard
	Al	27	13077625.9	0.9	**70.9563**	1.745	2.5	ug/L	2187	Standard
	Sc	45	42160.3	4.6				ug/L	39299	Standard
	Ti	47	105.3	7.1	**0.0958**	0.020	20.8	ug/L	82	Standard
	V	51	2508.7	6.6	**0.0775**	0.024	31.5	ug/L	1876	Standard
	Cr	52	12201.2	0.9	**0.4899**	0.023	4.7	ug/L	8221	Standard
	Cr	53	1881.8	3.4	**0.8190**	0.060	7.4	ug/L	1083	Standard
	Mn	55	11440.4	21.1	**0.6424**	0.185	28.8	ug/L	2738	Standard
	Co	59	662.0	6.2	**0.0066**	0.005	72.6	ug/L	635	Standard
	Ni	60	1477.1	2.7	**0.5432**	0.018	3.4	ug/L	261	Standard
	Cu	65	2409.9	0.9	**0.7295**	0.025	3.4	ug/L	660	Standard
	Zn	66	9198.5	1.4	**6.1003**	0.168	2.7	ug/L	558	Standard
>	Ge	72	823925.3	2.1				ug/L	807251	Standard
	As	75	15.5	440.5	**0.0598**	0.049	82.1	ug/L	-43	Standard
	Se	82	119.3	9.6	**0.8726**	0.109	12.5	ug/L	18	Standard
	Se-1	77	215.0	3.7	**0.9819**	0.120	12.2	ug/L	127	Standard
>	Ga	71	40.0	12.5				mg/L	32	Standard
	Rb	85	20100.0	4.7				ug/L	27	Standard
	Y	89	562542.7	2.8				ug/L	534994	Standard
>	Rh	103	36.7	28.4				ug/L	20	Standard
	Mo	98	130.2	3.1	**0.0049**	0.001	17.8	ug/L	285	Standard
	Ag	107	152.3	8.2	**0.0027**	0.002	56.7	ug/L	129	Standard
	Cd	111	53.8	5.6	**0.0178**	0.001	8.2	mg/L	6	Standard
	Cd	114	165.2	14.1	**0.0201**	0.005	23.7	ug/L	46	Standard
>	In	115	679869.7	1.6				ug/L	679215	Standard
	Sn	118	427.3	3.8	**0.1258**	0.012	9.8	ug/L	411	Standard
	Sb	123	166.0	17.8	**-0.0005**	0.006	1129.0	ug/L	497	Standard
	Ba	135	68568.8	1.0	**32.1386**	0.821	2.6	ug/L	43	Standard
	Ce	140	556.7	9.1				ug/L	22	Standard
>	Tb	159	1010658.1	0.5				ug/L	983965	Standard
	Ho	165	56.7	13.5				ug/L	10	Standard
	Tl	203	315.0	12.9	**0.0091**	0.005	54.9	ug/L	248	Standard
	Tl	205	773.4	7.4	**0.0061**	0.003	46.2	ug/L	620	Standard
	Pb	206	647.3	2.3	**0.0182**	0.003	15.3	ug/L	503	Standard
	Pb	207	568.7	5.5	**0.0217**	0.006	25.8	ug/L	406	Standard
	Pb	208	703.7	2.6	**0.0259**	0.003	12.3	ug/L	497	Standard
	U	238	388.7	2.4	**0.0713**	0.002	2.7	ug/L	17	Standard
>	Bi	209	593126.9	0.7				ug/L	559221	Standard

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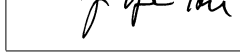

⌈	**Na**	23	30.0	33.3	**16.5003**	6.217	37.7	mg/L	2	Standard
|	**Mg**	24	288.3	11.5	**2.8045**	0.275	9.8	mg/L	33	Standard
|	**K**	39	138.3	29.2	**0.7109**	0.243	34.2	mg/L	18	Standard
|	**Ca**	43	65.0	13.3	**-27.9585**	9.299	33.3	mg/L	72	Standard
|	**Fe**	54	41.1	67.1	**0.0155**	0.139	897.2	mg/L	29	Standard
|	**Fe**	57	390.0	5.9	**-0.6278**	0.655	104.3	mg/L	382	Standard
⌊>	**Sc-1**	45	42160.3	4.6				mg/L	39299	Standard
	Cl	35	2.0	0.0				ug/L	4	Standard
	Kr	83	2.0	50.0				ug/L	3	Standard
	Br	81	6858.2	3.5				ug/L	2287	Standard
	P	31	91.7	25.8				ug/L	80	Standard
	S	34	40.0	33.1				ug/L	45	Standard
	Sr	88	153.3	13.6				ug/L	178	Standard
	C	12	30.0	57.7				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	50.8	30.2				mg/L	16	Standard
	Ho-1	165	56.7	13.5				mg/L	10	Standard
	Er	166	53.3	39.0				mg/L	17	Standard
	I	127	11766.2	4.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
⌈>	Li	6		106.604	
|	Be	9			
⌊	Al	27			
⌈	Sc	45			
|	Ti	47			
|	V	51			
|	Cr	52			
|	Cr	53			
|	Mn	55			
|	Co	59			
|	Ni	60			
|	Cu	65			
|	Zn	66			
|>	Ge	72		102.066	
|	As	75			
|	Se	82			
⌊	Se-1	77			
⌈>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.096
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.063
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, March 27, 2017 16:26:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	269077.8	2.8				ug/L	262785	Standard
	Be	9	129122.9	1.2	**50.5218**	1.154	2.3	ug/L	28	Standard
	Al	27	8244726.2	1.1	**46.5779**	1.752	3.8	ug/L	2187	Standard
	Sc	45	40430.6	2.8				ug/L	39299	Standard
	Ti	47	27127.3	0.3	**102.0268**	2.296	2.2	ug/L	82	Standard
	V	51	415255.1	1.1	**48.4266**	0.720	1.5	ug/L	1876	Standard
	Cr	52	397068.0	1.1	**48.8778**	0.783	1.6	ug/L	8221	Standard
	Cr	53	48760.0	2.1	**48.0496**	1.102	2.3	ug/L	1083	Standard
	Mn	55	673070.8	1.3	**49.3308**	0.612	1.2	ug/L	2738	Standard
	Co	59	509405.7	1.1	**49.2699**	0.728	1.5	ug/L	635	Standard
	Ni	60	108298.0	0.9	**48.9059**	0.796	1.6	ug/L	261	Standard
	Cu	65	113061.6	0.5	**49.5287**	1.008	2.0	ug/L	660	Standard
	Zn	66	68289.9	0.9	**49.4769**	0.934	1.9	ug/L	558	Standard
>	Ge	72	801780.3	2.5				ug/L	807251	Standard
	As	75	68143.8	0.7	**49.8993**	1.134	2.3	ug/L	-43	Standard
	Se	82	6386.7	1.4	**51.9649**	0.611	1.2	ug/L	18	Standard
	Se-1	77	4561.0	0.8	**49.9719**	1.299	2.6	ug/L	127	Standard
>	Ga	71	53.3	43.3				mg/L	32	Standard
	Rb	85	440.0	17.0				ug/L	27	Standard
	Y	89	541643.7	3.8				ug/L	534994	Standard
>	Rh	103	31.7	39.7				ug/L	20	Standard
	Mo	98	446544.9	0.4	**102.9908**	1.362	1.3	ug/L	285	Standard
	Ag	107	362539.5	0.5	**51.7046**	0.790	1.5	ug/L	129	Standard
	Cd	111	104353.4	0.3	**51.7387**	0.719	1.4	mg/L	6	Standard
	Cd	114	273570.7	0.6	**51.9171**	0.959	1.8	ug/L	46	Standard
>	In	115	667648.8	1.7				ug/L	679215	Standard
	Sn	118	59792.1	1.4	**51.4538**	1.092	2.1	ug/L	411	Standard
	Sb	123	271770.8	0.4	**50.7878**	0.985	1.9	ug/L	497	Standard
	Ba	135	103774.8	0.1	**49.5358**	0.776	1.6	ug/L	43	Standard
	Ce	140	361.7	18.6				ug/L	22	Standard
>	Tb	159	993359.4	2.0				ug/L	983965	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	416533.6	0.3	**50.3665**	1.153	2.3	ug/L	248	Standard
	Tl	205	998451.6	0.8	**50.6528**	1.564	3.1	ug/L	620	Standard
	Pb	206	337398.8	0.7	**50.0492**	1.499	3.0	ug/L	503	Standard
	Pb	207	306655.5	0.3	**50.4393**	1.297	2.6	ug/L	406	Standard
	Pb	208	355087.3	1.1	**50.0798**	1.529	3.1	ug/L	497	Standard
	U	238	282519.1	0.7	**54.1202**	1.307	2.4	ug/L	17	Standard
>	Bi	209	579193.4	2.3				ug/L	559221	Standard

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	Na	23	18.3	83.3	**9.9004**	8.851	89.4	mg/L	2	Standard
	Mg	24	406.7	7.5	**4.3916**	0.489	11.1	mg/L	33	Standard
	K	39	600.0	5.2	**3.7646**	0.269	7.1	mg/L	18	Standard
	Ca	43	33.3	37.7	**-68.7787**	17.778	25.8	mg/L	72	Standard
	Fe	54	829.6	4.2	**4.4963**	0.227	5.0	mg/L	29	Standard
	Fe	57	663.3	3.4	**4.8348**	0.196	4.1	mg/L	382	Standard
>	**Sc-1**	45	40430.6	2.8				mg/L	39299	Standard
	Cl	35	3.3	69.3				ug/L	4	Standard
	Kr	83	2.7	43.3				ug/L	3	Standard
	Br	81	2957.0	3.7				ug/L	2287	Standard
	P	31	66.7	30.3				ug/L	80	Standard
	S	34	55.0	9.1				ug/L	45	Standard
	Sr	88	138.3	4.2				ug/L	178	Standard
	C	12	33.3	45.8				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	5.1	94.9				mg/L	16	Standard
	Ho-1	165	11.7	107.9				mg/L	10	Standard
	Er	166	33.3	62.5				mg/L	17	Standard
	I	127	2985.3	2.0				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.044		
	Al	27	93.156		
	Sc	45			
	Ti	47	102.027		
	V	51	96.853		
	Cr	52	97.756		
	Cr	53			
	Mn	55	98.662		
	Co	59	98.540		
	Ni	60	97.812		
	Cu	65	99.057		
	Zn	66	98.954		
>	Ge	72		99.322	
	As	75	99.799		
	Se	82	103.930		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.991		
Ag	107	103.409		
Cd	111	103.477		
Cd	114			
In	115		98.297	
Sn	118	102.908		
Sb	123	101.576		
Ba	135	99.072		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.733		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.160		
U	238	108.240		
Bi	209		103.572	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, March 27, 2017 16:29:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	266152.7	1.6				ug/L	262785	Standard
	Be	9	61.7	49.5	**0.0231**	0.012	52.2	ug/L	28	Standard
	Al	27	3780.7	82.3	**0.0154**	0.018	115.5	ug/L	2187	Standard
	Sc	45	40163.2	2.5				ug/L	39299	Standard
	Ti	47	29.3	13.8	**-0.1787**	0.016	9.2	ug/L	82	Standard
	V	51	1455.9	10.3	**-0.0364**	0.020	54.8	ug/L	1876	Standard
	Cr	52	6184.9	1.4	**-0.2172**	0.022	10.2	ug/L	8221	Standard
	Cr	53	673.3	9.1	**-0.3396**	0.065	19.3	ug/L	1083	Standard
	Mn	55	2715.6	7.2	**0.0237**	0.017	71.7	ug/L	2738	Standard
	Co	59	355.0	16.1	**-0.0210**	0.006	28.1	ug/L	635	Standard
	Ni	60	279.0	6.8	**0.0202**	0.009	45.5	ug/L	261	Standard
	Cu	65	644.0	2.9	**-0.0177**	0.004	23.1	ug/L	660	Standard
	Zn	66	564.7	4.3	**-0.0265**	0.014	52.3	ug/L	558	Standard
>	Ge	72	794298.0	1.5				ug/L	807251	Standard
	As	75	-49.8	43.4	**0.0115**	0.016	142.0	ug/L	-43	Standard
	Se	82	18.5	18.2	**0.0784**	0.030	37.9	ug/L	18	Standard
	Se-1	77	98.3	2.6	**-0.2566**	0.035	13.7	ug/L	127	Standard
>	Ga	71	26.7	39.0				mg/L	32	Standard
	Rb	85	38.3	39.8				ug/L	27	Standard
	Y	89	534954.7	2.2				ug/L	534994	Standard
>	Rh	103	8.3	124.9				ug/L	20	Standard
	Mo	98	357.6	15.8	**0.0589**	0.012	21.0	ug/L	285	Standard
	Ag	107	172.3	18.5	**0.0063**	0.004	69.9	ug/L	129	Standard
	Cd	111	15.5	63.4	**-0.0006**	0.005	771.9	mg/L	6	Standard
	Cd	114	72.6	79.3	**0.0033**	0.011	339.0	ug/L	46	Standard
>	In	115	659405.9	1.3				ug/L	679215	Standard
	Sn	118	338.7	4.3	**0.0596**	0.016	26.3	ug/L	411	Standard
	Sb	123	358.5	13.5	**0.0369**	0.010	26.1	ug/L	497	Standard
	Ba	135	102.7	28.4	**0.0302**	0.014	45.4	ug/L	43	Standard
	Ce	140	25.0	40.0				ug/L	22	Standard
>	Tb	159	974616.4	0.5				ug/L	983965	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	126.7	43.9	**-0.0128**	0.007	53.0	ug/L	248	Standard
	Tl	205	303.3	61.9	**-0.0168**	0.010	57.1	ug/L	620	Standard
	Pb	206	582.0	12.4	**0.0109**	0.011	98.9	ug/L	503	Standard
	Pb	207	499.3	6.2	**0.0126**	0.005	39.6	ug/L	406	Standard
	Pb	208	611.0	4.6	**0.0153**	0.004	26.5	ug/L	497	Standard
	U	238	68.0	58.1	**0.0116**	0.008	65.5	ug/L	17	Standard
>	Bi	209	578415.5	0.6				ug/L	559221	Standard

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	Na	23	1.7	173.2	**-0.0369**	1.754	4755.9	mg/L	2	Standard
	Mg	24	33.3	22.9	**-0.1284**	0.099	76.8	mg/L	33	Standard
	K	39	20.0	43.3	**-0.0194**	0.061	312.0	mg/L	18	Standard
	Ca	43	51.7	39.1	**-42.7258**	26.917	63.0	mg/L	72	Standard
	Fe	54	29.5	16.7	**-0.0351**	0.027	76.0	mg/L	29	Standard
	Fe	57	325.0	9.4	**-1.5288**	0.593	38.8	mg/L	382	Standard
>	**Sc-1**	45	40163.2	2.5				mg/L	39299	Standard
	Cl	35	2.0	100.0				ug/L	4	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	2806.9	4.0				ug/L	2287	Standard
	P	31	291.7	113.8				ug/L	80	Standard
	S	34	50.0	20.0				ug/L	45	Standard
	Sr	88	160.0	3.1				ug/L	178	Standard
	C	12	30.0	88.2				mg/L	33	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	9.7	108.3				mg/L	16	Standard
	Ho-1	165	8.3	69.3				mg/L	10	Standard
	Er	166	6.7	173.2				mg/L	17	Standard
	I	127	5917.8	6.5				mg/L	5888	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.395	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85	
Y	89	
Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
In	115	97.083
Sn	118	
Sb	123	
Ba	135	
Ce	140	
Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
Bi	209	103.432
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, March 27, 2017 16:31:24
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2.2.3 Metals CVAA Data (Mercury)

2.2.3.1 Summary Data

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW08-032017	**Prep Method:**	7470A	**Prep Date:**	03/22/2017 09:07
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/23/2017 14:18
Workgroup #:	WG607470	**Analyst:**	KDD	**Run Date:**	03/23/2017 15:04
Collect Date:	03/20/2017 08:25	**Dilution:**	1	**File ID:**	M7.032317.150429
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #: L17031161-02 **PrePrep Method:** N/A **Instrument:** CVAA1
Client ID: 18WW08MS-032017 **Prep Method:** 7470A **Prep Date:** 03/22/2017 09:06
Matrix: Water **Analytical Method:** 7470A **Cal Date:** 03/23/2017 14:18
Workgroup #: WG607470 **Analyst:** KDD **Run Date:** 03/23/2017 15:09
Collect Date: 03/20/2017 08:25 **Dilution:** 1 **File ID:** M7.032317.150930
Sample Tag: 01 **Units:** mg/L

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00412		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #: L17031161-03 **PrePrep Method:** N/A **Instrument:** CVAA1
Client ID: 18WW08MSD-032017 **Prep Method:** 7470A **Prep Date:** 03/22/2017 09:06
Matrix: Water **Analytical Method:** 7470A **Cal Date:** 03/23/2017 14:18
Workgroup #: WG607470 **Analyst:** KDD **Run Date:** 03/23/2017 15:12
Collect Date: 03/20/2017 08:25 **Dilution:** 1 **File ID:** M7.032317.151200
Sample Tag: 01 **Units:** mg/L

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00409		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #: L17031161-04 **PrePrep Method:** N/A **Instrument:** CVAA1
Client ID: 18CPTMW23SW-032017 **Prep Method:** 7470A **Prep Date:** 03/22/2017 09:07
Matrix: Water **Analytical Method:** 7470A **Cal Date:** 03/23/2017 14:18
Workgroup #: WG607470 **Analyst:** KDD **Run Date:** 03/23/2017 15:15
Collect Date: 03/20/2017 09:40 **Dilution:** 1 **File ID:** M7.032317.151533
Sample Tag: 01 **Units:** mg/L

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW24-032017	**Prep Method:**	7470A	**Prep Date:**	03/22/2017 09:07
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/23/2017 14:18
Workgroup #:	WG607470	**Analyst:**	KDD	**Run Date:**	03/23/2017 15:18
Collect Date:	03/20/2017 10:40	**Dilution:**	1	**File ID:**	M7.032317.151804
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW25F-032017	**Prep Method:**	7470A	**Prep Date:**	03/22/2017 09:07
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/23/2017 14:18
Workgroup #:	WG607470	**Analyst:**	KDD	**Run Date:**	03/23/2017 15:20
Collect Date:	03/20/2017 13:25	**Dilution:**	1	**File ID:**	M7.032317.152036
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031161-09	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW10F-032017	**Prep Method:**	7470A	**Prep Date:**	03/22/2017 09:07
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/23/2017 14:18
Workgroup #:	WG607470	**Analyst:**	KDD	**Run Date:**	03/23/2017 15:23
Collect Date:	03/20/2017 14:25	**Dilution:**	1	**File ID:**	M7.032317.152308
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Microbac

Lab Report #: L17031161
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

2.2.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

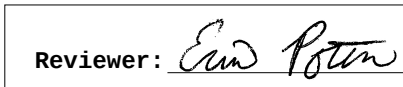
Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG607143
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 03/22/2017 09:07
Hotblock Start Temp: 95.7 @ 09:00
Hotblock End Temp: 95.4 @ 11:00
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD81043
Spike Witness: AC
H2SO4 Lot #: COA19447
HNO3 Lot #: COA19483
40 & 50 ML. DIGESTION TU COA19487
K2S2O8 1:1 Lot #: RGT39467
KMnO4 1:1 Lot #: RGT39613
Mercury Water ICV Lot #: STD81045
HG H2O STDS 10PPM Lot #: STD81051

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG607143-03	BLANK	1	40 mL	40 mL		
2	WG607001-01	FBLK1	17	4 mL	40 mL		
3	WG607001-02	FBLK2	17	4 mL	40 mL		
4	WG607143-04	LCS	1	40 mL	40 mL	4 mL	
5	L17031024-01	SAMP	17	4 mL	40 mL		03/24/17
6	L17031116-01	SAMP	2	40 mL	40 mL		03/31/17
7	L17031131-02	SAMP	17	4 mL	40 mL		03/27/17
8	L17031133-02	SAMP	17	4 mL	40 mL		03/27/17
9	WG607143-01	REF	2	40 mL	40 mL		
10	L17031143-01	SAMP	2	40 mL	40 mL		03/28/17
11	WG607143-02	REF	1	40 mL	40 mL		
12	L17031161-01	RS01	1	40 mL	40 mL		03/31/17
13	WG607143-06	MS	1	36 mL	40 mL	4 mL	
14	L17031161-02	MS01	1	36 mL	40 mL	4 mL	03/31/17
15	WG607143-07	MSD	1	36 mL	40 mL	4 mL	
16	L17031161-03	SD01	1	36 mL	40 mL	4 mL	03/31/17
17	L17031161-04	SAMP	1	40 mL	40 mL		03/31/17
18	L17031161-05	SAMP	1	40 mL	40 mL		03/31/17
19	L17031161-07	SAMP	1	40 mL	40 mL		03/31/17
20	L17031161-09	SAMP	1	40 mL	40 mL		03/31/17
21	WG607143-05	DUP	1	40 mL	40 mL		

Analyst: 

Reviewer: 

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 5210835
Report generated: 03/22/2017 11:24

TCLP Non-Volatile

Analyst(s): BNB
Date: 3-21-17
Filter Lot #: 94S80030
Microbac SOP: TCLP01 Rev #: 12

Balance ID: BAL020
pH Probe ID: T5
Temp probe ID: ☒ 1025 ☐ 1023

Analyst / Date		Analyst / Date	
BNB 3-21-17		BNB 3-22-17	
Time On	Temp On °C	Time Off	Temp Off °C
14:48	22.1	808	22.5

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
20	03-1024-01	Me,SV	1311	F1-221	S	100	7.02	1.83	100.01	2000	5.02
D	03-1120-01	Me	〃	〃	〃	〃	7.58	1.97	100.15	2003	5.57
29	03-1131-2	Me,SV,Herb,Pest,pH-L	1311	F2-392	S	100	10.95	9.20	100.30	2006	~~4.59~~ BNB 3-22-17 8.79
31	03-1133-02	〃 〃 〃 〃 〃	〃	F1-221	〃	〃	7.79	3.31	100.63	2012	6.87
NA	03-1139-01	Herb	1311	FIL	W	<0.5	NA	NA	100	100	8.89
NA	FBIK-1	Me,SV,Herb,Pest,pH-L	〃	F1-221	NA	NA	NA	NA	100	100	4.97
NA	FBIK-2	〃 〃 〃 〃 〃	〃	F2-392	〃	〃	〃	〃	〃	〃	2.83

BNB 3-22-17

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 032317C.CSV
Analyst1: KDD Analyst2: N/A
Method: 7470A/245.1 SOP: 404 Rev: 17
Maintenance Log ID:

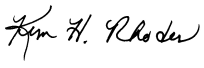
Calibration Std: STD81051 ICV Std: STD81045 Post Spike: STD81051
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT39471 Hydroxylamine : RGT39469

Workgroups: 607143

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.032317.140606	WG607614-01	Calibration Point		1		03/23/17 14:06
2	M7.032317.140837	WG607614-02	Calibration Point		1		03/23/17 14:08
3	M7.032317.141109	WG607614-03	Calibration Point		1		03/23/17 14:11
4	M7.032317.141342	WG607614-04	Calibration Point		1		03/23/17 14:13
5	M7.032317.141615	WG607614-05	Calibration Point		1		03/23/17 14:16
6	M7.032317.141849	WG607614-06	Calibration Point		1		03/23/17 14:18
7	M7.032317.142123	WG607614-07	Initial Calibration Verification		1		03/23/17 14:21
8	M7.032317.142354	WG607614-08	Initial Calib Blank		1		03/23/17 14:23
9	M7.032317.142626	WG607614-09	CCV		1		03/23/17 14:26
10	M7.032317.142857	WG607614-10	CCB		1		03/23/17 14:28
11	M7.032317.143127	WG607143-03	Method/Prep Blank	40/40	1		03/23/17 14:31
12	M7.032317.143358	WG607143-04	Laboratory Control S	40/40	1		03/23/17 14:33
13	M7.032317.143630	WG607001-01	Fluid Blank 1		1		03/23/17 14:36
14	M7.032317.143901	WG607001-02	Fluid Blank 2		1		03/23/17 14:39
15	M7.032317.144133	L17031024-01	031617 HGD		1		03/23/17 14:41
16	M7.032317.144406	L17031116-01	001	40/40	1		03/23/17 14:44
17	M7.032317.144638	L17031131-02	T7C0876-02	4/40	1		03/23/17 14:46
18	M7.032317.144911	WG607470-01	Post Digestion Spike		1	L17031131-02	03/23/17 14:49
19	M7.032317.145144	L17031133-02	T7C0709-02	4/40	1		03/23/17 14:51
20	M7.032317.145418	WG607143-01	Reference Sample	40/40	1	L17031143-01	03/23/17 14:54
21	M7.032317.145650	WG607614-11	CCV		1		03/23/17 14:56
22	M7.032317.145921	WG607614-12	CCB		1		03/23/17 14:59
23	M7.032317.150155	WG607143-05	Duplicate	40/40	1	L17031143-01	03/23/17 15:01
24	M7.032317.150429	WG607143-02	Reference Sample	40/40	1	L17031161-01	03/23/17 15:04
25	M7.032317.150659	WG607470-02	Post Digestion Spike		1	L17031161-01	03/23/17 15:06
26	M7.032317.150930	WG607143-06	Matrix Spike	36/40	1	L17031161-01	03/23/17 15:09
27	M7.032317.151200	WG607143-07	Matrix Spike Duplica	36/40	1	L17031161-01	03/23/17 15:12
28	M7.032317.151533	L17031161-04	18CPTMW23SW-032017	40/40	1		03/23/17 15:15
29	M7.032317.151804	L17031161-05	18WW24-032017	40/40	1		03/23/17 15:18
30	M7.032317.152036	L17031161-07	18WW25F-032017	40/40	1		03/23/17 15:20
31	M7.032317.152308	L17031161-09	MW10F-032017	40/40	1		03/23/17 15:23
32	M7.032317.152540	WG607614-13	CCV		1		03/23/17 15:25
33	M7.032317.152811	WG607614-14	CCB		1		03/23/17 15:28
34	M7.032317.153043	L17031024-01	031617 HGD		1		03/23/17 15:30

Page: 1 Approved: March 24, 2017



Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 032317C.CSV

Analyst1: KDD Analyst2: N/A

Method: 7470A/245.1 SOP: 404 Rev: 17

Maintenance Log ID:

Calibration Std: STD81051 ICV Std: STD81045 Post Spike: STD81051

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT39471 Hydroxylamine : RGT39469

Workgroups: 607143

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.032317.153316	WG607614-15	CCV		1		03/23/17 15:33
36	M7.032317.153546	WG607614-16	CCB		1		03/23/17 15:35
37	M7.032317.153907	L17031024-01	031617 HGD	4/40	5		03/23/17 15:39
38	M7.032317.154305	WG607470-03	Serial Dilution		25	L17031024-01	03/23/17 15:43
39	M7.032317.154538	WG607614-17	CCV		1		03/23/17 15:45
40	M7.032317.154808	WG607614-18	CCB		1		03/23/17 15:48

Page: 2 Approved: March 24, 2017

Kym H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAR-2017
Analyst: KDD
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 607614
Runlog ID: 81147
Analytical Workgroups: 607470

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1161
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KDD
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
24-MAR-2017

Secondary Reviewer:
24-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2017 14:12:05

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A AAB#: WG607470

Login Number: L17031161

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW08-032017	01	03/20/17					03/22/2017	2	28		03/23/17	3.3	28	
18WW08MS-032017	02	03/20/17					03/22/2017	2	28		03/23/17	3.3	28	
18WW08MSD-032017	03	03/20/17					03/22/2017	2	28		03/23/17	3.3	28	
18CPTMW23SW-032017	04	03/20/17					03/22/2017	2	28		03/23/17	3.2	28	
18WW24-032017	05	03/20/17					03/22/2017	1.9	28		03/23/17	3.2	28	
18WW25F-032017	07	03/20/17					03/22/2017	1.8	28		03/23/17	3.1	28	
MW10F-032017	09	03/20/17					03/22/2017	1.8	28		03/23/17	3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5215425
Report generated 03/24/2017 11:20

METHOD BLANK SUMMARY

Login Number: L17031161
Work Group: WG607470
Blank File ID: M7.032317.143127
Blank Sample ID: WG607143-03
Prep Date: 03/22/17 09:07
Instrument ID: CVAA1
Analyzed Date: 03/23/17 14:31
Method: 7470A
Analyst: KDD

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607143-04	M7.032317.143358	03/23/17 14:33	01
DUP	WG607143-05	M7.032317.150155	03/23/17 15:01	01
18WW08-032017	L17031161-01	M7.032317.150429	03/23/17 15:04	01
18WW08MS-032017	L17031161-02	M7.032317.150930	03/23/17 15:09	01
18WW08MSD-032017	L17031161-03	M7.032317.151200	03/23/17 15:12	01
18CPTMW23SW-032017	L17031161-04	M7.032317.151533	03/23/17 15:15	01
18WW24-032017	L17031161-05	M7.032317.151804	03/23/17 15:18	01
18WW25F-032017	L17031161-07	M7.032317.152036	03/23/17 15:20	01
MW10F-032017	L17031161-09	M7.032317.152308	03/23/17 15:23	01

Report Name: BLANK_SUMMARY
PDF File ID: 5215426
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031161 Prep Date: 03/22/17 09:07 Sample ID: WG607143-03
Instrument ID: CVAA1 Run Date: 03/23/17 14:31 Prep Method: 7470A
File ID: M7.032317.143127 Analyst: KDD Method: 7470A
Workgroup (AAB#): WG607470 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-23-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5215427
24-MAR-2017 11:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031161 **Run Date:** 03/23/2017 **Sample ID:** WG607143-04
Instrument ID: CVAA1 **Run Time:** 14:33 **Prep Method:** 7470A
File ID: M7.032317.143358 **Analyst:** KDD **Method:** 7470A
Workgroup (AAB#): WG607470 **Matrix:** Water **Units:** mg/L
QC Key: DOD4 **Lot#:** STD81043 **Cal ID:** CVAA1-23-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00374	93.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 5215428
Report generated: 03/24/2017 11:20

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum:L17031161 Cal ID:CVAA1- 23-MAR-17 Worknum:WG607470

Instrument ID:CVAA1 Contract #: Prep Method:7470A

Parent ID:L17031161-01 File ID:M7.032317.150429 Dil:1 Method:7470A

Sample ID:L17031161-02 MS File ID:M7.032317.150930 Dil:1 Matrix:Water

Sample ID:L17031161-03 MSD File ID:M7.032317.151200 Dil:1 Units:mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	U	0.00444	0.00412	92.6	0.00444	0.00409	92	0.731	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008

PDF File ID: 5215429

Report generated 03/24/2017 11:20

Loginnum:L17031161 Cal ID:CVAA1- Worknum:WG607470
Instrument ID:CVAA1 Contract #: Method:7470A
Parent ID:WG607143-02 File ID:M7.032317.150429 Dil:1 Matrix:WATER
Sample ID:WG607143-06 MS File ID:M7.032317.150930 Dil:1 Units:mg/L
Sample ID:WG607143-07 MSD File ID:M7.032317.151200 Dil:1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00412	92.6	0.00444	0.00409	92.0	0.731	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 5223930
Report generated 03/30/2017 12:26

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L17031161 **Worknum:** WG607470
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG607470-02 **File ID:** M7.032317.150659 **Dil:** 1 **Units:** ug/L
Sample ID: L17031161-01 **File ID:** M7.032317.150429 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	0.947		0	U	1	94.7	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 5215424
Report generated: 03/24/2017 11:20

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L17031161
Analytical Method: 7470A
ICAL Worknum: WG607614

Workgroup (AAB#): WG607470
Instrument ID: CVAA1
Initial Calibration Date: 03/23/2017 14:18

Analyte	WG607614-01		WG607614-02		WG607614-03		WG607614-04		WG607614-05		WG607614-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	14.24	0.200	1107	1.00	5486	2.00	11000	5.00	27530	10.0	54460

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 5215430
Report generated 03/24/2017 11:20

Login Number: L17031161
Analytical Method: 7470A
ICAL Worknum: WG607614

Workgroup (AAB#): WG607470
Instrument ID: CVAA1
Initial Calibration Date: 03/23/2017 14:18

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 5215430
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607614-08
Instrument ID: CVAA1 Run Time: 14:23 Method: 7470A
File ID: M7.032317.142354 Analyst: KDD Units: ug/L
Workgroup (AAB#): WG607470 Cal ID: CVAA1 - 23-MAR-17
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 5215432
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number:	L17031161	Run Date:	03/23/2017	Sample ID:	WG607614-10
Instrument ID:	CVAA1	Run Time:	14:28	Method:	7470A
File ID:	M7.032317.142857	Analyst:	KDD	Units:	ug/L
Workgroup (AAB#):	WG607470	Cal ID:	CVAA1 - 23-MAR-17		
Matrix:	WATER	QAPP:	DOD4		

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5215434
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/23/2017 | Sample ID: WG607614-12
Instrument ID: CVAA1 | Run Time: 14:59 | Method: 7470A
File ID: M7.032317.145921 | Analyst: KDD | Units: ug/L
Workgroup (AAB#): WG607470 | Cal ID: CVAA1 - 23-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5215434
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/23/2017 | Sample ID: WG607614-14
Instrument ID: CVAA1 | Run Time: 15:28 | Method: 7470A
File ID: M7.032317.152811 | Analyst: KDD | Units: ug/L
Workgroup (AAB#): WG607470 | Cal ID: CVAA1 - 23-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5215434
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L17031161 | Run Date: 03/23/2017 | Sample ID: WG607614-18
Instrument ID: CVAA1 | Run Time: 15:48 | Method: 7470A
File ID: M7.032317.154808 | Analyst: KDD | Units: ug/L
Workgroup (AAB#): WG607470 | Cal ID: CVAA1 - 23-MAR-17
Matrix: WATER | QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 5215434
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607614-07
Instrument ID: CVAA1 Run Time: 14:21 Method: 7470A
File ID: M7.032317.142123 Analyst: KDD Units: ug/L
Workgroup (AAB#): WG607470 Cal ID: CVAA1 - 23-MAR-17
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.98	99.2	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 5215431
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607614-09
Instrument ID: CVAA1 Run Time: 14:26 Method: 7470A
File ID: M7.032317.142626 Analyst: KDD QC Key: DOD4
Workgroup (AAB#): WG607470 Cal ID: CVAA1 - 23-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00202	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5215433
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607614-11
Instrument ID: CVAA1 Run Time: 14:56 Method: 7470A
File ID: M7.032317.145650 Analyst: KDD QC Key: DOD4
Workgroup (AAB#): WG607470 Cal ID: CVAA1 - 23-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00202	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5215433
Report generated 03/24/2017 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607614-13

Instrument ID: CVAA1 Run Time: 15:25 Method: 7470A

File ID: M7.032317.152540 Analyst: KDD QC Key: DOD4

Workgroup (AAB#): WG607470 Cal ID: CVAA1 - 23-MAR-17

Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00203	mg/L	102	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008

PDF File ID: 5215433

Report generated 03/24/2017 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031161 Run Date: 03/23/2017 Sample ID: WG607614-17
Instrument ID: CVAA1 Run Time: 15:45 Method: 7470A
File ID: M7.032317.154538 Analyst: KDD QC Key: DOD4
Workgroup (AAB#): WG607470 Cal ID: CVAA1 - 23-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00204	mg/L	102	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 5215433
Report generated 03/24/2017 11:20

2.2.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

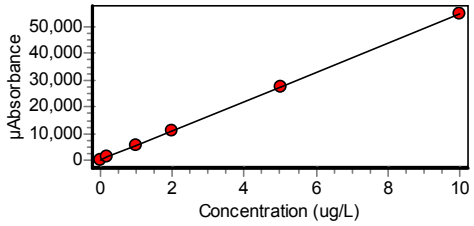
Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\032317C.wsz
Date Started: 3/23/2017 1:57:33 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	03/23/17 02:06:06 pm	0.0000	14	77.94		1.00
Replicates	13.3	30.1	8.4	5.1							
Standard #1 (0.2 ug/L)					STD	03/23/17 02:08:37 pm	0.2000	1107	1.17		1.00
Replicates	1088.7	1115.8	1107.1	1116.5							
Standard #2 (1.0 ug/L)					STD	03/23/17 02:11:09 pm	1.0000	5486	1.10		1.00
Replicates	5413.8	5462.7	5517.0	5550.5							
Standard #3 (2.0 ug/L)					STD	03/23/17 02:13:42 pm	2.0000	10997	0.83		1.00
Replicates	10882.6	10983.5	11017.3	11104.1							
Standard #4 (5.0 ug/L)					STD	03/23/17 02:16:15 pm	5.0000	27530	0.76		1.00
Replicates	27277.6	27463.5	27611.2	27766.8							
Standard #5 (10.0 ug/L)					STD	03/23/17 02:18:49 pm	10.0000	54463	0.64		1.00
Replicates	54037.5	54368.0	54579.3	54866.3							

Calibration

Equation: A = 66.730 + 5450.351C
R2: 0.99997
SEE: 125.7552
Flags:



ICV					ICV	03/23/17 02:21:23 pm	1.9840	10879	0.69		1.00
Replicates	10788.2	10861.7	10901.9	10966.2							
% Recovery	99.19										

Approved: March 24, 2017

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	03/23/17 02:23:54 pm	-0.0195	-40	35.20		1.00
Replicates	-51.2	-19.5	-41.5	-45.8							
CCV					CCV	03/23/17 02:26:26 pm	2.0170	11058	0.67		1.00
Replicates	10968.0	11032.0	11091.8	11140.5							
% Recovery	100.83										
CCB					CCB	03/23/17 02:28:57 pm	-0.0192	-38	23.38		1.00
Replicates	-29.5	-31.7	-48.2	-42.4							
WG607143-03					MB	03/23/17 02:31:27 pm	-0.0096	15	46.82		1.00
Replicates	4.6	19.5	18.2	16.2							
WG607143-04					LCS	03/23/17 02:33:58 pm	3.7430	20469	0.94		1.00
Replicates	20243.2	20397.9	20540.2	20693.5							
% Recovery	93.58										
WG607001-01					UNK	03/23/17 02:36:30 pm	-0.0202	-43	14.71		1.00
Replicates	-49.0	-37.8	-38.0	-49.0							
WG607001-02					UNK	03/23/17 02:39:01 pm	-0.0126	-2	318.25		1.00
Replicates	7.6	-2.6	-6.2	-7.4							
L1703102401 DLO.1					UNK	03/23/17 02:41:33 pm	0.5271	2939	0.60		1.00
Replicates	2913.1	2948.6	2950.8	2944.9							
L1703111601					UNK	03/23/17 02:44:06 pm	-0.0074	26	42.74		1.00
Replicates	10.2	27.5	31.4	35.7							
L1703113102					UNK	03/23/17 02:46:38 pm	-0.0058	35	23.15		1.00
Replicates	25.5	45.0	36.5	33.2							
WG607470-01					SPK	03/23/17 02:49:11 pm	0.9594	5296	0.80		1.00
Replicates	5257.3	5263.7	5318.3	5344.3							
% Recovery	96.52										
L1703113302					UNK	03/23/17 02:51:44 pm	-0.0105	10	130.44		1.00
Replicates	1.2	-1.9	13.6	25.3							

Approved: March 24, 2017

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1703114301					UNK	03/23/17 02:54:18 pm	-0.0072	28	18.48		1.00
Replicates	27.1	25.2	34.9	23.2							
CCV					CCV	03/23/17 02:56:50 pm	2.0220	11086	0.78		1.00
Replicates	10980.7	11058.6	11121.8	11184.0							
% Recovery	101.09										
CCB					CCB	03/23/17 02:59:21 pm	-0.0175	-28	67.35		1.00
Replicates	-36.3	-2.8	-48.0	-26.8							
WG607143-05					UNK	03/23/17 03:01:55 pm	-0.0039	46	22.48		1.00
Replicates	57.7	37.4	50.7	36.9							
L1703116101					UNK	03/23/17 03:04:29 pm	-0.0013	59	5.34		1.00
Replicates	56.0	61.3	62.8	57.7							
WG607470-02					SPK	03/23/17 03:06:59 pm	0.9466	5226	1.29		1.00
Replicates	5145.4	5207.6	5245.4	5306.3							
% Recovery	94.80										
L1703116102					UNK	03/23/17 03:09:30 pm	3.7060	20268	0.82		1.00
Replicates	20074.7	20217.6	20307.3	20470.5							
L1703116103					UNK	03/23/17 03:12:00 pm	3.6790	20120	0.85		1.00
Replicates	19916.9	20060.7	20186.8	20316.7							
L1703116104					UNK	03/23/17 03:15:33 pm	-0.0088	19	59.20		1.00
Replicates	3.8	27.0	27.3	16.8							
L1703116105					UNK	03/23/17 03:18:04 pm	-0.0040	45	18.94		1.00
Replicates	35.9	50.5	39.1	53.3							
L1703116107					UNK	03/23/17 03:20:36 pm	-0.0074	26	18.43		1.00
Replicates	26.6	32.9	23.4	22.0							
L1703116109					UNK	03/23/17 03:23:08 pm	-0.0080	23	19.53		1.00
Replicates	17.9	27.5	26.6	21.1							

Approved: March 24, 2017

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	03/23/17 03:25:40 pm	2.0310	11134	0.92		1.00
	Replicates	11004.1	11109.8	11178.1	11244.9						
	% Recovery	101.53									
CCB					CCB	03/23/17 03:28:11 pm	-0.0187	-35	18.92		1.00
	Replicates	-41.1	-25.8	-36.2	-38.5						
L1703102401					UNK	03/23/17 03:30:43 pm	20.5400	112022	0.50	O	1.00
	Replicates	111350.7	111852.5	112223.5	112659.5						
CCV					CCV	03/23/17 03:33:16 pm	1.9780	10847	0.81		1.00
	Replicates	10742.4	10822.7	10872.7	10951.7						
	% Recovery	98.90									
CCB					CCB	03/23/17 03:35:46 pm	-0.0237	-62	24.78		1.00
	Replicates	-40.6	-71.9	-62.0	-74.5						
L1703102401 DLO.2					UNK	03/23/17 03:39:07 pm	4.6850	25601	0.19		1.00
	Replicates	25531.6	25604.6	25621.4	25647.9						
WG607470-03					UNK	03/23/17 03:43:05 pm	0.9237	5101	0.20		1.00
	Replicates	5091.3	5108.2	5093.9	5112.2						
CCV					CCV	03/23/17 03:45:38 pm	2.0380	11176	0.99		1.00
	Replicates	11038.6	11138.7	11238.9	11287.0						
	% Recovery	101.91									
CCB					CCB	03/23/17 03:48:08 pm	-0.0163	-22	11.95		1.00
	Replicates	-25.1	-22.5	-22.0	-18.7						

Approved: March 24, 2017

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 31, 2017

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001 – BIO-CHEM TESTING WVDEP 220	002 – REIC Consultants, Inc. WVDEP 060
003 – Sturm Environmental	004 – MICROBAC PITTSBURGH
005 – ES LABORATORIES	006 – ALCOSAN LABORATORIES
007 – ALS LABORATORIES	008 – BENCHMARK LABORATORIES
010 – MICROBAC CHICAGOLAND	AC – AMBER R. CARMICHAEL
ADC – ANTHONY D. CANTER	ADG – APRIL D. GREENE
ALS – ADRIANE L. STEED	AWE – ANDREW W. ESSIG
AZH – AFTER HOURS	BJO – BRIAN J. OGDEN
BLG – BRENDA L. GREENWALT	BNB – Brandi N. Bentley
BRG – BRENDA R. GREGORY	CAS – Craig A. Smith
CEB – CHAD E. BARNES	CLC – CHRYS L. CRAWFORD
CLS – CARA L. STRICKLER	CPD – CHAD P. DAVIS
CSH – CHRIS S. HILL	CV – Carl Volkman
DAK – DEAN A. KETELSEN	DCM – DAVID C. MERCKLE
DEV – DAVID E. VANDENBERG	DIH – DEANNA I. HESSON
DLB – DAVID L. BUMGARNER	DLP – DOROTHY L. PAYNE
DSM – DAVID S. MOSSOR	DTG – DOMINIC T. GEHRET
ECL – ERIC C. LAWSON	EPT – ETHAN P. TIDD
ERP – ERIN R. PORTER	FJB – FRANCES J. BOLDEN
HRF – HEATHER R. FAIRCHILD	JDH – JUSTIN D. HESSON
JDS – JARED D. SMITH	JKP – JACQUELINE K. PARSONS
JLD – JESSICA L. DELONG	JST – JOSHUA S. TAYLOR
JTP – JOSHUA T. PEMBERTON	JWR – JOHN W. RICHARDS
JWS – JACK W. SHEAVES	JYH – JI Y. HU
KAK – KATHY A. KIRBY	KDD – Katelyn D. Daley
KEB – KATIE E. BARNES	KHR – KIM H. RHODES
KKB – KERRI K. BUCK	KRA – KATHY R. ALBERTSON
KRP – KATHY R. PARSONS	LJH – Lacey J. Hendershot
LLS – LARRY L. STEPHENS	LSB – LESLIE S. BUCINA
LSJ – LAURA S. JONES	MAP – MARLA A. PORTER
MBK – MORGAN B. KNOWLTON	MES – MARY E. SCHILLING
MMB – MAREN M. BEERY	MRT – MICHELLE R. TAYLOR
PDM – PIERCE D. MORRIS	PIT – MICROBAC WARRENDALE
REK – BOB E. KYER	RLB – BOB BUCHANAN
RNP – RICK N. PETTY	SAV – SARAH A. VANDENBERG
SCB – SARAH C. BOGOLIN	SCJ – SUE ELLEN C. JOHNSON
SDC – SHALYN D. CONLEY	TB – TODD BOYLE
TMB – TIFFANY M. BAILEY	TMM – TAMMY M. MORRIS
VC – VICKI COLLIER	WTD – WADE T. DELONG
XXX – UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 31, 2017

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Microbac Laboratories Inc.
List of Valid Qualifiers
March 31, 2017

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Elspeth Sharp	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135. GWTPTHRUMAR16			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	TOTAL METALS	ERPIMS SA CODE	ERPIMS Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW08-032017			3/20/17	0825		X	W	4	X	X					
	18WW08MS-032017			3/20/17	0825		X	W	4	X	X					
	18WW08MSD-032017			3/20/17	0825		X	W	4	X	X					
	18CPTMW23SW-032017			3/20/17	0940		X	W	4	X	X					
	18WW24-032017			3/20/17	1040		X	W	4	X	X					
	[redacted] SB															
	18WW25-032017			3/20/17	1325		X	W	3	X						
	18WW25F-032017			3/20/17	1325		X	W	1		X					
	MW10-032017			3/20/17	1425		X	W	3	X						
	MW10F-032017			3/20/17	1425		X	W	1		X					
	TRIP BLANK			3/20/17			X	W	2	X						

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by (Signature): Scott Beesinger	Date: 3/20/17	Time: 1515	Received by: (Signature)	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)	Dist

Microbac OVD
Received: 03/21/2017 10:14
By: BRENDA GREGORY
Brenda Gregory

221000098519

*Homogenize all composite samples prior to analysis

Manager

00847899

MICROBAC

Cooler ID 8519

COOLER TEMP >6° C LOG

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

3/21/17 BLG

pH Exceptions

pH Lot # HC693129

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

3/21/17 BLG

PRESERVATIVE EXCEPTIONS

__NONE

__AS NOTED

BLG 3/21/17

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031161
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 31-MAR-2017

Samplenum	Container ID	Products
L17031161-01	884146	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Samplenum	Container ID	Products
L17031161-01	884147	FE HG K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX Tl

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAR-2017 16:11	BRG		
2	PREP	W1	DIG	22-MAR-2017 08:39	AC	CLS	
3	ANALYZ*	DIG	METALS	22-MAR-2017 14:08	JYH	AC	
4	STORE	DIG	A1	23-MAR-2017 13:17	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031161
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 31-MAR-2017

Samplenum	Container ID	Products
L17031161-02	884148	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Samplenum	Container ID	Products
L17031161-02	884149	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAR-2017 16:11	BRG		
2	PREP	W1	DIG	22-MAR-2017 08:39	AC	CLS	
3	ANALYZ*	DIG	METALS	22-MAR-2017 14:08	JYH	AC	
4	STORE	DIG	A1	23-MAR-2017 13:17	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031161
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 31-MAR-2017

Samplenum	Container ID	Products
L17031161-03	884150	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:46	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Samplenum	Container ID	Products
L17031161-03	884151	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAR-2017 16:11	BRG		
2	PREP	W1	DIG	22-MAR-2017 08:39	AC	CLS	
3	ANALYZ*	DIG	METALS	22-MAR-2017 14:08	JYH	AC	
4	STORE	DIG	A1	23-MAR-2017 13:17	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031161
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 31-MAR-2017

Samplenum	Container ID	Products
L17031161-04	884152	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Samplenum	Container ID	Products
L17031161-04	884153	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAR-2017 16:11	BRG		
2	PREP	W1	DIG	22-MAR-2017 08:39	AC	CLS	
3	ANALYZ*	DIG	METALS	22-MAR-2017 14:08	JYH	AC	
4	STORE	DIG	A1	23-MAR-2017 13:17	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031161
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 31-MAR-2017

Samplenum	Container ID	Products
L17031161-05	884154	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Samplenum	Container ID	Products
L17031161-05	884155	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAR-2017 16:11	BRG		
2	PREP	W1	DIG	22-MAR-2017 08:39	AC	CLS	
3	ANALYZ*	DIG	METALS	22-MAR-2017 14:08	JYH	AC	
4	STORE	DIG	A1	23-MAR-2017 13:17	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031161
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 31-MAR-2017

Samplenum	Container ID	Products
L17031161-06	884156	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Samplenum	Container ID	Products
L17031161-07	884157	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAR-2017 16:11	BRG		
2	PREP	W1	DIG	22-MAR-2017 08:39	AC	CLS	
3	ANALYZ*	DIG	METALS	22-MAR-2017 14:08	JYH	AC	
4	STORE	DIG	A1	23-MAR-2017 13:17	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031161
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 31-MAR-2017

Samplenum	Container ID	Products
L17031161-08	884158	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Samplenum	Container ID	Products
L17031161-09	884159	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAR-2017 16:11	BRG		
2	PREP	W1	DIG	22-MAR-2017 08:39	AC	CLS	
3	ANALYZ*	DIG	METALS	22-MAR-2017 14:08	JYH	AC	
4	STORE	DIG	A1	23-MAR-2017 13:17	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L17031161-10	884160	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAR-2017 16:11	BRG		
2	ANALYZ	L1	ORG4	22-MAR-2017 12:47	HRF	CLS	
3	STORE	ORG4	A1	29-MAR-2017 07:09	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

00847911

GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

March 30, 2017

Mr. Adriane Steed
Microbac Laboratories, Inc.
158 Starlite Drive
Marietta, Ohio 45750

Re: Perchlorate-Steed
Work Order: 418938

Dear Mr. Steed:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 21, 2017. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4778.

Sincerely,

Linda Pullano for
Hope Taylor
Project Manager

Purchase Order: SIGNED QUOTE
Enclosures

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Case Narrative

Receipt Narrative
for
Microbac Laboratories, Inc Kentucky Division
SDG: 418938

March 30, 2017

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on March 21, 2017 for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Sample Identification: The laboratory received the following samples:

Laboratory ID	Client ID
418938001	18WW08-032017
418938002	18CPTMW23SW-032017
418938003	18WW24-032017
418938004	18WW25-032017
418938005	MW10-032017

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Perchlorates by LCMSMS.

Linda Pullano for
Hope Taylor
Project Manager

Chain of Custody and Supporting Documentation

AECOM

Chain of Custody Record

418938

COC Number:

Laboratory: ~~Microbac~~ Test America	POC: Hope Taylor	Project Manager: Elspeth Sharp	Mail to: Linda Raabe
Address: 2040 Savage Road		Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400
Charleston, SC. 29407		Sampler (print): Scott Beesinger	San Antonio, TX 78205
Phone: 1-843-556-8171			210-296-2000
Client: AECOM		Signature: Scott Beesinger	Fed Ex Airbill No:
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		pH:	Program:
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			ERPIMS REQUIRED FIELDS
Project Number: 60256135. GWTPTHRUMAR16			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	PERCHLORATE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW08-032017			3/20/17	0825		X	W	1	X					
	18WW08MS-032017			3/20/17	0825		X	W	1	X					
	18WW08MSD-032017			3/20/17	0825		X	W	1	X					
	18CPTMW23SW-032017			3/20/17	0940		X	W	1	X					
	18WW24-032017			3/20/17	1040		X	W	1	X					
	18WW25-032017			3/20/17	1325		X	W	1	X					
	MW10-032017			3/20/17	1425		X	W	1	X					

Comments: **STANDARD TAT**

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Scott Beesinger	3/20/17	1515			3/21/17	9:30	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature) Ashley Green	Date 3/21/17	Time 930		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00847916

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: MBAC	**SDG/AR/COC/Work Order:** 418938
Received By: AG	**Date Received:** 3/21/17
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other J457 939 2688

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 (CPM) / mR/Hr **Classified as: Rad 1 Rad 2 Rad 3**
Is package, COC, and/or Samples marked HAZ?		✓	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius **TEMP:** 1°C
4	Daily check performed and passed on IR temperature gun?	✓			**Temperature Device Serial #:** IR2-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?		✓		Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, Are Encores or Soil Kits present? Yes___ No___ (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes___ No___ (If unknown, select No) VOA vials free of headspace? Yes___ No___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AG Date 3/21/17 Page 1 of 1

GLCHL-SR-001 Rev 4

Laboratory Certifications

List of current GEL Certifications as of 30 March 2017

State	Certification
Alaska	UST−0110
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA170010
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122016−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−17−12
Utah NELAP	SC000122016−21
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Perchlorates by LCMSMS Analysis

Case Narrative

Perchlorates by LCMSMS
Technical Case Narrative
Microbac Laboratories, Inc Kentucky Division (MBAC)
SDG #: 418938

Method/Analysis Information

Procedure:	**Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)**
Analytical Method:	SW846 6850 Modified
Prep Method:	SW846 6850 Modified
Analytical Batch Number:	1651013
Prep Batch Number:	1651011

Sample Analysis

Sample ID	Client ID
418938001	418938001 (18WW08-032017)
418938002	418938002 (18CPTMW23SW-032017)
418938003	418938003 (18WW24-032017)
418938004	418938004 (18WW25-032017)
418938005	418938005 (MW10-032017)
1203755639	Interference Check Sample (ICS)
1203755635	Method Blank (MB)
1203755636	Laboratory Control Sample (LCS)
1203755637	418938001(18WW08-032017) Matrix Spike (MS)
1203755638	418938001(18WW08-032017) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with

GL-OA-E-067 REV# 14.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this SDG. Due to software constraints, all Initial Calibration Blanks must be designated as IPB001.

ICV Requirements
All associated initial calibration verification standard(s) (ICV) met the acceptance criteria.

CCB Requirements
All continuing calibration blanks (CCB) bracketing the analyses associated with this batch were within acceptance criteria.

CCV Requirements
All continuing calibration checks (CCV) requirements were met by all bracketing CCV standards.

Low Level Standard (CRI) Requirements
All low level calibration verification (CRI) requirements were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Interference Check Sample (ICS)
The ICS spike recoveries met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Client sample 418938001 (18WW08-032017) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
In 1203755637 (MS) and 1203755638 (MSD) a 0% recovery of Perchlorate was observed. The acceptance range is 75-125%. The detected concentrations in the MS and MSD were lower than the detected concentration in the parent sample. The outliers observed for the matrix spikes were due to the background concentration in the parent sample, 418938001 (18WW08-032017) and the need of a 1:5 dilution prior to analysis. 1203755637 (18WW08-032017MS) and 1203755638 (18WW08-032017MSD).

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the MS and MSD met the acceptance limits.

Internal Standard Area Acceptance
The internal standard areas were within the required acceptance criteria for all samples and QC.

Retention Time
During the analysis of Perchlorate by LC/MS/MS, retention time shifts are commonly observed. These retention time shifts, which are caused by fouling of the column by the sample matrices, are problematic when the retention time is used as one of the criterion for confirmation. To overcome this problem, a known amount of O(18) labeled Perchlorate was added to each sample as a retention time standard. The presence of Perchlorate was confirmed by the relative retention time (RRT) of the Perchlorate peak and the O(18) standard. A RRT window of 0.98 to 1.02, as required by DOD QSM 5.0, has been used. In addition to the isotopic ratio, the presence of Perchlorate in the samples associated with this data package have been confirmed using the relative

retention criteria stated above, not the absolute retention time.

Technical Information

Holding Time Specifications
All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Samples 1203755637 (18WW08-032017MS), 1203755638 (18WW08-032017MSD) and 418938001 (18WW08-032017) were diluted to bring the over range concentrations within the calibration range.

Sample Re-extraction/Re-analysis
The entire batch was re-analyzed the following day due to the problems with the method blank. A detection of Perchlorate was observed just below our concentration of our low level standard. Upon the analysis of a new aliquot of method blank, the high detection was not confirmed. All samples were re-aliquot and re-analyzed. All QC requirements were met and all data could be reported.

Miscellaneous Information

Data Exception (DER) Documentation
A data exception report (DER) 1618609 was generated for samples 1203755637 (18WW08-032017MS) and 1203755638 (18WW08-032017MSD) in this SDG/batch.

Manual Integrations
Manual integrations were not required for any data file associated with this SDG.

Method Comments
The samples in this SDG were not originally analyzed using EPA Method 314.0.

Additional Comments
The Perchlorate Isotope Ratio on the Form I may differ slightly from the ratio on the corresponding raw data due to rounding rules and/or significant figures or due to software limitations when there are manual integrations, dilutions or other factors. The ratio value of the Form I is the correct value. The retention time marker, Perchlorate-O (18), is added to all samples, instrument blanks, and standards prior to injection. It is used to verify the retention time of Perchlorate and Perchlorate-101 and to insure an accurate injection occurred. Due to various anions affecting the recovery of Perchlorate-O (18) and not Perchlorate and Perchlorate-101, the calibration curves of Perchlorate and Perchlorate-101 are internally corrected for using Perchlorate-O (18).

Perchlorate Isotope Ratio
The Perchlorate isotope ratio met acceptance criteria for all samples and QC samples. Please see the isotope ratio criteria in the Miscellaneous Section.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Perchlorate analysis. It is coupled with a Micromass Quattro Ultima Mass Spectrometer/Mass Spectrometer. It is designated as LCMSMS #2.It is fitted with an electrospray probe that is operated in the negative electrospray ionization mode for Perchlorate analysis. The laboratory may also utilize an Agilent 1100 liquid chromatography instrument for Perchlorate analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/Mass Spectrometer, designated as LCMSMS #3 or LCMSMS #4. It is also fitted with an electrospray probe that is operated in the

negative electrospray ionization mode for Perchlorate analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The LC-MS/MS Perchlorate analysis was performed on a Quatro Ultima LC/MS/MS.

Chromatographic separation of Perchlorate is accomplished through analysis on the following anion column:

Dionex: IonPac AG-16 2 x 50 mm.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

MBAC001 Microbac Laboratories, Inc Kentucky Division

Client SDG: 418938 GEL Work Order: 418938

The Qualifiers in this report are defined as follows:

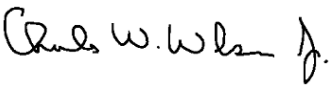
* A quality control analyte recovery is outside of specified acceptance criteria
** Analyte is a surrogate compound
J Value is estimated
U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Charles Wilson**

Date: 30 MAR 2017 **Title: Analyst II**

Sample Data Summary

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW08-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938001

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.25	1	7.72	ug/L		5	28-MAR-17 19:44	per0328016a
	Perchlorate-O(18)			2.41	ug/L		5	28-MAR-17 19:44	per0328016a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18CPTMW23SW-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938002

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 20:12	per0328019a
	Perchlorate-O(18)			0.488	ug/L		1	28-MAR-17 20:12	per0328019a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW24-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938003

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.0542	ug/L	J	1	28-MAR-17 20:22	per0328020a
	Perchlorate-O(18)			0.523	ug/L		1	28-MAR-17 20:22	per0328020a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW25-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938004

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 20:31	per0328021a
	Perchlorate-O(18)			0.540	ug/L		1	28-MAR-17 20:31	per0328021a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW10-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938005

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 20:41	per0328022a
	Perchlorate-O(18)			0.507	ug/L		1	28-MAR-17 20:41	per0328022a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quality Control Summary

Perchlorate Laboratory Control Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 418938

Extract Batch Code: 1651011

Date Filtered: 27-MAR-17

Matrix: WATER

Sample ID: 1203755636

Analyte^	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	0.200	.196	ug/L	98		85 - 115
Perchlorate-O(18)		.5	ug/L			-

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate Interference Check Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 418938

Extract Batch Code: 1651011

Date Filtered: 27-MAR-17

Matrix: WATER

Sample ID: 1203755639

Analyte^	True	Found	Units	%Rec	Q	Control Limits
Perchlorate	0.200	.211	ug/L	106		70 - 130
Perchlorate-O(18)		.506	ug/L			

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate Spike/Spike Duplicate Summary

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No (SDG): 418938

Extract Batch Code: 1651011

Date Extracted: 27-MAR-17

GEL MS/PS ID: 1203755637

Client ID: 18WW08-032017

GEL MSD/PSD ID: 1203755638

QC Type: MS

Compound^	Spike Added	Sample Conc	Units	MS Conc	MS Rec #	MSD Conc	MSD Rec #	RPD #	RPD Limit	Recovery Limit
Perchlorate	0.200	7.72	ug/L	7.46	0 *	7.45	0 *	0	30	75 - 125
Perchlorate-O(18)	0	2.41	ug/L	2.49		2.45		2		-

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate RT And Area Summary

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

HPLC Column: Dionex IonPac AG16 **Instrument ID:** LCMSMS2

Sample ID	Datafile	Run Date	Area	RT	RT CLO4	RRT	Q 0.98-1.02
MidLevel Standard Area	**per0328006a**	**28-MAR-17**	**15530.6**				
Lower Area Limit			**7765.3**				
Upper Area Limit			**23295.9**				
1203755635	per0328013a	28-MAR-17 19:16	15097.5	4.09	4.06102	.993	
1203755636	per0328014a	28-MAR-17 19:25	15400.2	4.06	4.08867	1.007	
1203755639	per0328015a	28-MAR-17 19:35	15579.7	4.06	4.08867	1.007	
418938001	per0328016a	28-MAR-17 19:44	14855.9	4.06	4.08867	1.007	
1203755637	per0328017a	28-MAR-17 19:54	15340.7	4.03	4.08867	1.015	
1203755638	per0328018a	28-MAR-17 20:03	15112	4.06	4.08867	1.007	
418938002	per0328019a	28-MAR-17 20:12	15018.3	4.06	4.08867	1.007	
418938003	per0328020a	28-MAR-17 20:22	16114.2	4.03	4.06102	1.008	
418938004	per0328021a	28-MAR-17 20:31	16611.8	4.01	4.0335	1.006	

Perchlorate RT And Area Summary

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Sample ID	Datafile	Run Date	Area	RT	RT CLO4	RRT	Q 0.98-1.02
MidLevel Standard Area	**per0328006a**	**28-MAR-17**	**15530.6**				
Lower Area Limit			**7765.3**				
Upper Area Limit			**23295.9**				
418938005	per0328022a	28-MAR-17 20:41	15606.8	4.01	4.0335	1.006	

Sample Data

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW08-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938001

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.25	1	7.72	ug/L		5	28-MAR-17 19:44	per0328016a
	Perchlorate-O(18)			2.41	ug/L		5	28-MAR-17 19:44	per0328016a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

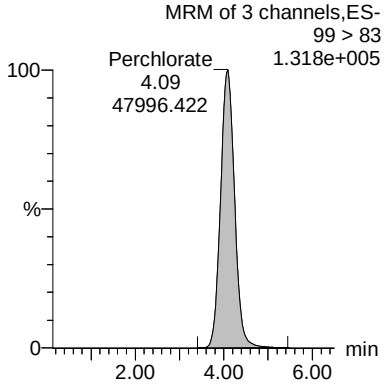
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

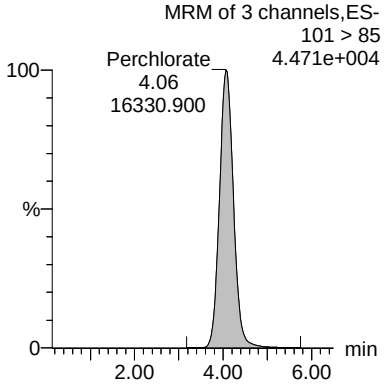
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328016a
Date: 28-Mar-2017
Time: 19:44:38
ID: 418938001
Vial: 1:3,D

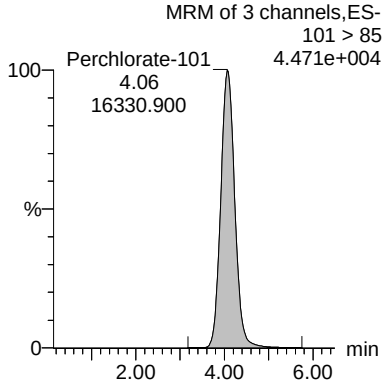
Perchlorate



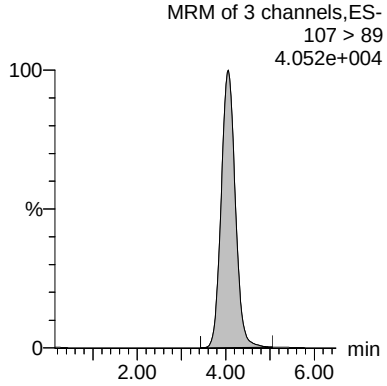
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
418938001	Perchlorate	99 > 83	4.09	47996.422	1.615	bb			1.5436			10232....	2.94
418938001	Perchlorate-101	101 > 85	4.06	16330.900	0.550	bb			1.5566			10183....	
418938001	Perchlorate-O(18)	107 > 89	4.06	14855.879	14855.879	bb			0.4826	96.52	-3.48	1314.4...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18CPTMW23SW-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938002

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 20:12	per0328019a
	Perchlorate-O(18)			0.488	ug/L		1	28-MAR-17 20:12	per0328019a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

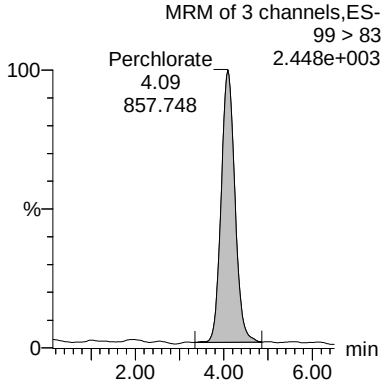
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

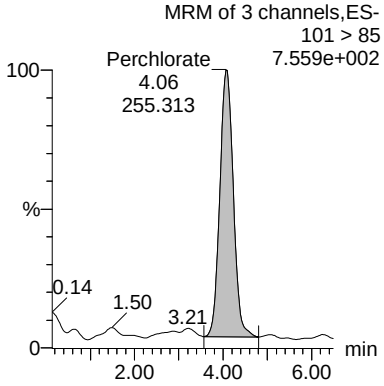
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328019a
Date: 28-Mar-2017
Time: 20:12:59
ID: 418938002
Vial: 1:4,A

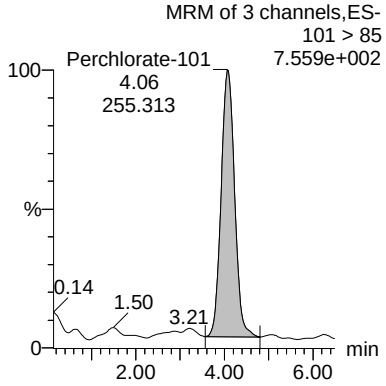
Perchlorate



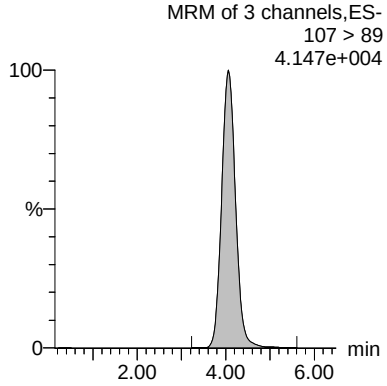
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
418938002	Perchlorate	99 > 83	4.09	857.748	0.029	bb			0.0273			122.997	3.36
418938002	Perchlorate-101	101 > 85	4.06	255.313	0.009	bb			0.0241			232.999	
418938002	Perchlorate-O(18)	107 > 89	4.06	15018.311	15018.311	bb			0.4879	97.58	-2.42	3126.8...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW24-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938003

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.0542	ug/L	J	1	28-MAR-17 20:22	per0328020a
	Perchlorate-O(18)			0.523	ug/L		1	28-MAR-17 20:22	per0328020a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration = Instrument Value X $\frac{\text{Concentrated Extract Volume}}{\text{Aliquot}}$ X $\frac{1}{\%\text{Solids}}$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

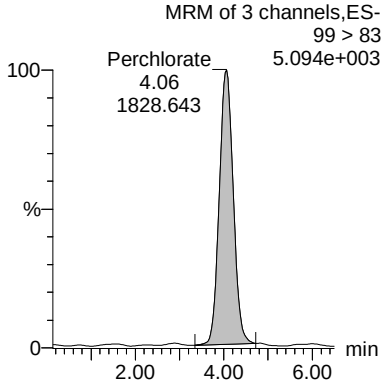
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

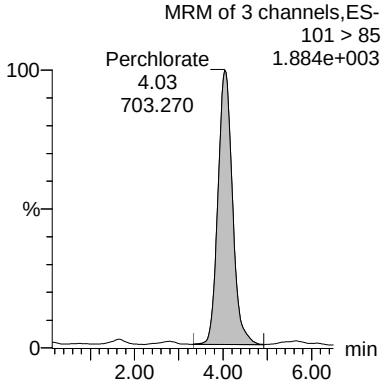
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328020a
Date: 28-Mar-2017
Time: 20:22:29
ID: 418938003
Vial: 1:4,B

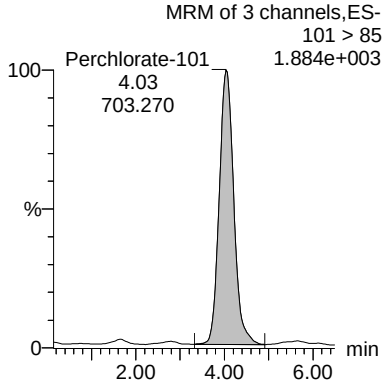
Perchlorate



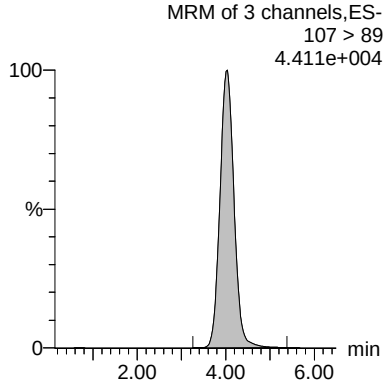
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
418938003	Perchlorate	99 > 83	4.06	1828.643	0.057	bb			0.0542			337.082	2.60
418938003	Perchlorate-101	101 > 85	4.03	703.270	0.022	bb			0.0618			130.841	
418938003	Perchlorate-O(18)	107 > 89	4.03	16114.228	16114.228	bb			0.5235	104.70	4.70	2246.7...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW25-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938004

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 20:31	per0328021a
	Perchlorate-O(18)			0.540	ug/L		1	28-MAR-17 20:31	per0328021a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

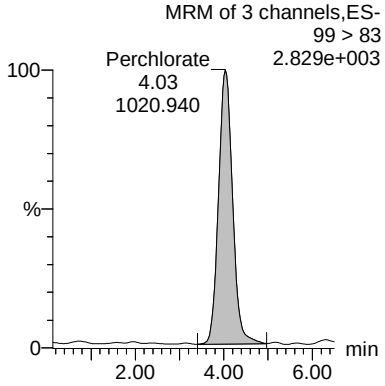
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

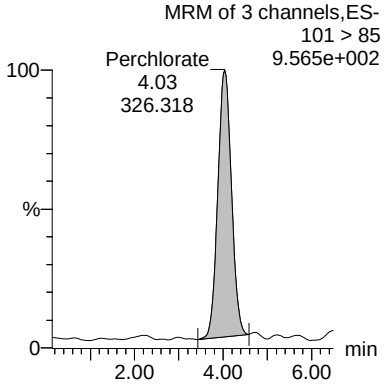
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328021a
Date: 28-Mar-2017
Time: 20:31:58
ID: 418938004
Vial: 1:4,C

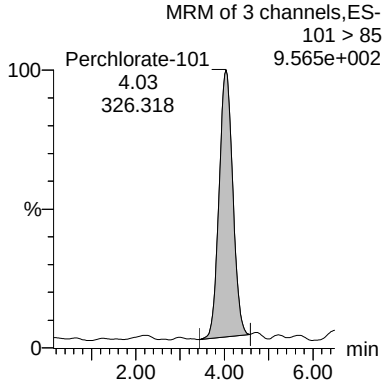
Perchlorate



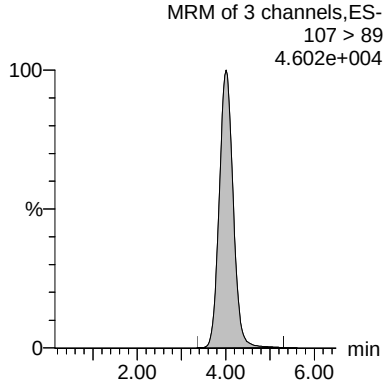
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
418938004	Perchlorate	99 > 83	4.03	1020.940	0.031	bb			0.0294			185.081	3.13
418938004	Perchlorate-101	101 > 85	4.03	326.318	0.010	bb			0.0278			75.841	
418938004	Perchlorate-O(18)	107 > 89	4.01	16611.801	16611.801	bb			0.5396	107.93	7.93	3594.4...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MW10-032017

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 418938005

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 20:41	per0328022a
	Perchlorate-O(18)			0.507	ug/L		1	28-MAR-17 20:41	per0328022a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

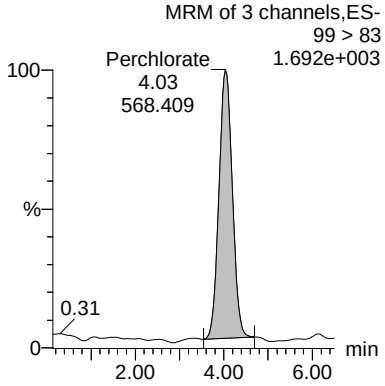
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

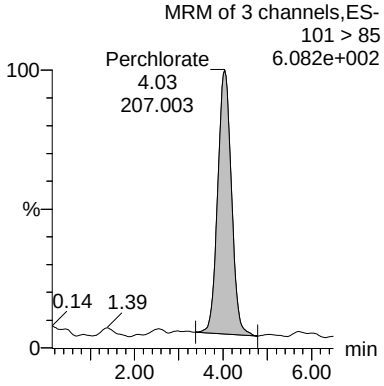
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328022a
Date: 28-Mar-2017
Time: 20:41:26
ID: 418938005
Vial: 1:4,D

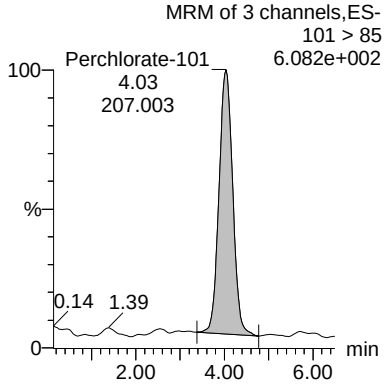
Perchlorate



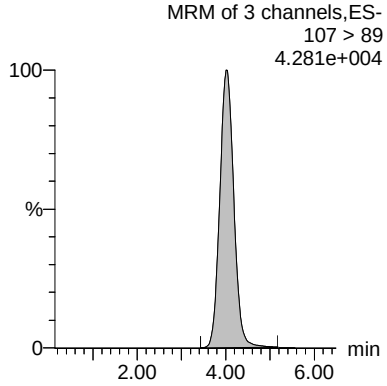
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
418938005	Perchlorate	99 > 83	4.03	568.409	0.018	bb			0.0174			170.161	2.75
418938005	Perchlorate-101	101 > 85	4.03	207.003	0.007	bb			0.0188			78.591	
418938005	Perchlorate-O(18)	107 > 89	4.01	15606.767	15606.767	bb			0.5070	101.40	1.40	7862.7...	

Standards

Perchlorate Initial Calibration

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Instrument ID: LCMSMS2 **Date Analyzed:** 28-MAR-17

HPLC Column: Dionex IonPac AG16

Calibration Level	1	2	3	4	5	6
Cal Concentration (ug/L)	0.05	0.1	0.25	0.50	1.0	2.0

Parmname Perchlorate

Coefficient of Determination:

Calibration Curve: 1.04667

Response Type: Internal Standard

Curve Type: RF

Perchlorate Initial Calibration

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Instrument ID: LCMSMS2 **Date Analyzed:** 28-MAR-17

HPLC Column: Dionex IonPac AG16

Calibration Level	1	2	3	4	5	6
Cal Concentration (ug/L)	0.05	0.1	0.25	0.50	1.0	2.0

Parmname Perchlorate-101

Coefficient of Determination:

Calibration Curve: .35333

Response Type: Internal Standard

Curve Type: RF

Quantify Calibration Report MassLynx 4.0 SP4
The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

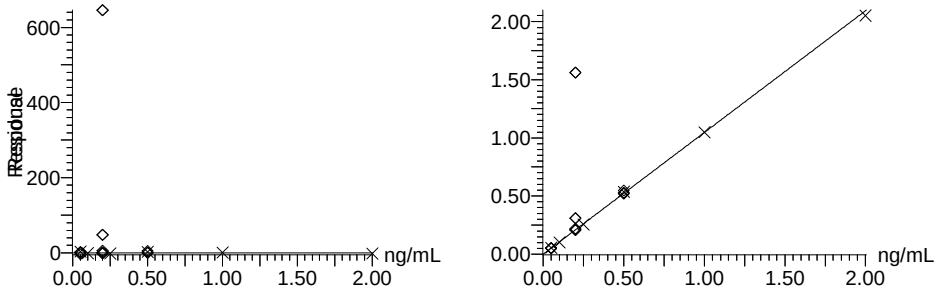
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

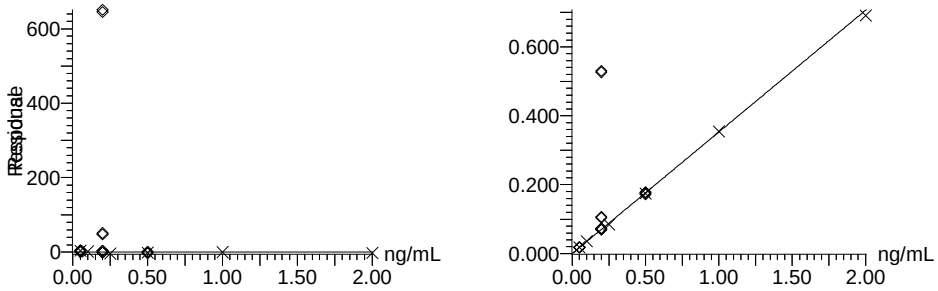
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Method: C:\MassLynx\Perchlorate.PRO\MethDB\per032817a.mdb 28 Mar 2017 15:32:39
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per032817a.cdb 29 Mar 2017 09:31:28

Compound name: Perchlorate
Response Factor: 1.04651
RRF SD: 0.023016, % Relative SD: 2.19931
Response type: Internal Std (Ref 3), Area * (IS Conc. / IS Area)
Curve type: RF



Compound name: Perchlorate-101
Response Factor: 0.353102
RRF SD: 0.0106439, % Relative SD: 3.0144
Response type: Internal Std (Ref 3), Area * (IS Conc. / IS Area)
Curve type: RF



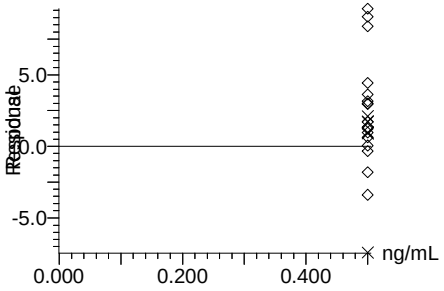
Quantify Calibration Report **MassLynx 4.0 SP4**

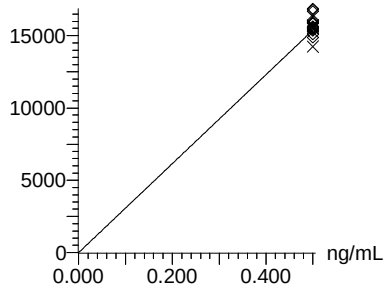
The GEL Group, LLC Analyst: Grace L. Cappelmann

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Compound name: Perchlorate-O(18)
Response Factor: 30783
RRF SD: 1128.79, % Relative SD: 3.66692
Response type: External Std, Area
Curve type: RF





Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

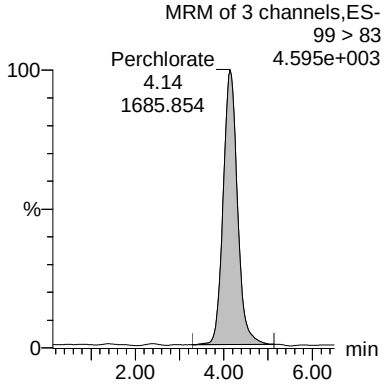
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

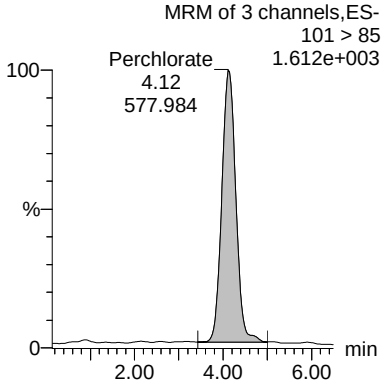
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328003a
Date: 28-Mar-2017
Time: 17:41:40
ID: WCL170320-01
Vial: 1:1,B

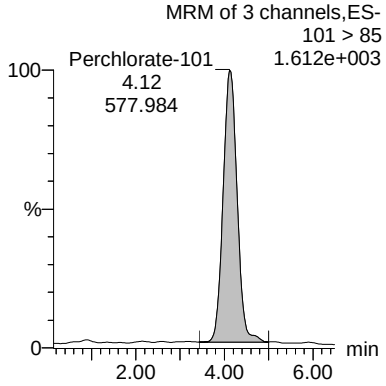
Perchlorate



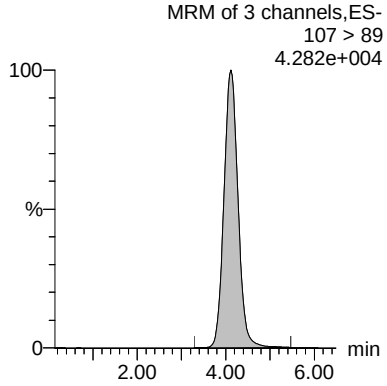
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-01	Perchlorate	99 > 83	4.14	1685.854	0.054	bb			0.0514	102.87	2.87	264.540	2.92
WCL170320-01	Perchlorate-101	101 > 85	4.12	577.984	0.018	bb			0.0523	104.52	4.52	181.765	
WCL170320-01	Perchlorate-O(18)	107 > 89	4.12	15660.600	15660.600	bb			0.5087	101.75	1.75	4034.8...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GC 03/29/2017

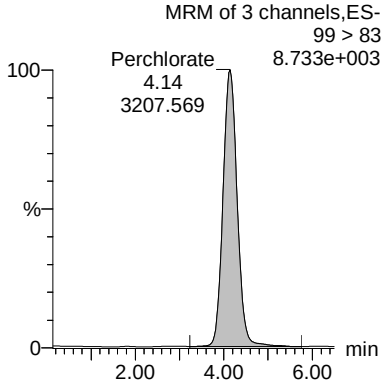
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

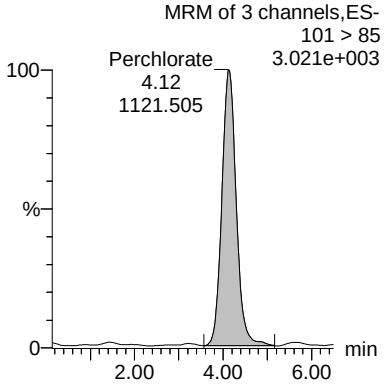
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328004a
Date: 28-Mar-2017
Time: 17:51:08
ID: WCL170320-02
Vial: 1:1,C

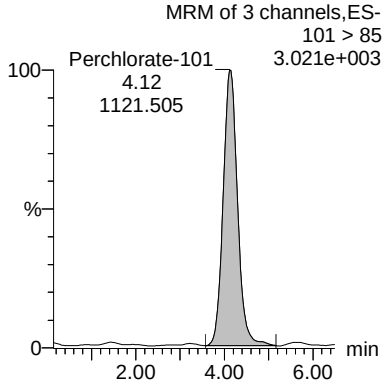
Perchlorate



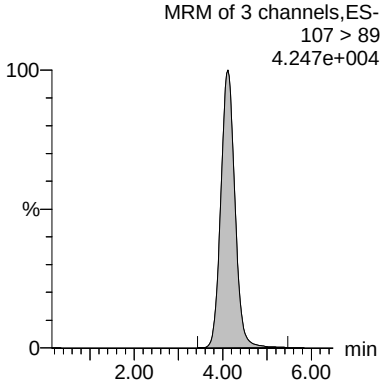
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-02	Perchlorate	99 > 83	4.14	3207.569	0.103	bb			0.0986	98.61	-1.39	1722.6...	2.86
WCL170320-02	Perchlorate-101	101 > 85	4.12	1121.505	0.036	bb			0.1022	102.18	2.18	237.467	
WCL170320-02	Perchlorate-O(18)	107 > 89	4.12	15541.402	15541.402	bb			0.5049	100.97	0.97	3529.0...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

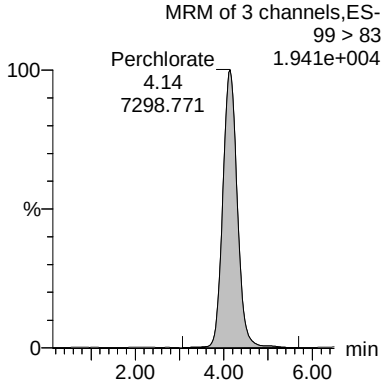
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

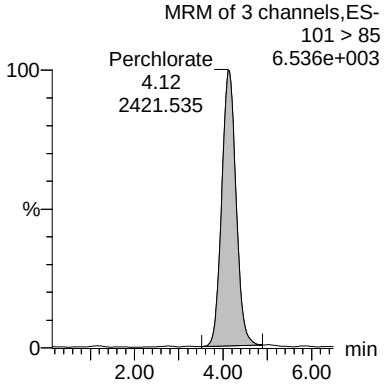
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328005a
Date: 28-Mar-2017
Time: 18:00:35
ID: WCL170320-03
Vial: 1:1,D

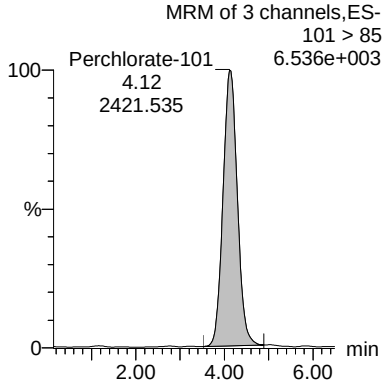
Perchlorate



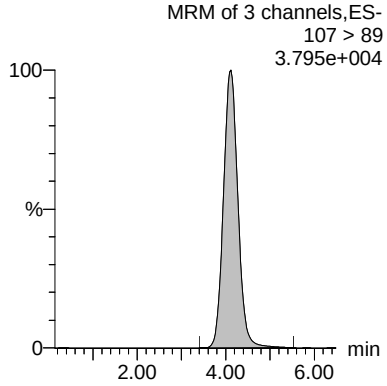
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-03	Perchlorate	99 > 83	4.14	7298.771	0.256	bb			0.2447	97.89	-2.11	625.719	3.01
WCL170320-03	Perchlorate-101	101 > 85	4.12	2421.535	0.085	bb			0.2406	96.26	-3.74	435.045	
WCL170320-03	Perchlorate-O(18)	107 > 89	4.12	14248.785	14248.785	bb			0.4629	92.58	-7.42	2410.8...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

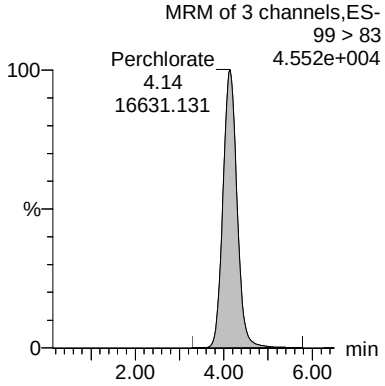
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

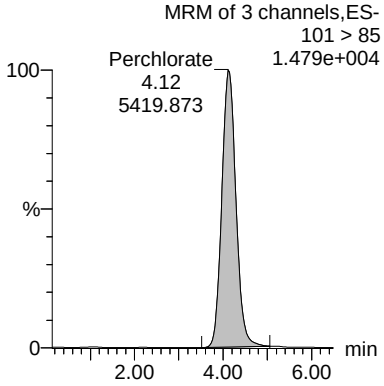
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328006a
Date: 28-Mar-2017
Time: 18:10:02
ID: WCL170320-04
Vial: 1:1,E

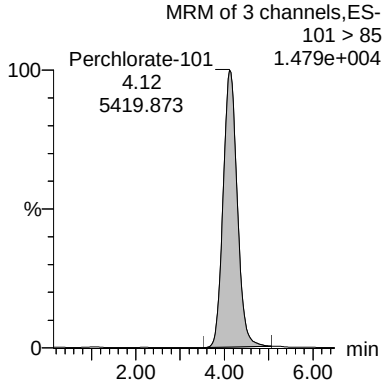
Perchlorate



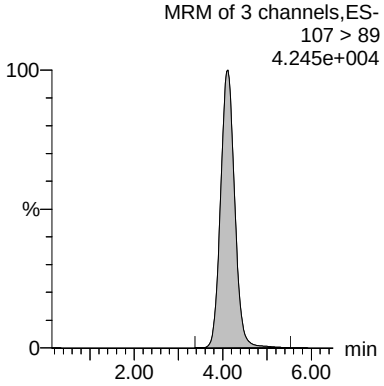
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-04	Perchlorate	99 > 83	4.14	16631.131	0.535	bb			0.5116	102.33	2.33	2542.8...	3.07
WCL170320-04	Perchlorate-101	101 > 85	4.12	5419.873	0.174	bb			0.4942	98.83	-1.17	1419.4...	
WCL170320-04	Perchlorate-O(18)	107 > 89	4.12	15530.634	15530.634	bb			0.5045	100.90	0.90	6433.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

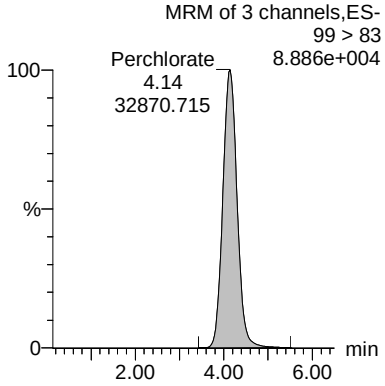
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

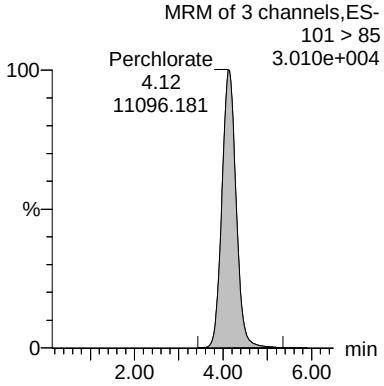
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328007a
Date: 28-Mar-2017
Time: 18:19:29
ID: WCL170320-05
Vial: 1:1,F

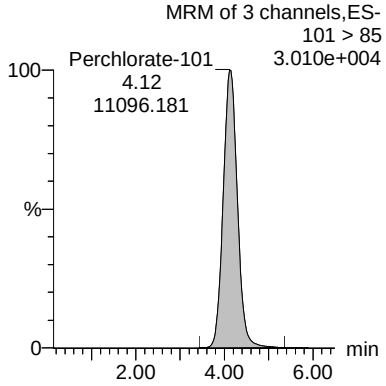
Perchlorate



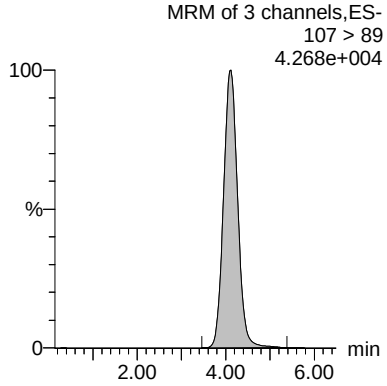
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-05	Perchlorate	99 > 83	4.14	32870.715	1.050	bb			1.0033	100.33	0.33	5946.6...	2.96
WCL170320-05	Perchlorate-101	101 > 85	4.12	11096.181	0.354	bb			1.0038	100.38	0.38	4116.1...	
WCL170320-05	Perchlorate-O(18)	107 > 89	4.12	15653.696	15653.696	bb			0.5085	101.70	1.70	1806.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

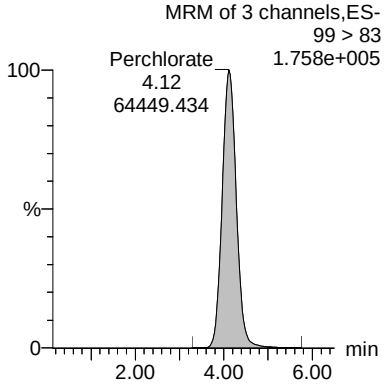
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

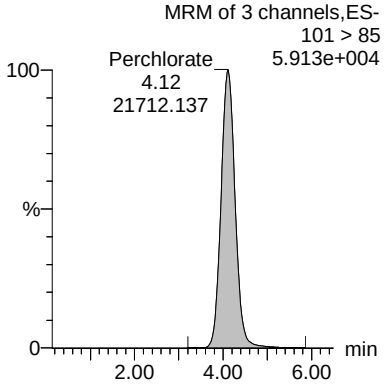
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328008a
Date: 28-Mar-2017
Time: 18:28:55
ID: WCL170320-06
Vial: 1:2,A

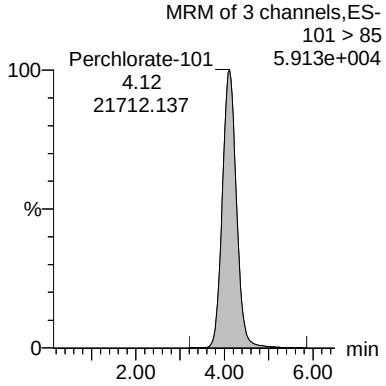
Perchlorate



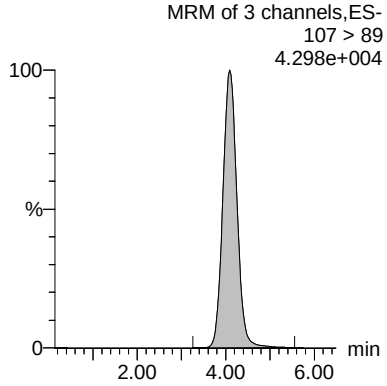
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-06	Perchlorate	99 > 83	4.12	64449.434	2.051	bb			1.9596	97.98	-2.02	11932....	2.97
WCL170320-06	Perchlorate-101	101 > 85	4.12	21712.137	0.691	bb			1.9565	97.83	-2.17	2202.0...	
WCL170320-06	Perchlorate-O(18)	107 > 89	4.09	15713.861	15713.861	bb			0.5105	102.09	2.09	5310.3...	

Perchlorate Initial Calibration Verification

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.5	99.53	28-MAR-17 18:47	per0328010a
Perchlorate Isotope Ratio		2.92		28-MAR-17 18:47	per0328010a
Perchlorate-101	.5	.51	101.04	28-MAR-17 18:47	per0328010a

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

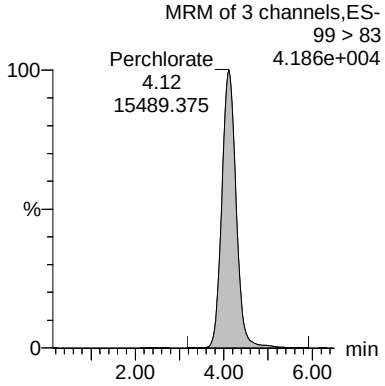
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

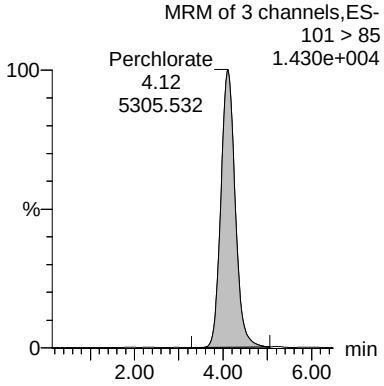
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328010a
Date: 28-Mar-2017
Time: 18:47:51
ID: WCL170320-07ICV
Vial: 1:2,B

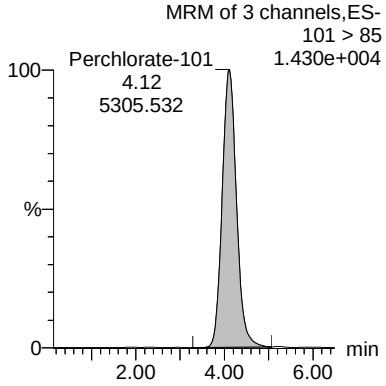
Perchlorate



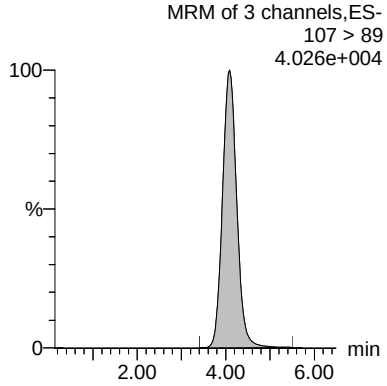
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-07ICV	Perchlorate	99 > 83	4.12	15489.375	0.521	bb			0.4977	99.53	-0.47	3353.3...	2.92
WCL170320-07ICV	Perchlorate-101	101 > 85	4.12	5305.532	0.178	bb			0.5052	101.04	1.04	1142.2...	
WCL170320-07ICV	Perchlorate-O(18)	107 > 89	4.09	14870.273	14870.273	bb			0.4831	96.61	-3.39	590.627	

Perchlorate Continuing Calibration Verification

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.5	.52	104.31	28-MAR-17 20:50	per0328023a
Perchlorate Isotope Ratio		3.13		28-MAR-17 20:50	per0328023a
Perchlorate-101	.5	.49	98.81	28-MAR-17 20:50	per0328023a

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

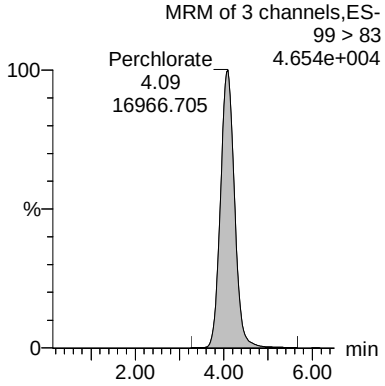
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

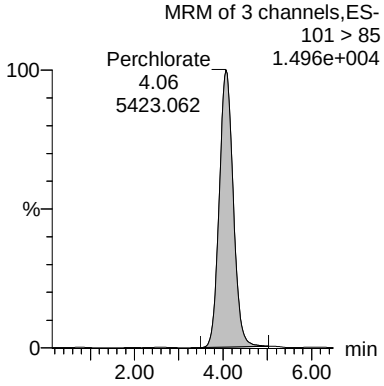
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328023a
Date: 28-Mar-2017
Time: 20:50:53
ID: WCL170320-07CCV
Vial: 1:2,B

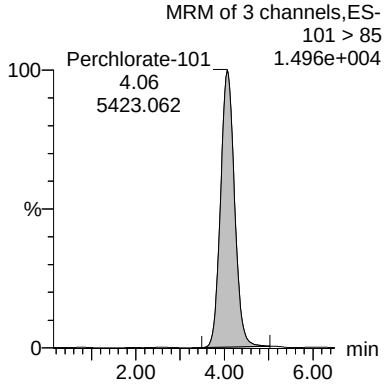
Perchlorate



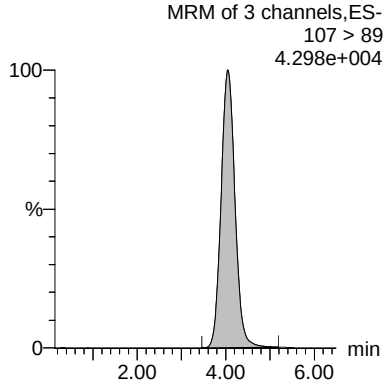
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-07CCV	Perchlorate	99 > 83	4.09	16966.705	0.546	bb			0.5215	104.31	4.31	3293.1...	3.13
WCL170320-07CCV	Perchlorate-101	101 > 85	4.06	5423.062	0.174	bb			0.4941	98.81	-1.19	664.482	
WCL170320-07CCV	Perchlorate-O(18)	107 > 89	4.03	15543.203	15543.203	bb			0.5049	100.99	0.99	4090.0...	

Perchlorate MDL Verification

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id
Perchlorate	.05	.05	100.74	28-MAR-17 19:06	per0328012a
Perchlorate Isotope Ratio		2.81		28-MAR-17 19:06	per0328012a
Perchlorate-101	.05	.05	106.07	28-MAR-17 19:06	per0328012a
Perchlorate	.05	.05	101.79	28-MAR-17 21:09	per0328025a
Perchlorate Isotope Ratio		2.94		28-MAR-17 21:09	per0328025a
Perchlorate-101	.05	.05	102.48	28-MAR-17 21:09	per0328025a

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

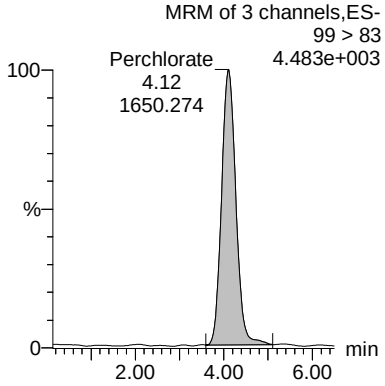
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

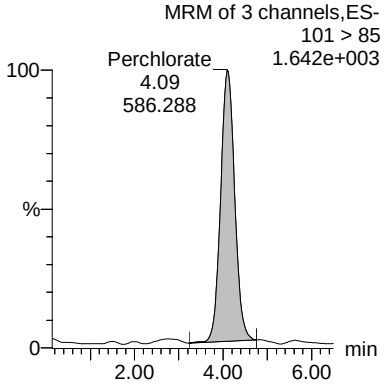
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328012a
Date: 28-Mar-2017
Time: 19:06:45
ID: WCL170320-08CRI
Vial: 1:2,C

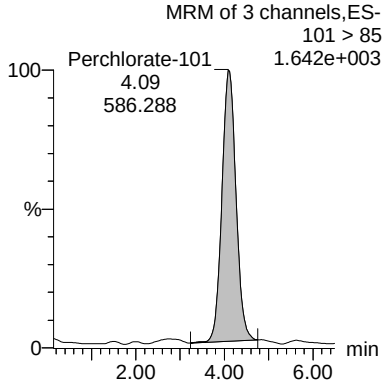
Perchlorate



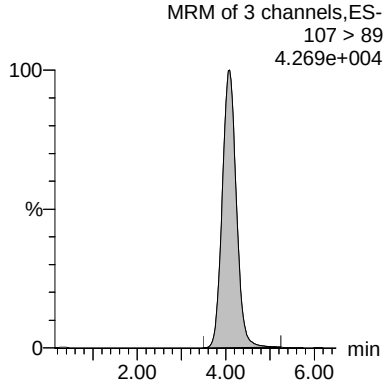
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-08CRI	Perchlorate	99 > 83	4.12	1650.274	0.053	bb			0.0504	100.74	0.74	501.890	2.81
WCL170320-08CRI	Perchlorate-101	101 > 85	4.09	586.288	0.019	bb			0.0530	106.07	6.07	100.665	
WCL170320-08CRI	Perchlorate-O(18)	107 > 89	4.09	15653.307	15653.307	bb			0.5085	101.70	1.70	3864.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

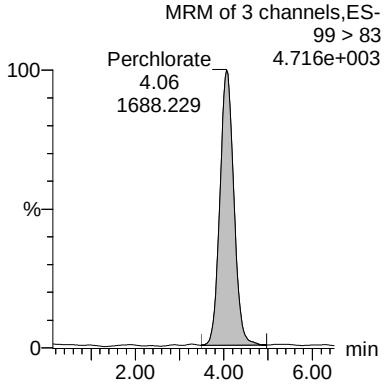
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

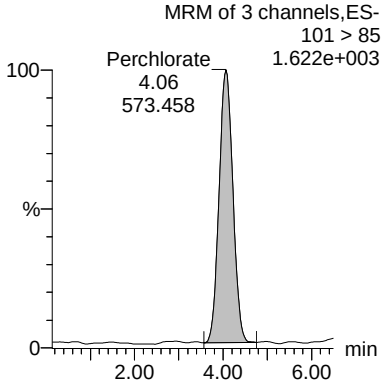
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328025a
Date: 28-Mar-2017
Time: 21:09:49
ID: WCL170320-08CRI
Vial: 1:2,C

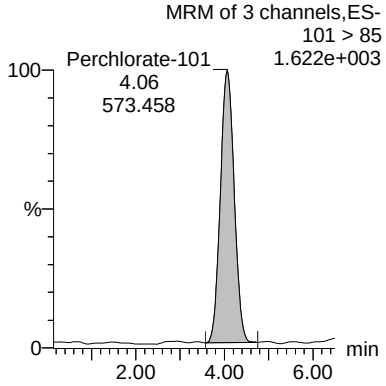
Perchlorate



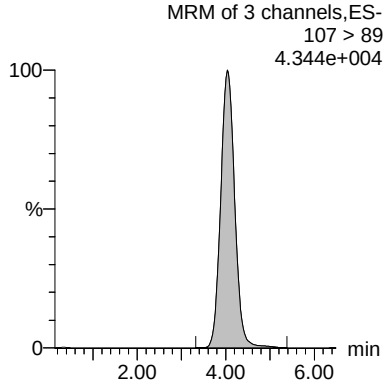
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
WCL170320-08CRI	Perchlorate	99 > 83	4.06	1688.229	0.053	bb			0.0509	101.79	1.79	528.091	2.94
WCL170320-08CRI	Perchlorate-101	101 > 85	4.06	573.458	0.018	bb			0.0512	102.48	2.48	184.648	
WCL170320-08CRI	Perchlorate-O(18)	107 > 89	4.03	15847.729	15847.729	bb			0.5148	102.96	2.96	1672.2...	

Quality Control Data

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: EPA 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
MB

Date Received: 27-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 1203755635

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.200	ug/L	U	1	28-MAR-17 19:16	per0328013a
	Perchlorate-O(18)			0.490	ug/L		1	28-MAR-17 19:16	per0328013a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

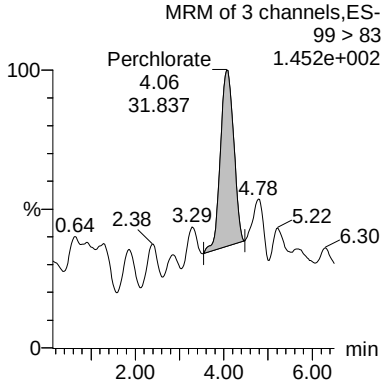
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

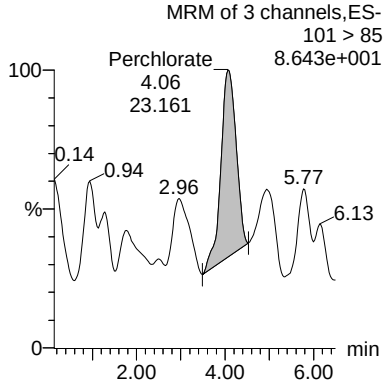
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328013a
Date: 28-Mar-2017
Time: 19:16:12
ID: 1203755635
Vial: 1:3,A

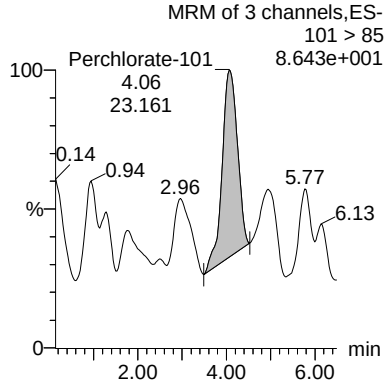
Perchlorate



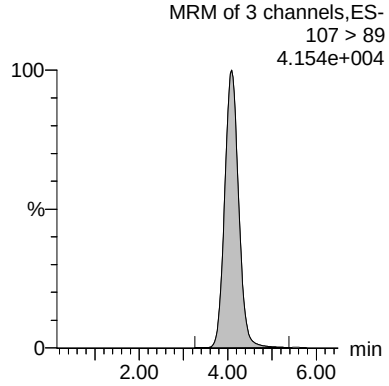
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755635	Perchlorate	99 > 83	4.06	31.837	0.001	bb			0.0010			6.229	1.37
1203755635	Perchlorate-101	101 > 85	4.06	23.161	0.001	bb			0.0022			1.948	
1203755635	Perchlorate-O(18)	107 > 89	4.09	15097.521	15097.521	bb			0.4905	98.09	-1.91	1465.2...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: EPA 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
LCS

Date Received: 27-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 1203755636

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.196	ug/L	J	1	28-MAR-17 19:25	per0328014a
	Perchlorate-O(18)			0.500	ug/L		1	28-MAR-17 19:25	per0328014a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

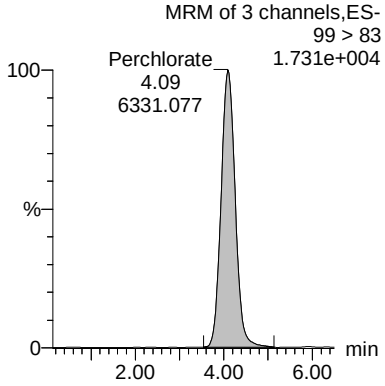
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

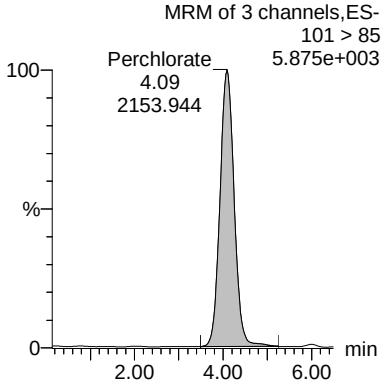
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328014a
Date: 28-Mar-2017
Time: 19:25:41
ID: 1203755636
Vial: 1:3,B

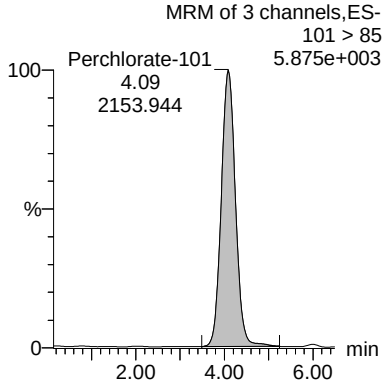
Perchlorate



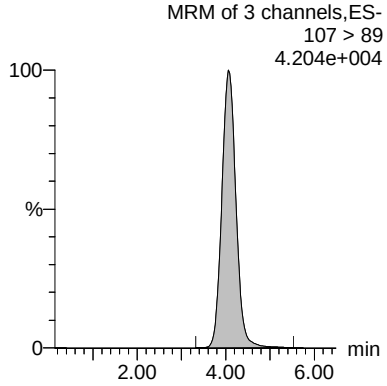
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755636	Perchlorate	99 > 83	4.09	6331.077	0.206	bb			0.1964	98.21	-1.79	710.715	2.94
1203755636	Perchlorate-101	101 > 85	4.09	2153.944	0.070	bb			0.1981	99.03	-0.97	363.928	
1203755636	Perchlorate-O(18)	107 > 89	4.06	15400.181	15400.181	bb			0.5003	100.06	0.06	3437.1...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
ICS

Date Received:

GEL Job No (SDG): 418938

GEL Sample ID: 1203755639

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.05	.2	0.211	ug/L		1	28-MAR-17 19:35	per0328015a
	Perchlorate-O(18)			0.506	ug/L		1	28-MAR-17 19:35	per0328015a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

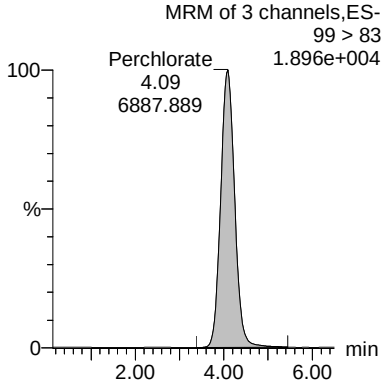
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

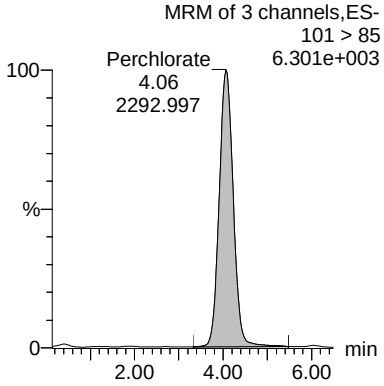
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328015a
Date: 28-Mar-2017
Time: 19:35:09
ID: 1203755639
Vial: 1:3,C

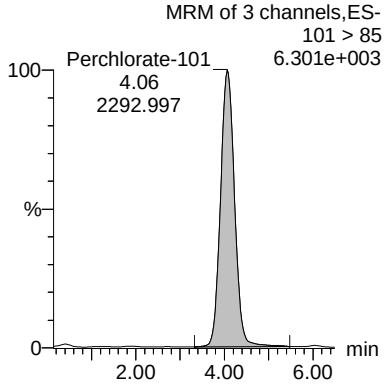
Perchlorate



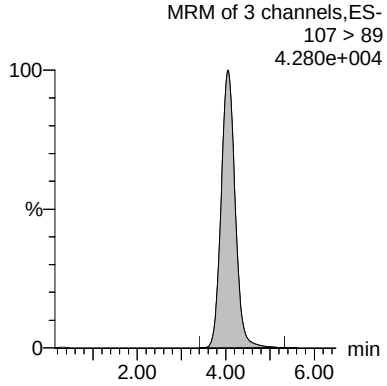
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755639	Perchlorate	99 > 83	4.09	6887.889	0.221	bb			0.2112	105.61	5.61	3146.6...	3.00
1203755639	Perchlorate-101	101 > 85	4.06	2292.997	0.074	bb			0.2084	104.20	4.20	516.199	
1203755639	Perchlorate-O(18)	107 > 89	4.06	15579.710	15579.710	bb			0.5061	101.22	1.22	3501.5...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW08-032017MS

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 1203755637

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.25	1	7.46	ug/L		5	28-MAR-17 19:54	per0328017a
	Perchlorate-O(18)			2.49	ug/L		5	28-MAR-17 19:54	per0328017a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

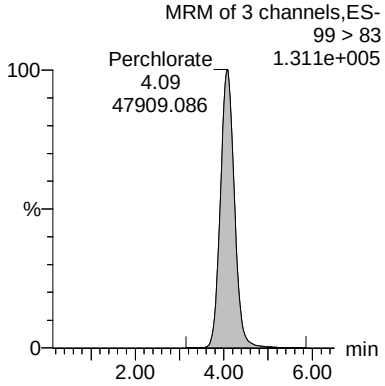
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

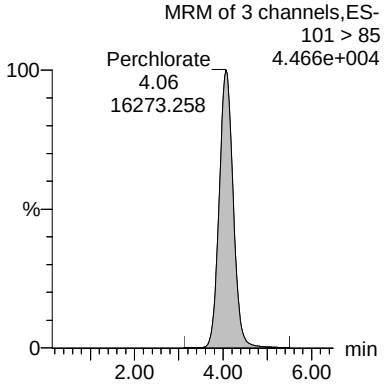
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328017a
Date: 28-Mar-2017
Time: 19:54:05
ID: 1203755637
Vial: 1:3,E

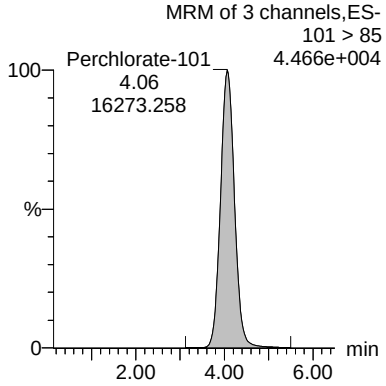
Perchlorate



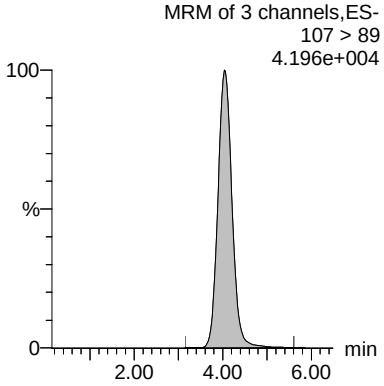
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755637	Perchlorate	99 > 83	4.09	47909.086	1.562	bb			1.4921	746.05	646.05	11634....	2.94
1203755637	Perchlorate-101	101 > 85	4.06	16273.258	0.530	bb			1.5021	751.05	651.05	1548.0...	
1203755637	Perchlorate-O(18)	107 > 89	4.03	15340.698	15340.698	bb			0.4983	99.67	-0.33	2750.6...	

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Lab Code: GEL

Instrument: LCMSMS

Method: SW846 6850 Modified

Matrix: WATER

Extraction Batch ID: 1651011

Extraction Type: Filter/DAI

Sample Volume/Weight: 10.0 mL

Concentrated Extract Volume: 10.0

Client Sample No.
18WW08-032017MSD

Date Received: 21-MAR-17

GEL Job No (SDG): 418938

GEL Sample ID: 1203755638

Date Filtered: 27-MAR-17

Injection Volume (uL): 20

%Solids:

CAS No.	Analyte^	MDL	RL	Conc*	Units	Q	Dilution Factor	Date Analyzed	GEL File ID
14797-73-0	Perchlorate	.25	1	7.45	ug/L		5	28-MAR-17 20:03	per0328018a
	Perchlorate-O(18)			2.45	ug/L		5	28-MAR-17 20:03	per0328018a

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\%\text{Solids}}$$

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

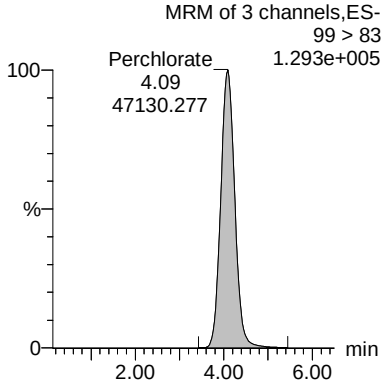
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

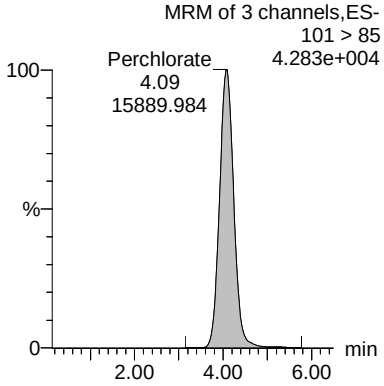
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328018a
Date: 28-Mar-2017
Time: 20:03:33
ID: 1203755638
Vial: 1:3,F

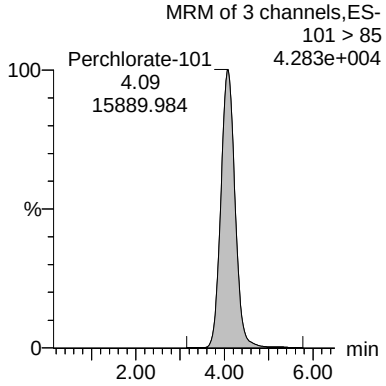
Perchlorate



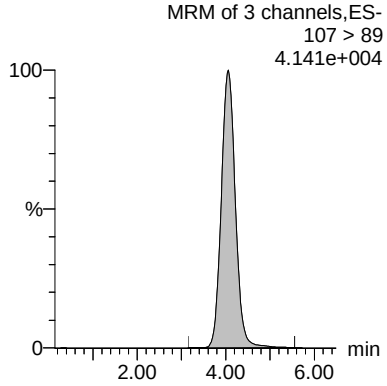
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
1203755638	Perchlorate	99 > 83	4.09	47130.277	1.559	bb			1.4901	745.03	645.03	4484.3...	2.97
1203755638	Perchlorate-101	101 > 85	4.09	15889.984	0.526	bb			1.4889	744.46	644.46	3362.7...	
1203755638	Perchlorate-O(18)	107 > 89	4.06	15111.959	15111.959	bb			0.4909	98.18	-1.82	5667.8...	

Perchlorate Initial Calibration Blank

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id	GEL Sample ID
Perchlorate	0.00	0	NA	28-MAR-17	per0328001a	IPB001
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328001a	IPB001
Perchlorate	0.00	0	NA	28-MAR-17	per0328002a	IPB001
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328002a	IPB001

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017 CWW 03/30/2017

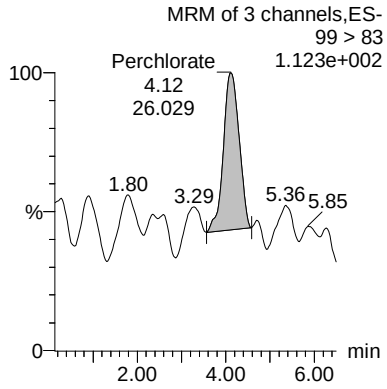
Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

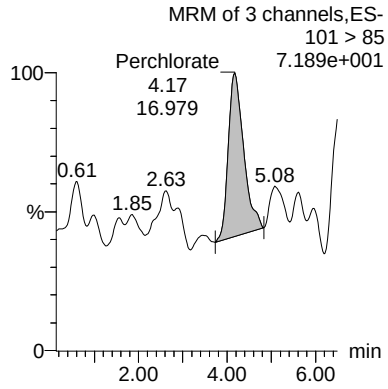
Method: C:\MassLynx\Perchlorate.PRO\MethDB\per032817a.mdb 28 Mar 2017 15:32:39
Calibration: C:\MassLynx\Perchlorate.PRO\CurveDB\per032817a.cdb 29 Mar 2017 09:31:28

Name: per0328001a
Date: 28-Mar-2017
Time: 17:22:40
ID: IPB001
Vial: 1:1,A

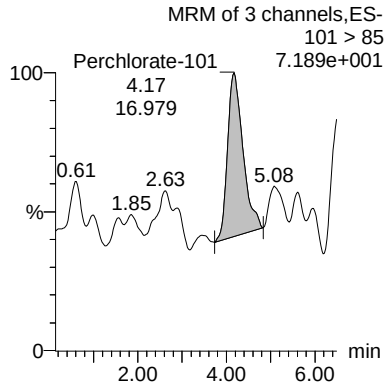
Perchlorate



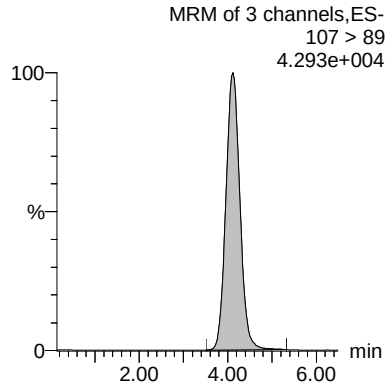
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB001	Perchlorate	99 > 83	4.12	26.029	0.001	bb			0.0008			5.733	1.53
IPB001	Perchlorate-101	101 > 85	4.17	16.979	0.001	bb			0.0015			8.208	
IPB001	Perchlorate-O(18)	107 > 89	4.12	15705.856	15705.856	bb			0.5102	102.04	2.04	1516.2...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

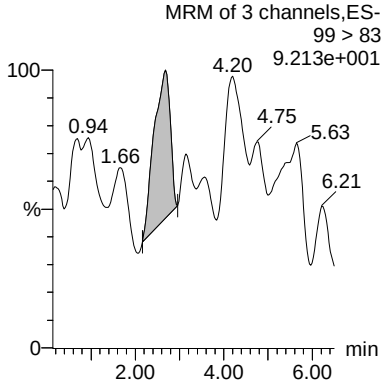
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

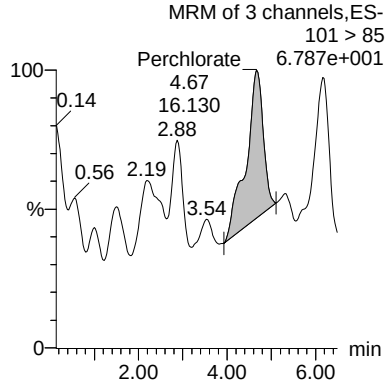
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328002a
Date: 28-Mar-2017
Time: 17:32:12
ID: IPB001
Vial: 1:1,A

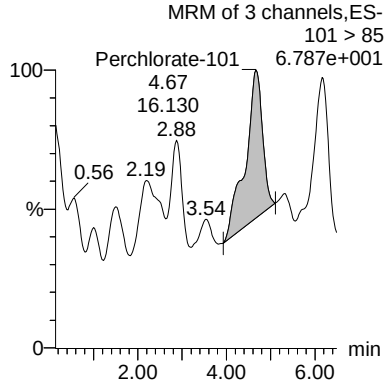
Perchlorate



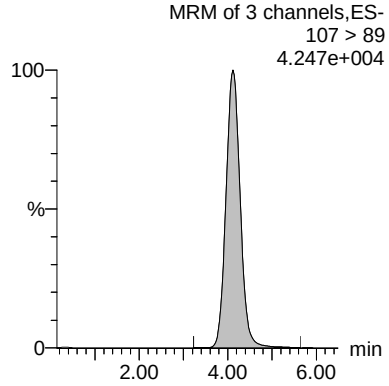
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB001	Perchlorate	99 > 83	2.68	21.127	0.001	bb			0.0006			2.053	1.31
IPB001	Perchlorate-101	101 > 85	4.67	16.130	0.001	bb			0.0015			4.395	
IPB001	Perchlorate-O(18)	107 > 89	4.12	15721.755	15721.755	bb			0.5107	102.15	2.15	1755.5...	

Perchlorate Continuing Calibration Blank

Lab Name: General Engineering Laboratories **GEL Job No.(SDG):** 418938

Lab Code: GEL

Reporting Units: ug/L

Analyte	True	Found	%Rec	Date Analyzed	GEL File Id	GEL Sample ID
Perchlorate	0.00	0	NA	28-MAR-17	per0328009a	IPB002
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328009a	IPB002
Perchlorate	0.00	0	NA	28-MAR-17	per0328011a	IPB003
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328011a	IPB003
Perchlorate	0.00	0	NA	28-MAR-17	per0328024a	IPB004
Perchlorate-101	0.00	0	NA	28-MAR-17	per0328024a	IPB004

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

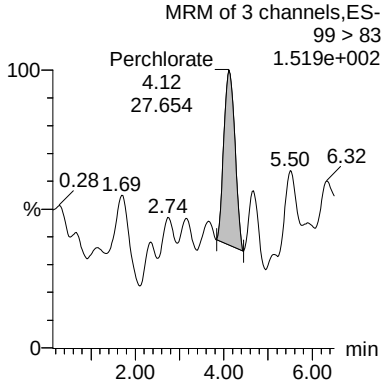
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

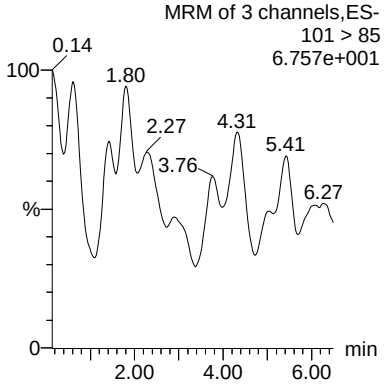
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328009a
Date: 28-Mar-2017
Time: 18:38:23
ID: IPB002
Vial: 1:1,A

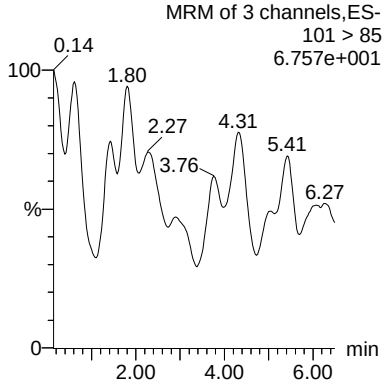
Perchlorate



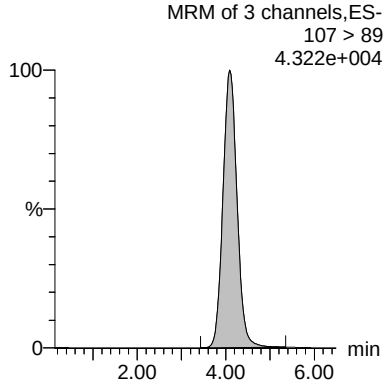
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB002	Perchlorate	99 > 83	4.12	27.654	0.001	bb			0.0008			5.988	0.00
IPB002	Perchlorate-101	101 > 85											
IPB002	Perchlorate-O(18)	107 > 89	4.09	15841.096	15841.096	bb			0.5146	102.92	2.92	2561.1...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

GL 03/29/2017

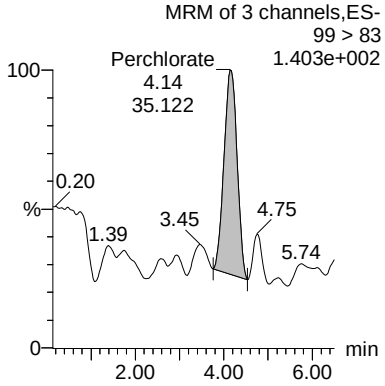
CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

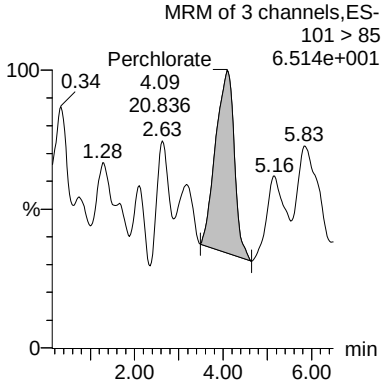
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328011a
Date: 28-Mar-2017
Time: 18:57:18
ID: IPB003
Vial: 1:1,A

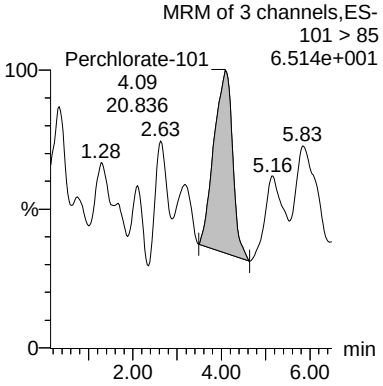
Perchlorate



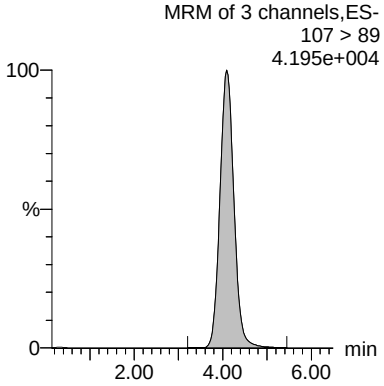
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB003	Perchlorate	99 > 83	4.14	35.122	0.001	bb			0.0011			7.519	1.69
IPB003	Perchlorate-101	101 > 85	4.09	20.836	0.001	bb			0.0019			6.259	
IPB003	Perchlorate-O(18)	107 > 89	4.09	15253.137	15253.137	bb			0.4955	99.10	-0.90	1904.9...	

Quantify Sample Report **MassLynx 4.0 SP4**

The GEL Group, LLC Analyst: Grace L. Cappelmann

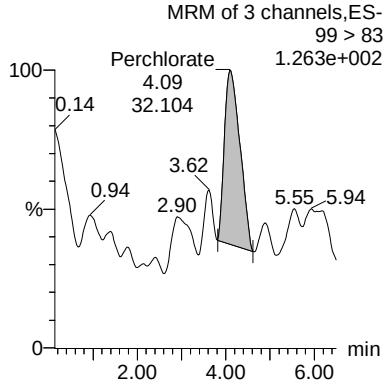
GL 03/29/2017 CWW 03/30/2017

Dataset: C:\MassLynx\Perchlorate.PRO\per032817a.qld

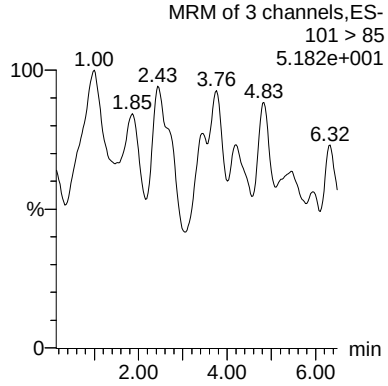
Last Altered: Wednesday, March 29, 2017 9:31:29 AM Eastern Daylight Time
Printed: Wednesday, March 29, 2017 11:53:12 AM Eastern Daylight Time

Name: per0328024a
Date: 28-Mar-2017
Time: 21:00:21
ID: IPB004
Vial: 1:1,A

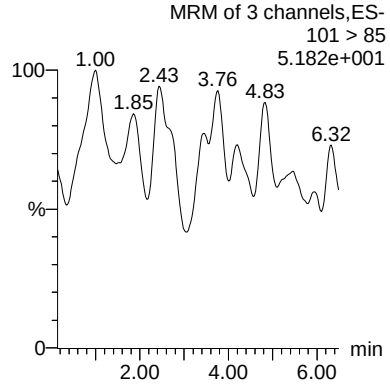
Perchlorate



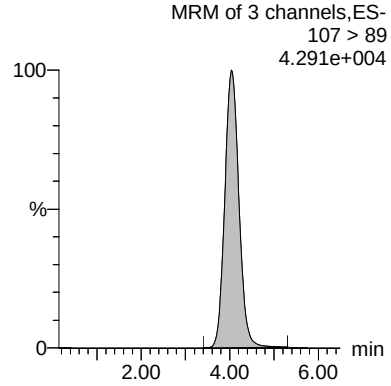
Perchlorate



Perchlorate-101



Perchlorate-O(18)



ID	Name	Trace	RT	Area	Response	Flags	Mod.Date	Mod.Time	ng/mL	%Rec	%Error	S/N	Ion Ratio
IPB004	Perchlorate	99 > 83	4.09	32.104	0.001	bb			0.0010			7.179	0.00
IPB004	Perchlorate-101	101 > 85											
IPB004	Perchlorate-O(18)	107 > 89	4.03	15784.369	15784.369	bb			0.5128	102.55	2.55	2586.5...	

Miscellaneous

Prep Logbook

Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)

Batch ID: 1651011 **Verified by:** _____
Analyst: Grace Cappelmann
Method: SW846 6850 Modified

Lab SOP: GL-OA-E-067 REV# 14
Instrument: LCMSMS Manual Instrument

Sample ID	Prep Date	Initial Volume (mL)	Final Volume (mL)	Prepped Factor (mL/mL)
1203755635 MB	27-MAR-2017 14:00:00	10	10	1
1203755636 LCS	27-MAR-2017 14:00:00	10	10	1
1203755639 ICS	27-MAR-2017 14:00:00	10	10	1
418938001	27-MAR-2017 14:00:00	10	10	1
1203755637 MS (418938001)	27-MAR-2017 14:00:00	10	10	1
1203755638 MSD (418938001)	27-MAR-2017 14:00:00	10	10	1
418938002	27-MAR-2017 14:00:00	10	10	1
418938003	27-MAR-2017 14:00:00	10	10	1
418938004	27-MAR-2017 14:00:00	10	10	1
418938005	27-MAR-2017 14:00:00	10	10	1
418939001	27-MAR-2017 14:00:00	10	10	1
419110001	27-MAR-2017 14:00:00	10	10	1
419111001	27-MAR-2017 14:00:00	10	10	1
419111002	27-MAR-2017 14:00:00	10	10	1
419111003	27-MAR-2017 14:00:00	10	10	1
419111004	27-MAR-2017 14:00:00	10	10	1
419111005	27-MAR-2017 14:00:00	10	10	1
419111006	27-MAR-2017 14:00:00	10	10	1
419111007	27-MAR-2017 14:00:00	10	10	1
419111008	27-MAR-2017 14:00:00	10	10	1
419111009	27-MAR-2017 14:00:00	10	10	1
419111010	27-MAR-2017 14:00:00	10	10	1

Type	Sample Id	Description	Serial Number	Spike Amt	Units
ICS	1203755639	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
LCS	1203755636	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
MS	1203755637	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
MSD	1203755638	10 ug/L ICV/CCV Second Source	UCL161229-01.1	.2	mL
RGNT	All	TYPE I Water for HPLC	2457559	10	mL
RGNT	All	500 ppm Carbonate, Bicarbonate, Chloride, Sulfate	2463729	10	mL

Comments:

De-salting cartridge: 161107-2.5-Ba/Ag/H

00847988

03/29/2017

03/30/2017

GEL ORGANIC RUN LOG INSTRUMENT ID: LC-MS/MS#2

Date: 03/28/17 Method: EPA 6850-Modified
Extr. Injection Volume: 20uL Int. Std.: UCL161103-01
Sequence Number: per032817a Mobile Phase Lot#: 2523118, 2457559 SOP: GL-OA-E-067
Initial Calibration Date: 03/28/17 Standard-Samp Reagent Lot#:: 2457559 Alt Check Std. ID: WCL170320-07

DataFile	Sample	Analyst	Injection Date	Batch	SDG	Dilution	Client	Comments	QC_Flag
per0328001a	IPB001	GXC1	3/28/2017 17:22			1		USE	B
per0328002a	IPB001	GXC1	3/28/2017 17:32			1		USE	B
per0328003a	WCLICAL-01	GXC1	3/28/2017 17:41			1		USE	I
per0328004a	WCLICAL-02	GXC1	3/28/2017 17:51			1		USE	I
per0328005a	WCLICAL-03	GXC1	3/28/2017 18:00			1		USE	I
per0328006a	WCLICAL-04	GXC1	3/28/2017 18:10			1		USE	I
per0328007a	WCLICAL-05	GXC1	3/28/2017 18:19			1		USE	I
per0328008a	WCLICAL-06	GXC1	3/28/2017 18:28			1		USE	I
per0328009a	IPB002	GXC1	3/28/2017 18:38			1		USE	B
per0328010a	WCLICV	GXC1	3/28/2017 18:47			1		USE	C
per0328011a	IPB003	GXC1	3/28/2017 18:57			1		USE	B
per0328012a	WCLCRI	GXC1	3/28/2017 19:06			1		USE	C
per0328013a	1203755635	GXC1	3/28/2017 19:16	1651013	Various	1	MBAC	USE	S
per0328014a	1203755636	GXC1	3/28/2017 19:25	1651013	Various	1	MBAC	USE	S
per0328015a	1203755639	GXC1	3/28/2017 19:35	1651013	Various	1	MBAC	USE	S
per0328016a	418938001	GXC1	3/28/2017 19:44	1651013	418938	5	MBAC	USE	S
per0328017a	1203755637	GXC1	3/28/2017 19:54	1651013	418938	5	MBAC	USE	S
per0328018a	1203755638	GXC1	3/28/2017 20:03	1651013	418938	5	MBAC	USE	S
per0328019a	418938002	GXC1	3/28/2017 20:12	1651013	418938	1	MBAC	USE	S
per0328020a	418938003	GXC1	3/28/2017 20:22	1651013	418938	1	MBAC	USE	S
per0328021a	418938004	GXC1	3/28/2017 20:31	1651013	418938	1	MBAC	USE	S
per0328022a	418938005	GXC1	3/28/2017 20:41	1651013	418938	1	MBAC	USE	S
per0328023a	WCLCCV	GXC1	3/28/2017 20:50			1		USE	C
per0328024a	IPB004	GXC1	3/28/2017 21:00			1		USE	B
per0328025a	WCLCRI	GXC1	3/28/2017 21:09			1		USE	C
per0328026a	418939001	GXC1	3/28/2017 21:19	1651013	418939	1	MBAC	USE	S
per0328027a	419110001	GXC1	3/28/2017 21:28	1651013	419110	5	MBAC	USE	S
per0328028a	419111001	GXC1	3/28/2017 21:38	1651013	419111	1	MBAC	USE	S
per0328029a	419111002	GXC1	3/28/2017 21:47	1651013	419111	1	MBAC	USE	S

per0328030a	419111003	GXC1	3/28/2017 21:57	1651013	419111	2000	MBAC	USE	S
per0328031a	419111004	GXC1	3/28/2017 22:06	1651013	419111	1	MBAC	USE	S
per0328032a	419111005	GXC1	3/28/2017 22:16	1651013	419111	1	MBAC	USE	S
per0328033a	419111006	GXC1	3/28/2017 22:25	1651013	419111	1	MBAC	USE	S
per0328034a	419111007	GXC1	3/28/2017 22:35	1651013	419111	1	MBAC	USE	S
per0328035a	419111008	GXC1	3/28/2017 22:44	1651013	419111	1	MBAC	USE	S
per0328036a	WCLCCV	GXC1	3/28/2017 22:53			1		USE	C
per0328037a	IPB005	GXC1	3/28/2017 23:03			1		USE	B
per0328038a	WCLCRI	GXC1	3/28/2017 23:12			1		USE	C
per0328039a	419111009	GXC1	3/28/2017 23:22	1651013	419111	1	MBAC	USE	S
per0328040a	419111010	GXC1	3/28/2017 23:31	1651013	419111	1	MBAC	USE	S
per0328041a	IPB006	GXC1	3/28/2017 23:41			1		USE	B
per0328042a	1203756791	GXC1	3/28/2017 23:50	1651435	2017-1250	1	ARSL	USE	S
per0328043a	1203756792	GXC1	3/29/2017 0:00	1651435	2017-1250	1	ARSL	USE	S
per0328044a	1203756795	GXC1	3/29/2017 0:09	1651435	2017-1250	1	ARSL	USE	S
per0328045a	419173001	GXC1	3/29/2017 0:19	1651435	2017-1250	1	ARSL	USE	S
per0328046a	1203756793	GXC1	3/29/2017 0:28	1651435	2017-1250	1	ARSL	USE	S
per0328047a	1203756794	GXC1	3/29/2017 0:38	1651435	2017-1250	1	ARSL	USE	S
per0328048a	WCLCCV	GXC1	3/29/2017 0:47			1		USE	C
per0328049a	IPB007	GXC1	3/29/2017 0:57			1		USE	B
per0328050a	WCLCRI	GXC1	3/29/2017 1:06			1		USE	C

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1618609
Revision No.: 1

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
29-MAR-17	Federal	Others	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
LC-MS/MS	SW846-6850 Modified	Liquid	MBAC001
Batch ID:	**Sample Numbers:**		
1651013	See Below		

Potentially affected work order(s)(SDG): 418938,418939,419110,419111

Application Issues:

Failed Recovery for MS/MSD, or PS/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. In 1203755637 (MS) and 1203755638 (MSD) a 0% recovery of Perchlorate was observed. The acceptance range is 75-125%. The detected concentrations in the MS and MSD were lower than the detected concentration in the parent sample.	1. The outliers observed for the matrix spikes were due to the background concentration in the parent sample, 418938001 (18WW08-032017) and the need of a 1:5 dilution prior to analysis. Will report data and note in case narrative.

Originator's Name:

Grace Cappelmann 29-MAR-17

Data Validator/Group Leader:

Charles Wilson 30-MAR-17

Isotope Ratio Criteria

Isotope Ratio $_{35}Cl/_{37}CL$

2.31-3.85

Tune Criteria

The tuning solution is introduced directly into the mass spectrometer using the ESI interface in the positive ion mode. The mass range scanned is 20 to 1100 amu using at least six scans. The observed mass for the target compound in the daily calibration standards must be within 0.2 amu of the expected value. If it is greater than 0.2 amu, then a mass calibration is performed and the instrument is re-calibrated.

Microbac

Laboratory Report Number: L17031259

Linda Raabe
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Adriane Steed – Client Services Specialist
(740) 373-4071
Adriane.Steed@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 31 2017

Leslie Bucina – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L17031259
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113655	I	3.0		J4616882318	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac

Lab Report #: L17031259
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
LH18/24-SP650-6426-GRAB	L17031259-01	03/22/2017 15:00	03/23/2017 09:44

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L17031259
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
1.2 Certificate of Analysis 25
2.0 Full Sample Data Package 27
2.1 General Chemistry Data 28
2.1.1 Ammonia Data 29
2.1.1.1 Summary Data 30
2.1.1.2 QC Summary Data 32
2.1.1.3 Raw Data 39
2.1.2 Orthophosphate Data 49
2.1.2.1 Summary Data 50
2.1.2.2 QC Summary Data 52
2.1.2.3 Raw Data 59
2.1.3 Total Organic Carbon Data 67
2.1.3.1 Summary Data 68
2.1.3.2 QC Summary Data 70
2.1.3.3 Raw Data 77
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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	NH3
Prep Batch Number(s):	WG607533	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2017-03-28 15:00:42

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	NH3
Prep Batch Number(s):	WG607533	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	NH3
Prep Batch Number(s):	WG607533	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	NH3
Prep Batch Number(s):	WG607533	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	NH3
Prep Batch Number(s):	WG607533	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	NH3
Prep Batch Number(s):	WG607533	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	PO4
Prep Batch Number(s):	WG607484	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2017-03-28 15:00:00

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	PO4
Prep Batch Number(s):	WG607484	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	PO4
Prep Batch Number(s):	WG607484	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	PO4
Prep Batch Number(s):	WG607484	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	PO4
Prep Batch Number(s):	WG607484	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

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5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	PO4
Prep Batch Number(s):	WG607484	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG607616	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2017-03-28 15:01:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG607616	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG607616	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG607616	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG607616	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031259
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG607616	**Reviewer Name:**	Deanna Hesson
LRC Date:	2017-03-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L17031259
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031259-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	LH18/24-SP650-6426-GRAB	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	03/24/2017 08:39
Workgroup #:	WG607533	**Analyst:**	DCM	**Run Date:**	03/24/2017 09:50
Collect Date:	03/22/2017 15:00	**Dilution:**	50	**File ID:**	S2170324001.068
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrogen, Ammonia	7664-41-7	49.0		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L17031259-01	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	LH18/24-SP650-6426-GRAB	**Prep Method:**	365.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.2	**Cal Date:**	03/09/2017 11:25
Workgroup #:	WG607484	**Analyst:**	TMM	**Run Date:**	03/24/2017 08:20
Collect Date:	03/22/2017 15:00	**Dilution:**	5	**File ID:**	00.1703240820-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Orthophosphate	14265-44-2	3.75		0.500	0.250	0.125

Certificate of Analysis

Sample #:	L17031259-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	LH18/24-SP650-6426-GRAB	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	02/10/2017 10:25
Workgroup #:	WG607616	**Analyst:**	ADG	**Run Date:**	03/24/2017 19:20
Collect Date:	03/22/2017 15:00	**Dilution:**	25	**File ID:**	TC03242017.041
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	503		50.0	25.0	12.5

2.0 Full Sample Data Package

2.1 General Chemistry Data

2.1.1 Ammonia Data

2.1.1.1 Summary Data

Microbac

Lab Report #: L17031259
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031259-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	LH18/24-SP650-6426-GRAB	**Prep Method:**	350.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	350.1	**Cal Date:**	03/24/2017 08:39
Workgroup #:	WG607533	**Analyst:**	DCM	**Run Date:**	03/24/2017 09:50
Collect Date:	03/22/2017 15:00	**Dilution:**	50	**File ID:**	S2170324001.068
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrogen, Ammonia	7664-41-7	49.0		10.0	5.00	2.50

2.1.1.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 24-MAR-2017
Analyst: DCM
Analyst: NA
Method: NH3
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG607532 WG607533 WG607598

Calibration/Linearity	03-24-2017
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
24-MAR-2017



Secondary Reviewer:
27-MAR-2017



CHECKLIST1 - Modified 03/05/2008
Generated: MAR-27-2017 13:53:59

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 350.1 **AAB#:** WG607533

Login Number: L17031259

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP650-6426-GRAB	01	03/22/17					03/24/2017	1.8	28		03/24/17	1.8	28	

*** = SEE PROJECT QAPP REQUIREMENTS**

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5217419
Report generated 03/27/2017 10:28

METHOD BLANK SUMMARY

Login Number:	L17031259	**Work Group:**	WG607533
Blank File ID:	S2170324001.061	**Blank Sample ID:**	WG607533-01
Prep Date:	03/24/17 09:30	**Instrument ID:**	SMARTCHEM2
Analyzed Date:	03/24/17 09:30	**Method:**	350.1
Analyst:	DCM		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607533-02	S2170324001.035	03/24/17 09:05	01
DUP	WG607533-04	S2170324001.055	03/24/17 09:24	01
LH18/24-SP650-6426-GRAB	L17031259-01	S2170324001.068	03/24/17 09:50	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5217420
Report generated 03/27/2017 10:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031259 Prep Date: 03/24/17 09:30 Sample ID: WG607533-01
Instrument ID: SMARTCHEM2 Run Date: 03/24/17 09:30 Prep Method: 350.1
File ID: S2170324001.061 Analyst: DCM Method: 350.1
Workgroup (AAB#): WG607533 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-24-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Nitrogen, Ammonia	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5217421
27-MAR-2017 10:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031259 **Run Date:** 03/24/2017 **Sample ID:** WG607533-02
Instrument ID: SMARTCHEM2 **Run Time:** 09:05 **Prep Method:** 350.1
File ID: S2170324001.035 **Analyst:** DCM **Method:** 350.1
Workgroup (AAB#): WG607533 **Matrix:** Water **Units:** mg/L
QC Key: DOD4 **Lot#:** STD80299 **Cal ID:** SMARTC-24-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Nitrogen, Ammonia	2.00	1.91	95.3	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 5217422
Report generated: 03/27/2017 10:28

2.1.1.3 Raw Data

WORKGROUP: WG607532
607533
607598

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9
  Syringe filter lot # _____
  pH paper Lot #: _____
- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
   Plan # 20170324001
2) **Workgroup** _____
   Plan # 20170324002
3) **Workgroup** _____
   Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		NH_3		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	03-1147-01			
1-6	C4			
1-7	C7			
1-8	10			
1-9	MS 11			
1-10	MSD 12			
1-11	19			
1-12	22			
1-13	25			
1-14	03-1149-01	20mL		
1-15	C2	15 mL		
1-16	C3	17 mL		
1-17	C4	19 mL		
1-18	C5	24 mL		
1-19	C6	25 mL		
1-20	DUP 03-1147-22			
1-21	Blk			
1-22	LCS			
2-1	03-1087-01			
2-2	03-1131-03			
2-3	03-1133-03			

	Analyte	1	2	3
Position				
2-4	03-1090-01	Auto ½		
2-5	03-1154-13			
2-6	17			
2-7	03-1187-01	Auto 1/5		
2-8	03-1119-01			
2-9	02	Auto 1/5		
2-10	03			
2-11	04			
2-12	03-1155-01		[illegible] 3/24/17	
2-13	03-1202-01	4mL/40 *	~~1/40~~ 1/40	
2-14	02	4mL/40 *	1/20	
2-15	03	4mL/40 *	1/20	
2-16	06	4mL/40 *	1/2	
2-17	03-1259-01	1/5 *	Auto 1/5	
2-18	DUP 03-1087-01			
2-19	MS 03-1087-01			
2-20	MS 03-1119-01			
2-21	03-1259-01		Replaced with	DI
2-22	Blk			
2-23				
2-24 1	ICV			
2-25 2	Blk			
2-26 3	LCS			
3-1 4	03-1119-02			
3-2 5	03-1087-01	RSF		
6	DUP 03-1087-01			
7	MS 03-1087-01			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#124753

WORKGROUP: WG607532

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

Analyte		1	2	3
Position				
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Analyte		1	2	3
Position				
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

✓	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	NH3	AA	Reagents
SOP & Revision	K3501 R24		RGT 38596
Curve Stock (SC made)	Std 80966		RGT 39421
NO2 STD			RGT 39214
ICV	Std 80868		
CCV	Std 80967		
LCS	See	Std 8095	
MS	Distill Log Dilution	Std 80299 0.1(100)/10=1	

Comments: _____

Analyst: David Merchle

Date: 3/24/17

DCN#124753

AMMONIA DISTILLATION LOG

SOP K3501 Revision # 24

LCS: Std 80299 SPIKE: Std 80299 WATER (mg/L)

DAILY DIL. 5(100)/250 = 2 DAILY DIL. .4(100)/40 = 1 SOIL (mg/Kg)

40(2)/40 = 2

* All Distillate are at a Final Volume of 40 mL.

RGT 39399
RGT 39615

SAMPLE	VOLUME DISTILLED (mL or g)	CHLORINE PRESENT?	pH ADJUSTED 9.5 ± 0.2	COMMENTS
BLANK	40	—	✓	
LCS(2.0)	40	—	✓	
LCS DUP( )				
03-1087-01	40	—	✓	
03-1131-03	40	—	✓	
03-1133-03	40	—	✓	
03-1090-01	40	—	✓	CT1
03-1154-13	40	—	✓	
-17	40	—	✓	
03-1187-01	40	—	✓	
03-1119-01	40	—	✓	
-02	40	—	✓	
-03	40	—	✓	
-04	40	—	✓	
03-1155-01	40	—	✓	
03-1202-01	4	—	✓	
-02	4	—	✓	
-03	4	—	✓	
-06	4	—	✓	
03-1259-01	40	—	✓	
			✓	
DUP 1087-01	40	—	✓	
MS( ) 1087-01	40	—	✓	
MS( ) 1119-01	40	—	✓	

Analyst: Edwin Tidd Date/Time: 3/23/17 1100

*MS required on 10% of samples (EPA 350.1)
*MS/MS required on each set of 20 samples (SM4500)

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0522	0.00		8:32:03 AM
DIL-1	RBL	0.000	0.0505	0.00		8:32:21 AM
DIL-1	RBL	0.000	0.0507	0.00		8:33:51 AM
DIL-1	Std-1	0.000	0.0007	0.00		8:34:09 AM
SR5-1	Std-2	0.030	0.0089	0.00		8:35:39 AM
SR5-2	Std-3	0.094	0.0249	0.00		8:35:57 AM
SR5-3	Std-4	0.600	0.1540	0.00		8:37:27 AM
SR5-4	Std-5	1.050	0.2726	0.00		8:37:45 AM
SR5-5	Std-6	2.100	0.5395	0.00		8:39:15 AM
ST-1	Std-7	3.000	0.7850	0.00		8:39:33 AM
ST-3	1CCV (1.5 mg/L)	1.511	0.3927	100.72		8:41:03 AM
ST-2	2CCB (0 mg/L)	-0.007	-0.0023	0.00	INV,><,LL	8:41:21 AM
1	ICV	1.488	0.3867	0.00		8:42:51 AM
2	WG607532-01 BLK	0.007	0.0015	0.00		8:43:09 AM
3	WG607532-02 LCS	1.976	0.5137	0.00		8:44:40 AM
4	WG607532-03 LCSDUP	2.012	0.5232	0.00		8:44:58 AM
5	L17031147-01	0.009	0.0018	0.00		8:46:28 AM
6	L17031147-04	0.002	0.0000	0.00	><	8:46:45 AM
7	L17031147-07	0.030	0.0074	0.00		8:48:16 AM
8	L17031147-10	0.021	0.0051	0.00		8:48:34 AM
9	L17031147-11 MS	1.045	0.2716	0.00		8:50:04 AM
10	L17031147-12 MSD	1.061	0.2756	0.00		8:50:22 AM
ST-3	1CCV (1.5 mg/L)	1.512	0.3930	100.80		8:51:52 AM
ST-2	2CCB (0 mg/L)	-0.003	-0.0013	0.00	INV,><,LL	8:52:10 AM
11	L17031147-19	0.011	0.0023	0.00		8:53:40 AM
12	L17031147-22	0.003	0.0004	0.00	><	8:53:58 AM
13	L17031147-25	0.001	-0.0002	0.00	INV,><	8:55:28 AM
14	L17031149-01	0.167	0.0429	0.00	20 mL	8:55:46 AM
15	L17031149-02	0.402	0.1041	0.00	15 mL	8:57:16 AM
16	L17031149-03	0.363	0.0941	0.00	17mL	8:57:34 AM
17	L17031149-04	0.344	0.0891	0.00	19mL	8:59:40 AM
18	L17031149-05	0.198	0.0512	0.00	24mL	8:59:58 AM
19	L17031149-06	0.197	0.0508	0.00	25mL	9:01:28 AM
20	WG607532-08 DUP	0.003	0.0004	0.00	><	9:01:46 AM
ST-3	1CCV (1.5 mg/L)	1.530	0.3977	102.00		9:03:16 AM
ST-2	2CCB (0 mg/L)	0.004	0.0006	0.00	><	9:03:34 AM

Report Date :03/24/2017 **Run Date :03/24/2017** **Operator : SMARTCHEM2** **Plan # :20170324001**

Plan Description : NH3-A2-DCM/03/24/2017

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
21	WG607533-01 BLK	X 0.053	0.0133	0.00		9:05:04 AM
22	WG607533-02 LCS	1.906	0.4954	0.00		9:05:22 AM
23	L17031087-01	0.594	0.1541	0.00		9:07:28 AM
24	L17031131-03	0.346	0.0895	0.00		9:07:46 AM
25	L17031133-03	0.425	0.1101	0.00		9:09:16 AM
26 dcm 3/24/17	L17031190-01	X 18.048	4.6958	0.00	><,LH	9:09:34 AM
27	L17031154-13	0.155	0.0399	0.00		9:11:04 AM
28	L17031154-17	0.142	0.0364	0.00		9:11:22 AM
29	L17031187-01	X 18.048	4.6956	0.00	><,LH	9:12:52 AM
30	L17031119-01	0.104	0.0266	0.00		9:13:10 AM
ST-3	1CCV (1.5 mg/L)	1.532	0.3983	102.16		9:14:58 AM
ST-2	2CCB (0 mg/L)	0.002	0.0001	0.00	><	9:15:16 AM
31	L17031119-02	X 10.116	2.6319	0.00	EPL,><,LH	9:16:46 AM
32	L17031119-03	0.069	0.0175	0.00		9:17:04 AM
33	L17031119-04	0.125	0.0320	0.00		9:18:34 AM
34	L17031155-01	0.184	0.0475	0.00		9:18:52 AM
35	L17031202-01 (400)	1.796	0.4670	0.00		9:20:22 AM
36	L17031202-02 (200)	2.716	0.7063	0.00		9:21:16 AM
37	L17031202-03 (200)	1.551	0.4032	0.00		9:22:10 AM
38	L17031202-06 (20)	1.874	0.4871	0.00		9:23:04 AM
39	L17031259-01 (5)	X 11.977	3.1160	0.00	><,LH	9:23:58 AM
40	WG607533-04 DUP	0.757	0.1966	0.00		9:24:52 AM
ST-3	1CCV (1.5 mg/L)	1.550	0.4030	103.36		9:25:46 AM
ST-2	2CCB (0 mg/L)	0.006	0.0012	0.00		9:26:40 AM
41	WG607533-05 MS	1.512	0.3931	0.00		9:27:34 AM
42	WG607533-07 MS	0.987	0.2564	0.00		9:28:28 AM
43	ID 43	X 18.053	4.6970	0.00	><,LH	9:29:22 AM
44	ID 44 Blk	0.026	0.0064	0.00		9:30:16 AM
45	ID 45	0.026	0.0064	0.00		9:31:10 AM
ST-3	1CCV (1.5 mg/L)	1.560	0.4055	104.00		9:32:04 AM
ST-2	2CCB (0 mg/L)	0.010	0.0021	0.00		9:32:58 AM
26-[1/2] dcm 3/24/17	L17031190-01 (5)	5.654	0.7352	0.00	LH	9:45:08 AM
29-[1/2]	L17031187-01 (5)	3.733	0.4852	0.00	LH	9:46:56 AM
31-[1/2]	L17031119-02 (5)	X 0.085	0.0106	0.00		9:48:44 AM
39-[1/2]	L17031259-01 (5) (5)	1.961	0.2547	0.00		9:50:32 AM
43-[1/2]	ID 43	-0.004	-0.0010	0.00	INV,><,LL	9:52:20 AM

Report Date :03/24/2017 **Run Date :03/24/2017** **Operator : SMARTCHEM2** **Plan # :20170324001**

Plan Description : NH3-A2-DCM/03/24/2017

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	**1CCV (1.5 mg/L)**	**1.582**	**0.4113**	**105.49**		**9:52:20 AM**
ST-2	**2CCB (0 mg/L)**	**0.026**	**0.0062**	**0.00**		**9:53:50 AM**

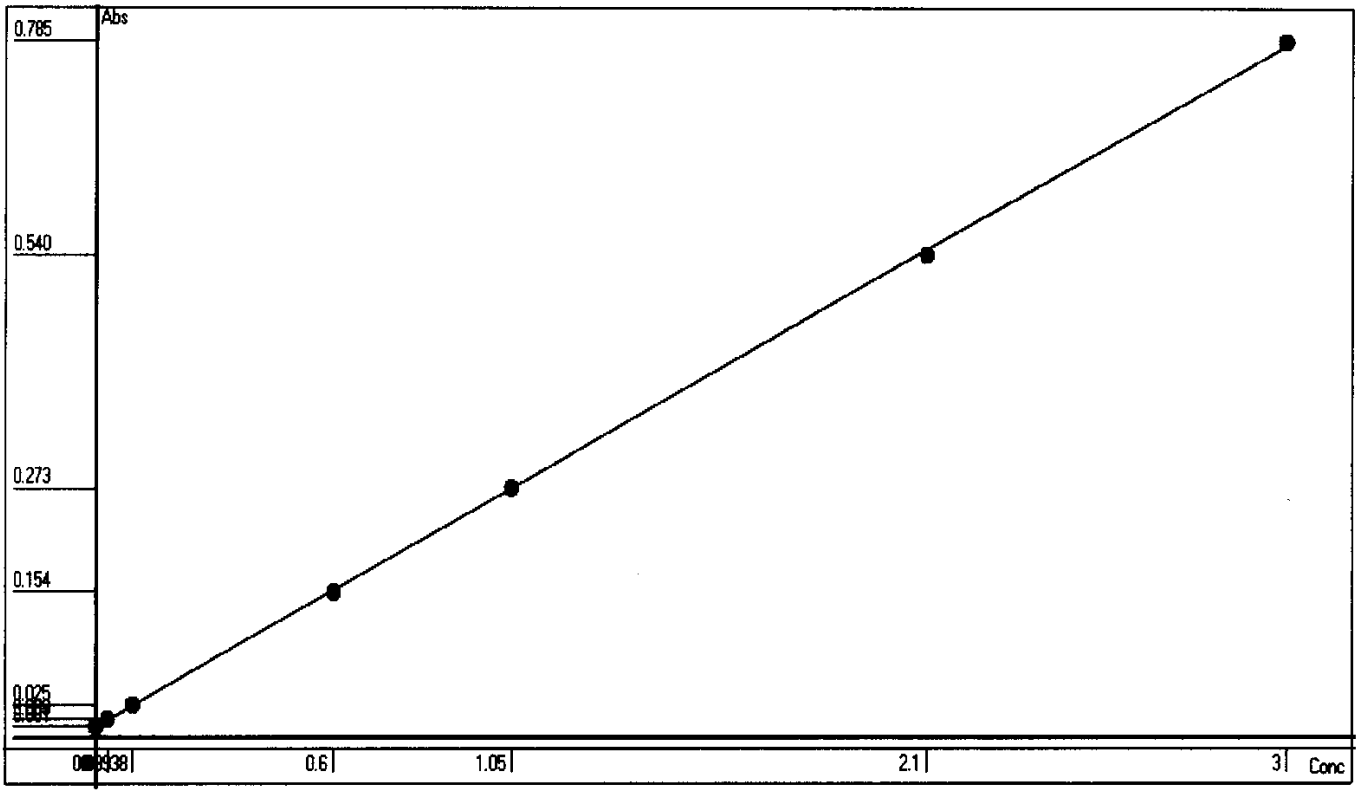
Report Date :03/24/2017 **Run Date :03/24/2017** **Operator : SMARTCHEM2** **Plan # :20170324001**

Plan Description : NH3-A2-DCM/03/24/2017

Calibrant Report - WNH3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:Westco Scientific

Plan # : 20170324001 Description : [NH3-A2-DCM/03/24/2017] Unit



Point	OD	Conc	Recalc Conc	% Error
1	0.0007	0	0.0043	0.43
2	0.0089	0.03	0.0358	19.33
3	0.0249	0.0938	0.0973	3.73
4	0.1540	0.6	0.5935	-1.08
5	0.2726	1.05	1.0493	-0.07
6	0.5395	2.1	2.0750	-1.19
7	0.7850	3	3.0185	0.62

Conc= +3.8432*Abso +0.0016 R²=0.9999

RBL
0.0506
0

Report Date 3/24/2017 Run Date 3/24/2017

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WNH3 -Unit [mg/L] - EPA 350.1/SM4500-NH3 AMMONIA

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0558	0.00		10:16:02 AM
DIL-1	RBL	0.000	0.0544	0.00		10:16:20 AM
DIL-1	RBL	0.000	0.0519	0.00		10:17:50 AM
DIL-1	Std-1	0.000	-0.0024	0.00	INV	10:18:08 AM
SR5-1	Std-2	0.030	0.0067	0.00		10:19:39 AM
SR5-2	Std-3	0.094	0.0248	0.00		10:19:57 AM
SR5-3	Std-4	0.600	0.1726	0.00		10:21:27 AM
SR5-4	Std-5	1.050	0.2946	0.00		10:21:45 AM
SR5-5	Std-6	2.100	0.5853	0.00		10:23:15 AM
ST-1	Std-7	3.000	0.8483	0.00		10:23:33 AM
ST-3	1CCV (1.5 mg/L)	1.526	0.4293	101.76		10:25:03 AM
ST-2	2CCB (0 mg/L)	0.039	0.0095	0.00		10:25:21 AM
1	ICV	1.471	0.4136	0.00		10:26:51 AM
2	WG607598-01 BLK	0.035	0.0086	0.00		10:27:08 AM
3	WG607598-02 LCS	1.931	0.5434	0.00		10:28:39 AM
4	L17031119-02	0.104	0.0281	0.00		10:28:57 AM
5	WG607598-03 REF	0.558	0.1562	0.00		10:30:27 AM
6	WG607598-04 DUP	0.714	0.2002	0.00		10:30:45 AM
7	WG607598-05 MS	1.432	0.4026	0.00		10:32:15 AM
8	ID 8	0.108	0.0292	0.00		10:32:33 AM
9	ID 9	0.031	0.0074	0.00		10:34:03 AM
10	ID 10	1.825	0.5136	0.00		10:34:21 AM
ST-3	1CCV (1.5 mg/L)	1.548	0.4354	103.20		10:35:51 AM
ST-2	2CCB (0 mg/L)	0.048	0.0121	0.00		10:36:09 AM

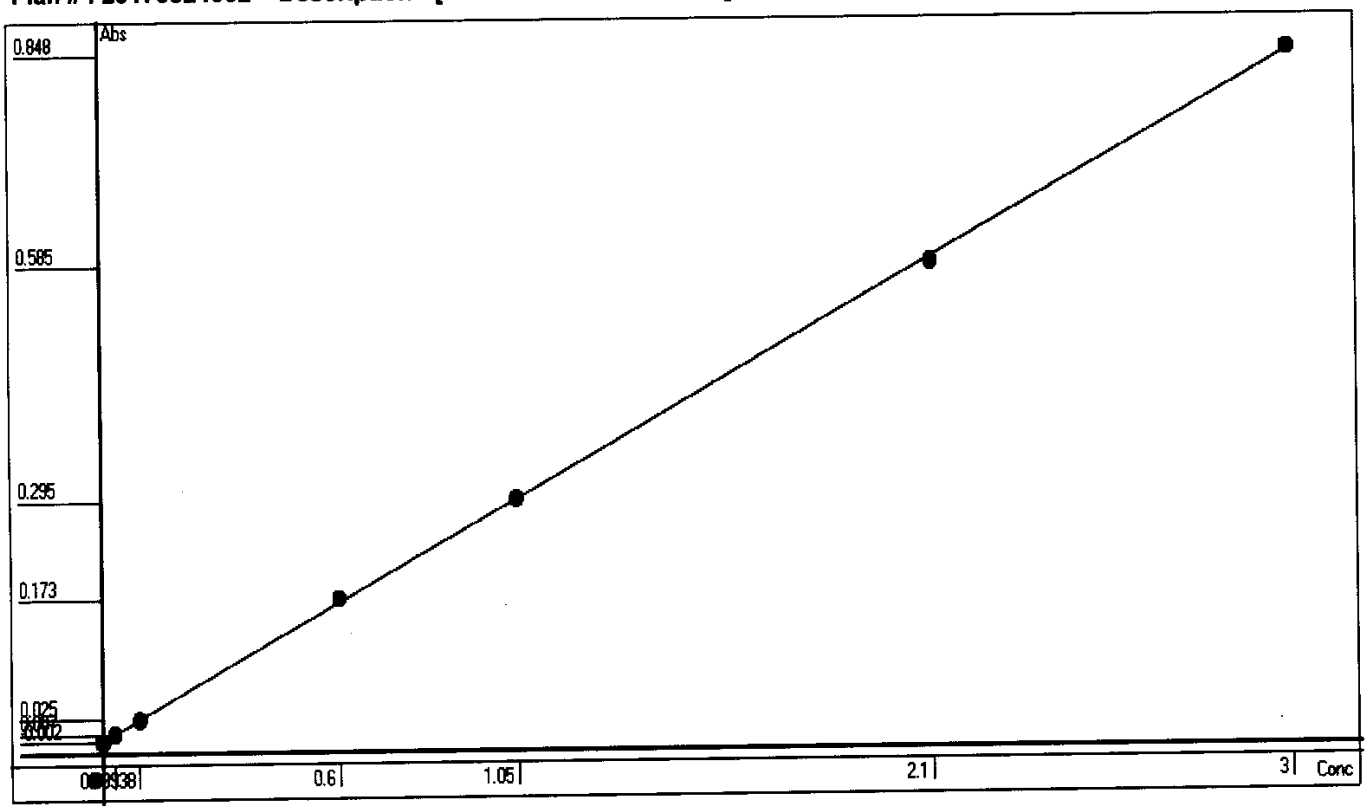
Report Date :03/24/2017 **Run Date :3/24/2017** **Operator : SMARTCHEM2** **Plan # :20170324002**

Plan Description : NH3-B2-DCM/03/24/2017

Calibrant Report - WNH3 -

Calib Lot #:010104 Exp Date:6/17/2020 User:Westco Scientific

Plan # : 20170324002 Description : [NH3-B2-DCM/03/24/2017] Unit



Point	OD	Conc	Recalc Conc	% Error
1	-0.0024	0	-0.0036	-0.36
2	0.0067	0.03	0.0286	-4.67
3	0.0248	0.0938	0.0928	-1.07
4	0.1726	0.6	0.6166	2.77
5	0.2946	1.05	1.0490	-0.10
6	0.5853	2.1	2.0793	-0.99
7	0.8483	3	3.0114	0.38

Conc= +3.5441*Abso +0.0049 **R^2=0.9999**

RBL
0.0551
0

Report Date 3/24/2017 **Run Date 3/24/2017**

2.1.2 Orthophosphate Data

2.1.2.1 Summary Data

Microbac

Lab Report #: L17031259
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031259-01	**PrePrep Method:**	N/A	**Instrument:**	UV-2600
Client ID:	LH18/24-SP650-6426-GRAB	**Prep Method:**	365.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.2	**Cal Date:**	03/09/2017 11:25
Workgroup #:	WG607484	**Analyst:**	TMM	**Run Date:**	03/24/2017 08:20
Collect Date:	03/22/2017 15:00	**Dilution:**	5	**File ID:**	00.1703240820-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Orthophosphate	14265-44-2	3.75		0.500	0.250	0.125

2.1.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 24-MAR-2017
Analyst: TMM
Analyst: NA
Method: PO4
Instrument: UV-2600
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG607484

Calibration/Linearity	3/9/17
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TMM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
24-MAR-2017
Tammy Morris

Secondary Reviewer:
24-MAR-2017
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2017 14:39:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.2 **AAB#:** WG607484

Login Number: L17031259

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP650-6426-GRAB	01	03/22/17					03/24/2017	1.7	2		03/24/17	1.7	2	

*** = SEE PROJECT QAPP REQUIREMENTS**

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5216165
Report generated 03/24/2017 14:29

METHOD BLANK SUMMARY

Login Number:	L17031259	**Work Group:**	WG607484
Blank File ID:	00.1703240820-03	**Blank Sample ID:**	WG607484-01
Prep Date:	03/24/17 08:20	**Instrument ID:**	UV-2600
Analyzed Date:	03/24/17 08:20	**Method:**	365.2
Analyst:	TMM		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607484-02	00.1703240820-04	03/24/17 08:20	
LCS2	WG607484-03	00.1703240820-05	03/24/17 08:20	
LH18/24-SP650-6426-GRAB	L17031259-01	00.1703240820-06	03/24/17 08:20	
DUP	WG607484-05	00.1703240820-07	03/24/17 08:20	

Report Name: BLANK_SUMMARY
PDF File ID: 5216166
Report generated 03/24/2017 14:29

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number:L17031259 Prep Date:03/24/17 08:20 Sample ID:WG607484-01
Instrument ID:UV-2600 Run Date:03/24/17 08:20 Prep Method:365.2
File ID:00.1703240820-03 Analyst:TMM Method:365.2
Workgroup (AAB#):WG607484 Matrix:Water Units:mg/L
Contract #: Cal ID:UV-260-16-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Orthophosphate	0.0250	0.100	0.0250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5216167
24-MAR-2017 14:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031259 Analyst: TMM Prep Method: 365.2
Instrument ID: UV-2600 Matrix: Water Method: 365.2
Workgroup (AAB#): WG607484 Units: mg/L
QC Key: DOD4 Lot #: STD81054

Sample ID: WG607484-02 LCS File ID: 00.1703240820-04 Run Date: 03/24/2017 08:20
Sample ID: WG607484-03 LCS2 File ID: 00.1703240820-05 Run Date: 03/24/2017 08:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Orthophosphate	1.00	0.975	97.5	1.00	0.980	98.0	0.491	90 - 110	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5216168
Report generated: 03/24/2017 14:29

2.1.2.3 Raw Data

WG 005651

Curves

Parameter: PO4

Spectrophotometer: UV-2600

Calibration (Curve) standard stock: Std 79640

Concentration: 1000mg/L

Recipe for preparation of curve standards found in:

SOP: 3653 Revision: 17 Page: 19

Second Source Stock: Std 80857 ~~79554~~ Ag 3/9/17 (concentration: ~~1000~~ 10)

Daily Preparation: Std 80857 10(W) / 100

concentration = ~1.0

Calibration Standards (mg/L)	Volume (mL)	Cell Size (cm)	Wavelength (nm)	Absorbance
1.0	50	1cm	880	0.632
0.7	↓	↓	↓	0.438
0.5				0.317
0.2				0.129
0.1				0.067
0.05				0.039
0.00			3/9/17 Ag	~~0.013~~ 0.001
2nd Source 1.0	↓	↓	↓	0.633

Analyst: [signature] Date/Time: 3/9/17 1125

DCN#124440

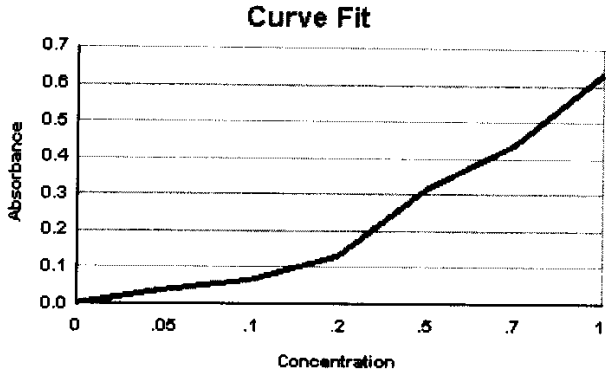
Microbac Laboratories Inc.
INITIAL CALIBRATION

Workgroup:WG605651
Analytical Method:300
Instrument ID:UV-2600

Analyst:ADG
Initial Calibration Date:03/09/2017

Analyte: ORTHOPHOSPHATE
Number of Points: 7
Slope: 0.625674
Y-Intercept: 0.00393300
Coef. Of Correlation (R^2): 0.999869
Coef. Of Correlation (R): 0.999935

Concentration X	Absorbance Y	X^2	X * Y	Y-Fitted (mX^2+B)
0.00	0.00100	0.00	0.00	0.00393300
0.0500	0.0390	0.00250	0.00195	0.0352167
0.100	0.0670	0.0100	0.00670	0.0665004
0.200	0.129	0.0400	0.0258	0.129068
0.500	0.317	0.250	0.159	0.316770
0.700	0.438	0.490	0.307	0.441905
1.00	0.632	1.00	0.632	0.629607



WG_ICAL_CAL_WET - Modified 03/06/2008
Report generated 03/09/2017 11:49

[redacted]

Microbac Laboratories Inc.
ALTERNATE SOURCE REPORT

Workgroup #: WG605651
File ID: 00.1703091125-08
CCV ID: WG605651-08
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-2600
Run Date: 03/09/2017
Run Time: 11:25
Analyst: ADG
Cal ID: UV-260 - 09-MAR-17 11:25:07

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	1	1.01	0.633	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_SSCV - Modified 03/06/2008
Report generated 03/09/2017 11:50

[redacted]

WORKGROUP: WG607484

Orthophosphate
(orthophosphate1)

EPA 365.2 / SM4500-P E
SOP K3653 Rev 17
Color Reagent Chemicals
39094
38726
39475
COA18278

CCV: 81055 3/24/17
Daily Dilution: 5(50)/50
Daily Dilution: =0.5
Spectrophotometer: UV-2600

LCS: 81054
Daily Dilution: 10(10)/100
Daily Dilution: =1.0
Curve ID: 3/9/17

Spike: 81054
Daily Dilution 2(10)/50
Daily Dilution: =0.4

SAMPLE	VOLUME	PH < 8.2	DILUTION	ABSORBANCE @ 880 nm
CCV: 0.5 mg/L	50	✓		0.322
BLK/CCB:	50	✓		0.003
LCS: 1.0 ppm	50	✓		0.614
LCSD: 1.0 ppm	50	✓		0.617
03-1259-01	50	✓	1/5	0.473
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
CCV:	50			
CCB:	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
	50			
DUP: 03-1259-01	50		1/5	0.473
MS: ( ) 03-1259-01	50		1/5	0.508
MSD: ( )	50			
CCV: (0.5)	50			0.320
CCB:	50			0.002

Analyst: Tammy Morris

Date / Time: 3/24/17 / 0820

DCN#124744

Microbac Laboratories Inc.
SAMPLE REPORT

Workgroup: WG607484 **Analyst:** TMM
Analyte: ORTHOPHOSPHATE **Date:** 03/24/2017

Sample ID	I Vol	F Vol	Response	Slope	Y Intercept	Anal. Conc.	Rep. Conc.	Dil	Units
WG607484-01	50	50	0.00300	0.6257	0.003933	-0.0014912	-0.0014912	1	mg/L
WG607484-02	50	50	0.614	0.6257	0.003933	0.97506	0.97506	1	mg/L
WG607484-03	50	50	0.617	0.6257	0.003933	0.97985	0.97985	1	mg/L
L17031259-01	50	50	0.473	0.6257	0.003933	0.74970	3.7485	5	mg/L
WG607484-04	50	50	0.473	0.6257	0.003933	0.74970	3.7485	5	mg/L
WG607484-05	50	50	0.473	0.6257	0.003933	0.74970	3.7485	5	mg/L
WG607484-06	50	50	0.508	0.6257	0.003933	0.80564	4.0282	5	mg/L

[redacted]

UV_SAMPLE_REPORT - Modified 03/06/2008

Report generated **03/24/2017 14:02**

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG607644
File ID: 00.1703240820-01
CCV ID: WG607644-01
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-2600
Run Date: 03/24/2017
Run Time: 08:20
Analyst: TMM
Cal ID: UV-260 - 16-MAR-17

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.508	0.644	1.6	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 03/24/2017 14:04

[redacted]*

Microbac Laboratories Inc.
CONTINUING CALIBRATION REPORT

Workgroup #: WG607644
File ID: 00.1703240820-09
CCV ID: WG607644-03
Units: mg/L
Analyte: ORTHOPHOSPHATE

Instrument ID: UV-2600
Run Date: 03/24/2017
Run Time: 08:20
Analyst: TMM
Cal ID: UV-260 - 16-MAR-17

Analyte	Expected	Found	RF	%D	Q
Orthophosphate	.5	0.505	0.640	1.0	

* Exceeds %D Limit

CCC Calibrtion Check Compounds
SPCC System Performance Check Compounds

WET_WG_CCV - Modified 03/06/2008

Report generated 03/24/2017 14:04

[redacted]

2.1.3 Total Organic Carbon Data

2.1.3.1 Summary Data

Microbac

Lab Report #: L17031259
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031259-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	LH18/24-SP650-6426-GRAB	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	02/10/2017 10:25
Workgroup #:	WG607616	**Analyst:**	ADG	**Run Date:**	03/24/2017 19:20
Collect Date:	03/22/2017 15:00	**Dilution:**	25	**File ID:**	TC03242017.041
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	503		50.0	25.0	12.5

2.1.3.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 24-MAR-2017
Analyst: DCM
Analyst: ADG
Method: TOC
Instrument: TOCVPM
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG607551 607616

Calibration/Linearity	02/10/17
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	ADG
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
30-MAR-2017

Secondary Reviewer:
31-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-31-2017 09:42:09

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG607616

Login Number: L17031259

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LH18/24-SP650-6426-GRAB	01	03/22/17					03/24/2017	2.2	28		03/24/17	2.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5225747
Report generated 03/31/2017 10:10

METHOD BLANK SUMMARY

Login Number:	L17031259	**Work Group:**	WG607616
Blank File ID:	TC03242017.018	**Blank Sample ID:**	WG607616-01
Prep Date:	03/24/17 14:46	**Instrument ID:**	TOC-VWP
Analyzed Date:	03/24/17 14:46	**Method:**	415.1
Analyst:	ADG		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607616-02	TC03242017.019	03/24/17 14:58	01
LCS2	WG607616-03	TC03242017.020	03/24/17 15:10	01
LH18/24-SP650-6426-GRAB	L17031259-01	TC03242017.041	03/24/17 19:20	DL01
DUP	WG607616-05	TC03242017.045	03/24/17 20:11	01

Report Name: BLANK_SUMMARY
PDF File ID: 5225748
Report generated 03/31/2017 10:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031259 Prep Date: 03/24/17 14:46 Sample ID: WG607616-01
Instrument ID: TOC-VWP Run Date: 03/24/17 14:46 Prep Method: 415.1
File ID: TC03242017.018 Analyst: ADG Method: 415.1
Workgroup (AAB#): WG607616 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-10-FEB-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5225749
31-MAR-2017 10:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031259 Analyst: ADG Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG607616 Units: mg/L
QC Key: DOD4 Lot #: STD80787

Sample ID: WG607616-02 LCS File ID: TC03242017.019 Run Date: 03/24/2017 14:58
Sample ID: WG607616-03 LCS2 File ID: TC03242017.020 Run Date: 03/24/2017 15:10

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	25.3	101	25.0	25.1	100	0.873	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5225750
Report generated: 03/31/2017 10:10

2.1.3.3 Raw Data

Curve

~~WG602411~~ ~~WG602476~~ dm 1/13/17 WG602481

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 38944, RGT 37673

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ WG_____

SOP: K 4151 Rev. ~~17~~ 18 dm 1/13/17

Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☐ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid waste container

Position	Sample ID	Dilution
1	TC Curve	
2	TC ICV	
3	TIC Curve	
4	TIC ICV	
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19	all points analyzed in duplicate	
20		
21		
22		
23		
24		
25		

Position	Sample ID	Dilution
26	TC Curve	
27	Std 79318	
28		
29	TIC Curve	
30	Std 80415	
31		
32		
33	TOC (TC)	
34	ICV	
35	Std 77870	
36		
37	TIC ICV	
38	Std 80416	
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52	See SOP	
53	for point	
54	Preparation	
55		
56		
57		
58		
59		
60	5/200 (100) = 25	
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: David Merkle Date/Time: 2/10/17

DCN#123915

C:\TOC3201\Data\CURVES-02-10-2017.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TC	TCCURVE		Complete	2/10/2017 10:29:51 A	0, 1, 2, 3, 4, 5
2	TC	TOC ICV	TC:23.90mg/L	Complete	2/10/2017 10:47:48 A	6
3	IC	TICCURVE		Complete	2/10/2017 3:55:41 PM	0, 1, 2, 3, 4, 5
4	IC	TIC CURVE	IC:24.27mg/L	Complete	2/10/2017 4:12:07 PM	6
5	TC		TC:0.000mg/L	Complete	2/10/2017 4:31:41 PM	7
6	IC	TOC/TIC	IC:8.571mg/L	Complete	2/10/2017 4:42:05 PM	7
7	TC	TOC/TIC	TC:32.10mg/L	Complete	2/10/2017 5:01:02 PM	7

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

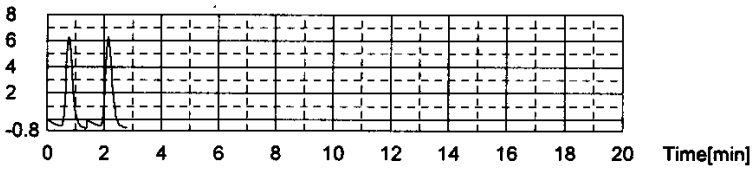
Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-02-10-2017.2017_02_10_09_32_59.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	10.83	500uL	1	********		2/10/2017 9:36:31 AM
2	10.82	500uL	1	********		2/10/2017 9:40:05 AM

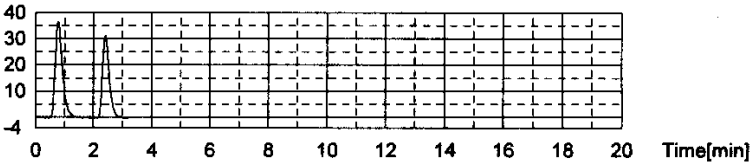
Acid Add. 0.000%
Mean Area 10.82



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	64.31	500uL	1	********		2/10/2017 9:45:28 AM
2	51.52	500uL	1	********		2/10/2017 9:49:19 AM

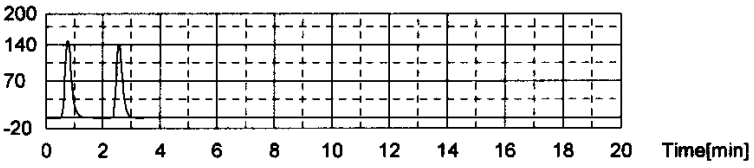
Acid Add. 0.000%
Mean Area 57.92



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	238.4	500uL	1	********		2/10/2017 9:55:04 AM
2	216.3	500uL	1	********		2/10/2017 9:58:58 AM

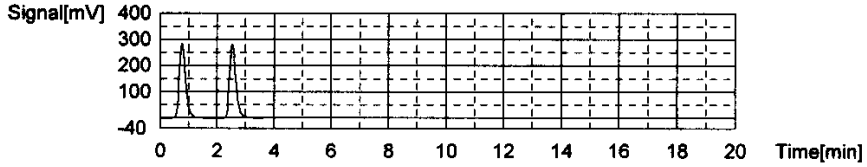
Acid Add. 0.000%
Mean Area 227.4



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	442.5	500uL	1	********		2/10/2017 10:04:41 AM
2	437.9	500uL	1	********		2/10/2017 10:08:48 AM

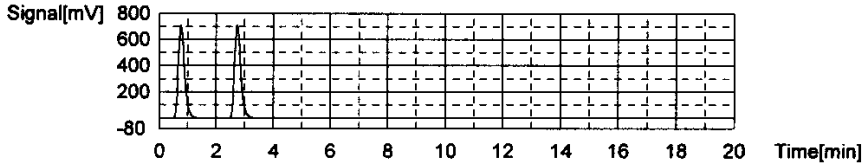
Acid Add. 0.000%
Mean Area 440.2



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1091	500uL	1	********		2/10/2017 10:14:47 AM
2	1092	500uL	1	********		2/10/2017 10:19:05 AM

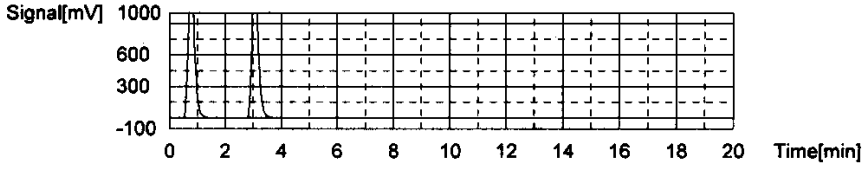
Acid Add. 0.000%
Mean Area 1092



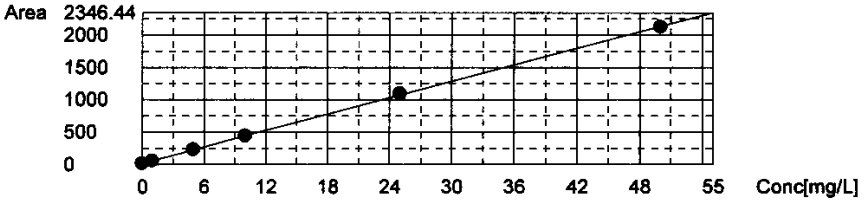
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2132	500uL	1	*H*****		2/10/2017 10:25:19 AM
2	2118	500uL	1	*H*****		2/10/2017 10:29:51 AM

Acid Add. 0.000%
Mean Area 2125



Slope: 42.33
Intercept 16.87
r^2 0.999887
Zero Shift No



Sample

Sample Name: TOC ICV
Sample ID: Untitled
Origin: TCCURVE-02-10-2017.2017_02_10_09_32_59.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:23.90mg/L

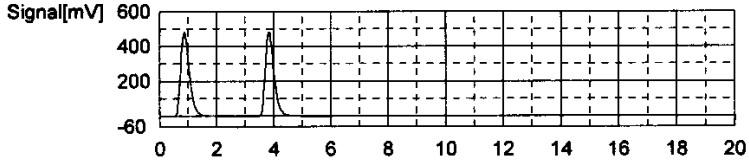
1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1029	23.91mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_52	2/10/2017 10:42:11 AM
2	1028	23.89mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_52	2/10/2017 10:47:48 AM

95.6%

Mean Area 1029
Mean Conc. 23.90mg/L



Cal. Curve

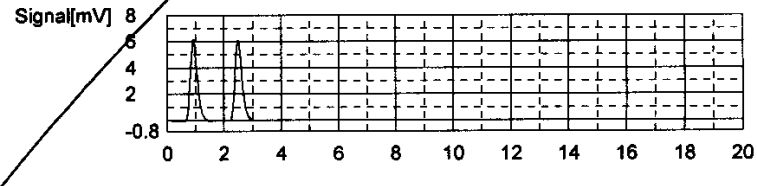
Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-02-10-2017.2017_02_10_14_45_10.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	10.59	500uL	1	********		2/10/2017 2:49:09 PM
2	10.43	500uL	1	********		2/10/2017 2:53:06 PM

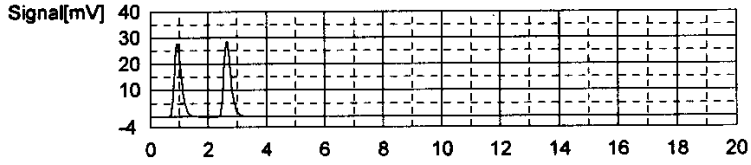
Acid Add. 3.000%
Mean Area 10.51



Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	48.13	500uL	1	********		2/10/2017 3:00:24 PM
2	49.13	500uL	1	********		2/10/2017 3:04:41 PM

Acid Add. 3.000%
Mean Area 48.63



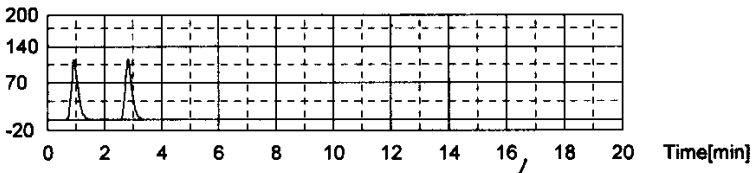
Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	189.0	500uL	1	********		2/10/2017 3:12:24 PM
2	190.1	500uL	1	********		2/10/2017 3:16:55 PM

dcm
3/23/17

2/12/2017 11:18:36 AM CURVES-02-10-2017.t32

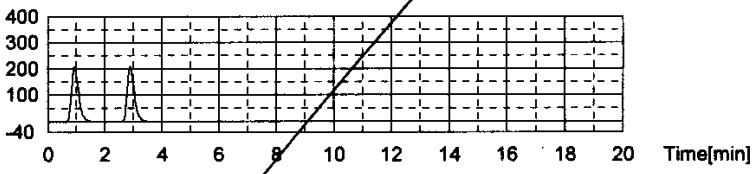
Acid Add. 3.000%
Mean Area 189.6



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	360.6	500uL	1	********		2/10/2017 3:24:47 PM
2	362.2	500uL	1	********		2/10/2017 3:29:24 PM

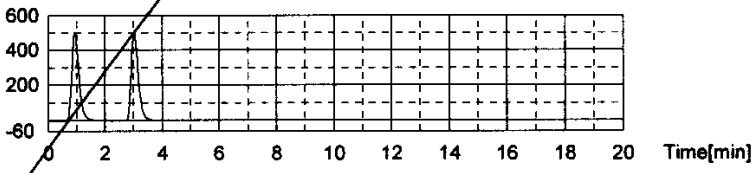
Acid Add. 3.000%
Mean Area 361.4



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	859.3	500uL	1	********		2/10/2017 3:37:23 PM
2	856.9	500uL	1	********		2/10/2017 3:42:16 PM

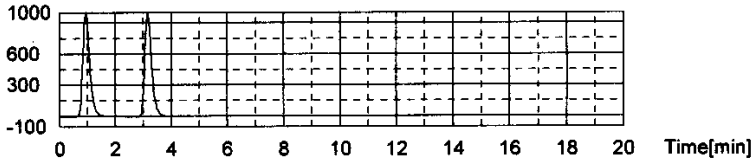
Acid Add. 3.000%
Mean Area 858.1



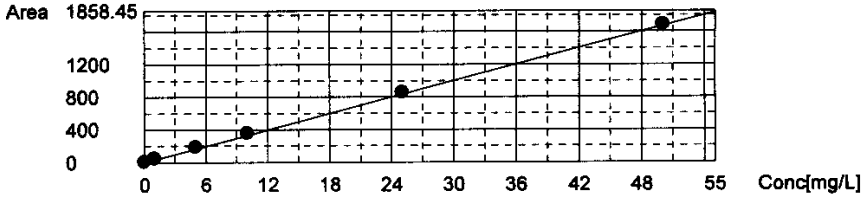
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1690	500uL	1	********		2/10/2017 3:50:31 PM
2	1689	500uL	1	********		2/10/2017 3:55:41 PM

Acid Add. 3.000%
Mean Area 1690



Slope: 33.49
Intercept 0.000
r^2 0.999919
Zero Shift Yes



Sample dcm

See following pages for curve, slope, intercept and zero shift unchecked

4/6

TOC-V Cal Curve Information
TICCURVE-02-10-2017.2017_02_10_14_45_10.cal

Date of Creation	2:10:17 PM 2/10/2017
User	
System	TOCVW ASI

Cal. Curve

Sample Name:	TICCURVE
Sample ID:	Untitled
Cal. Curve:	TICCURVE-02-10-2017.2017_02_10_14_45_10.cal
Status	Completed
Comment:	

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	10.59	500uL	1	*******		2/10/2017 2:49:09 PM
2	10.43	500uL	1	*******		2/10/2017 2:53:06 PM

Acid Add.	3.000%
Mean Area	10.51
SD Area	0.1131
CV Area	1.08%
Vial	0

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	48.13	500uL	1	*******		2/10/2017 3:00:24 PM
2	49.13	500uL	1	*******		2/10/2017 3:04:41 PM

Acid Add.	3.000%
Mean Area	48.63
SD Area	0.7071
CV Area	1.45%
Vial	1

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	189.0	500uL	1	*******		2/10/2017 3:12:24 PM
2	190.1	500uL	1	*******		2/10/2017 3:16:55 PM

Acid Add.	3.000%
Mean Area	189.6
SD Area	0.7778
CV Area	0.41%
Vial	2

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	360.6	500uL	1	*******		2/10/2017 3:24:47 PM
2	362.2	500uL	1	*******		2/10/2017 3:29:24 PM

Acid Add.	3.000%
Mean Area	361.4
SD Area	1.131
CV Area	0.31%
Vial	3

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	859.3	500uL	1	*******		2/10/2017 3:37:23 PM
2	856.9	500uL	1	*******		2/10/2017 3:42:16 PM

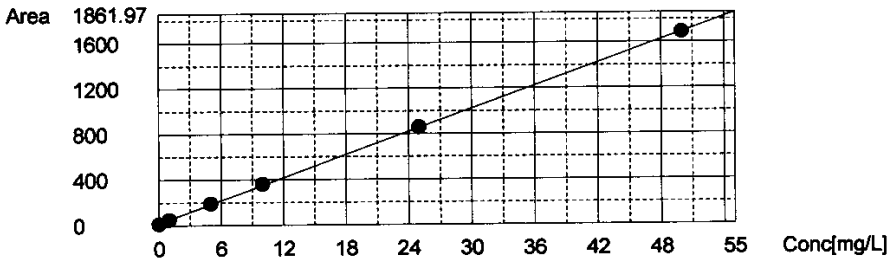
Acid Add.	3.000%
Mean Area	858.1
SD Area	1.697
CV Area	0.20%
Vial	4

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1690	500uL	1	*******		2/10/2017 3:50:31 PM
2	1689	500uL	1	*******		2/10/2017 3:55:41 PM

Acid Add.	3.000%
Mean Area	1690
SD Area	0.7071
CV Area	0.04%
Vial	5

Slope:	33.49
Intercept	18.41
r^2	0.999919
Zero Shift	No



Sample Name: TIC CURVE
Sample ID: Untitled
Origin: TICCURVE-02-10-2017.2017_02_10_14_45_10.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.27mg/L

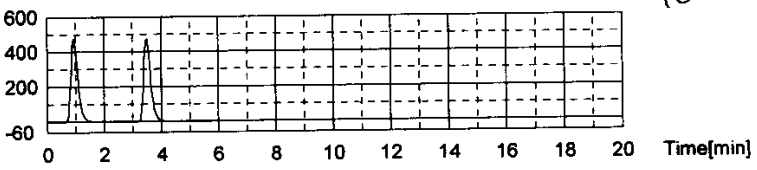
1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	810.5	24.20mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	2/10/2017 4:06:15 PM
2	814.6	24.33mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	2/10/2017 4:12:07 PM

96.9%

Mean Area 812.5
Mean Conc. 24.27mg/L



Sample

Sample Name:
Sample ID: Untitled
Origin: TCCURVE-02-10-2017.2017_02_10_14_14_25.cal
Status Completed
Chk. Result

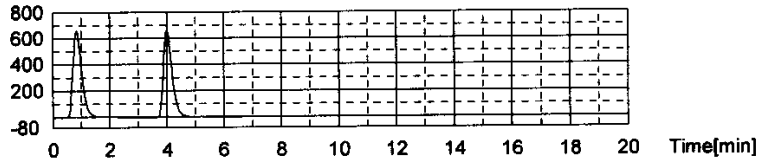
Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:0.000mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1406	0.000mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_14_14_2	2/10/2017 4:25:42 PM
2	1411	0.000mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_14_14_2	2/10/2017 4:31:41 PM

Mean Area 1409
Mean Conc. 0.000mg/L



Sample

Sample Name: TOC/TIC
Sample ID: Untitled
Origin: TICCURVE-02-10-2017.2017_02_10_14_45_10.cal
Status Completed
Chk. Result

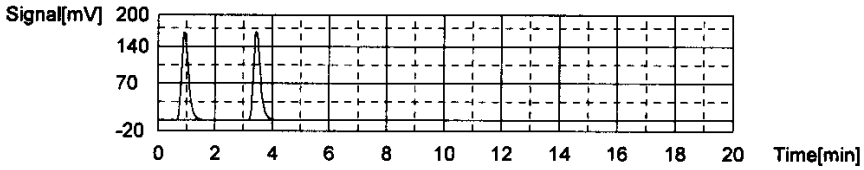
Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:8.571mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	286.8	8.565mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	2/10/2017 4:37:09 PM
2	287.2	8.577mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	2/10/2017 4:42:05 PM

Mean Area 287.0
Mean Conc. 8.571mg/L



Sample

Sample Name: TOC/TIC
Sample ID: Untitled
Origin: TCCURVE-02-10-2017.2017_02_10_09_32_59.cal
Status Completed
Chk. Result

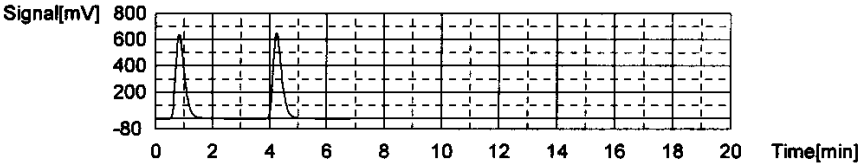
Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:32.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1378	32.16mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_59	2/10/2017 4:55:07 PM
2	1373	32.04mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_59	2/10/2017 5:01:02 PM

Mean Area 1376
Mean Conc. 32.10mg/L



WORKGROUP: WG607551

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 79381 / (5/200)(1000) = 25mg/L

LCS (TOC): Std 80787 / (5/200)(1000) = 25mg/L

CCV (TIC): Std 80416 / (5/200)(1000) = 25mg/L

MS (TOC): Std 80787 / 0.4(1000)/40=10

Calibration Curve Date: 2-10-17

Reagent: 39272 / 39266

☑ SM5310-C : Matrix 2 WG 607551

☑ EPA 415.1/9060A(mod): Matrix 1 WG 607616 SOP: K 4151 Rev. 19

WG _____ Instrument: Shimadzu TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☐ sufficient acid
☐ waste container

Position	Sample ID	Dilution
~~1~~6	TOC ITIC	
2	TIC	
3	CCV	
4	BLK	
5	LCS	
6	LCS2	
7	1301-01	
8	1301-01DUP	
9	1301-01 MS	
10	TOC ITIC	
11	1344-01	1/50
12	1345 01	
13	1345-02	
14	CCV	
15	CCB	
16	1345-03	
17	1345-04	
18	BLK	
19	LCS	
20	LCSDUP	
21	1217-27	
22	28	
23	29	
24	30	
25	MS ~~CCV~~ 31	

Position	Sample ID	Dilution
26	3/24/17 ~~CCB~~ CCV	
27	CCB	
28	1217-32	
29	33	
30	34	
31	35	
32	36	
33	37	
34	38	
35	39	
36	3/24/17 CCV 40	
37	DUP ~~CCB~~ 41	
38	CCV	
39	CCB	
40	1217-42	
41	1259-01	1/25
42	1260-01	
43	02	1/2
44	1268-02	
45	1217-27DUP	
46	1217-27MS	
47	BLK	
48	LCS	
49	LCS	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52DUP	1260501	
53MS	03	
54MSD	04	
55	05	
56	07	
57	1361-01	
58DUP	04	
59MS	05	
60MSD	06	
61	13	
62	CCV	
63	CCB	
64	~~1361-14~~	
65	~~14~~	Rerun
66	~~22~~	MS
67	~~25~~	3/27/17
68	~~28~~	
69		
70		
71		
72		
73		
74		
75		

3/24/17
Analyst: April Greene / David Merchle

Date/Time: 3/24/17

DCN#124756

	Analys	Sample Name	Result	Status	Date / Time	Vial
1	TOC		!!Error!! TOC:0.09915mg/L TC:-0.2035mg/L IC:-0.3026mg/L	Completed	3/24/2017 9:00:45 AM	0
2	TOC	TIC	TOC:1.504mg/L TC:25.80mg/L IC:24.30mg/L	Completed	3/24/2017 9:13:16 AM	2
3	TOC	CCV	!!Error!! TOC:23.73mg/L TC:23.42mg/L IC:-0.3171mg/L	Completed	3/24/2017 9:25:28 AM	3
4	TOC	WG607551-01 BLK	!!Error!! TOC:0.1144mg/L TC:-0.1916mg/L IC:-0.3060mg/L	Completed	3/24/2017 9:41:50 AM	0
5	TOC	WG607551-02 LCS	!!Error!! TOC:25.00mg/L TC:24.66mg/L IC:-0.3401mg/L	Completed	3/24/2017 10:02:50 AM	5
6	TOC	WG607551-03 LCSD	!!Error!! TOC:25.03mg/L TC:24.69mg/L IC:-0.3375mg/L	Completed	3/24/2017 10:23:38 AM	6
7	TOC	L17031301-01	TOC:2.999mg/L TC:43.51mg/L IC:40.51mg/L	Completed	3/24/2017 10:47:14 AM	7
8	TOC	WG607551-05 DUP	TOC:3.232mg/L TC:44.33mg/L IC:41.09mg/L	Completed	3/24/2017 11:10:52 AM	8
9	TOC	WG607551-06 MS	TOC:29.84mg/L TC:44.46mg/L IC:14.62mg/L	Completed	3/24/2017 12:11:32 PM	9
10	TOC	TOC/TIC	TOC:25.74mg/L TC:32.16mg/L IC:6.423mg/L	Completed	3/24/2017 12:24:11 PM	10
11	TOC	L17031344-01 (50)	!!Error!! TOC:27.06mg/L TC:27.04mg/L IC:-0.01328mg/L	Completed	3/24/2017 12:47:05 PM	11
12	TOC	L17031345-01	TOC:3.798mg/L TC:7.866mg/L IC:4.068mg/L	Completed	3/24/2017 1:08:00 PM	12
13	TOC	L17031345-02	TOC:3.276mg/L TC:4.916mg/L IC:1.640mg/L	Completed	3/24/2017 1:29:08 PM	13
14	TOC	CCV	!!Error!! TOC:24.54mg/L TC:24.24mg/L IC:-0.2926mg/L	Completed	3/24/2017 1:41:21 PM	14
15	TOC	CCB	!!Error!! TOC:0.1218mg/L TC:-0.1883mg/L IC:-0.3101mg/L	Completed	3/24/2017 1:50:11 PM	0
16	TOC	L17031345-03	TOC:1.468mg/L TC:6.306mg/L IC:4.837mg/L	Completed	3/24/2017 2:10:53 PM	16
17	TOC	L17031345-04	TOC:2.741mg/L TC:14.80mg/L IC:12.06mg/L	Completed	3/24/2017 2:32:27 PM	17
18	TOC	WG607616-01 BLK	!!Error!! TOC:0.1111mg/L TC:-0.1715mg/L IC:-0.2827mg/L	Completed	3/24/2017 2:50:19 PM	0
19	TOC	WG607616-02 LCS	!!Error!! TOC:25.32mg/L TC:25.05mg/L IC:-0.2711mg/L	Completed	3/24/2017 3:02:29 PM	19
20	TOC	WG607616-03 LCSD	!!Error!! TOC:25.10mg/L TC:24.83mg/L IC:-0.2694mg/L	Completed	3/24/2017 3:14:43 PM	20
21	TOC	L17031217-27	TOC:2.325mg/L TC:14.41mg/L IC:12.09mg/L	Completed	3/24/2017 3:27:04 PM	21
22	TOC	L17031217-28	TOC:2.028mg/L TC:15.49mg/L IC:13.46mg/L	Completed	3/24/2017 3:39:30 PM	22
23	TOC	L17031217-29	TOC:2.106mg/L TC:15.68mg/L IC:13.58mg/L	Completed	3/24/2017 3:52:01 PM	23
24	TOC	L17031217-30	TOC:2.289mg/L TC:13.76mg/L IC:11.47mg/L	Completed	3/24/2017 4:04:20 PM	24
25	TOC	L17031217-31	TOC:2.275mg/L TC:13.64mg/L IC:11.37mg/L	Completed	3/24/2017 4:16:37 PM	25
26	TOC	CCV	!!Error!! TOC:24.57mg/L TC:24.31mg/L IC:-0.2514mg/L	Completed	3/24/2017 4:28:51 PM	26
27	TOC	CCB	!!Error!! TOC:0.1154mg/L TC:-0.1887mg/L IC:-0.3041mg/L	Completed	3/24/2017 4:37:44 PM	0
28	TOC	L17031217-32	TOC:2.576mg/L TC:12.60mg/L IC:10.02mg/L	Completed	3/24/2017 4:49:57 PM	28
29	TOC	L17031217-33	TOC:1.894mg/L TC:12.01mg/L IC:10.11mg/L	Completed	3/24/2017 5:02:15 PM	29
30	TOC	L17031217-34	TOC:1.988mg/L TC:10.61mg/L IC:8.621mg/L	Completed	3/24/2017 5:14:30 PM	30
31	TOC	L17031217-35	TOC:1.913mg/L TC:11.54mg/L IC:9.625mg/L	Completed	3/24/2017 5:26:54 PM	31
32	TOC	L17031217-36	TOC:1.991mg/L TC:10.14mg/L IC:8.152mg/L	Completed	3/24/2017 5:39:16 PM	32
33	TOC	L17031217-37	TOC:2.062mg/L TC:4.832mg/L IC:2.771mg/L	Completed	3/24/2017 5:51:10 PM	33
34	TOC	L17031217-38	TOC:2.419mg/L TC:4.981mg/L IC:2.562mg/L	Completed	3/24/2017 6:03:04 PM	34
35	TOC	L17031217-39	TOC:2.027mg/L TC:4.691mg/L IC:2.663mg/L	Completed	3/24/2017 6:14:58 PM	35
36	TOC	L17031217-40	TOC:1.757mg/L TC:8.057mg/L IC:6.301mg/L	Completed	3/24/2017 6:27:10 PM	36
37	TOC	L17031217-41	TOC:1.877mg/L TC:4.223mg/L IC:2.346mg/L	Completed	3/24/2017 6:39:02 PM	37
38	TOC	CCV	!!Error!! TOC:24.75mg/L TC:24.48mg/L IC:-0.2690mg/L	Completed	3/24/2017 6:51:15 PM	38
39	TOC	CCB	!!Error!! TOC:0.1136mg/L TC:-0.1844mg/L IC:-0.2980mg/L	Completed	3/24/2017 7:00:06 PM	0
40	TOC	L17031217-42	TOC:1.964mg/L TC:4.010mg/L IC:2.046mg/L	Completed	3/24/2017 7:11:56 PM	40
41	TOC	L17031259-01 (25)	TOC:20.11mg/L TC:21.10mg/L IC:0.9845mg/L	Completed	3/24/2017 7:24:37 PM	41
42	TOC	L17031266-01	TOC:2.720mg/L TC:17.87mg/L IC:15.15mg/L	Completed	3/24/2017 7:37:12 PM	42
43	TOC	L17031266-02 (2)	TOC:3.061mg/L TC:14.66mg/L IC:11.60mg/L	Completed	3/24/2017 7:49:41 PM	43
44	TOC		TOC:3.636mg/L TC:53.82mg/L IC:50.19mg/L	Completed	3/24/2017 8:03:45 PM	44
45	TOC	WG607616-05 DUP	TOC:1.785mg/L TC:9.286mg/L IC:7.501mg/L	Completed	3/24/2017 8:15:55 PM	45
46	TOC	WG607616-06 MS	TOC:12.01mg/L TC:16.30mg/L IC:4.288mg/L	Completed	3/24/2017 8:28:04 PM	46
47	TOC	WG607646-01 BLK	!!Error!! TOC:0.1045mg/L TC:-0.1678mg/L IC:-0.2723mg/L	Completed	3/24/2017 8:36:59 PM	0
48	TOC	WG607646-02 LCS	!!Error!! TOC:25.19mg/L TC:24.91mg/L IC:-0.2805mg/L	Completed	3/24/2017 8:49:12 PM	48
49	TOC	WG607646-03 LCSD	!!Error!! TOC:25.29mg/L TC:25.00mg/L IC:-0.2863mg/L	Completed	3/24/2017 9:01:25 PM	49
50	TOC	CCV	!!Error!! TOC:23.91mg/L TC:23.63mg/L IC:-0.2800mg/L	Completed	3/24/2017 9:13:34 PM	50
51	TOC	CCB	!!Error!! TOC:0.1120mg/L TC:-0.1744mg/L IC:-0.2864mg/L	Completed	3/24/2017 9:22:27 PM	0
52	TOC	L17031268-01	TOC:4.900mg/L TC:28.12mg/L IC:23.22mg/L	Completed	3/24/2017 9:35:14 PM	52
53	TOC	L17031268-03 MS	TOC:13.63mg/L TC:28.47mg/L IC:14.84mg/L	Completed	3/24/2017 9:48:06 PM	53
54	TOC	L17031268-04 MSD	TOC:13.92mg/L TC:27.43mg/L IC:13.51mg/L	Completed	3/24/2017 10:00:51 PM	54
55	TOC	L17031268-05	TOC:2.706mg/L TC:13.44mg/L IC:10.74mg/L	Completed	3/24/2017 10:13:07 PM	55
56	TOC	L17031268-07	!!Error!! TOC:0.8880mg/L TC:0.6158mg/L IC:-0.2721mg/L	Completed	3/24/2017 10:24:32 PM	56
57	TOC	L17031361-01	TOC:1.449mg/L TC:10.25mg/L IC:8.803mg/L	Completed	3/24/2017 10:36:41 PM	57
58	TOC	L17031361-04	TOC:1.534mg/L TC:9.036mg/L IC:7.501mg/L	Completed	3/24/2017 10:48:53 PM	58
59	TOC	L17031361-05 MS	TOC:11.36mg/L TC:16.78mg/L IC:5.420mg/L	Completed	3/24/2017 11:01:25 PM	59
60	TOC	L17031361-06 MSD	TOC:10.71mg/L TC:15.95mg/L IC:5.238mg/L	Completed	3/24/2017 11:13:36 PM	60
61	TOC	L17031361-13	TOC:1.584mg/L TC:4.946mg/L IC:3.362mg/L	Completed	3/24/2017 11:25:21 PM	61
62	TOC	CCV	!!Error!! TOC:25.23mg/L TC:24.95mg/L IC:-0.2756mg/L	Completed	3/24/2017 11:37:35 PM	62
63	TOC	CCB	!!Error!! TOC:0.1102mg/L TC:-0.1738mg/L IC:-0.2840mg/L	Completed	3/24/2017 11:46:37 PM	0
64	TOC		TOC:1.614mg/L TC:5.376mg/L IC:3.762mg/L	Completed	3/24/2017 11:58:31 PM	64
65	TOC		TOC:1.406mg/L TC:4.523mg/L IC:3.117mg/L	Completed	3/25/2017 12:10:17 AM	65
66	TOC		TOC:1.476mg/L TC:4.575mg/L IC:3.099mg/L	Completed	3/25/2017 12:22:08 AM	66
67	TOC		!!Error!! TOC:1.137mg/L TC:1.060mg/L IC:-0.07659mg/L	Completed	3/25/2017 12:33:36 AM	67
68	TOC		!!Error!! TOC:1.083mg/L TC:0.9886mg/L IC:-0.09391mg/L	Completed	3/25/2017 12:45:03 AM	68

3/27/2017 8:09:46 AM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

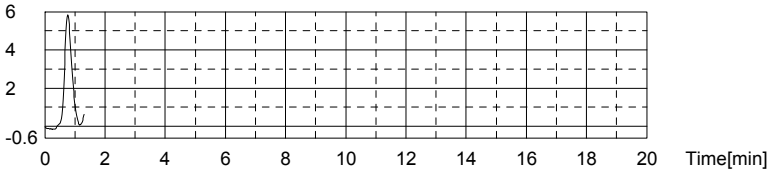
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.09915mg/L TC:-0.2035mg/L IC:-0.3026mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.253	-0.2035mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 8:56:52 AM

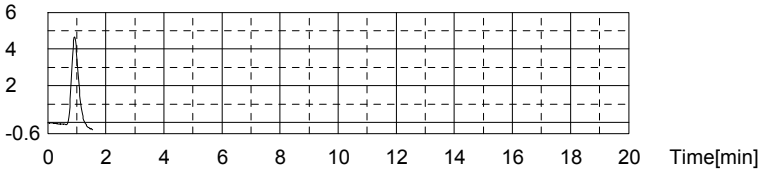
Mean Area 8.253
Mean Conc. -0.2035mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.281	-0.3026mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:00:45 AM

Mean Area 8.281
Mean Conc. -0.3026mg/L



Sample

Sample Name: TIC
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

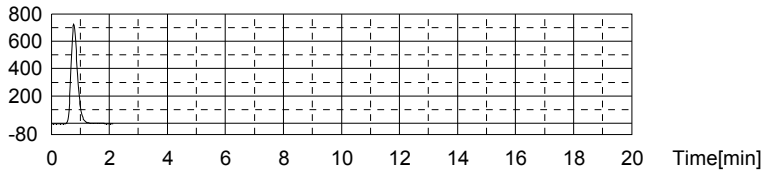
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.504mg/L TC:25.80mg/L IC:24.30mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1109	25.80mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:08:20 AM

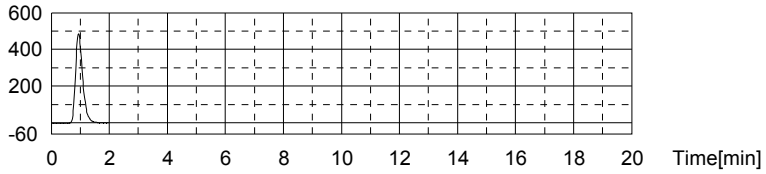
Mean Area 1109
Mean Conc. 25.80mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	832.1	24.30mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:13:16 AM

Mean Area 832.1
Mean Conc. 24.30mg/L



Sample

Sample Name: CCV
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

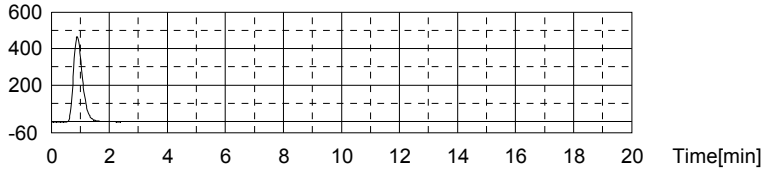
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.73mg/L TC:23.42mg/L IC:-0.3171mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1008	23.42mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:21:05 AM

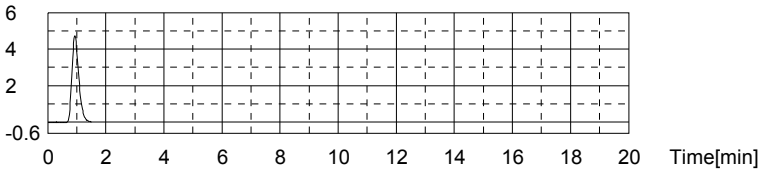
Mean Area 1008
Mean Conc. 23.42mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.796	-0.3171mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:25:28 AM

Mean Area 7.796
Mean Conc. -0.3171mg/L



Sample

Sample Name: WG607551-01 BLK
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

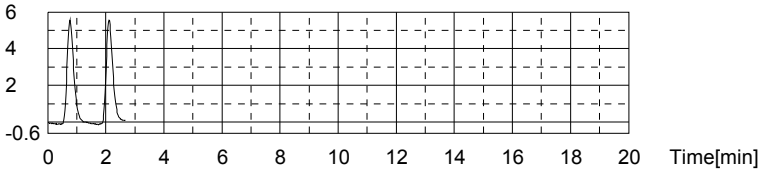
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1144mg/L TC:-0.1916mg/L IC:-0.3060mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.868	-0.1889mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:30:27 AM
2	8.640	-0.1943mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:33:55 AM

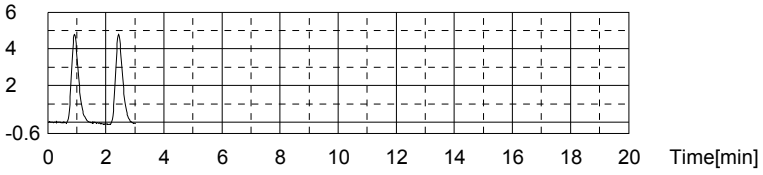
Mean Area 8.754
Mean Conc. -0.1916mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.132	-0.3071mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 9:37:50 AM
2	8.203	-0.3050mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 9:41:50 AM

Mean Area 8.168
Mean Conc. -0.3060mg/L



Sample

Sample Name: WG607551-02 LCS
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

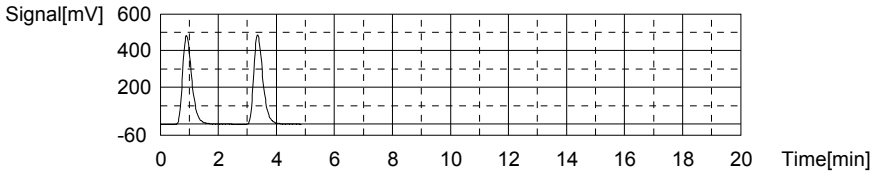
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.00mg/L TC:24.66mg/L IC:-0.3401mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1058	24.60mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:49:44 AM
2	1063	24.72mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:54:24 AM

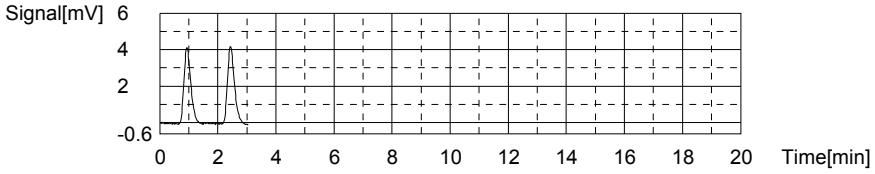
Mean Area 1061
Mean Conc. 24.66mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.997	-0.3410mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 9:58:46 AM
2	7.055	-0.3392mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 10:02:50 AM

Mean Area 7.026
Mean Conc. -0.3401mg/L



Sample

Sample Name: WG607551-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

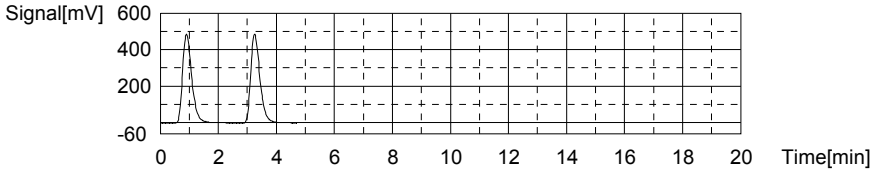
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.03mg/L TC:24.69mg/L IC:-0.3375mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1063	24.72mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:10:35 AM
2	1061	24.67mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:15:12 AM

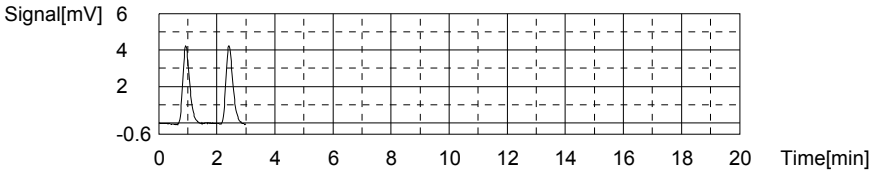
Mean Area 1062
Mean Conc. 24.69mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.128	-0.3371mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:19:30 AM
2	7.095	-0.3380mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:23:38 AM

Mean Area 7.112
Mean Conc. -0.3375mg/L



Sample

Sample Name: L17031301-01
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

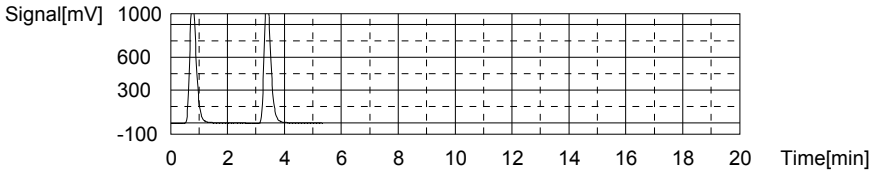
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.999mg/L TC:43.51mg/L IC:40.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1826	42.74mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:31:41 AM
2	1891	44.28mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:36:49 AM

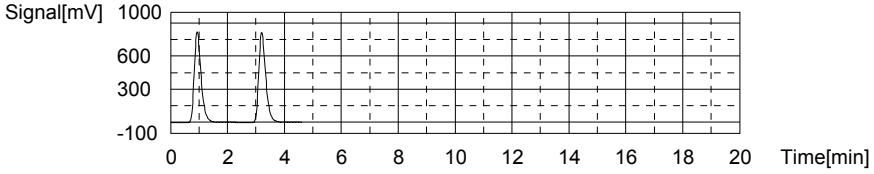
Mean Area 1859
Mean Conc. 43.51mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1373	40.45mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:42:05 AM
2	1377	40.57mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:47:14 AM

Mean Area 1375
Mean Conc. 40.51mg/L



Sample

Sample Name: WG607551-05 DUP
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

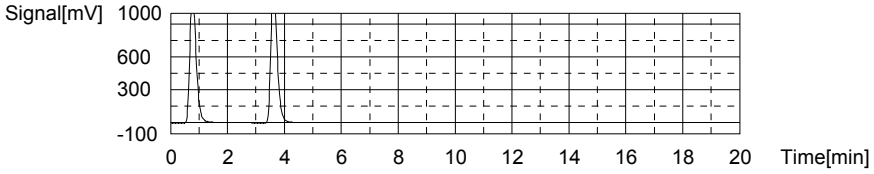
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.232mg/L TC:44.33mg/L IC:41.09mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1850	43.31mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:55:31 AM
2	1936	45.34mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 11:00:31 AM

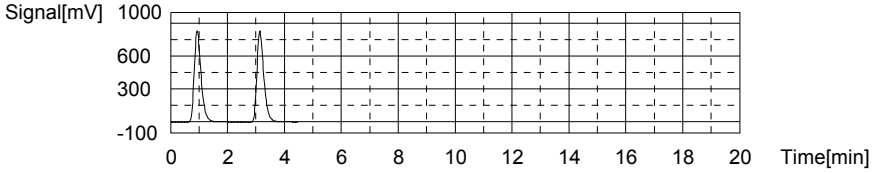
Mean Area 1893
Mean Conc. 44.33mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1394	41.08mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 11:05:50 AM
2	1395	41.11mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 11:10:52 AM

Mean Area 1395
Mean Conc. 41.09mg/L



Sample

Sample Name: WG607551-06 MS
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

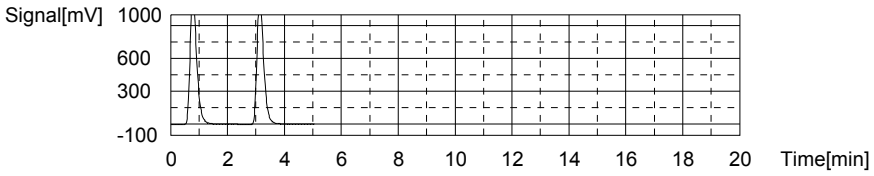
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.84mg/L TC:44.46mg/L IC:14.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1903	44.56mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 11:56:58 AM
2	1894	44.35mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 12:02:04 PM

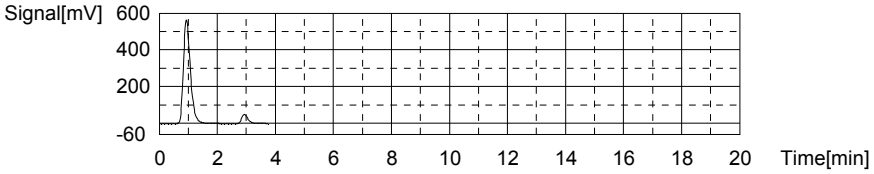
Mean Area 1899
Mean Conc. 44.46mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	941.0	27.55mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 12:07:04 PM
2	74.71	1.681mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 12:11:32 PM

Mean Area 507.9
Mean Conc. 14.62mg/L



Sample

Sample Name: TOC/TIC
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

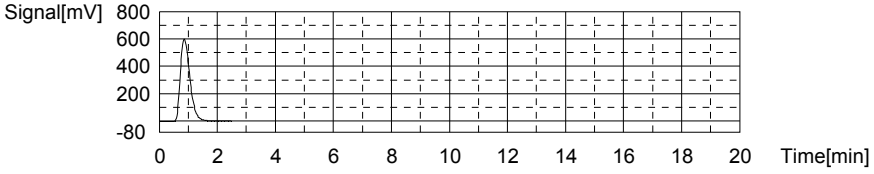
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.74mg/L TC:32.16mg/L IC:6.423mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1378	32.16mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 12:19:28 PM

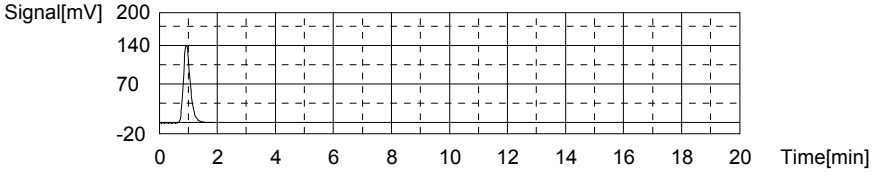
Mean Area 1378
Mean Conc. 32.16mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	233.5	6.423mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 12:24:11 PM

Mean Area 233.5
Mean Conc. 6.423mg/L



Sample

Sample Name: L17031344-01 (50)
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

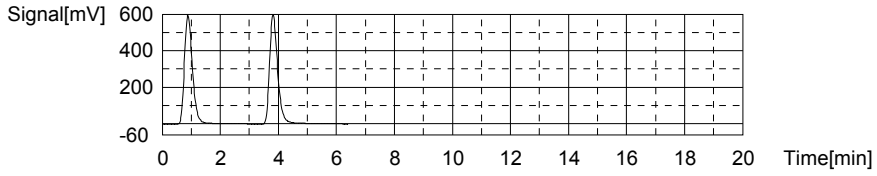
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.06mg/L TC:27.04mg/L IC:-0.01328mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1145	26.65mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 12:32:34 PM
2	1178	27.43mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 12:38:28 PM

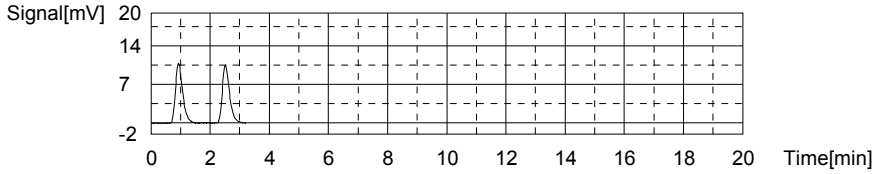
Mean Area 1162
Mean Conc. 27.04mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.22	-0.00581mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 12:42:50 PM
2	17.72	-0.02074mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 12:47:05 PM

Mean Area 17.97
Mean Conc. -0.01328mg/L



Sample

Sample Name: L17031345-01
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

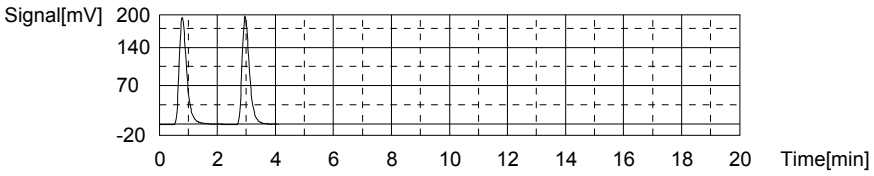
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.798mg/L TC:7.866mg/L IC:4.068mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	353.1	7.944mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 12:54:42 PM
2	346.5	7.788mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 12:58:53 PM

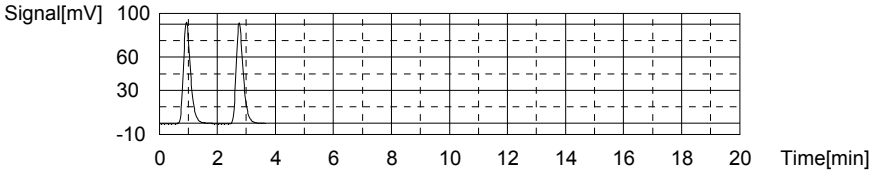
Mean Area 349.8
Mean Conc. 7.866mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	155.0	4.079mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 1:03:33 PM
2	154.3	4.058mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 1:08:00 PM

Mean Area 154.7
Mean Conc. 4.068mg/L



Sample

Sample Name: L17031345-02
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

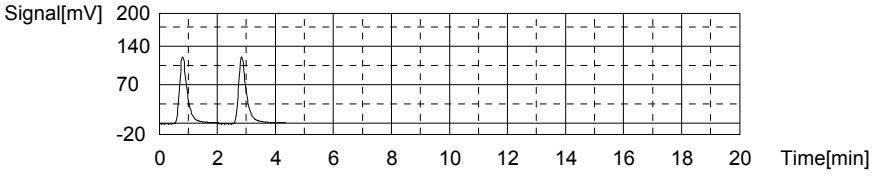
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.276mg/L TC:4.916mg/L IC:1.640mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	221.4	4.832mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 1:15:28 PM
2	228.5	5.000mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 1:20:08 PM

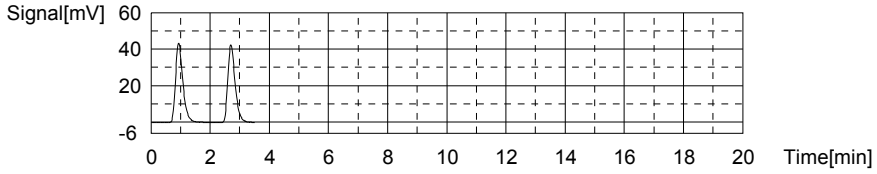
Mean Area 224.9
Mean Conc. 4.916mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	74.03	1.661mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 1:24:44 PM
2	72.64	1.619mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 1:29:08 PM

Mean Area 73.34
Mean Conc. 1.640mg/L



Sample

Sample Name: CCV
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

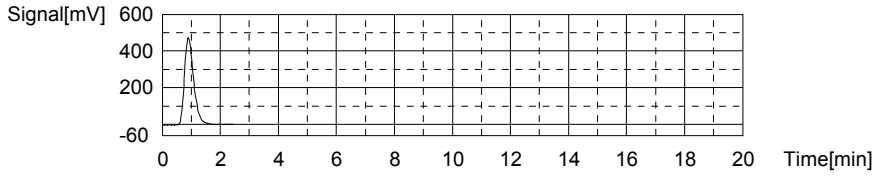
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.54mg/L TC:24.24mg/L IC:-0.2926mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1043	24.24mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 1:37:01 PM

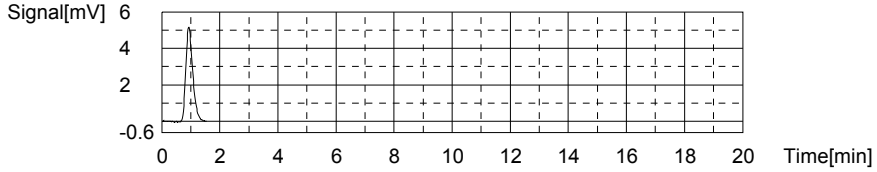
Mean Area 1043
Mean Conc. 24.24mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.615	-0.2926mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 1:41:21 PM

Mean Area 8.615
Mean Conc. -0.2926mg/L



Sample

Sample Name: CCB
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

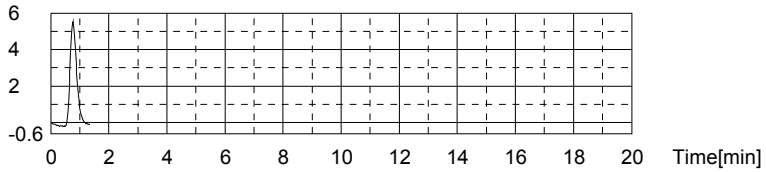
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1218mg/L TC:-0.1883mg/L IC:-0.3101mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.894	-0.1883mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 1:46:19 PM

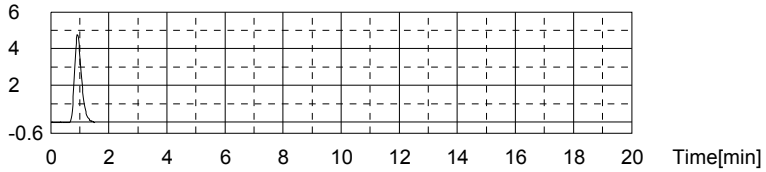
Mean Area 8.894
Mean Conc. -0.1883mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.030	-0.3101mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 1:50:11 PM

Mean Area 8.030
Mean Conc. -0.3101mg/L



Sample

Sample Name: L17031345-03
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

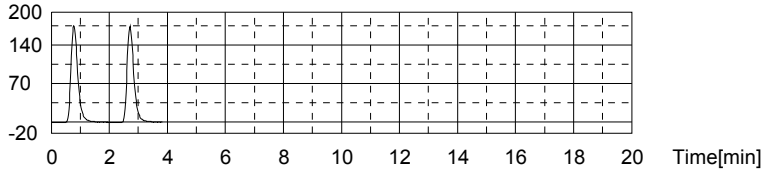
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.468mg/L TC:6.306mg/L IC:4.837mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	284.8	6.330mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 1:57:33 PM
2	282.7	6.281mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 2:01:42 PM

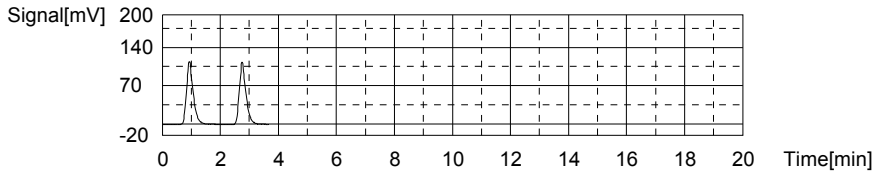
Mean Area 283.8
Mean Conc. 6.306mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	181.4	4.867mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 2:06:21 PM
2	179.4	4.808mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 2:10:53 PM

Mean Area 180.4
Mean Conc. 4.837mg/L



Sample

Sample Name: L17031345-04
Sample ID: <Untitled>
Origin: TOC-02-10-2017A.met
Status Completed
Chk. Result

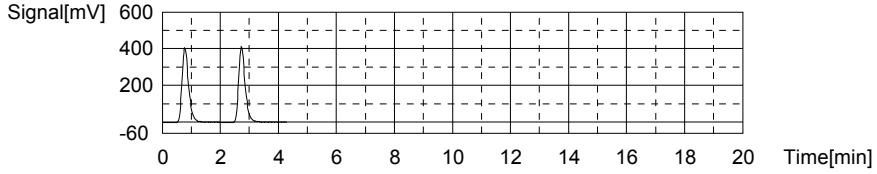
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.741mg/L TC:14.80mg/L IC:12.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	635.7	14.62mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 2:18:17 PM
2	651.2	14.99mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 2:22:53 PM

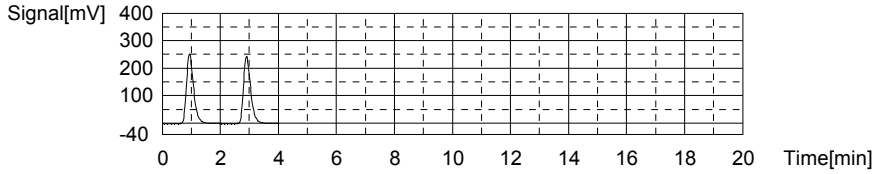
Mean Area 643.5
Mean Conc. 14.80mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	427.4	12.21mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 2:27:45 PM
2	417.3	11.91mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_13	3/24/2017 2:32:27 PM

Mean Area 422.4
Mean Conc. 12.06mg/L



Sample

Sample Name: WG607616-01 BLK
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

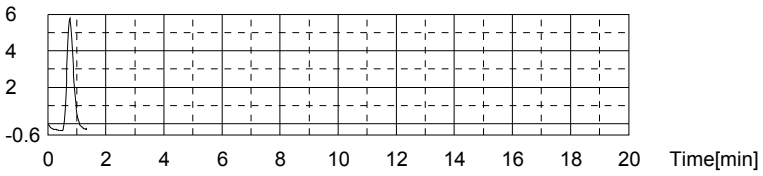
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1111mg/L TC:-0.1715mg/L IC:-0.2827mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.605	-0.1715mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 2:46:24 PM

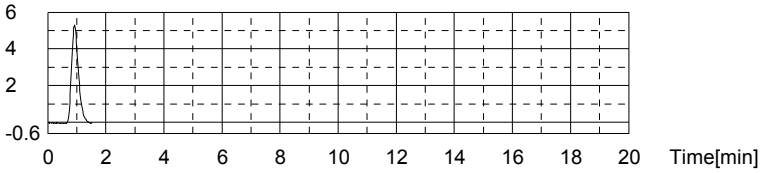
Mean Area 9.605
Mean Conc. -0.1715mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.949	-0.2827mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 2:50:19 PM

Mean Area 8.949
Mean Conc. -0.2827mg/L



Sample

Sample Name: WG607616-02 LCS
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

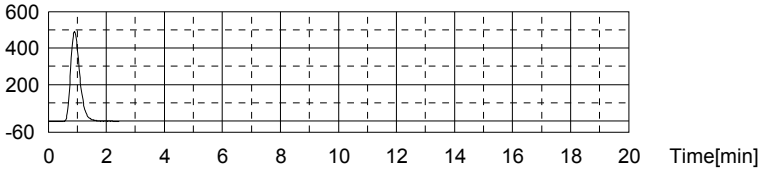
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.32mg/L TC:25.05mg/L IC:-0.2711mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1077	25.05mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 2:58:09 PM

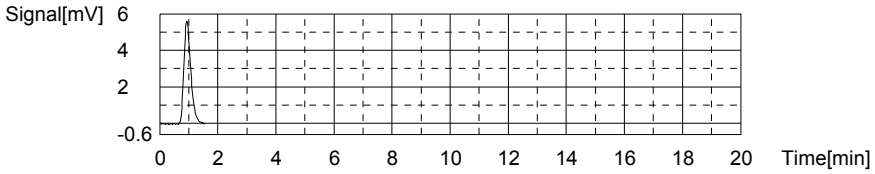
Mean Area 1077
Mean Conc. 25.05mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.337	-0.2711mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 3:02:29 PM

Mean Area 9.337
Mean Conc. -0.2711mg/L



Sample

Sample Name: WG607616-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

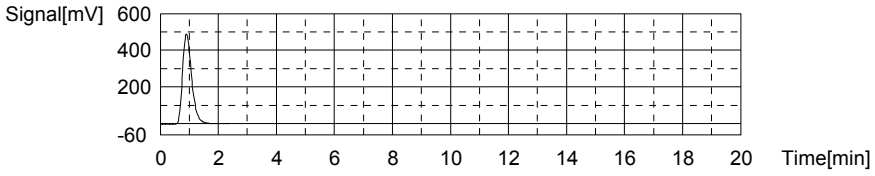
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.10mg/L TC:24.83mg/L IC:-0.2694mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1068	24.83mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 3:10:20 PM

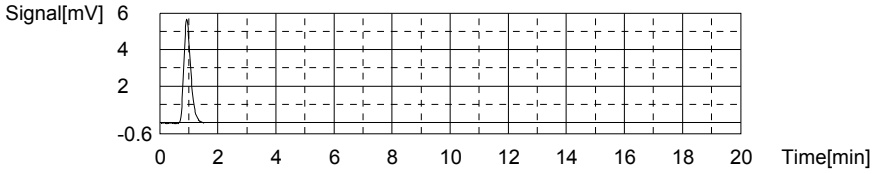
Mean Area 1068
Mean Conc. 24.83mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.394	-0.2694mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 3:14:43 PM

Mean Area 9.394
Mean Conc. -0.2694mg/L



Sample

Sample Name: L17031217-27
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

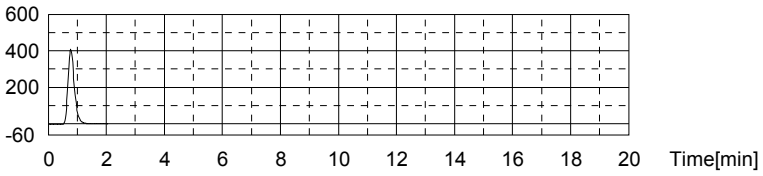
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.325mg/L TC:14.41mg/L IC:12.09mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	626.9	14.41mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 3:22:13 PM

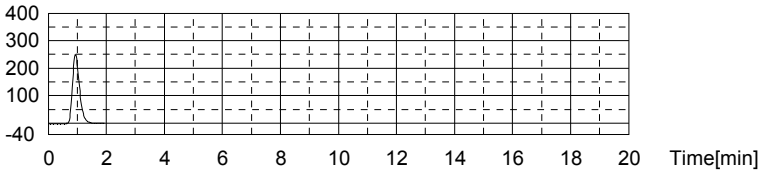
Mean Area 626.9
Mean Conc. 14.41mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	423.2	12.09mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 3:27:04 PM

Mean Area 423.2
Mean Conc. 12.09mg/L



Sample

Sample Name: L17031217-28
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

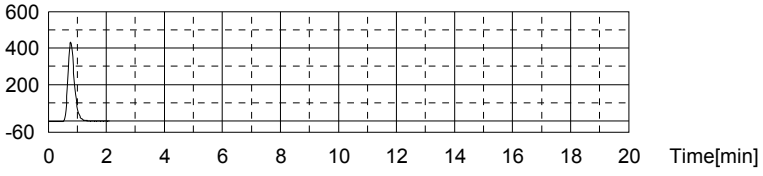
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.028mg/L TC:15.49mg/L IC:13.46mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	672.6	15.49mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 3:34:37 PM

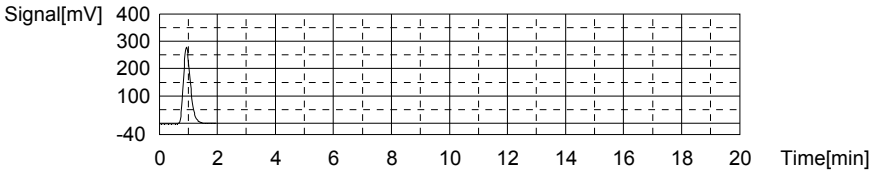
Mean Area 672.6
Mean Conc. 15.49mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	469.3	13.46mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 3:39:30 PM

Mean Area 469.3
Mean Conc. 13.46mg/L



Sample

Sample Name: L17031217-29
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

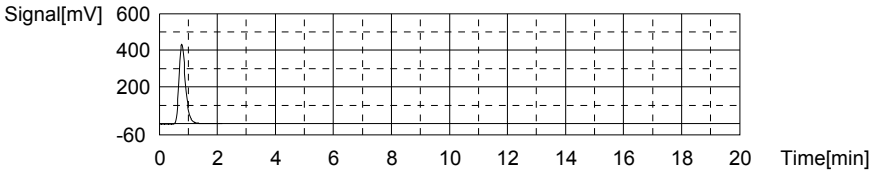
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.106mg/L TC:15.68mg/L IC:13.58mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	680.6	15.68mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 3:47:06 PM

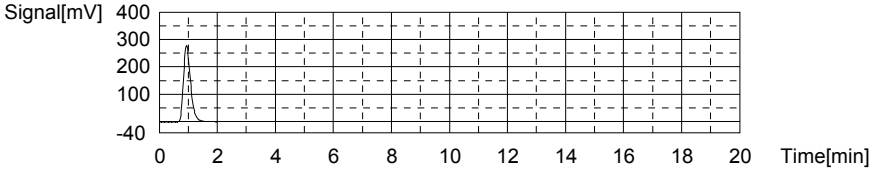
Mean Area 680.6
Mean Conc. 15.68mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	473.0	13.58mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 3:52:01 PM

Mean Area 473.0
Mean Conc. 13.58mg/L



Sample

Sample Name: L17031217-30
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

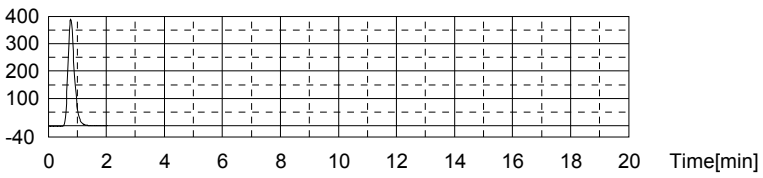
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.289mg/L TC:13.76mg/L IC:11.47mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	599.1	13.76mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 3:59:28 PM

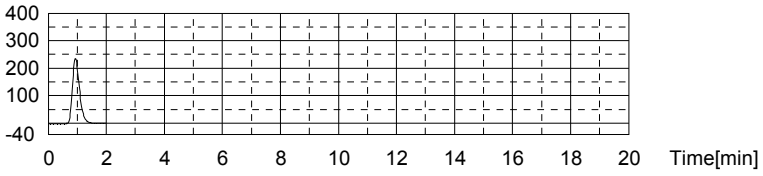
Mean Area 599.1
Mean Conc. 13.76mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	402.4	11.47mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 4:04:20 PM

Mean Area 402.4
Mean Conc. 11.47mg/L



Sample

Sample Name: L17031217-31
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

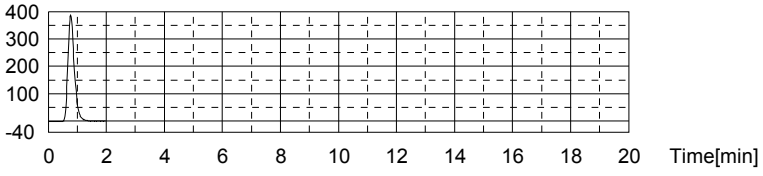
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.275mg/L TC:13.64mg/L IC:11.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	594.2	13.64mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 4:11:45 PM

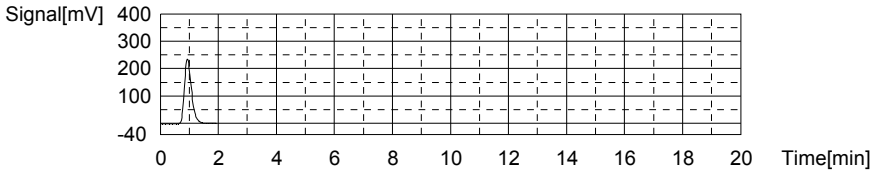
Mean Area 594.2
Mean Conc. 13.64mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	399.0	11.37mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 4:16:37 PM

Mean Area 399.0
Mean Conc. 11.37mg/L



Sample

Sample Name: CCV
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

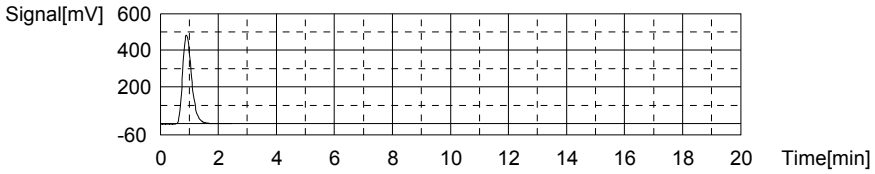
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.57mg/L TC:24.31mg/L IC:-0.2514mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1046	24.31mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 4:24:30 PM

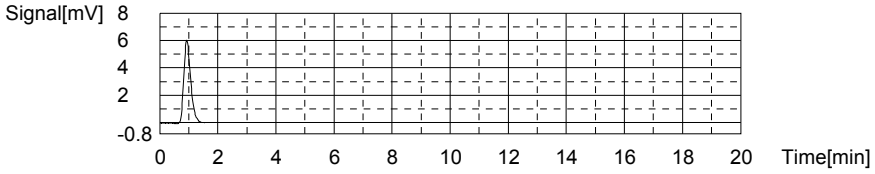
Mean Area 1046
Mean Conc. 24.31mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.995	-0.2514mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 4:28:51 PM

Mean Area 9.995
Mean Conc. -0.2514mg/L



Sample

Sample Name: CCB
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

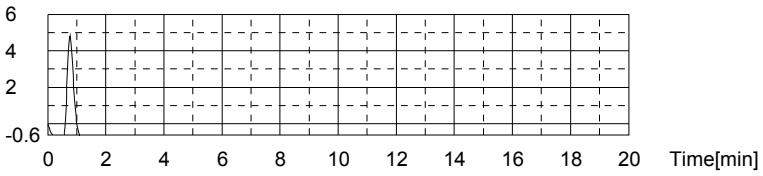
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1154mg/L TC:-0.1887mg/L IC:-0.3041mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.878	-0.1887mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 4:33:50 PM

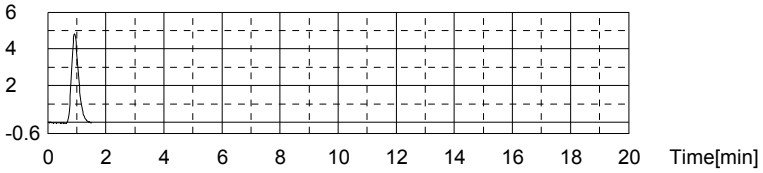
Mean Area 8.878
Mean Conc. -0.1887mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.230	-0.3041mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 4:37:44 PM

Mean Area 8.230
Mean Conc. -0.3041mg/L



Sample

Sample Name: L17031217-32
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

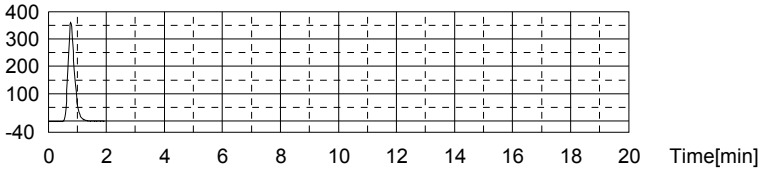
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.576mg/L TC:12.60mg/L IC:10.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	550.2	12.60mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 4:45:07 PM

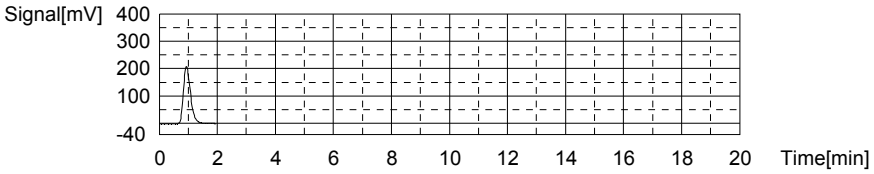
Mean Area 550.2
Mean Conc. 12.60mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	354.1	10.02mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 4:49:57 PM

Mean Area 354.1
Mean Conc. 10.02mg/L



Sample

Sample Name: L17031217-33
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

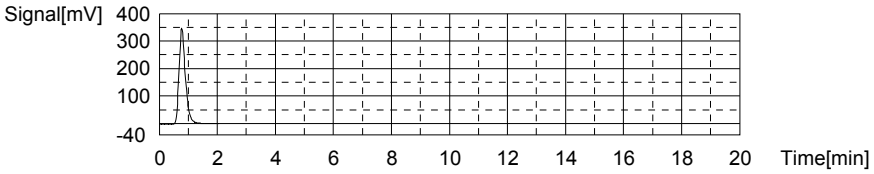
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.894mg/L TC:12.01mg/L IC:10.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	525.0	12.01mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 4:57:27 PM

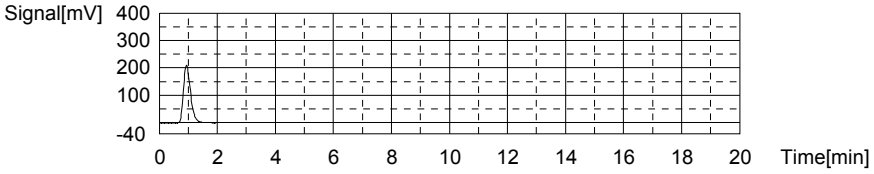
Mean Area 525.0
Mean Conc. 12.01mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	357.0	10.11mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 5:02:15 PM

Mean Area 357.0
Mean Conc. 10.11mg/L



Sample

Sample Name: L17031217-34
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

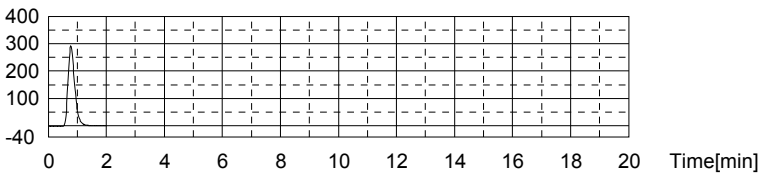
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.988mg/L TC:10.61mg/L IC:8.621mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	465.9	10.61mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 5:09:42 PM

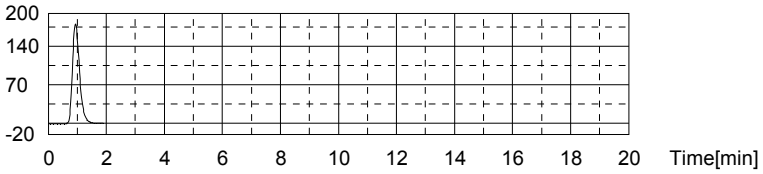
Mean Area 465.9
Mean Conc. 10.61mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	307.1	8.621mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 5:14:30 PM

Mean Area 307.1
Mean Conc. 8.621mg/L



Sample

Sample Name: L17031217-35
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

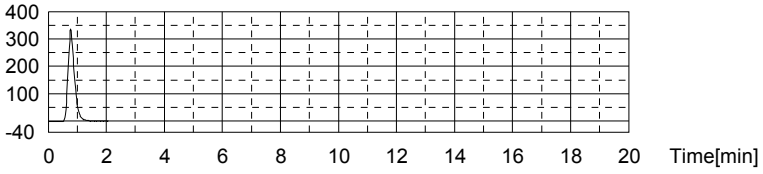
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.913mg/L TC:11.54mg/L IC:9.625mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	505.2	11.54mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 5:22:02 PM

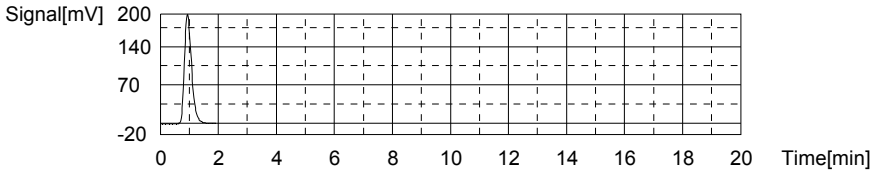
Mean Area 505.2
Mean Conc. 11.54mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	340.7	9.625mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 5:26:54 PM

Mean Area 340.7
Mean Conc. 9.625mg/L



Sample

Sample Name: L17031217-36
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

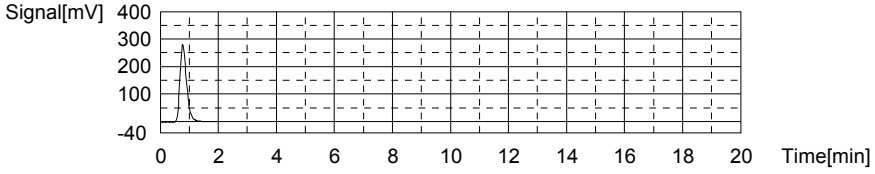
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.991mg/L TC:10.14mg/L IC:8.152mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	446.2	10.14mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_55	3/24/2017 5:34:31 PM

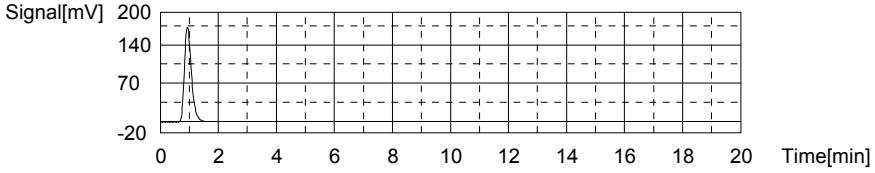
Mean Area 446.2
Mean Conc. 10.14mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	291.4	8.152mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 5:39:16 PM

Mean Area 291.4
Mean Conc. 8.152mg/L



Sample

Sample Name: L17031217-37
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

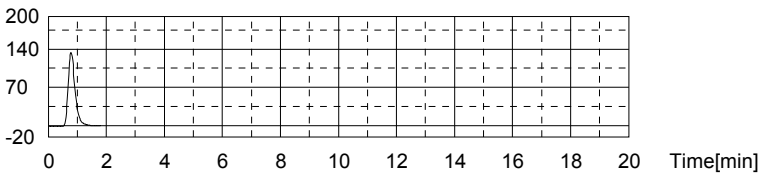
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.062mg/L TC:4.832mg/L IC:2.771mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	221.4	4.832mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 5:46:32 PM

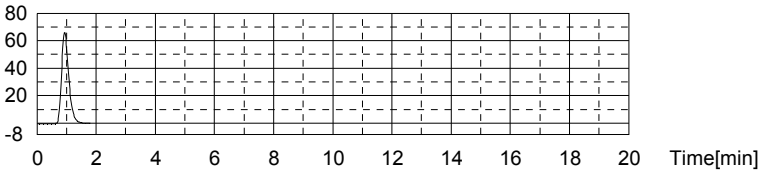
Mean Area 221.4
Mean Conc. 4.832mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.2	2.771mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 5:51:10 PM

Mean Area 111.2
Mean Conc. 2.771mg/L



Sample

Sample Name: L17031217-38
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

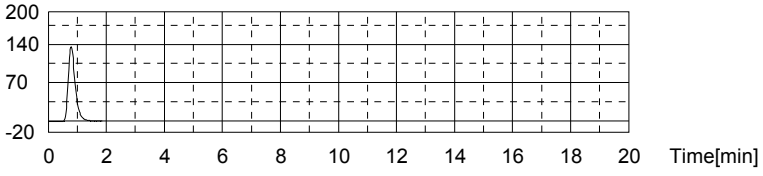
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.419mg/L TC:4.981mg/L IC:2.562mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	227.7	4.981mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 5:58:29 PM

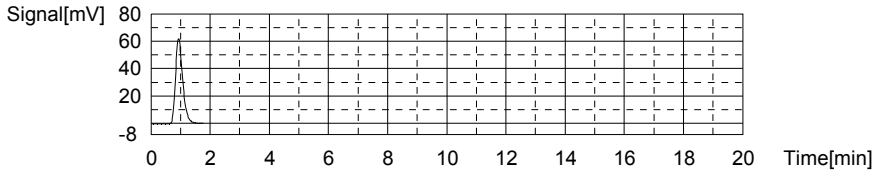
Mean Area 227.7
Mean Conc. 4.981mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.2	2.562mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 6:03:04 PM

Mean Area 104.2
Mean Conc. 2.562mg/L



Sample

Sample Name: L17031217-39
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

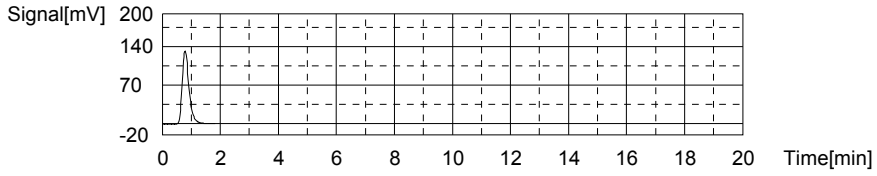
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.027mg/L TC:4.691mg/L IC:2.663mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	215.4	4.691mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 6:10:20 PM

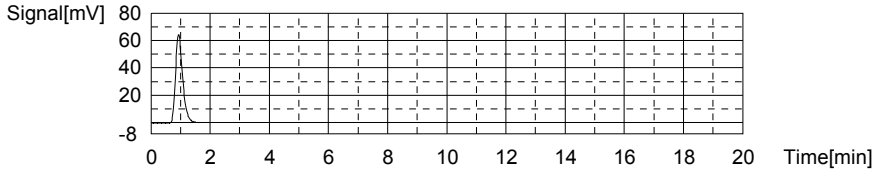
Mean Area 215.4
Mean Conc. 4.691mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	107.6	2.663mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 6:14:58 PM

Mean Area 107.6
Mean Conc. 2.663mg/L



Sample

Sample Name: L17031217-40
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

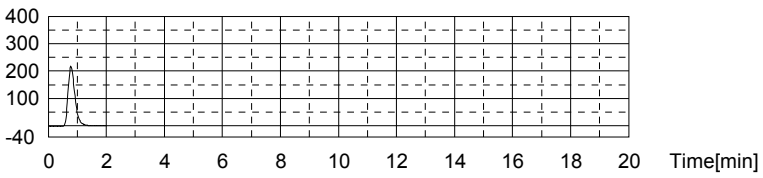
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.757mg/L TC:8.057mg/L IC:6.301mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	357.9	8.057mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 6:22:26 PM

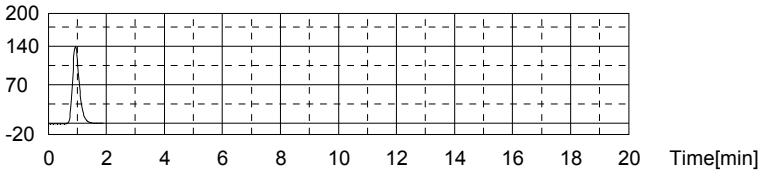
Mean Area 357.9
Mean Conc. 8.057mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	229.4	6.301mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 6:27:10 PM

Mean Area 229.4
Mean Conc. 6.301mg/L



Sample

Sample Name: L17031217-41
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

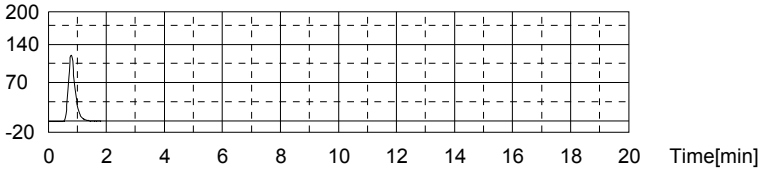
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.877mg/L TC:4.223mg/L IC:2.346mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	195.6	4.223mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 6:34:27 PM

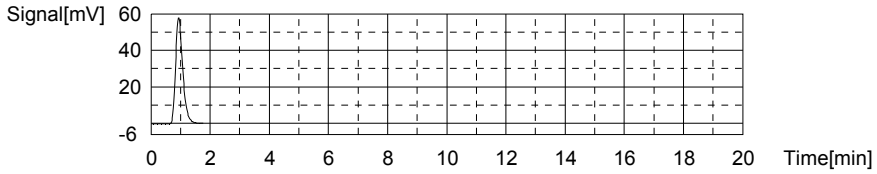
Mean Area 195.6
Mean Conc. 4.223mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	96.96	2.346mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 6:39:02 PM

Mean Area 96.96
Mean Conc. 2.346mg/L



Sample

Sample Name: CCV
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

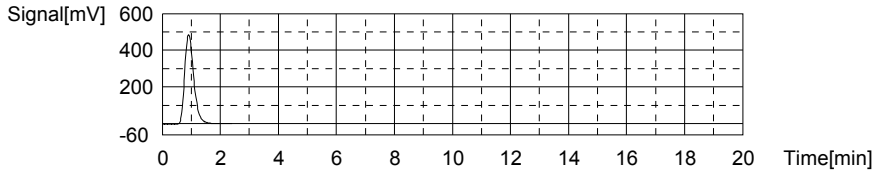
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.75mg/L TC:24.48mg/L IC:-0.2690mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1053	24.48mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 6:46:53 PM

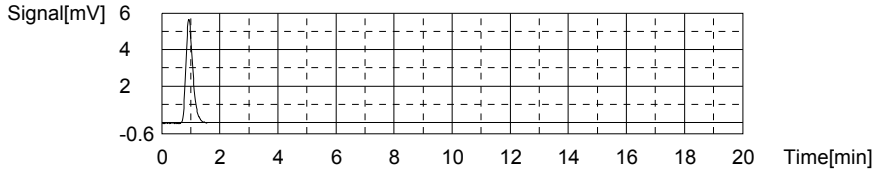
Mean Area 1053
Mean Conc. 24.48mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.408	-0.2690mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 6:51:15 PM

Mean Area 9.408
Mean Conc. -0.2690mg/L



Sample

Sample Name: CCB
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

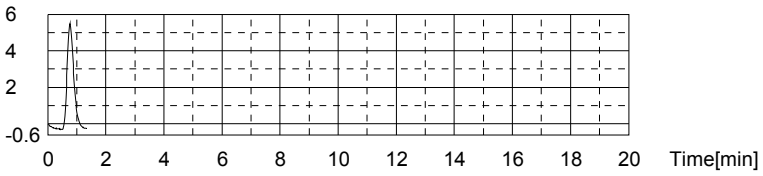
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1136mg/L TC:-0.1844mg/L IC:-0.2980mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.059	-0.1844mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 6:56:13 PM

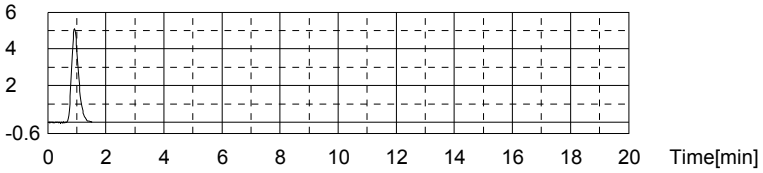
Mean Area 9.059
Mean Conc. -0.1844mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.435	-0.2980mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 7:00:06 PM

Mean Area 8.435
Mean Conc. -0.2980mg/L



Sample

Sample Name: L17031217-42
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

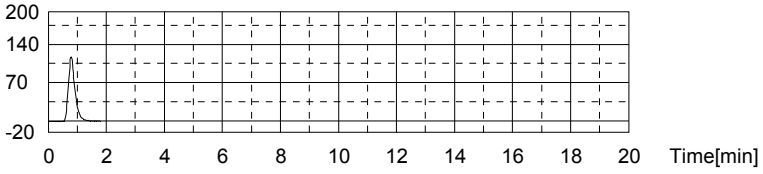
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.964mg/L TC:4.010mg/L IC:2.046mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	186.6	4.010mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 7:07:21 PM

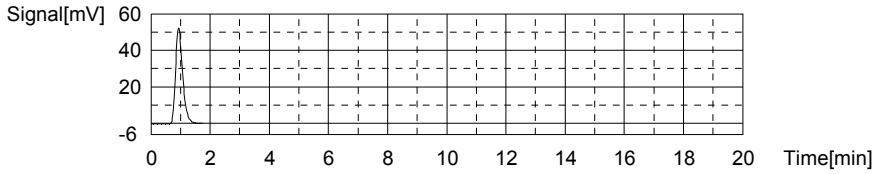
Mean Area 186.6
Mean Conc. 4.010mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	86.94	2.046mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 7:11:56 PM

Mean Area 86.94
Mean Conc. 2.046mg/L



Sample

Sample Name: L17031259-01 (25)
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

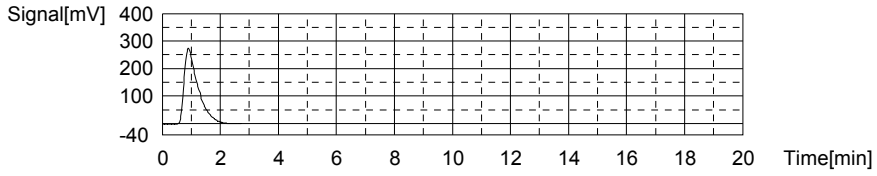
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.11mg/L TC:21.10mg/L IC:0.9845mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	909.9	21.10mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_55	3/24/2017 7:20:06 PM

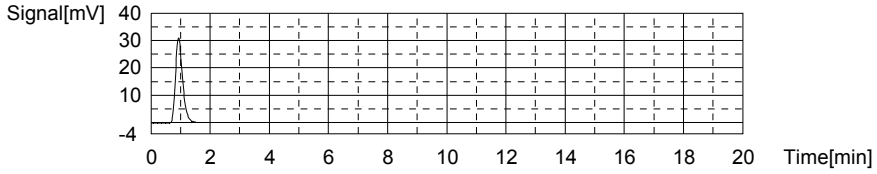
Mean Area 909.9
Mean Conc. 21.10mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	51.38	0.9845mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 7:24:37 PM

Mean Area 51.38
Mean Conc. 0.9845mg/L



Sample

Sample Name: L17031266-01
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

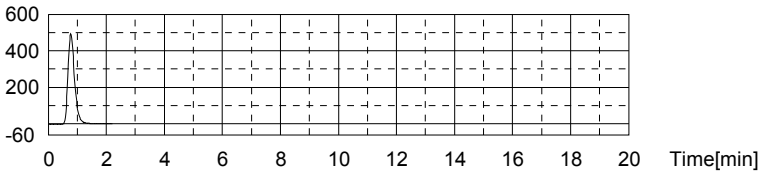
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.720mg/L TC:17.87mg/L IC:15.15mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	773.3	17.87mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 7:32:17 PM

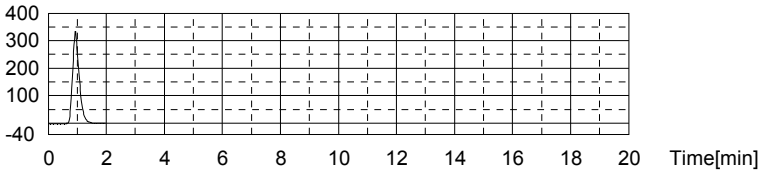
Mean Area 773.3
Mean Conc. 17.87mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	525.8	15.15mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 7:37:12 PM

Mean Area 525.8
Mean Conc. 15.15mg/L



Sample

Sample Name: L17031266-02 (2)
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

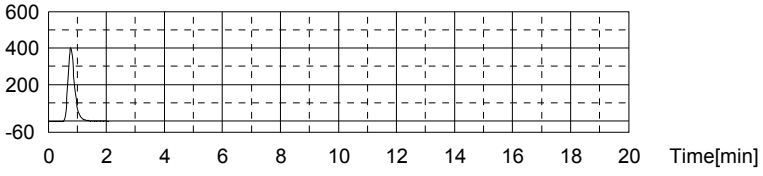
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.061mg/L TC:14.66mg/L IC:11.60mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	637.2	14.66mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 7:44:44 PM

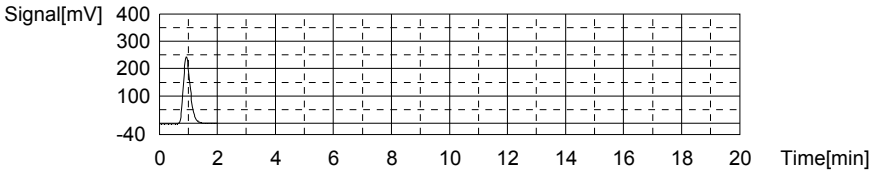
Mean Area 637.2
Mean Conc. 14.66mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	406.7	11.60mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 7:49:41 PM

Mean Area 406.7
Mean Conc. 11.60mg/L



Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

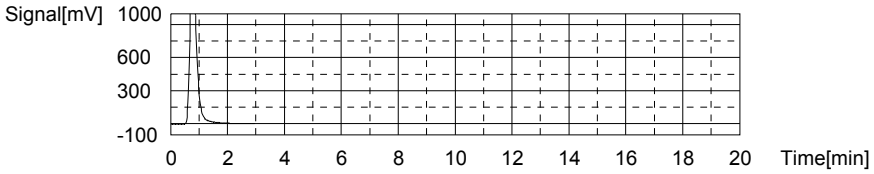
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.636mg/L TC:53.82mg/L IC:50.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2295	53.82mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 7:58:06 PM

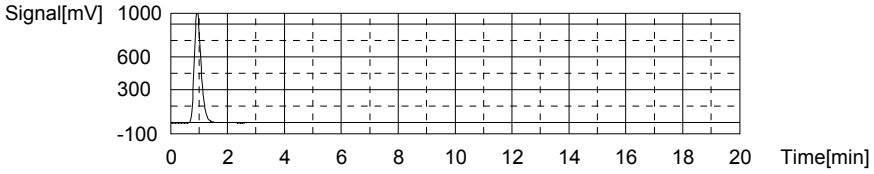
Mean Area 2295
Mean Conc. 53.82mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1699	50.19mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 8:03:45 PM

Mean Area 1699
Mean Conc. 50.19mg/L



Sample

Sample Name: WG607616-05 DUP
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

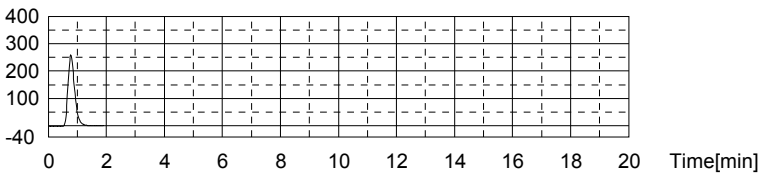
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.785mg/L TC:9.286mg/L IC:7.501mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	409.9	9.286mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 8:11:07 PM

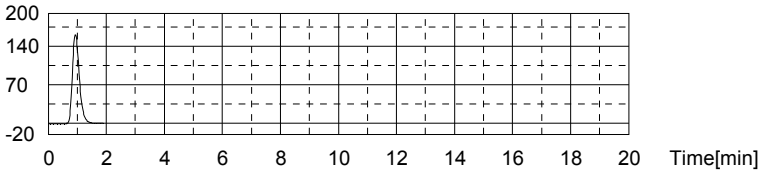
Mean Area 409.9
Mean Conc. 9.286mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	269.6	7.501mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 8:15:55 PM

Mean Area 269.6
Mean Conc. 7.501mg/L



Sample

Sample Name: WG607616-06 MS
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

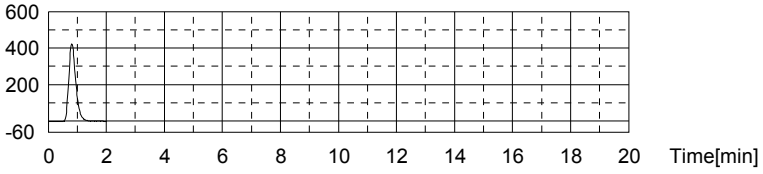
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.01mg/L TC:16.30mg/L IC:4.288mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	706.6	16.30mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 8:23:22 PM

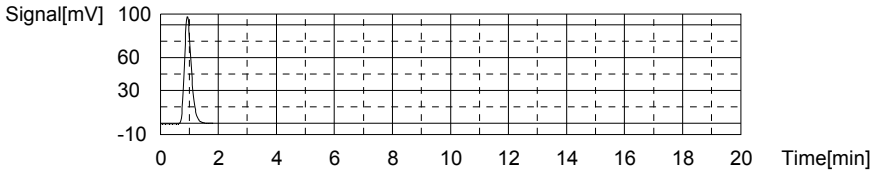
Mean Area 706.6
Mean Conc. 16.30mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	162.0	4.288mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 8:28:04 PM

Mean Area 162.0
Mean Conc. 4.288mg/L



Sample

Sample Name: WG607646-01 BLK
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

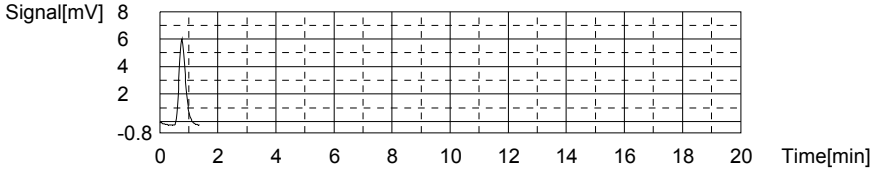
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1045mg/L TC:-0.1678mg/L IC:-0.2723mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.761	-0.1678mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 8:33:05 PM

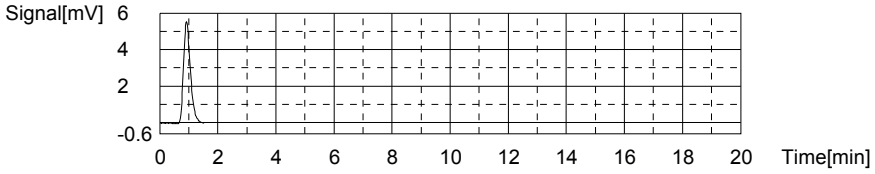
Mean Area 9.761
Mean Conc. -0.1678mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.296	-0.2723mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 8:36:59 PM

Mean Area 9.296
Mean Conc. -0.2723mg/L



Sample

Sample Name: WG607646-02 LCS
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

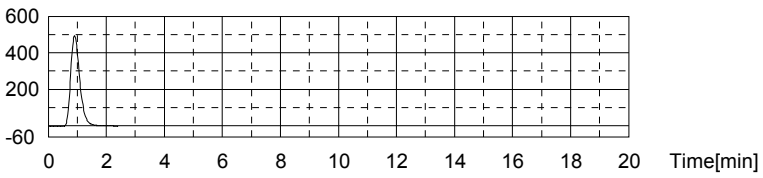
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.19mg/L TC:24.91mg/L IC:-0.2805mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1071	24.91mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 8:44:51 PM

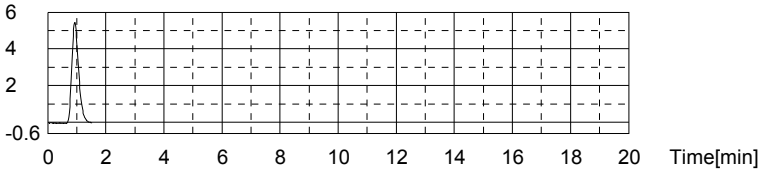
Mean Area 1071
Mean Conc. 24.91mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.021	-0.2805mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 8:49:12 PM

Mean Area 9.021
Mean Conc. -0.2805mg/L



Sample

Sample Name: WG607646-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

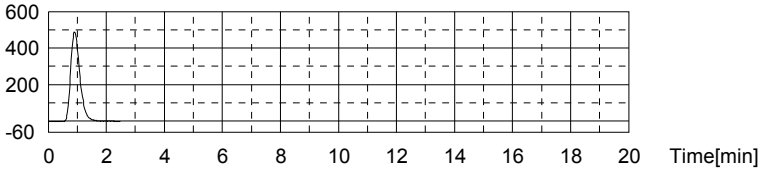
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.29mg/L TC:25.00mg/L IC:-0.2863mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1075	25.00mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 8:57:08 PM

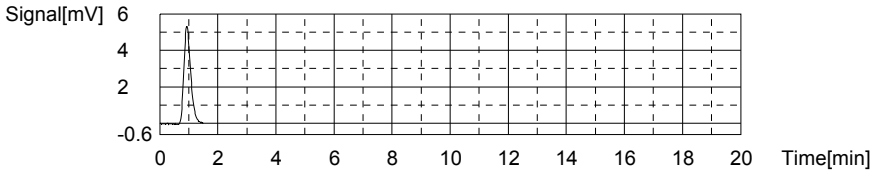
Mean Area 1075
Mean Conc. 25.00mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.827	-0.2863mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:01:25 PM

Mean Area 8.827
Mean Conc. -0.2863mg/L



Sample

Sample Name: CCV
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

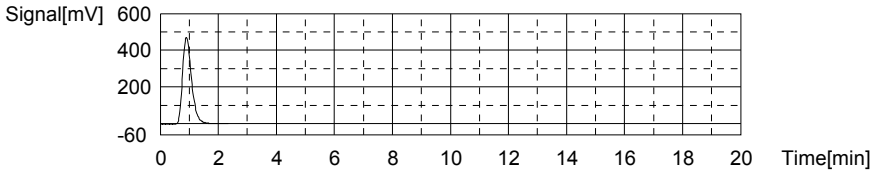
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.91mg/L TC:23.63mg/L IC:-0.2800mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1017	23.63mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 9:09:15 PM

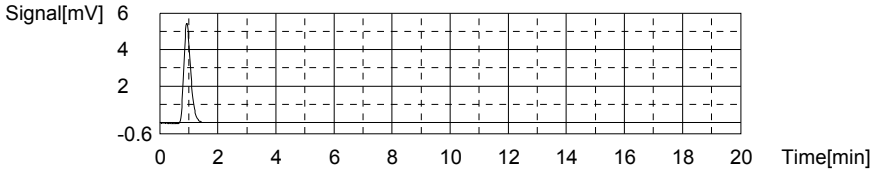
Mean Area 1017
Mean Conc. 23.63mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.039	-0.2800mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:13:34 PM

Mean Area 9.039
Mean Conc. -0.2800mg/L



Sample

Sample Name: CCB
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

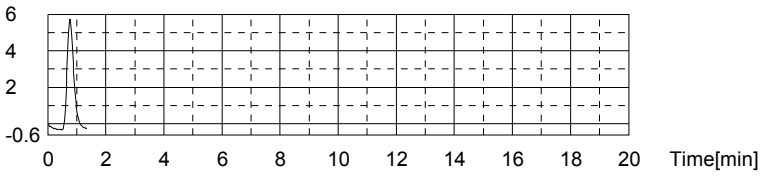
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1120mg/L TC:-0.1744mg/L IC:-0.2864mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.483	-0.1744mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:18:34 PM

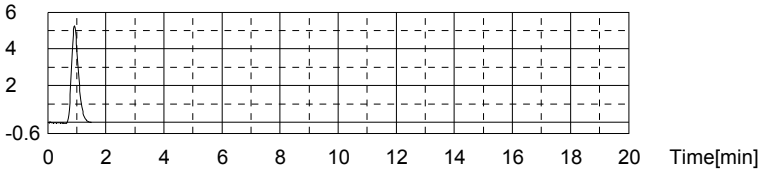
Mean Area 9.483
Mean Conc. -0.1744mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.825	-0.2864mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:22:27 PM

Mean Area 8.825
Mean Conc. -0.2864mg/L



Sample

Sample Name: L17031268-01
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

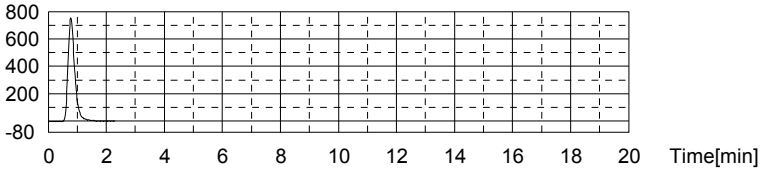
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.900mg/L TC:28.12mg/L IC:23.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1207	28.12mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:30:13 PM

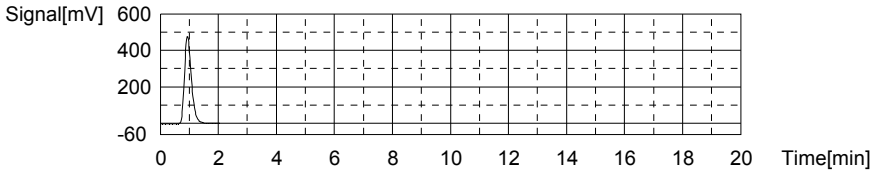
Mean Area 1207
Mean Conc. 28.12mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	795.9	23.22mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:35:14 PM

Mean Area 795.9
Mean Conc. 23.22mg/L



Sample

Sample Name: L17031268-03 MS
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

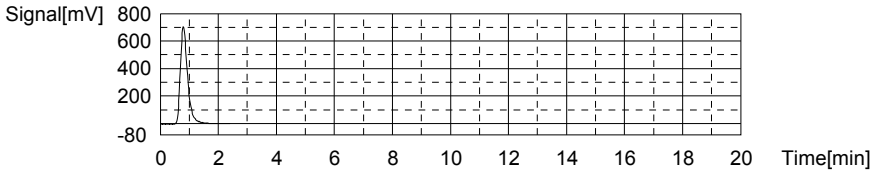
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.63mg/L TC:28.47mg/L IC:14.84mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1222	28.47mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_55	3/24/2017 9:43:07 PM

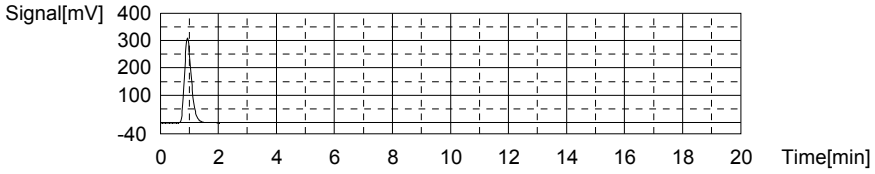
Mean Area 1222
Mean Conc. 28.47mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	515.4	14.84mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 9:48:06 PM

Mean Area 515.4
Mean Conc. 14.84mg/L



Sample

Sample Name: L17031268-04 MSD
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

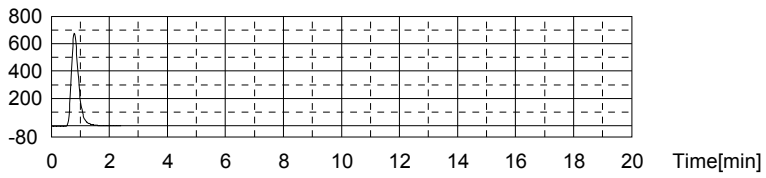
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.92mg/L TC:27.43mg/L IC:13.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1178	27.43mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 9:55:59 PM

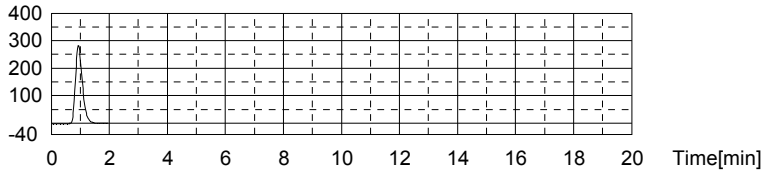
Mean Area 1178
Mean Conc. 27.43mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	470.9	13.51mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:00:51 PM

Mean Area 470.9
Mean Conc. 13.51mg/L



Sample

Sample Name: L17031268-05
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

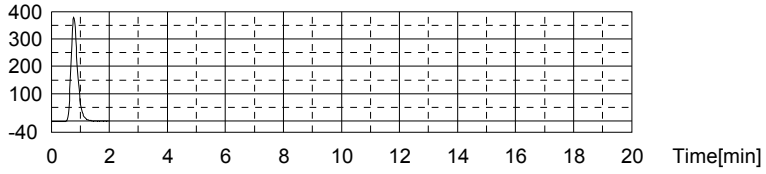
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.706mg/L TC:13.44mg/L IC:10.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	585.9	13.44mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:08:17 PM

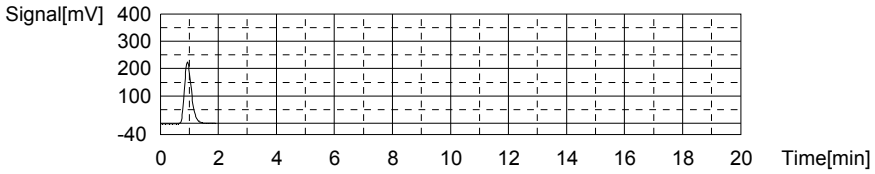
Mean Area 585.9
Mean Conc. 13.44mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	378.0	10.74mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:13:07 PM

Mean Area 378.0
Mean Conc. 10.74mg/L



Sample

Sample Name: L17031268-07
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

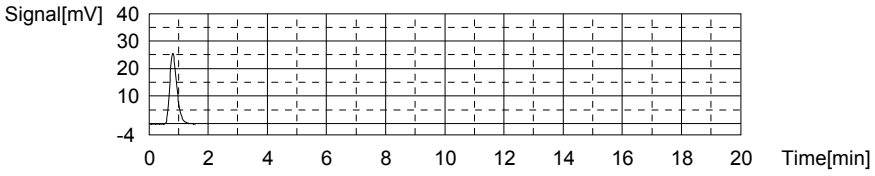
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.8880mg/L TC:0.6158mg/L IC:-0.2721mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	42.93	0.6158mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_55	3/24/2017 10:20:10 PM

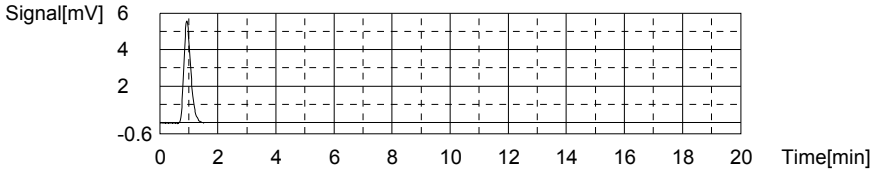
Mean Area 42.93
Mean Conc. 0.6158mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.302	-0.2721mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:24:32 PM

Mean Area 9.302
Mean Conc. -0.2721mg/L



Sample

Sample Name: L17031361-01
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

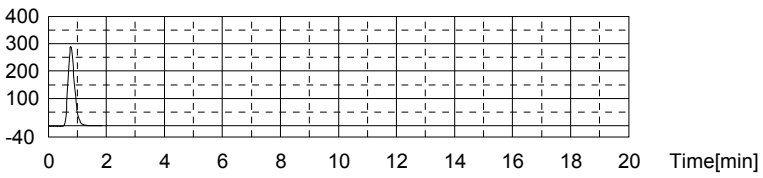
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.449mg/L TC:10.25mg/L IC:8.803mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	450.8	10.25mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:31:51 PM

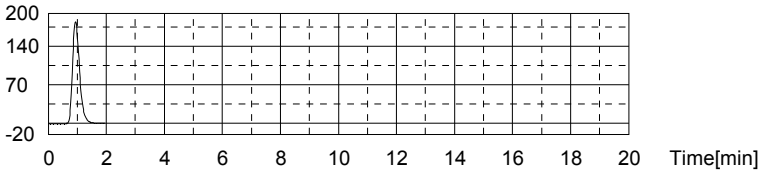
Mean Area 450.8
Mean Conc. 10.25mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	313.2	8.803mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:36:41 PM

Mean Area 313.2
Mean Conc. 8.803mg/L



Sample

Sample Name: L17031361-04
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

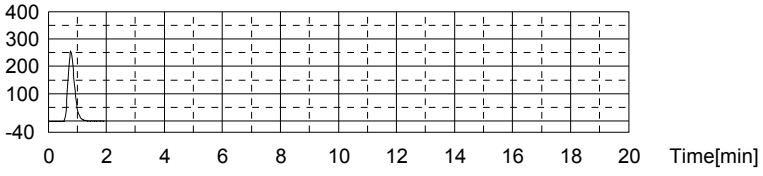
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.534mg/L TC:9.036mg/L IC:7.501mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	399.3	9.036mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 10:44:05 PM

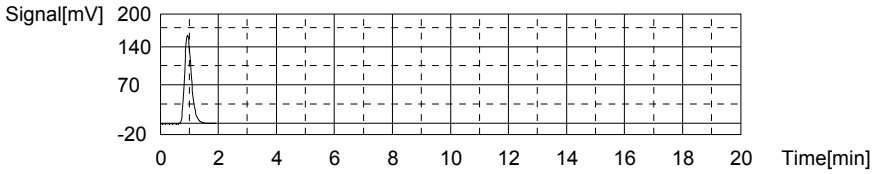
Mean Area 399.3
Mean Conc. 9.036mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	269.6	7.501mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 10:48:53 PM

Mean Area 269.6
Mean Conc. 7.501mg/L



Sample

Sample Name: L17031361-05 MS
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

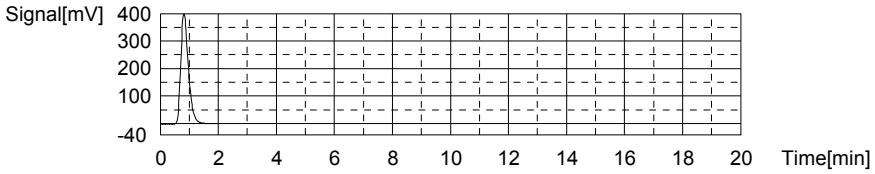
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.36mg/L TC:16.78mg/L IC:5.420mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	727.2	16.78mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_55	3/24/2017 10:56:33 PM

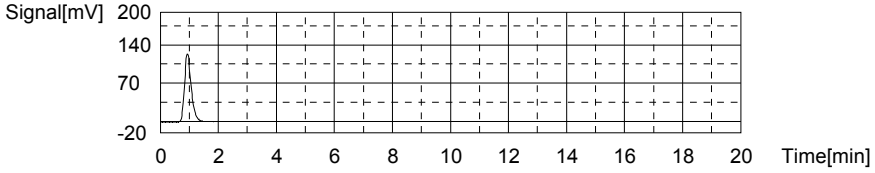
Mean Area 727.2
Mean Conc. 16.78mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	199.9	5.420mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 11:01:25 PM

Mean Area 199.9
Mean Conc. 5.420mg/L



Sample

Sample Name: L17031361-06 MSD
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

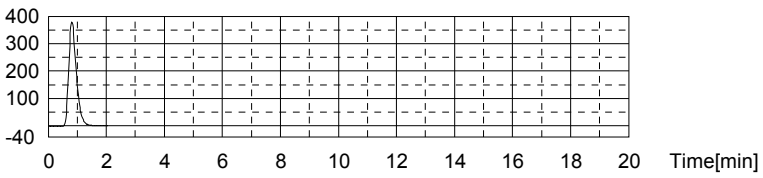
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.71mg/L TC:15.95mg/L IC:5.238mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	691.8	15.95mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 11:08:56 PM

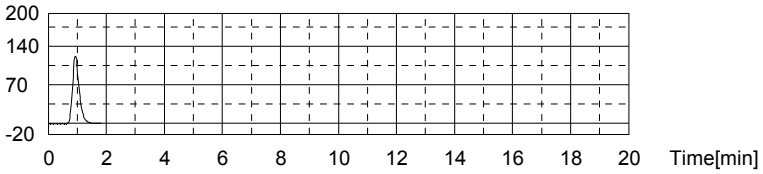
Mean Area 691.8
Mean Conc. 15.95mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	193.8	5.238mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 11:13:36 PM

Mean Area 193.8
Mean Conc. 5.238mg/L



Sample

Sample Name: L17031361-13
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

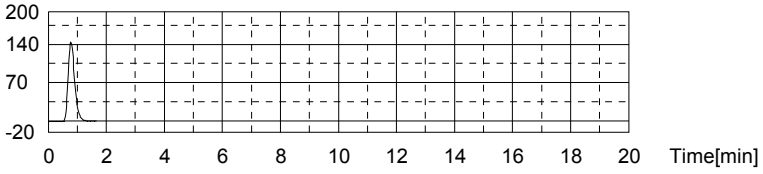
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.584mg/L TC:4.946mg/L IC:3.362mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	226.2	4.946mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 11:20:44 PM

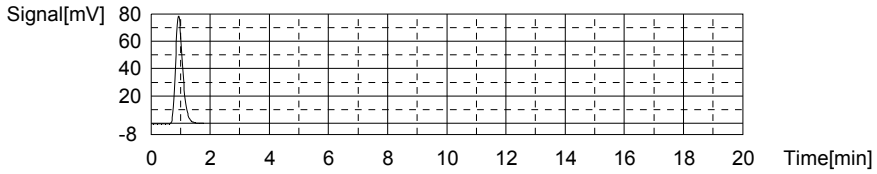
Mean Area 226.2
Mean Conc. 4.946mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	131.0	3.362mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 11:25:21 PM

Mean Area 131.0
Mean Conc. 3.362mg/L



Sample

Sample Name: CCV
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

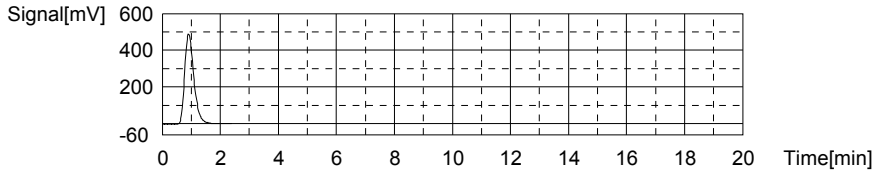
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.23mg/L TC:24.95mg/L IC:-0.2756mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1073	24.95mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/24/2017 11:33:13 PM

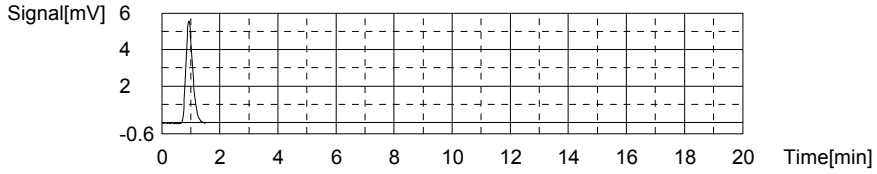
Mean Area 1073
Mean Conc. 24.95mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.187	-0.2756mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 11:37:35 PM

Mean Area 9.187
Mean Conc. -0.2756mg/L



Sample

Sample Name: CCB
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

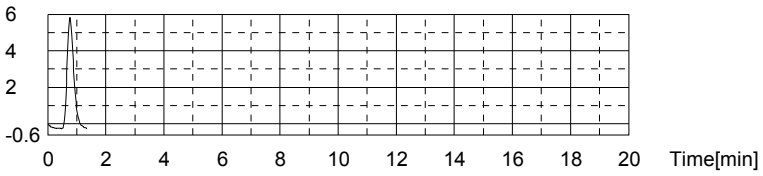
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.1102mg/L TC:-0.1738mg/L IC:-0.2840mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.508	-0.1738mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 11:42:43 PM

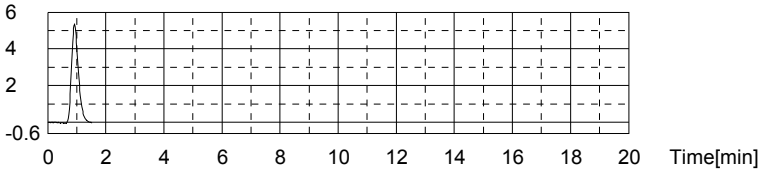
Mean Area 9.508
Mean Conc. -0.1738mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.904	-0.2840mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 11:46:37 PM

Mean Area 8.904
Mean Conc. -0.2840mg/L



Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

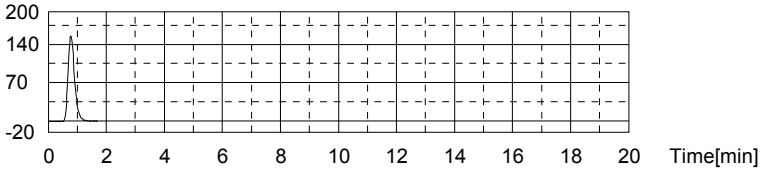
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.614mg/L TC:5.376mg/L IC:3.762mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	244.4	5.376mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/24/2017 11:53:50 PM

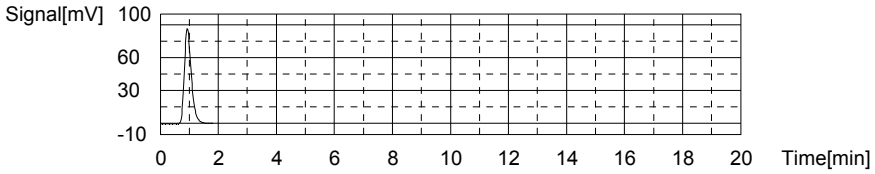
Mean Area 244.4
Mean Conc. 5.376mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	144.4	3.762mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/24/2017 11:58:31 PM

Mean Area 144.4
Mean Conc. 3.762mg/L



Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

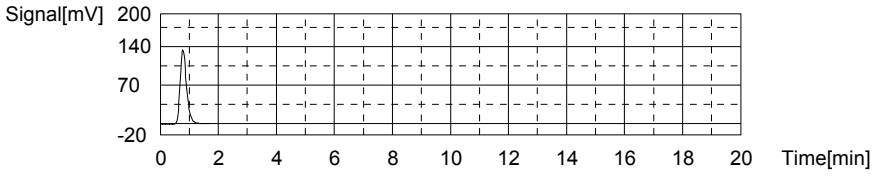
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.406mg/L TC:4.523mg/L IC:3.117mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	208.3	4.523mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/25/2017 12:05:42 AM

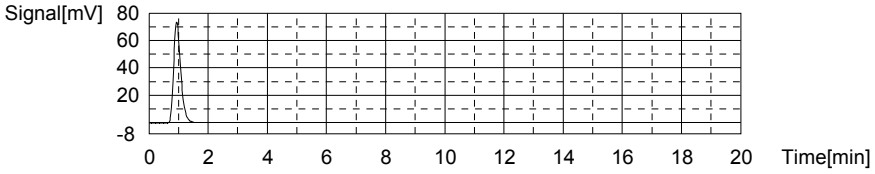
Mean Area 208.3
Mean Conc. 4.523mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	122.8	3.117mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/25/2017 12:10:17 AM

Mean Area 122.8
Mean Conc. 3.117mg/L



Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

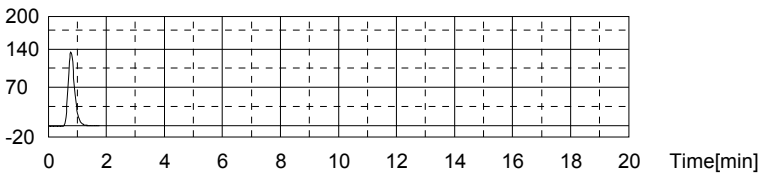
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.476mg/L TC:4.575mg/L IC:3.099mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	210.5	4.575mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/25/2017 12:17:31 AM

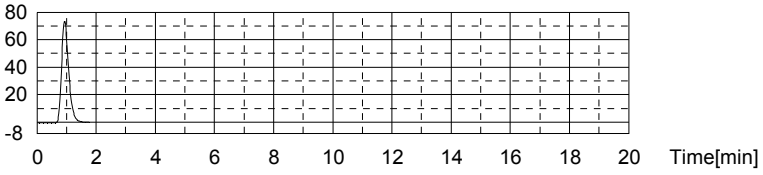
Mean Area 210.5
Mean Conc. 4.575mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	122.2	3.099mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/25/2017 12:22:08 AM

Mean Area 122.2
Mean Conc. 3.099mg/L



Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

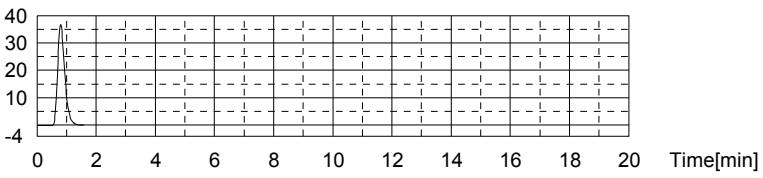
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:1.137mg/L TC:1.060mg/L IC:-0.07659mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	61.74	1.060mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_53	3/25/2017 12:29:13 AM

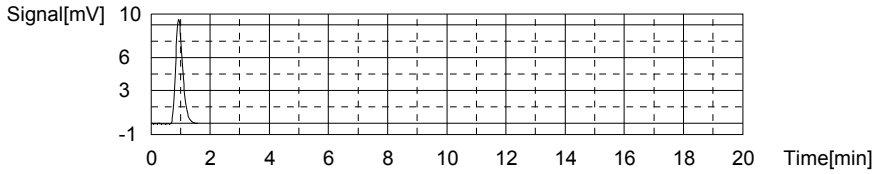
Mean Area 61.74
Mean Conc. 1.060mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.85	-0.07659mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/25/2017 12:33:36 AM

Mean Area 15.85
Mean Conc. -0.07659mg/L



Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-02-10-2017.met
Status Completed
Chk. Result

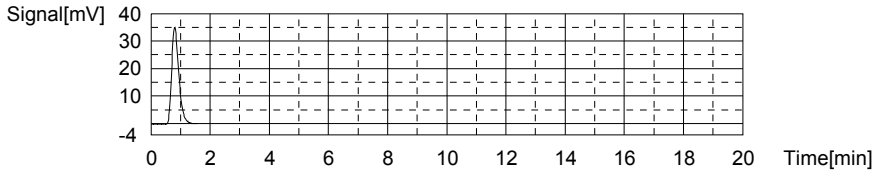
Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:1.083mg/L TC:0.9886mg/L IC:-0.09391mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	58.71	0.9886mg/L	500uL	1		TCCURVE-02-10-2017.2017_02_10_09_32_5	3/25/2017 12:40:40 AM

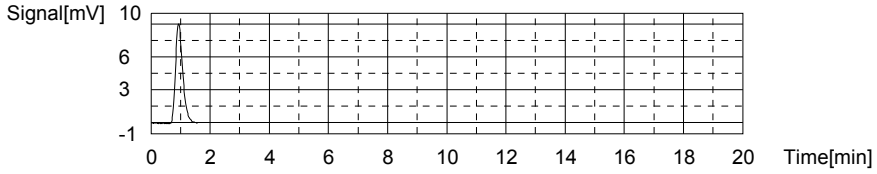
Mean Area 58.71
Mean Conc. 0.9886mg/L



Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.27	-0.09391mg/L	500uL	1		TICCURVE-02-10-2017.2017_02_10_14_45_1	3/25/2017 12:45:03 AM

Mean Area 15.27
Mean Conc. -0.09391mg/L



3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 31, 2017

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001 – BIO-CHEM TESTING WVDEP 220	002 – REIC Consultants, Inc. WVDEP 060
003 – Sturm Environmental	004 – MICROBAC PITTSBURGH
005 – ES LABORATORIES	006 – ALCOSAN LABORATORIES
007 – ALS LABORATORIES	008 – BENCHMARK LABORATORIES
010 – MICROBAC CHICAGOLAND	AC – AMBER R. CARMICHAEL
ADC – ANTHONY D. CANTER	ADG – APRIL D. GREENE
ALS – ADRIANE L. STEED	AWE – ANDREW W. ESSIG
AZH – AFTER HOURS	BJO – BRIAN J. OGDEN
BLG – BRENDA L. GREENWALT	BNB – Brandi N. Bentley
BRG – BRENDA R. GREGORY	CAS – Craig A. Smith
CEB – CHAD E. BARNES	CLC – CHRYS L. CRAWFORD
CLS – CARA L. STRICKLER	CPD – CHAD P. DAVIS
CSH – CHRIS S. HILL	CV – Carl Volkman
DAK – DEAN A. KETELSEN	DCM – DAVID C. MERCKLE
DEV – DAVID E. VANDENBERG	DIH – DEANNA I. HESSON
DLB – DAVID L. BUMGARNER	DLP – DOROTHY L. PAYNE
DSM – DAVID S. MOSSOR	DTG – DOMINIC T. GEHRET
ECL – ERIC C. LAWSON	EPT – ETHAN P. TIDD
ERP – ERIN R. PORTER	FJB – FRANCES J. BOLDEN
HRF – HEATHER R. FAIRCHILD	JDH – JUSTIN D. HESSON
JDS – JARED D. SMITH	JKP – JACQUELINE K. PARSONS
JLD – JESSICA L. DELONG	JST – JOSHUA S. TAYLOR
JTP – JOSHUA T. PEMBERTON	JWR – JOHN W. RICHARDS
JWS – JACK W. SHEAVES	JYH – JI Y. HU
KAK – KATHY A. KIRBY	KDD – Katelyn D. Daley
KEB – KATIE E. BARNES	KHR – KIM H. RHODES
KKB – KERRI K. BUCK	KRA – KATHY R. ALBERTSON
KRP – KATHY R. PARSONS	LJH – Lacey J. Hendershot
LLS – LARRY L. STEPHENS	LSB – LESLIE S. BUCINA
LSJ – LAURA S. JONES	MAP – MARLA A. PORTER
MBK – MORGAN B. KNOWLTON	MES – MARY E. SCHILLING
MMB – MAREN M. BEERY	MRT – MICHELLE R. TAYLOR
PDM – PIERCE D. MORRIS	PIT – MICROBAC WARRENDALE
REK – BOB E. KYER	RLB – BOB BUCHANAN
RNP – RICK N. PETTY	SAV – SARAH A. VANDENBERG
SCB – SARAH C. BOGOLIN	SCJ – SUE ELLEN C. JOHNSON
SDC – SHALYN D. CONLEY	TB – TODD BOYLE
TMB – TIFFANY M. BAILEY	TMM – TAMMY M. MORRIS
VC – VICKI COLLIER	WTD – WADE T. DELONG
XXX – UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 31, 2017

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
>,H1	Result is greater than the associated numerical value. Sample analysis performed past holding time.
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound

Microbac Laboratories Inc.
List of Valid Qualifiers
March 31, 2017

Qualkey: DOD

TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

L17031259 / Revision: 0 / 145 total pages

CHAIN OF CUSTODY

Name Of Lab Shipping To: MICROBAC (740) 373-4071 ATTN: STEPHANIE MOSSBURG

Project: AECOM
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
60256135.GWTPT
HRUMAR16

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: AMMONIA-N	Analyses: ORTHO-PHOSPHATE	Analyses: TOTAL ORGANIC CARBON	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650-6426-Grab	Water	03/22/17 / 15:00		2	X		X	H2SO4	
LH18/24-SP650-6426-Grab	Water	03/22/17 / 15:00		1		X		NONE	

Additional Remarks: **Standard TAT on all parameters** Send results to Linda Raabe at linda.raabe@aecom.com or call at 210-253-7518

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	03/22/17	15:30									

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

Microbac OVD
Received: 03/23/2017 09:44
By: CARA STRICKLER
221000098646

Cara Strickler

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

Generated: 03/31/2017 11:01

00848131

MICROBAC

COOLER TEMP >6° C LOG

Cooler ID 8646

SAMPLE ID	Bottle 1 °C	Bottle 2 °C	Bottle 3 °C	Bottle 4 °C	Bottle 5 °C	Bottle 6 °C

CAD 3/23/17

pH Exceptions

pH Lot # HC693124

SAMPLE ID	Bottle 1	Bottle 2	Bottle 3	Bottle 4	Bottle 5	Bottle 6

CAD 3/23/17

PRESERVATIVE EXCEPTIONS

☑ NONE

__ AS NOTED

CAD 3/23/17

Document Control # 1957
Last 10-07-2016

Issued to: Document Master File

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L17031259
Account: 2551
Project: 2551.096
Samples: 1
Due Date: 03-APR-2017

Samplenum	Container ID	Products
L17031259-01	884826	PO4

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-MAR-2017 09:58	CLS		
2	ANALYZ	W1	WET	23-MAR-2017 09:59	DCM	CLS	
3	STORE	WET	A1	24-MAR-2017 10:24	CLS	TMM	

Samplenum	Container ID	Products
L17031259-01	884827	TOC PB-MS-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-MAR-2017 09:58	CLS		<2
2	ANALYZ	W1	WET	23-MAR-2017 09:59	DCM	CLS	
3	STORE	WET	A1	27-MAR-2017 08:26	CLS	ADG	

Samplenum	Container ID	Products
L17031259-01	884828	NH3

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-MAR-2017 09:58	CLS		<2
2	ANALYZ	W1	WET	23-MAR-2017 09:59	DCM	CLS	
3	STORE	WET	A1	27-MAR-2017 11:27	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L17031339

Linda Raabe
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Adriane Steed – Client Services Specialist
(740) 373-4071
Adriane.Steed@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 31 2017

Leslie Bucina – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018592	I	4.0		J4579392704	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
126-032117	L17031339-01	03/21/2017 08:15	03/23/2017 09:38
126F-032117	L17031339-02	03/21/2017 08:15	03/23/2017 09:38
126FD-032117	L17031339-03	03/21/2017 08:15	03/23/2017 09:38
126FDF-032117	L17031339-04	03/21/2017 08:15	03/23/2017 09:38
MW2-032117	L17031339-05	03/21/2017 09:35	03/23/2017 09:38
18CPTMW01DW-032117	L17031339-06	03/21/2017 10:35	03/23/2017 09:38
18CPTMW01SW-032117	L17031339-07	03/21/2017 11:35	03/23/2017 09:38
MW13-032117	L17031339-08	03/21/2017 13:40	03/23/2017 09:38
MW13FD-032117	L17031339-09	03/21/2017 13:40	03/23/2017 09:38
CO2-032117	L17031339-10	03/21/2017 14:40	03/23/2017 09:38
CO2F-032117	L17031339-11	03/21/2017 14:40	03/23/2017 09:38
MW16-032217	L17031339-12	03/22/2017 08:45	03/23/2017 09:38
MW16F-032217	L17031339-13	03/22/2017 08:45	03/23/2017 09:38
MW19-032217	L17031339-14	03/22/2017 10:00	03/23/2017 09:38
MW19F-032217	L17031339-15	03/22/2017 10:00	03/23/2017 09:38
TRIP BLANK	L17031339-16	03/22/2017 00:01	03/23/2017 09:38

Microbac REPORT L17031339
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG607681, WG607735, WG607986, WG608101	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-03-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden		Analyst I	2017-03-31 16:46:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG607681, WG607735, WG607986, WG608101	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-03-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG607681, WG607735, WG607986, WG608101	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-03-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?		X			1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG607681, WG607735, WG607986, WG608101	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-03-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?					2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG607681, WG607735, WG607986, WG608101	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-03-31 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG607681, WG607735, WG607986, WG608101	**Reviewer Name:**	Franci Bolden
LRC Date:	2017-03-31 00:00:00		

data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Sample 12 dilution reanalysis performed from vial with headspace due to instrument error associated with previous vials.

2) Bromomethane was marginally below the LCL in ICV WG607066-12 analyzed 03/21/2017 on HPMS8.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6010
Prep Batch Number(s):	607726	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Kerri Buck	Kerri K Buck		2017-03-31 16:08:32

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6010
Prep Batch Number(s):	607726	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6010
Prep Batch Number(s):	607726	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				ER#3
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				ER#1

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6010
Prep Batch Number(s):	607726	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				ER#2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6010
Prep Batch Number(s):	607726	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6010
Prep Batch Number(s):	607726	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to a calibration coefficient correlation below 0.998 for magnesium on 27-Mar-2017, all batch QA/QC and client samples were reanalyzed on a later calibration for magnesium.

ER#2 - The low level initial calibration verification analyzed on 27-Mar-2017 at 10:11 yielded a noncompliant recovery for iron. All client samples and QA/QC were reanalyzed on a later calibration which was compliant for iron. The closing low level calibration verification analyzed on 29-Mar-2017 at 14:43 yielded a noncompliant recovery for iron. All client samples and QA/QC were reanalyzed on a later calibration which was compliant for iron.

ER#3 - All client samples required dilution analyses in order to obtain results for calcium within the calibration range. Client samples 05, 07, 08, 09, 13, and 15 required dilution analyses in order to obtain results for iron within the calibration range. Client samples 02, 04, 05, and 07 required dilution analyses in order to obtain results for magnesium within the calibration range. Client samples 02, 04, 05, 06, 07, and 15 required dilution analyses in order to obtain results for sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6020
Prep Batch Number(s):	607689	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Kerri Buck	Kerri K Buck		2017-03-31 16:35:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6020
Prep Batch Number(s):	607689	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6020
Prep Batch Number(s):	607689	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				ER#1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6020
Prep Batch Number(s):	607689	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6020
Prep Batch Number(s):	607689	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	6020
Prep Batch Number(s):	607689	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client samples 02, 04, 05, 07, 08, 09, 11, 13, and 15 required dilution analyses in order to obtain results for barium and manganese within the calibration range. Client sample 15 required dilution analysis in order to obtain a result for zinc within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	7471
Prep Batch Number(s):	607691	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Kerri Buck	Kerri K Buck		2017-03-31 16:03:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	7471
Prep Batch Number(s):	607691	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	7471
Prep Batch Number(s):	607691	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	7471
Prep Batch Number(s):	607691	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	7471
Prep Batch Number(s):	607691	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L17031339
Project Name:		**Method:**	7471
Prep Batch Number(s):	607691	**Reviewer Name:**	Kerri Buck
LRC Date:	2017-03-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 16:57
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	8M418571
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.46	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.0	85	115	
1,2-Dichloroethane-d4	98.4	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	95.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:36
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	T3.032717.153641
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.56		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:25
Collect Date:	03/21/2017 08:15	**Dilution:**	5	**File ID:**	T3.033017.112529
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	1.96		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 13:51
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	T3.032917.135125
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	312		50.0	25.0	12.5
Magnesium, Total	7439-95-4	244		100	50.0	25.0
Sodium, Total	7440-23-5	913		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:31
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	NI.032717.143118
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00938		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000623	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00258	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0294		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00355	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0229		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000209	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0479	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 16:58
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	NI.032917.165815
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.98		0.600	0.300	0.150
Manganese, Total	7439-96-5	0.533		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126F-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 14:55
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	M7.032717.145555
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126FD-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 17:28
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	8M418572
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.07	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	85	115	
1,2-Dichloroethane-d4	99.1	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	95.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126FDF-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:40
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	T3.032717.154030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.51		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126FDF-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:29
Collect Date:	03/21/2017 08:15	**Dilution:**	5	**File ID:**	T3.033017.112913
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	1.81		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126FDF-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:02
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	T3.032917.140234
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	315		50.0	25.0	12.5
Magnesium, Total	7439-95-4	245		100	50.0	25.0
Sodium, Total	7440-23-5	909		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126FDF-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:34
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	NI.032717.143424
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00854		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000447	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00280	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0281		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00358	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0225		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000110	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0412	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126FDF-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:01
Collect Date:	03/21/2017 08:15	**Dilution:**	100	**File ID:**	NI.032917.170121
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.70		0.600	0.300	0.150
Manganese, Total	7439-96-5	0.505		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126FDF-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 14:58
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	M7.032717.145828
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW2-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607681	**Analyst:**	JDS	**Run Date:**	03/25/2017 20:35
Collect Date:	03/21/2017 09:35	**Dilution:**	1000	**File ID:**	8M418542
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5000	U	10000	5000	2500
Benzene	71-43-2	250	U	1000	250	125
Bromobenzene	108-86-1	250	U	1000	250	125
Bromochloromethane	74-97-5	400	U	1000	400	200
Bromodichloromethane	75-27-4	500	U	1000	500	250
Bromoform	75-25-2	1000	U	2000	1000	500
Bromomethane	74-83-9	1000	U	2000	1000	500
2-Butanone	78-93-3	5000	U	10000	5000	2500
n-Butylbenzene	104-51-8	500	U	1000	500	250
sec-Butylbenzene	135-98-8	500	U	1000	500	250
tert-Butylbenzene	98-06-6	500	U	1000	500	250
Carbon disulfide	75-15-0	1000	U	2000	1000	500
Carbon tetrachloride	56-23-5	500	U	1000	500	250
Chlorobenzene	108-90-7	181	J	1000	250	125
Chlorodibromomethane	124-48-1	500	U	1000	500	250
Chloroethane	75-00-3	1000	U	2000	1000	500
Chloroform	67-66-3	135	J	1000	250	125
Chloromethane	74-87-3	1000	U	2000	1000	500
2-Chlorotoluene	95-49-8	250	U	1000	250	125
4-Chlorotoluene	106-43-4	500	U	1000	500	250
1,2-Dibromo-3-chloropropane	96-12-8	2000	U	5000	2000	1000
1,2-Dibromoethane	106-93-4	500	U	1000	500	250
Dibromomethane	74-95-3	500	U	1000	500	250
1,2-Dichlorobenzene	95-50-1	250	U	1000	250	125
1,3-Dichlorobenzene	541-73-1	500	U	1000	500	250
1,4-Dichlorobenzene	106-46-7	250	U	1000	250	125
Dichlorodifluoromethane	75-71-8	500	U	1000	500	250
1,1-Dichloroethane	75-34-3	250	U	1000	250	125
1,2-Dichloroethane	107-06-2	500	U	1000	500	250
1,1-Dichloroethene	75-35-4	1000	U	2000	1000	500
cis-1,2-Dichloroethene	156-59-2	38600		1000	500	250

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	500	U	1000	500	250
1,2-Dichloropropane	78-87-5	400	U	1000	400	200
1,3-Dichloropropane	142-28-9	400	U	1000	400	200
2,2-Dichloropropane	594-20-7	500	U	1000	500	250
cis-1,3-Dichloropropene	10061-01-5	500	U	1000	500	250
trans-1,3-Dichloropropene	10061-02-6	1000	U	2000	1000	500
1,1-Dichloropropene	563-58-6	500	U	1000	500	250
Ethylbenzene	100-41-4	500	U	1000	500	250
2-Hexanone	591-78-6	5000	U	10000	5000	2500
Hexachlorobutadiene	87-68-3	500	U	1000	500	250
Isopropylbenzene	98-82-8	500	U	1000	500	250
p-Isopropyltoluene	99-87-6	500	U	1000	500	250
4-Methyl-2-pentanone	108-10-1	5000	U	10000	5000	2500
Naphthalene	91-20-3	400	U	1000	400	200
n-Propylbenzene	103-65-1	250	U	1000	250	125
Styrene	100-42-5	250	U	1000	250	125
1,1,1,2-Tetrachloroethane	630-20-6	500	U	1000	500	250
1,1,2,2-Tetrachloroethane	79-34-5	400	U	1000	400	200
Tetrachloroethene	127-18-4	500	U	1000	500	250
Toluene	108-88-3	500	U	1000	500	250
1,2,3-Trichlorobenzene	87-61-6	300	U	1000	300	150
1,2,4-Trichlorobenzene	120-82-1	400	U	1000	400	200
1,1,1-Trichloroethane	71-55-6	500	U	1000	500	250
1,1,2-Trichloroethane	79-00-5	500	U	1000	500	250
Trichloroethene	79-01-6	8720		1000	500	250
Trichlorofluoromethane	75-69-4	500	U	1000	500	250
1,2,3-Trichloropropane	96-18-4	1000	U	2000	1000	500
1,2,4-Trimethylbenzene	95-63-6	500	U	1000	500	250
1,3,5-Trimethylbenzene	108-67-8	500	U	1000	500	250
Vinyl chloride	75-01-4	500	U	1000	500	250
o-Xylene	95-47-6	500	U	1000	500	250
m-,p-Xylene	179601-23-1	1000	U	2000	1000	500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	85	115	
1,2-Dichloroethane-d4	95.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	96.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW2-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 15:28
Collect Date:	03/21/2017 09:35	**Dilution:**	5000	**File ID:**	8M418568
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methylene chloride	75-09-2	346000		5000	2500	1250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	96.4	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW2-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:44
Collect Date:	03/21/2017 09:35	**Dilution:**	1	**File ID:**	T3.032717.154421
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.63		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0105	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW2-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:06
Collect Date:	03/21/2017 09:35	**Dilution:**	10	**File ID:**	T3.032917.140620
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	77.3		5.00	2.50	1.25
Magnesium, Total	7439-95-4	59.1		10.0	5.00	2.50
Sodium, Total	7440-23-5	239		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW2-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:32
Collect Date:	03/21/2017 09:35	**Dilution:**	20	**File ID:**	T3.033017.113257
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	13.7		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW2-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:37
Collect Date:	03/21/2017 09:35	**Dilution:**	1	**File ID:**	NI.032717.143728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00860		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000652	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0176		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0578		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00252	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0467		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0967		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW2-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:04
Collect Date:	03/21/2017 09:35	**Dilution:**	100	**File ID:**	NI.032917.170426
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.98		0.600	0.300	0.150
Manganese, Total	7439-96-5	3.45		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW2-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:01
Collect Date:	03/21/2017 09:35	**Dilution:**	1	**File ID:**	M7.032717.150101
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW01DW-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 18:27
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	8M418574
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.00		1.00	0.500	0.250

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	4.23		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.20		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	98.8	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	93.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:48
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	T3.032717.154801
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0828	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	64.8		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:51
Collect Date:	03/21/2017 10:35	**Dilution:**	5	**File ID:**	T3.033017.115126
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	0.948	J	1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:10
Collect Date:	03/21/2017 10:35	**Dilution:**	10	**File ID:**	T3.032917.141004
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	20.1		5.00	2.50	1.25
Magnesium, Total	7439-95-4	7.21	J	10.0	5.00	2.50
Sodium, Total	7440-23-5	265		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW01DW-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:40
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	NI.032717.144034
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00576		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.249		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0184		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00121	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00196	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.122		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00467	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000174	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW01DW-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:03
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	M7.032717.150335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000100	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW01SW-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 21:10
Collect Date:	03/21/2017 11:35	**Dilution:**	10	**File ID:**	8M418579
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	6.00	J	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	5.00	U	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	3.67	J	10.0	5.00	2.50

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	1310		10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	3.63	J	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	53.0		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	32.2		10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	94.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:51
Collect Date:	03/21/2017 11:35	**Dilution:**	1	**File ID:**	T3.032717.155144
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	5.44		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:13
Collect Date:	03/21/2017 11:35	**Dilution:**	20	**File ID:**	T3.032917.141352
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	28.0		10.0	5.00	2.50
Magnesium, Total	7439-95-4	19.8	J	20.0	10.0	5.00
Sodium, Total	7440-23-5	97.3		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:55
Collect Date:	03/21/2017 11:35	**Dilution:**	50	**File ID:**	T3.033017.115510
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	49.7		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:43
Collect Date:	03/21/2017 11:35	**Dilution:**	1	**File ID:**	NI.032717.144339
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0169		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00138	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00110	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00308	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000117	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW01SW-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:07
Collect Date:	03/21/2017 11:35	**Dilution:**	10	**File ID:**	NI.032917.170731
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.01		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.639		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW01SW-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:11
Collect Date:	03/21/2017 11:35	**Dilution:**	1	**File ID:**	M7.032717.151111
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 18:57
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	8M418575
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.370	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:55
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	T3.032717.155528
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.222		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.95		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	97.1		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:17
Collect Date:	03/21/2017 13:40	**Dilution:**	20	**File ID:**	T3.032917.141738
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	27.3		10.0	5.00	2.50
Magnesium, Total	7439-95-4	15.1	J	20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 11:58
Collect Date:	03/21/2017 13:40	**Dilution:**	50	**File ID:**	T3.033017.115857
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	93.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:46
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	NI.032717.144644
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00478		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000419	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0478		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00180	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00599		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0665		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000175	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00114	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0232	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:10
Collect Date:	03/21/2017 13:40	**Dilution:**	10	**File ID:**	NI.032917.171037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.526		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.36		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW13-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:13
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	M7.032717.151345
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13FD-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 19:40
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	8M418576
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.401	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13FD-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 15:59
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	T3.032717.155907
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.299		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.93		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	94.5		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13FD-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:21
Collect Date:	03/21/2017 13:40	**Dilution:**	20	**File ID:**	T3.032917.142124
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	28.4		10.0	5.00	2.50
Magnesium, Total	7439-95-4	13.5	J	20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW13FD-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:02
Collect Date:	03/21/2017 13:40	**Dilution:**	50	**File ID:**	T3.033017.120243
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	87.4		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13FD-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:49
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	NI.032717.144950
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00449		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000338	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0519		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00193	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00693		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.000752	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0707		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000113	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00174	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0244	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW13FD-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:13
Collect Date:	03/21/2017 13:40	**Dilution:**	10	**File ID:**	NI.032917.171342
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.512		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.35		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW13FD-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:16
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	M7.032717.151616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	CO2-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 20:10
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	8M418577
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.33	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	85	115	
1,2-Dichloroethane-d4	98.1	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	94.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	CO2F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 16:02
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	T3.032717.160246
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	72.7		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	CO2F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:25
Collect Date:	03/21/2017 14:40	**Dilution:**	10	**File ID:**	T3.032917.142511
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	17.1		5.00	2.50	1.25
Magnesium, Total	7439-95-4	10.6		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	CO2F-032117	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:06
Collect Date:	03/21/2017 14:40	**Dilution:**	10	**File ID:**	T3.033017.120630
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	7.78		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	CO2F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:52
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	NI.032717.145255
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00137	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000345	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000518	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00171	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000133	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0152	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	CO2F-032117	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:23
Collect Date:	03/21/2017 14:40	**Dilution:**	10	**File ID:**	NI.032917.172302
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.874		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.43		0.0400	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-11	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	CO2F-032117	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:18
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	M7.032717.151846
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW16-032217	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607986	**Analyst:**	FJB	**Run Date:**	03/28/2017 22:51
Collect Date:	03/22/2017 08:45	**Dilution:**	2	**File ID:**	8M418597
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.45	J	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	0.797	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	32.6		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	4.44		4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	14.7		2.00	1.00	0.500

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	95.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW16-032217	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG608101	**Analyst:**	TMB	**Run Date:**	03/29/2017 17:52
Collect Date:	03/22/2017 08:45	**Dilution:**	10	**File ID:**	8M418629
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	224		10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	95.5	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 16:06
Collect Date:	03/22/2017 08:45	**Dilution:**	1	**File ID:**	T3.032717.160630
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.164	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.65		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	109		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:28
Collect Date:	03/22/2017 08:45	**Dilution:**	10	**File ID:**	T3.032917.142857
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	22.1		5.00	2.50	1.25
Magnesium, Total	7439-95-4	12.4		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:10
Collect Date:	03/22/2017 08:45	**Dilution:**	50	**File ID:**	T3.033017.121016
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	28.0		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:56
Collect Date:	03/22/2017 08:45	**Dilution:**	1	**File ID:**	NI.032717.145600
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00650		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000689	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00787		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00581		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00135	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0438		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000107	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0206	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:26
Collect Date:	03/22/2017 08:45	**Dilution:**	10	**File ID:**	NI.032917.172608
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.471		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.555		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-13	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW16F-032217	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:21
Collect Date:	03/22/2017 08:45	**Dilution:**	1	**File ID:**	M7.032717.152117
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW19-032217	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 20:40
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	8M418578
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.37		1.00	0.500	0.250

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.71		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	94.7	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/27/2017 10:00
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/27/2017 16:10
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	T3.032717.161013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	36.8		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.61		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/29/2017 10:06
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/29/2017 14:32
Collect Date:	03/22/2017 10:00	**Dilution:**	20	**File ID:**	T3.032917.143242
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	24.2		10.0	5.00	2.50
Magnesium, Total	7439-95-4	10.6	J	20.0	10.0	5.00
Sodium, Total	7440-23-5	96.4		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-032217	**Prep Method:**	3015A	**Prep Date:**	03/27/2017 09:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	03/30/2017 10:37
Workgroup #:	WG607804	**Analyst:**	JYH	**Run Date:**	03/30/2017 12:14
Collect Date:	03/22/2017 10:00	**Dilution:**	50	**File ID:**	T3.033017.121404
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	59.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/27/2017 11:33
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/27/2017 14:59
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	NI.032717.145905
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0186		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00499		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.184		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0315		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0967		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.0530		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.128		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.00108		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.203		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-032217	**Prep Method:**	3015	**Prep Date:**	03/27/2017 07:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	03/29/2017 12:57
Workgroup #:	WG607753	**Analyst:**	JYH	**Run Date:**	03/29/2017 17:29
Collect Date:	03/22/2017 10:00	**Dilution:**	10	**File ID:**	NI.032917.172913
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.790		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.85		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	0.606		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-15	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW19F-032217	**Prep Method:**	7470A	**Prep Date:**	03/27/2017 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	03/27/2017 14:28
Workgroup #:	WG607805	**Analyst:**	LSJ	**Run Date:**	03/27/2017 15:23
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	M7.032717.152348
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000196	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 17:58
Collect Date:	03/22/2017 00:01	**Dilution:**	1	**File ID:**	8M418573
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.56	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	96.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 16:57
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	8M418571
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.46	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.0	85	115	
1,2-Dichloroethane-d4	98.4	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	95.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126FD-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 17:28
Collect Date:	03/21/2017 08:15	**Dilution:**	1	**File ID:**	8M418572
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.07	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	85	115	
1,2-Dichloroethane-d4	99.1	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	95.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW2-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607681	**Analyst:**	JDS	**Run Date:**	03/25/2017 20:35
Collect Date:	03/21/2017 09:35	**Dilution:**	1000	**File ID:**	8M418542
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5000	U	10000	5000	2500
Benzene	71-43-2	250	U	1000	250	125
Bromobenzene	108-86-1	250	U	1000	250	125
Bromochloromethane	74-97-5	400	U	1000	400	200
Bromodichloromethane	75-27-4	500	U	1000	500	250
Bromoform	75-25-2	1000	U	2000	1000	500
Bromomethane	74-83-9	1000	U	2000	1000	500
2-Butanone	78-93-3	5000	U	10000	5000	2500
n-Butylbenzene	104-51-8	500	U	1000	500	250
sec-Butylbenzene	135-98-8	500	U	1000	500	250
tert-Butylbenzene	98-06-6	500	U	1000	500	250
Carbon disulfide	75-15-0	1000	U	2000	1000	500
Carbon tetrachloride	56-23-5	500	U	1000	500	250
Chlorobenzene	108-90-7	181	J	1000	250	125
Chlorodibromomethane	124-48-1	500	U	1000	500	250
Chloroethane	75-00-3	1000	U	2000	1000	500
Chloroform	67-66-3	135	J	1000	250	125
Chloromethane	74-87-3	1000	U	2000	1000	500
2-Chlorotoluene	95-49-8	250	U	1000	250	125
4-Chlorotoluene	106-43-4	500	U	1000	500	250
1,2-Dibromo-3-chloropropane	96-12-8	2000	U	5000	2000	1000
1,2-Dibromoethane	106-93-4	500	U	1000	500	250
Dibromomethane	74-95-3	500	U	1000	500	250
1,2-Dichlorobenzene	95-50-1	250	U	1000	250	125
1,3-Dichlorobenzene	541-73-1	500	U	1000	500	250
1,4-Dichlorobenzene	106-46-7	250	U	1000	250	125
Dichlorodifluoromethane	75-71-8	500	U	1000	500	250
1,1-Dichloroethane	75-34-3	250	U	1000	250	125
1,2-Dichloroethane	107-06-2	500	U	1000	500	250
1,1-Dichloroethene	75-35-4	1000	U	2000	1000	500
cis-1,2-Dichloroethene	156-59-2	38600		1000	500	250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	500	U	1000	500	250
1,2-Dichloropropane	78-87-5	400	U	1000	400	200
1,3-Dichloropropane	142-28-9	400	U	1000	400	200
2,2-Dichloropropane	594-20-7	500	U	1000	500	250
cis-1,3-Dichloropropene	10061-01-5	500	U	1000	500	250
trans-1,3-Dichloropropene	10061-02-6	1000	U	2000	1000	500
1,1-Dichloropropene	563-58-6	500	U	1000	500	250
Ethylbenzene	100-41-4	500	U	1000	500	250
2-Hexanone	591-78-6	5000	U	10000	5000	2500
Hexachlorobutadiene	87-68-3	500	U	1000	500	250
Isopropylbenzene	98-82-8	500	U	1000	500	250
p-Isopropyltoluene	99-87-6	500	U	1000	500	250
4-Methyl-2-pentanone	108-10-1	5000	U	10000	5000	2500
Naphthalene	91-20-3	400	U	1000	400	200
n-Propylbenzene	103-65-1	250	U	1000	250	125
Styrene	100-42-5	250	U	1000	250	125
1,1,1,2-Tetrachloroethane	630-20-6	500	U	1000	500	250
1,1,2,2-Tetrachloroethane	79-34-5	400	U	1000	400	200
Tetrachloroethene	127-18-4	500	U	1000	500	250
Toluene	108-88-3	500	U	1000	500	250
1,2,3-Trichlorobenzene	87-61-6	300	U	1000	300	150
1,2,4-Trichlorobenzene	120-82-1	400	U	1000	400	200
1,1,1-Trichloroethane	71-55-6	500	U	1000	500	250
1,1,2-Trichloroethane	79-00-5	500	U	1000	500	250
Trichloroethene	79-01-6	8720		1000	500	250
Trichlorofluoromethane	75-69-4	500	U	1000	500	250
1,2,3-Trichloropropane	96-18-4	1000	U	2000	1000	500
1,2,4-Trimethylbenzene	95-63-6	500	U	1000	500	250
1,3,5-Trimethylbenzene	108-67-8	500	U	1000	500	250
Vinyl chloride	75-01-4	500	U	1000	500	250
o-Xylene	95-47-6	500	U	1000	500	250
m-,p-Xylene	179601-23-1	1000	U	2000	1000	500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	85	115	
1,2-Dichloroethane-d4	95.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	96.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW2-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 15:28
Collect Date:	03/21/2017 09:35	**Dilution:**	5000	**File ID:**	8M418568
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methylene chloride	75-09-2	346000		5000	2500	1250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	96.4	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW01DW-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 18:27
Collect Date:	03/21/2017 10:35	**Dilution:**	1	**File ID:**	8M418574
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.00		1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	4.23		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.20		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	98.8	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	93.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW01SW-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 21:10
Collect Date:	03/21/2017 11:35	**Dilution:**	10	**File ID:**	8M418579
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	6.00	J	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	5.00	U	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	3.67	J	10.0	5.00	2.50

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	1310		10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	3.63	J	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	53.0		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	32.2		10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	94.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 18:57
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	8M418575
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.370	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13FD-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 19:40
Collect Date:	03/21/2017 13:40	**Dilution:**	1	**File ID:**	8M418576
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.401	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	CO2-032117	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 20:10
Collect Date:	03/21/2017 14:40	**Dilution:**	1	**File ID:**	8M418577
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.33	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	85	115	
1,2-Dichloroethane-d4	98.1	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	94.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW16-032217	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607986	**Analyst:**	FJB	**Run Date:**	03/28/2017 22:51
Collect Date:	03/22/2017 08:45	**Dilution:**	2	**File ID:**	8M418597
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.45	J	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	0.797	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	32.6		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	4.44		4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	14.7		2.00	1.00	0.500

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	95.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW16-032217	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG608101	**Analyst:**	TMB	**Run Date:**	03/29/2017 17:52
Collect Date:	03/22/2017 08:45	**Dilution:**	10	**File ID:**	8M418629
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	224		10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	95.5	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW19-032217	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 20:40
Collect Date:	03/22/2017 10:00	**Dilution:**	1	**File ID:**	8M418578
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.37		1.00	0.500	0.250

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.71		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	94.7	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

Sample #:	L17031339-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	03/21/2017 20:43
Workgroup #:	WG607735	**Analyst:**	TMB	**Run Date:**	03/27/2017 17:58
Collect Date:	03/22/2017 00:01	**Dilution:**	1	**File ID:**	8M418573
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.56	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.4	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	96.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Microbac

Lab Report #: L17031339
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Adriane Steed

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Analyst(s): BNB
Date: 3-28-17
Filter Lot #: 9772550

Agitator Speed 30 ± 2 rpm ☑

Balance ID: BAL020
pH Probe ID: T5
Temp probe ID: ☒ 1025 ☐ 1023

Analyst / Date		Analyst / Date	
BNB 3-28-17		BNB 3-29-17	
Time On	Temp On °C	Time Off	Temp Off °C
1435	22.0	758	22.2

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F	03-1447-01	✓	16	10	1311	F-223	S	100		✓	25.00	500
G	03-1447-02	✓	↓	↓	↓	↓	↓	↓		✓	25.01	500
H												
I												
J												
K												
L												
M												
N												
O												
P												
Q												
R												
S												
NA	03-1448-01	NA	NA	NA	1311	FIL.	W	<0.5	NA	NA	40	40
NA	FBIK-1	NA	NA	NA	↓	F-223	NA	NA	NA	NA	↓	↓

BNB 3-29-17

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: NA

Peer Review By:

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53988

Internal Standard: STD78987 Surrogate Standard: STD78987
CCV: STD79185; STD79330 LCS: STD79186; STD78319 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG594051; WG594142

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M416518	WG594051-01 50ng BFB STD A9/FOO	NA	1	1	STD78995	12/08/16 08:55
8M416519	WG594051-02 5ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 09:19
8M416520	WG594051-03 20ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 09:48
8M416521	WG594051-04 50ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 10:17
8M416522	WG594051-05 100ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 10:47
8M416523	WG594051-06 200ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 11:16
8M416524	WG594051-07 300ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 11:46
8M416525	WG594051-08 400ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 12:16
8M416526	WG594051-09 500ug/L STD A9/FOO	NA	1	1	STD79185	12/08/16 12:45
8M416527	RINSE	NA	1	1		12/08/16 13:14
8M416528	RINSE	NA	1	1		12/08/16 13:43
8M416529	WG594051-10 100ug/L STD A9/FOO	NA	1	1	STD79186	12/08/16 14:12
8M416530	WG594141-01 50ng BFB STD 8260	NA	1	1	STD78995	12/08/16 14:40
8M416531	WG594141-01 50ng BFB STD 8260	NA	1	1	STD78995	12/08/16 14:54
8M416532	WG594141-01 50ng BFB STD 8260	NA	1	1	STD78995	12/08/16 15:17
8M416533	WG594141-02 50ug/L CCV STD 8260	NA	1	1	STD79330	12/08/16 15:44
8M416534	WG594141-02 50ug/L CCV STD 8260	NA	1	1	STD79330	12/08/16 16:15
8M416535	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD78971	12/08/16 16:45
8M416536	WG594142-01 VBLK1208 BLANK STD 826	NA	1	1		12/08/16 17:16
8M416537	WG594142-02 20ug/L LCS STD 8260	NA	1	1	STD79319	12/08/16 17:45
8M416538	L16120424-04 A MS 826-SPE	<2	1	1	STD79319	12/08/16 18:14
8M416539	L16120424-05 A MSD 826-SPE	<2	1	1	STD79319	12/08/16 18:43
8M416540	L16120315-05 B TB 826-SPE	<2	1	1		12/08/16 19:12
8M416541	L16120315-03 B EB 826-SPE	<2	1	1		12/08/16 19:41
8M416542	L16120424-01 A TB 826-SPE	<2	1	1		12/08/16 20:10
8M416543	L16120424-03 A RS 826-SPE	<2	1	1		12/08/16 20:39
8M416544	L16120424-06 A 826-SPE	<2	1	1		12/08/16 21:09
8M416545	L16120424-02 A 826-SPE	<2	1	1		12/08/16 21:40
8M416546	L16120315-01 B 826-SPE	<2	1	1		12/08/16 22:08
8M416547	L16120315-02 B 826-SPE	<2	1	1		12/08/16 22:37
8M416548	L16120315-04 B 826-SPE	<2	1	1		12/08/16 23:06
8M416549	L16120424-07 A 826-SPE	<2	1	1		12/08/16 23:35
8M416550	WG594142-06 20ug/L LCS2 STD 8260	NA	1	1	STD79319	12/09/16 00:04
8M416551	CCV	NA	1	1		12/09/16 00:33

Approved: December 09, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 120816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53988

Internal Standard: STD78987 Surrogate Standard: STD78987
CCV: STD79185; STD79330 LCS: STD79186; STD78319 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG594051; WG594142

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M416552	RINSE	NA	1	1		12/09/16 01:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X			
File ID: 8M416530				
	Tune failed, DNR.			
15	X			
File ID: 8M416531				
	Tune failed, DNR.			
16				
File ID: 8M416532				
	Purged BFB.			
17	X			
File ID: 8M416533				
	DNR. Bromomethane was low.			
19				
File ID: 8M416535				
	Not needed, DNR.			
27	X	10	Over Calibration Range	PCE
File ID: 8M416543				

Approved: December 09, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032117
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54101

Internal Standard: STD80702 Surrogate Standard: STD80702
CCV: STD81040 LCS: STD81038 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607066

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418406	WG607066-01 50ng BFB STD 8260	NA	1	1	STD80989	03/21/17 15:10
8M418407	RINSE	NA	1	1		03/21/17 15:39
8M418408	WG607066-02 0.3ug/L STD 8260	NA	1	1	STD810	03/21/17 16:09
8M418409	WG607066-03 0.4ug/L STD 8260	NA	1	1	STD81040	03/21/17 16:39
8M418410	WG607066-04 1ug/L STD 8260	NA	1	1	STD81040	03/21/17 17:09
8M418411	WG607066-05 2ug/L STD 8260	NA	1	1	STD81040	03/21/17 17:40
8M418412	WG607066-06 5ug/L STD 8260	NA	1	1	STD81040	03/21/17 18:10
8M418413	WG607066-07 20ug/L STD 8260	NA	1	1	STD81040	03/21/17 18:41
8M418414	WG607066-08 50ug/L STD 8260	NA	1	1	STD81040	03/21/17 19:11
8M418415	WG607066-09 100ug/L STD 8260	NA	1	1	STD81040	03/21/17 19:42
8M418416	WG607066-10 200ug/L STD 8260	NA	1	1	STD81040	03/21/17 20:12
8M418417	WG607066-11 300ug/L STD 8260	NA	1	1	STD81040	03/21/17 20:43
8M418418	RINSE	NA	1	1		03/21/17 21:13
8M418419	RINSE	NA	1	1		03/21/17 21:44
8M418420	WG607066-12 50ug/L ALT SRC STD 8260	NA	1	1	STD81038	03/21/17 22:14
8M418421	RINSE	NA	1	1		03/21/17 22:45
8M418422	RINSE	NA	1	1		03/21/17 23:15
8M418423	RINSE	NA	1	1		03/21/17 23:45

Approved: March 24, 2017

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032517
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54104

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607681

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418524	WG607680-01 50ng BFB STD 8260	NA	1	1	STD80989	03/25/17 11:42
8M418525	WG607680-02 50ug/L CCV STD 8260	NA	1	1	STD81106	03/25/17 12:05
8M418526	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD80642	03/25/17 12:35
8M418527	WG607681-01 BLANK STD 8260	NA	1	1		03/25/17 13:06
8M418528	WG607681-02 20ug/L LCS STD 8260	NA	1	1	STD81038	03/25/17 13:36
8M418529	WG607681-03 20ug/L LCS STD 8260	NA	1	1	STD81038	03/25/17 14:05
8M418530	L17031156-13 A TB 826-SPE	<2	1	1		03/25/17 14:35
8M418531	L17031156-01 A 826-SPE	<2	1	1		03/25/17 15:05
8M418532	L17031156-02 A 826-SPE	<2	1	1		03/25/17 15:36
8M418533	L17031156-03 A 826-SPE	<2	1	1		03/25/17 16:05
8M418534	L17031156-04 A 826-SPE	<2	1	1		03/25/17 16:35
8M418535	L17031339-01 A 826-LOW	<2	1	1		03/25/17 17:06
8M418536	L17031339-03 A 826-LOW	<2	1	1		03/25/17 17:36
8M418537	L17031156-05 A 826-SPE	<2	1	1		03/25/17 18:06
8M418538	L17031156-08 A 826-SPE	<2	1	1		03/25/17 18:35
8M418539	L17031156-09 A 826-SPE	<2	1	1		03/25/17 19:04
8M418540	L17031156-11 A 826-SPE	<2	1	1		03/25/17 19:34
8M418541	L17031156-12 A 826-SPE	<2	1	1		03/25/17 20:04
8M418542	L17031339-05 A 1000X 826-LOW	<2	1	1000		03/25/17 20:35
8M418543	L17031156-10 A 2X 826-SPE	<2	1	2		03/25/17 21:04
8M418544	L17031156-06 A 20X AF 826-SPE	7	1	20		03/25/17 21:34
8M418545	L17031156-07 A 25X AF 826-SPE	7	1	25		03/25/17 22:04
8M418546	RINSE	NA	2	1		03/25/17 22:34
8M418547	WG607681-04 BLANK STD 624	NA	2	1		03/25/17 23:04
8M418548	L17031333-02 B D1 10X 624-SPE	7	2	10		03/25/17 23:34
8M418549	L17031379-03 B D1 25X 624-SPE	7	2	25		03/26/17 00:04
8M418550	L17031331-01 B D1 20X 624-SPE	7	2	20		03/26/17 00:34
8M418551	L17031379-05 B D1 200X 624-SPE	7	2	200		03/26/17 01:03
8M418552	CCV	NA	1	1		03/26/17 01:33
8M418553	RINSE	NA	1	1		03/26/17 02:03
8M418554	RINSE	NA	1	1		03/26/17 02:33
8M418555	AF BLANK	NA	1	1		03/26/17 03:02

Approved: March 27, 2017
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032517
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 54104

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607681

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M418526				
	Not needed. DNR.			
12	X	1	Carry-over contamination	
File ID: 8M418535				
	Possible CB carry over.			
13	X	1	Carry-over contamination	
File ID: 8M418536				
	Possible CB carry over.			
19	X	5000	Over Calibration Range	MECL
File ID: 8M418542				
	Possible CB carry over.			
20	X	1	Analyzed too dilute	
File ID: 8M418543				
	DNR.			

Approved: March 27, 2017
Sarah Vandenberg

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032717
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: STD81038

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups:

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418556	WG607733-01 50ng BFB STD 8260	NA	1	1	STD80989	03/27/17 09:29
8M418557	WG607733-02 50ug/L CCV STD 8260	NA	1	1	STD81106	03/27/17 09:54
8M418558	WG607733-02 50ug/L CCV STD 8260	NA	1	1	STD81106	03/27/17 10:28
8M418559	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD80642	03/27/17 10:59
8M418560	WG607735-01 VBLK0327 BLANK STD 826	NA	1	1		03/27/17 11:29
8M418561	L17030534-01 A 826-REF-BLK	<2	1	1		03/27/17 11:58
8M418562	L17030534-02 A 826-REF-BLK	<2	1	1		03/27/17 12:28
8M418563	L17030534-03 A 826-REF-BLK	<2	1	1		03/27/17 12:58
8M418564	L17030534-04 A 826-REF-BLK	<2	1	1		03/27/17 13:28
8M418565	L17030534-05 A 826-REF-BLK	<2	1	1		03/27/17 13:59
8M418566	WG607735-02 20ug/L LCS STD 8260	NA	1	1	STD81038	03/27/17 14:28
8M418567	WG607735-03 20ug/L LCS2 STD 8260	NA	1	1	STD81038	03/27/17 14:58
8M418568	L17031339-05 B 5000X 826-LOW D1	<2	1	5000		03/27/17 15:28
8M418569	L17031156-10 B 826-SPE	<2	1	1		03/27/17 15:58
8M418570	L17031156-09 B 10X 826-SPE D1	<2	1	10		03/27/17 16:27
8M418571	L17031339-01 B 826-LOW	<2	1	1		03/27/17 16:57
8M418572	L17031339-03 B 826-LOW	<2	1	1		03/27/17 17:28
8M418573	L17031339-16 B TB 826-LOW	<2	1	1		03/27/17 17:58
8M418574	L17031339-06 C 826-LOW	<2	1	1		03/27/17 18:27
8M418575	L17031339-08 A 826-LOW	<2	1	1		03/27/17 18:57
8M418576	L17031339-09 A 826-LOW	<2	1	1		03/27/17 19:40
8M418577	L17031339-10 A 826-LOW	<2	1	1		03/27/17 20:10
8M418578	L17031339-14 A 826-LOW	<2	1	1		03/27/17 20:40
8M418579	L17031339-07 A 10X 826-LOW	<2	1	10		03/27/17 21:10
8M418580	L17031339-12 B 2X 826-LOW 00	<2	1	2		03/27/17 21:40
8M418581	CCV	NA	1	1		03/27/17 22:10
8M418582	RINSE	NA	1	1		03/27/17 22:40
8M418583	RINSE	NA	1	1		03/27/17 23:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
25	X		Missed Tune	
File ID: 8M418580				

Approved: March 28, 2017
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032717
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: STD81038

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups:

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
L17031339-12				

Approved: March 28, 2017
Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032817
Analyst1: FJB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID:

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: STD81038

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607986

Comments: Rerun all of the 1355's, 1,4-dioxane was low in the lcs.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418584	WG607985-01 BFB 50ng 8260	NA	1	1	STD80989	03/28/17 16:26
8M418585	WG607985-02 50ug/L CCV 8260	NA	1	1	STD81106	03/28/17 16:49
8M418586	WG607985-01 BFB 50ng 8260	NA	1	1	STD81106	03/28/17 17:24
8M418587	WG607985-02 50ug/L CCV 8260	NA	1	1	STD81106	03/28/17 17:47
8M418588	WG607985-02 50ug/L CCV 8260	NA	1	1	STD81106	03/28/17 18:19
8M418589	WG607XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	03/28/17 18:50
8M418590	WG607986-01 BLANK 8260	NA	1	1		03/28/17 19:20
8M418591	WG607986-02 20ug/L LCS 8260	NA	1	1	STD81038	03/28/17 19:50
8M418592	L17031355-03 EB A 826-SPE	<2	1	1		03/28/17 20:20
8M418593	L17031355-04 EB A 826-SPE	<2	1	1		03/28/17 20:50
8M418594	L17031268-07 RB A 826-SPE	<2	1	1		03/28/17 21:21
8M418595	L17031268-06 TB A 826-SPE	<2	1	1		03/28/17 21:51
8M418596	L17031355-08 TB A 826-SPE	<2	1	1		03/28/17 22:21
8M418597	L17031339-12 2X C 826-SPE 00	<2	1	2		03/28/17 22:51
8M418598	L17031355-06 MS A 826-SPE	<2	1	1	STD81038	03/28/17 23:22
8M418599	L17031355-07 MSD A 826-SPE	<2	1	1	STD81038	03/28/17 23:52
8M418600	L17031355-05 REF A 826-SPE	<2	1	1		03/29/17 00:23
8M418601	L17031355-01 A 826-SPE	<2	1	1		03/29/17 00:53
8M418602	L17031355-02 A 826-SPE	<2	1	1		03/29/17 01:23
8M418603	L17031268-05 A 826-SPE	<2	1	1		03/29/17 01:54
8M418604	L17031269-01 A 826-SPE	<2	1	1		03/29/17 02:24
8M418605	L17031269-03 A 826-SPE	<2	1	1		03/29/17 02:54
8M418606	L17031267-01 A 826-SPE	<2	1	1		03/29/17 03:24
8M418607	L17031267-03 A 826-SPE	<2	1	1		03/29/17 03:54
8M418608	L17031267-05 A 826-SPE	<2	1	1		03/29/17 04:24
8M418609	L17031267-07 A 826-SPE	<2	1	1		03/29/17 04:54
8M418610	L17031268-02 5X A 826-SPE	<2	1	5		03/29/17 05:23
8M418611	CCV	NA	1	1		03/29/17 05:53
8M418612	RINSE	NA	1	1		03/29/17 06:23
8M418613	RINSE	NA	1	1		03/29/17 06:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: March 31, 2017

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032817
Analyst1: FJB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID:

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: STD81038

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607986

Comments: Rerun all of the 1355's, 1,4-dioxane was low in the lcs.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M418585				
Vc was high, DNR.				
4	X			
File ID: 8M418587				
VC was high, DNR.				
6				
File ID: 8M418589				
Not needed, DNR.				
14	X	10	Over Calibration Range	TCE
File ID: 8M418597				
17	X	5	Over Calibration Range	1,4-DIOXANE
File ID: 8M418600				
20	X	200	Over Calibration Range	PCE, TCE
File ID: 8M418603				
21	X	50	Over Calibration Range	PCE
File ID: 8M418604				
22	X	10	Over Calibration Range	PCE
File ID: 8M418605				
23	X	1	Carry-over contamination	
File ID: 8M418606				
Possible PCE carry over, DNR.				
24	X	50	Over Calibration Range	PCE
File ID: 8M418607				
25	X	100	Over Calibration Range	PCE
File ID: 8M418608				
26	X	100	Over Calibration Range	PCE
File ID: 8M418609				

Approved: March 31, 2017

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032817
Analyst1: FJB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID:

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: STD81038

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG607986

Comments: Rerun all of the 1355's, 1,4-dioxane was low in the lcs.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
27	X	20	Over Calibration Range	PCE
File ID: 8M418610				

Approved: March 31, 2017



Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032917
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID: 54107

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG608101

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418614	RINSE W/MEOH	NA	1	1		03/29/17 10:23
8M418615	RINSE	NA	1	1		03/29/17 10:54
8M418616	RINSE	NA	1	1		03/29/17 11:24
8M418617	RINSE W/MEOH	NA	1	1		03/29/17 12:02
8M418618	RINSE	NA	1	1		03/29/17 12:31
8M418619	RINSE	NA	1	1		03/29/17 13:02
8M418620	WG608100-01 50ng BFB STD 8260	NA	1	1	STD80989	03/29/17 13:37
8M418621	WG608100-01 50ng BFB STD 8260	NA	1	1	STD80989	03/29/17 13:55
8M418622	WG608100-01 50ng BFB STD 8260	NA	1	1	STD80989	03/29/17 14:15
8M418623	WG608100-02 50ug/L CCV STD 8260	NA	1	1	STD81106	03/29/17 14:41
8M418624	WG608100-02 50ug/L CCV STD 8260	NA	1	1	STD81106	03/29/17 15:10
8M418625	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD80642	03/29/17 15:41
8M418626	WG608101-01 VBLK0329 BLANK STD 826	NA	1	1		03/29/17 16:21
8M418627	WG608101-02 20ug/L LCS STD 8260	NA	1	1	STD81038	03/29/17 16:52
8M418628	WG608101-03 20ug/L LCS2 STD 8260	NA	1	1	STD81038	03/29/17 17:22
8M418629	L17031339-12 C 10X 826-LOW D1	<2	1	10		03/29/17 17:52
8M418630	L17031267-01 B 826-SPE	<2	1	1		03/29/17 18:23
8M418631	L17031441-03 TB A 826-SPE CT1	<2	1	1		03/29/17 18:52
8M418632	L17031441-02 A 826-SPE CT1	<2	1	1		03/29/17 19:22
8M418633	L17031269-01 C 50X 826-SPE D1	<2	1	50		03/29/17 19:53
8M418634	L17031269-03 B 10X 826-SPE D1	<2	1	10		03/29/17 20:24
8M418635	L17031447-01 A 10X 826-TC	NA	17	10		03/29/17 20:55
8M418636	L17031447-02 A 10X 826-TC	NA	17	10		03/29/17 21:25
8M418637	L17031448-01 A 10X 826-TC	NA	17	10		03/29/17 21:55
8M418638	L17031268-02 B 20X 826-SPE D1	<2	1	20		03/29/17 22:26
8M418639	L17031268-05 B 200X 826-SPE D1	<2	1	200		03/29/17 22:56
8M418640	L17031267-03 B 50X 826-SPE D1	<2	1	50		03/29/17 23:26
8M418641	L17031267-05 B 100X 826-SPE D1	<2	1	100		03/29/17 23:56
8M418642	L17031267-07 B 100X 826-SPE D1	<2	1	100		03/30/17 00:26
8M418643	L17031267-09 A 826-SPE	<2	1	1		03/30/17 00:56
8M418644	L17031267-11 A 826-SPE	<2	1	1		03/30/17 01:26
8M418645	L17031267-13 A 826-SPE	<2	1	1		03/30/17 01:56
8M418646	L17031267-15 A 826-SPE	<2	1	1		03/30/17 02:25
8M418647	CCV	NA	1	1		03/30/17 02:55

Approved: March 31, 2017
Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 032917
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 24/0
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID: 54107

Internal Standard: STD80906 Surrogate Standard: STD80906
CCV: STD81106 LCS: STD81038 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG608101

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M418648	RINSE	NA	1	1		03/30/17 03:25
8M418649	RINSE	NA	1	1		03/30/17 03:54
8M418650	RINSE	NA	1	1		03/30/17 04:24
8M418651	RINSE	NA	1	1		03/30/17 04:53
8M418652	WG607864-01 A FBLK 10X 826-TC	NA	17	10		03/30/17 05:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X			
File ID: 8M418620				
Tune failed, DNR.				
8	X			
File ID: 8M418621				
Tune failed, DNR. Changed the septa.				
10	X			
File ID: 8M418623				
Vc was high, DNR.				
12				
File ID: 8M418625				
Not needed, DNR.				
24	X	50	Over Calibration Range	CB
File ID: 8M418637				
30	X	50	Over Calibration Range	PCE
File ID: 8M418643				
31	X	25	Over Calibration Range	PCE
File ID: 8M418644				
32	X	10	Over Calibration Range	PCE
File ID: 8M418645				
33	X	25	Over Calibration Range	PCE
File ID: 8M418646				
Also missed tune, DNR.				

Approved: March 31, 2017
Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 08-DEC-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 79117
Analytical Workgroups: WG594051; WG594142

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-DEC-2016
Tiffany Bailey

Secondary Reviewer:
09-DEC-2016
Wade D

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-09-2016 15:20:50

Microbac Laboratories Inc.

Data Checklist

Date: 21-MAR-2017
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 81123
Analytical Workgroups: WG607066

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAR-2017
Tiffany Bailey

Secondary Reviewer:
24-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2017 16:23:54

Microbac Laboratories Inc.

Data Checklist

Date: 25-MAR-2017
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 81185
Analytical Workgroups: WG607681

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-MAR-2017
Tiffany Bailey

Secondary Reviewer:
27-MAR-2017
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-27-2017 16:10:06

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAR-2017
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 81203
Analytical Workgroups: WG607735

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-MAR-2017

Secondary Reviewer:
28-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-28-2017 15:09:58

Microbac Laboratories Inc.

Data Checklist

Date: 28-MAR-2017
Analyst: FJB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 81225
Analytical Workgroups: WG607986

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-MAR-2017
Tiffany Bailey

Secondary Reviewer:
31-MAR-2017

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-31-2017 13:06:13

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAR-2017
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 81249
Analytical Workgroups: WG608101

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-MAR-2017
Tiffany Bailey

Secondary Reviewer:
31-MAR-2017
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-31-2017 11:06:31

Microbac

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B AAB#: WG607681

Login Number: L17031339

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW2-032117	05	03/21/17					03/25/2017	4.5	14		03/25/17	4.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5218348
Report generated 03/31/2017 10:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B **AAB#:** WG607735

Login Number: L17031339

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126-032117	01	03/21/17					03/27/2017	6.4	14		03/27/17	6.4	14	
126FD-032117	03	03/21/17					03/27/2017	6.4	14		03/27/17	6.4	14	
MW2-032117	05	03/21/17					03/27/2017	6.2	14		03/27/17	6.2	14	
18CPTMW01DW-032117	06	03/21/17					03/27/2017	6.3	14		03/27/17	6.3	14	
18CPTMW01SW-032117	07	03/21/17					03/27/2017	6.4	14		03/27/17	6.4	14	
MW13-032117	08	03/21/17					03/27/2017	6.2	14		03/27/17	6.2	14	
MW13FD-032117	09	03/21/17					03/27/2017	6.3	14		03/27/17	6.3	14	
CO2-032117	10	03/21/17					03/27/2017	6.2	14		03/27/17	6.2	14	
MW19-032217	14	03/22/17					03/27/2017	5.4	14		03/27/17	5.4	14	
TRIP BLANK	16	03/22/17					03/27/2017	5.7	14		03/27/17	5.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5218348
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B AAB#: WG607986

Login Number: L17031339

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16-032217	12	03/22/17					03/28/2017	6.6	14		03/28/17	6.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5218348
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B AAB#: WG608101

Login Number: L17031339

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16-032217	12	03/22/17					03/29/2017	7.4	14		03/29/17	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 5218348
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031339
Instrument Id: HPMS8
Workgroup (AAB#): WG607735

Method: 8260
CAL ID: HPMS8 - 21-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031339-01	1.00	01	98.4	96.0	95.3	99.5
L17031339-03	1.00	01	99.1	95.8	95.0	100
L17031339-05	5000	DL02	96.2	97.1	96.4	100
L17031339-06	1.00	01	98.8	95.6	93.2	101
L17031339-07	10.0	DL01	101	96.6	94.2	99.3
L17031339-08	1.00	01	99.5	95.6	93.8	100
L17031339-09	1.00	01	98.2	95.7	93.7	100
L17031339-10	1.00	01	98.1	95.7	94.9	99.6
L17031339-14	1.00	01	99.9	97.3	94.7	99.7
L17031339-16	1.00	01	99.0	96.4	96.1	101
WG607735-01	1.00	01	97.7	96.4	96.8	99.4
WG607735-02	1.00	01	96.1	97.7	90.3	98.4
WG607735-03	1.00	01	93.5	96.3	92.6	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5218354
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031339
Instrument Id: HPMS8
Workgroup (AAB#): WG608101

Method: 8260
CAL ID: HPMS8-21-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031339-12	10.0	DL02	94.9	94.7	95.5	100
WG608101-01	1.00	01	94.3	95.0	95.6	99.3
WG608101-02	1.00	01	97.1	97.2	91.5	98.7
WG608101-03	1.00	01	95.5	98.4	90.8	98.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5218354
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031339
Instrument Id: HPMS8
Workgroup (AAB#): WG607986

Method: 8260
CAL ID: HPMS8-21-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031339-12	2.00	DL01	98.2	96.2	95.5	99.3
WG607986-01	1.00	01	96.7	96.3	96.3	99.6
WG607986-02	1.00	01	91.8	97.8	92.1	98.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5218354
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L17031339
Instrument Id: HPMS8
Workgroup (AAB#): WG607681

Method: 8260
CAL ID: HPMS8-21-MAR-17
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L17031339-05	1000	DL01	95.2	96.8	96.6	100
WG607681-01	1.00	01	92.8	94.7	97.3	102
WG607681-02	1.00	01	92.3	96.2	94.0	99.9
WG607681-03	1.00	01	92.5	96.9	93.1	99.2
WG607681-04	1.00	01	97.1	93.8	95.8	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 5218354
Report generated: 03/31/2017 10:48

METHOD BLANK SUMMARY

Login Number:	L17031339	Work Group:	WG607681
Blank File ID:	8M418527	Blank Sample ID:	WG607681-01
Prep Date:	03/25/17 13:06	Instrument ID:	HPMS8
Analyzed Date:	03/25/17 13:06	Method:	8260B
Analyst:	JDS		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607681-02	8M418528	03/25/17 13:36	01
LCS2	WG607681-03	8M418529	03/25/17 14:05	01
MW2-032117	L17031339-05	8M418542	03/25/17 20:35	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5220675
Report generated 03/31/2017 10:48

METHOD BLANK SUMMARY

Login Number: L17031339
Blank File ID: 8M418560
Prep Date: 03/27/17 11:29
Analyzed Date: 03/27/17 11:29
Analyst: TMB

Work Group: WG607735
Blank Sample ID: WG607735-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607735-02	8M418566	03/27/17 14:28	01
LCS2	WG607735-03	8M418567	03/27/17 14:58	01
MW2-032117	L17031339-05	8M418568	03/27/17 15:28	DL02
126-032117	L17031339-01	8M418571	03/27/17 16:57	01
126FD-032117	L17031339-03	8M418572	03/27/17 17:28	01
TRIP BLANK	L17031339-16	8M418573	03/27/17 17:58	01
18CPTMW01DW-032117	L17031339-06	8M418574	03/27/17 18:27	01
MW13-032117	L17031339-08	8M418575	03/27/17 18:57	01
MW13FD-032117	L17031339-09	8M418576	03/27/17 19:40	01
CO2-032117	L17031339-10	8M418577	03/27/17 20:10	01
MW19-032217	L17031339-14	8M418578	03/27/17 20:40	01
18CPTMW01SW-032117	L17031339-07	8M418579	03/27/17 21:10	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5220675
Report generated 03/31/2017 10:48

METHOD BLANK SUMMARY

Login Number:	L17031339	**Work Group:**	WG607986
Blank File ID:	8M418590	**Blank Sample ID:**	WG607986-01
Prep Date:	03/28/17 19:20	**Instrument ID:**	HPMS8
Analyzed Date:	03/28/17 19:20	**Method:**	8260B
Analyst:	FJB		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG607986-02	8M418591	03/28/17 19:50	01
MW16-032217	L17031339-12	8M418597	03/28/17 22:51	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 5220675
Report generated 03/31/2017 10:48

METHOD BLANK SUMMARY

Login Number:	L17031339	Work Group:	WG608101
Blank File ID:	8M418626	Blank Sample ID:	WG608101-01
Prep Date:	03/29/17 16:21	Instrument ID:	HPMS8
Analyzed Date:	03/29/17 16:21	Method:	8260B
Analyst:	TMB		

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG608101-02	8M418627	03/29/17 16:52	01
LCS2	WG608101-03	8M418628	03/29/17 17:22	01
MW16-032217	L17031339-12	8M418629	03/29/17 17:52	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 5220675
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/25/17 13:06 Sample ID: WG607681-01
Instrument ID: HPMS8 Run Date: 03/25/17 13:06 Prep Method: 5030B/5030C/503
File ID: 8M418527 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG607681 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.435	1	J
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 5218349
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/25/17 13:06 Sample ID: WG607681-01
Instrument ID: HPMS8 Run Date: 03/25/17 13:06 Prep Method: 5030B/5030C/503
File ID: 8M418527 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG607681 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits			Qualifier
Dibromofluoromethane	94.7	85	-	115	PASS
1,2-Dichloroethane-d4	92.8	70	-	120	PASS
Toluene-d8	102	85	-	120	PASS
4-Bromofluorobenzene	97.3	75	-	120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5218349
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/27/17 11:29 Sample ID: WG607735-01
Instrument ID: HPMS8 Run Date: 03/27/17 11:29 Prep Method: 5030B/5030C/503
File ID: 8M418560 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG607735 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/27/17 11:29 Sample ID: WG607735-01
Instrument ID: HPMS8 Run Date: 03/27/17 11:29 Prep Method: 5030B/5030C/503
File ID: 8M418560 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG607735 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.4	85 - 115	PASS
1,2-Dichloroethane-d4	97.7	70 - 120	PASS
Toluene-d8	99.4	85 - 120	PASS
4-Bromofluorobenzene	96.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5218349
31-MAR-2017 10:48

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number:L17031339 Prep Date:03/28/17 19:20 Sample ID:WG607986-01
Instrument ID:HPMS8 Run Date:03/28/17 19:20 Prep Method:5030B/5030C/503
File ID:8M418590 Analyst:FJB Method:8260B
Workgroup (AAB#):WG607986 Matrix:Water Units:ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 5218349
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/28/17 19:20 Sample ID: WG607986-01
Instrument ID: HPMS8 Run Date: 03/28/17 19:20 Prep Method: 5030B/5030C/503
File ID: 8M418590 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG607986 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits			Qualifier
Dibromofluoromethane	96.3	85	-	115	PASS
1,2-Dichloroethane-d4	96.7	70	-	120	PASS
Toluene-d8	99.6	85	-	120	PASS
4-Bromofluorobenzene	96.3	75	-	120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5218349
31-MAR-2017 10:48

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L17031339 Prep Date: 03/29/17 16:21 Sample ID: WG608101-01
Instrument ID: HPMS8 Run Date: 03/29/17 16:21 Prep Method: 5030B/5030C/503
File ID: 8M418626 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG608101 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-21-MAR-17

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Trichloroethene	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.0	85 - 115	PASS
1,2-Dichloroethane-d4	94.3	70 - 120	PASS
Toluene-d8	99.3	85 - 120	PASS
4-Bromofluorobenzene	95.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 5218349
31-MAR-2017 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Run Date: 03/28/2017 Sample ID: WG607986-02
Instrument ID: HPMS8 Run Time: 19:50 Prep Method: 5030B/5030C/503
File ID: 8M418591 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG607986 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD81038 Cal ID: HPMS8-21-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	11.2	56.2	40 - 140	
Benzene	20.0	20.3	101	80 - 120	
Bromobenzene	20.0	18.1	90.7	75 - 125	
Bromochloromethane	20.0	19.5	97.4	65 - 130	
Bromodichloromethane	20.0	19.7	98.3	75 - 120	
Bromoform	20.0	17.9	89.3	70 - 130	
Bromomethane	20.0	17.5	87.4	30 - 145	
2-Butanone	20.0	12.2	61.2	30 - 150	
n-Butylbenzene	20.0	18.0	90.1	70 - 135	
sec-Butylbenzene	20.0	19.2	95.8	70 - 125	
tert-Butylbenzene	20.0	18.0	89.8	70 - 130	
Carbon disulfide	20.0	17.0	85.1	35 - 160	
Carbon tetrachloride	20.0	21.8	109	65 - 140	
Chlorobenzene	20.0	18.6	93.2	80 - 120	
Chlorodibromomethane	20.0	18.2	91.1	60 - 135	
Chloroethane	20.0	19.8	98.9	60 - 135	
Chloroform	20.0	19.1	95.7	65 - 135	
Chloromethane	20.0	21.9	110	40 - 125	
2-Chlorotoluene	20.0	18.7	93.7	75 - 125	
4-Chlorotoluene	20.0	18.6	92.9	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	14.6	73.2	50 - 130	
1,2-Dibromoethane	20.0	17.8	89.1	80 - 120	
Dibromomethane	20.0	20.0	100	75 - 125	
1,2-Dichlorobenzene	20.0	18.3	91.5	70 - 120	
1,3-Dichlorobenzene	20.0	18.2	90.8	75 - 125	
1,4-Dichlorobenzene	20.0	18.1	90.6	75 - 125	
Dichlorodifluoromethane	20.0	19.5	97.4	30 - 155	
1,1-Dichloroethane	20.0	19.8	99.1	70 - 135	
1,2-Dichloroethane	20.0	19.0	94.8	70 - 130	
1,1-Dichloroethene	20.0	19.8	99.0	70 - 130	
cis-1,2-Dichloroethene	20.0	19.7	98.7	70 - 125	
trans-1,2-Dichloroethene	20.0	19.5	97.4	60 - 140	
1,2-Dichloropropane	20.0	19.7	98.3	75 - 125	
1,3-Dichloropropane	20.0	18.9	94.5	75 - 125	
2,2-Dichloropropane	20.0	20.5	103	70 - 135	
cis-1,3-Dichloropropene	20.0	20.4	102	70 - 130	
trans-1,3-Dichloropropene	20.0	18.4	92.0	55 - 140	
1,1-Dichloropropene	20.0	20.4	102	75 - 130	
Ethylbenzene	20.0	19.3	96.5	75 - 125	
2-Hexanone	20.0	14.1	70.5	55 - 130	
Hexachlorobutadiene	20.0	15.6	77.9	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Run Date: 03/28/2017 Sample ID: WG607986-02
Instrument ID: HPMS8 Run Time: 19:50 Prep Method: 5030B/5030C/503
File ID: 8M418591 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG607986 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD81038 Cal ID: HPMS8-21-MAR-17

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.7	98.6	75 - 125	
p-Isopropyltoluene	20.0	19.3	96.6	75 - 130	
4-Methyl-2-pentanone	20.0	15.5	77.4	60 - 135	
Methylene chloride	20.0	19.0	94.8	55 - 140	
Naphthalene	20.0	14.3	71.5	55 - 140	
n-Propylbenzene	20.0	19.1	95.6	70 - 130	
Styrene	20.0	19.6	98.2	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	17.8	88.9	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.3	65 - 130	
Tetrachloroethene	20.0	19.1	95.6	45 - 150	
Toluene	20.0	20.0	100	75 - 120	
1,2,3-Trichlorobenzene	20.0	15.4	76.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	15.6	77.8	65 - 135	
1,1,1-Trichloroethane	20.0	21.3	106	65 - 130	
1,1,2-Trichloroethane	20.0	18.4	92.1	75 - 125	
Trichlorofluoromethane	20.0	19.4	96.8	60 - 145	
1,2,3-Trichloropropane	20.0	17.5	87.3	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.4	96.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.2	96.0	75 - 130	
Vinyl chloride	20.0	24.7	124	50 - 145	
o-Xylene	20.0	18.9	94.3	80 - 120	
m-,p-Xylene	40.0	39.4	98.6	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.8	85 - 115	PASS
1,2-Dichloroethane-d4	91.8	70 - 120	PASS
Toluene-d8	98.7	85 - 120	PASS
4-Bromofluorobenzene	92.1	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 5221836
Report generated: 03/29/2017 10:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG607681 Units: ug/L
QC Key: DOD4 Lot #: STD81038

Sample ID: WG607681-02 LCS File ID: 8M418528 Run Date: 03/25/2017 13:36
Sample ID: WG607681-03 LCS2 File ID: 8M418529 Run Date: 03/25/2017 14:05

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	17.8	89.0	20.0	17.7	88.7	0.277	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.4	102	20.0	20.4	102	0.299	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.6	97.8	20.0	19.5	97.7	0.106	65 - 130	30	
1,1,2-Trichloroethane	20.0	18.9	94.7	20.0	19.0	95.2	0.524	75 - 125	30	
1,1-Dichloroethane	20.0	19.3	96.5	20.0	19.2	96.0	0.516	70 - 135	30	
1,1-Dichloroethene	20.0	19.4	96.9	20.0	19.3	96.7	0.210	70 - 130	30	
1,1-Dichloropropene	20.0	19.9	99.3	20.0	19.7	98.6	0.677	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	17.3	86.5	20.0	17.1	85.3	1.41	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.4	96.9	20.0	19.2	96.0	0.955	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	17.3	86.6	20.0	17.2	85.9	0.839	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.4	97.0	20.0	19.0	95.2	1.88	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.0	89.9	20.0	17.9	89.7	0.172	50 - 130	30	
1,2-Dibromoethane	20.0	18.8	94.2	20.0	19.1	95.4	1.30	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.7	93.4	20.0	18.6	93.2	0.140	70 - 120	30	
1,2-Dichloroethane	20.0	18.8	94.2	20.0	18.9	94.6	0.453	70 - 130	30	
1,2-Dichloropropane	20.0	19.3	96.5	20.0	19.2	95.9	0.577	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.3	96.3	20.0	19.1	95.5	0.818	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.5	92.3	20.0	18.4	92.2	0.0926	75 - 125	30	
1,3-Dichloropropane	20.0	19.5	97.3	20.0	19.5	97.5	0.266	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.6	93.2	20.0	18.4	92.1	1.13	75 - 125	30	
2,2-Dichloropropane	20.0	20.4	102	20.0	20.4	102	0.0686	70 - 135	30	
2-Butanone	20.0	17.5	87.7	20.0	17.6	87.8	0.0994	30 - 150	30	
2-Chlorotoluene	20.0	19.0	95.1	20.0	18.8	94.0	1.10	75 - 125	30	
2-Hexanone	20.0	19.3	96.6	20.0	18.6	93.1	3.71	55 - 130	30	
4-Chlorotoluene	20.0	19.0	94.8	20.0	18.5	92.4	2.57	75 - 130	30	
4-Methyl-2-pentanone	20.0	17.4	86.9	20.0	17.9	89.4	2.90	60 - 135	30	
Acetone	20.0	17.7	88.3	20.0	17.7	88.7	0.535	40 - 140	30	
Benzene	20.0	19.7	98.6	20.0	19.7	98.7	0.139	80 - 120	30	
Bromobenzene	20.0	18.6	92.8	20.0	18.4	91.9	0.900	75 - 125	30	
Bromochloromethane	20.0	19.1	95.6	20.0	19.2	96.2	0.664	65 - 130	30	
Bromodichloromethane	20.0	19.4	96.8	20.0	19.5	97.6	0.890	75 - 120	30	
Bromoform	20.0	18.8	94.0	20.0	19.2	95.8	1.90	70 - 130	30	
Bromomethane	20.0	18.8	93.8	20.0	19.1	95.5	1.75	30 - 145	30	
Carbon disulfide	20.0	16.9	84.4	20.0	16.9	84.5	0.182	35 - 160	30	
Carbon tetrachloride	20.0	20.9	104	20.0	20.9	104	0.0055	65 - 140	30	
Chlorobenzene	20.0	18.9	94.6	20.0	18.7	93.4	1.28	80 - 120	30	
Chloroethane	20.0	20.0	100	20.0	20.4	102	1.69	60 - 135	30	
Chloroform	20.0	18.6	92.8	20.0	18.5	92.6	0.200	65 - 135	30	
Chloromethane	20.0	21.2	106	20.0	20.6	103	2.98	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.6	97.9	20.0	19.8	99.0	1.10	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG607681 Units: ug/L
QC Key: DOD4 Lot #: STD81038

Sample ID: WG607681-02 LCS File ID: 8M418528 Run Date: 03/25/2017 13:36
Sample ID: WG607681-03 LCS2 File ID: 8M418529 Run Date: 03/25/2017 14:05

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	20.2	101	20.0	20.4	102	0.786	70 - 130	30	
Chlorodibromomethane	20.0	18.6	93.0	20.0	18.9	94.6	1.77	60 - 135	30	
Dibromomethane	20.0	20.2	101	20.0	20.1	101	0.319	75 - 125	30	
Dichlorodifluoromethane	20.0	19.9	99.5	20.0	20.4	102	2.68	30 - 155	30	
Ethylbenzene	20.0	19.2	95.9	20.0	19.1	95.3	0.581	75 - 125	30	
Hexachlorobutadiene	20.0	16.7	83.3	20.0	16.3	81.4	2.27	50 - 140	30	
Isopropylbenzene	20.0	19.6	97.8	20.0	19.2	96.2	1.65	75 - 125	30	
m-,p-Xylene	40.0	39.2	98.1	40.0	38.6	96.6	1.51	75 - 130	30	
n-Butylbenzene	20.0	19.6	98.2	20.0	19.0	95.0	3.39	70 - 135	30	
n-Propylbenzene	20.0	19.2	96.1	20.0	19.0	94.8	1.39	70 - 130	30	
Naphthalene	20.0	17.7	88.6	20.0	17.4	87.2	1.52	55 - 140	30	
o-Xylene	20.0	18.5	92.3	20.0	18.3	91.4	0.948	80 - 120	30	
p-Isopropyltoluene	20.0	19.8	99.0	20.0	19.5	97.3	1.64	75 - 130	30	
sec-Butylbenzene	20.0	19.6	97.8	20.0	19.4	96.9	0.973	70 - 125	30	
Styrene	20.0	19.7	98.6	20.0	19.4	96.9	1.73	65 - 135	30	
tert-Butylbenzene	20.0	18.2	91.1	20.0	18.0	90.1	1.04	70 - 130	30	
Tetrachloroethene	20.0	18.9	94.6	20.0	19.0	95.2	0.636	45 - 150	30	
Toluene	20.0	19.8	98.9	20.0	19.6	98.1	0.838	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.0	95.1	20.0	18.9	94.3	0.853	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.1	95.5	20.0	19.0	95.2	0.237	55 - 140	30	
Trichloroethene	20.0	19.0	94.9	20.0	19.0	95.1	0.211	70 - 125	30	
Trichlorofluoromethane	20.0	19.3	96.4	20.0	19.4	97.0	0.563	60 - 145	30	
Vinyl chloride	20.0	21.8	109	20.0	20.8	104	4.81	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	92.3	92.5	70 - 120	PASS
Dibromofluoromethane	96.2	96.9	85 - 115	PASS
4-Bromofluorobenzene	94.0	93.1	75 - 120	PASS
Toluene-d8	99.9	99.2	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5218350
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG608101 Units: ug/L
QC Key: DOD4 Lot #: STD81038

Sample ID: WG608101-02 LCS File ID: 8M418627 Run Date: 03/29/2017 16:52
Sample ID: WG608101-03 LCS2 File ID: 8M418628 Run Date: 03/29/2017 17:22

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Trichloroethene	20.0	19.7	98.3	20.0	19.6	98.2	0.0812	70 - 125	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	97.1	95.5	70 - 120	PASS
Dibromofluoromethane	97.2	98.4	85 - 115	PASS
4-Bromofluorobenzene	91.5	90.8	75 - 120	PASS
Toluene-d8	98.7	98.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5218350
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG607735 Units: ug/L
QC Key: DOD4 Lot #: STD81038

Sample ID: WG607735-02 LCS File ID: 8M418566 Run Date: 03/27/2017 14:28
Sample ID: WG607735-03 LCS2 File ID: 8M418567 Run Date: 03/27/2017 14:58

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	17.8	88.8	20.0	18.0	90.1	1.42	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.3	102	20.0	20.7	103	1.67	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.1	90.7	20.0	18.3	91.6	0.994	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.0	95.2	20.0	18.8	94.0	1.30	75 - 125	30	
1,1-Dichloroethane	20.0	19.8	98.9	20.0	20.0	99.9	0.974	70 - 135	30	
1,1-Dichloroethene	20.0	19.2	95.9	20.0	19.6	98.1	2.35	70 - 130	30	
1,1-Dichloropropene	20.0	19.8	99.0	20.0	20.0	100	1.18	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	16.3	81.7	20.0	16.3	81.4	0.420	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.2	91.2	20.0	18.6	92.9	1.84	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	16.4	82.1	20.0	16.5	82.4	0.270	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	18.7	93.5	20.0	19.5	97.4	4.13	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.3	86.5	20.0	17.2	85.8	0.760	50 - 130	30	
1,2-Dibromoethane	20.0	18.5	92.5	20.0	18.7	93.4	0.997	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.4	91.9	20.0	18.7	93.6	1.85	70 - 120	30	
1,2-Dichloroethane	20.0	19.9	99.4	20.0	19.5	97.4	2.05	70 - 130	30	
1,2-Dichloropropane	20.0	20.2	101	20.0	19.8	99.2	1.62	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	18.4	91.9	20.0	19.2	96.2	4.58	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.2	90.8	20.0	18.6	93.2	2.66	75 - 125	30	
1,3-Dichloropropane	20.0	19.6	97.9	20.0	19.7	98.6	0.724	75 - 125	30	
1,4-Dichlorobenzene	20.0	17.9	89.5	20.0	18.5	92.3	3.07	75 - 125	30	
2,2-Dichloropropane	20.0	17.9	89.5	20.0	19.4	96.8	7.80	70 - 135	30	
2-Butanone	20.0	17.7	88.4	20.0	17.1	85.4	3.46	30 - 150	30	
2-Chlorotoluene	20.0	16.3	81.6	20.0	17.0	85.1	4.22	75 - 125	30	
2-Hexanone	20.0	17.9	89.7	20.0	18.1	90.3	0.663	55 - 130	30	
4-Chlorotoluene	20.0	20.7	103	20.0	21.3	106	2.93	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.6	92.9	20.0	17.7	88.5	4.83	60 - 135	30	
Acetone	20.0	18.3	91.6	20.0	17.5	87.7	4.36	40 - 140	30	
Benzene	20.0	20.1	101	20.0	20.2	101	0.435	80 - 120	30	
Bromobenzene	20.0	17.5	87.5	20.0	18.5	92.4	5.41	75 - 125	30	
Bromochloromethane	20.0	19.6	98.0	20.0	19.7	98.4	0.479	65 - 130	30	
Bromodichloromethane	20.0	19.9	99.3	20.0	19.9	99.3	0.0311	75 - 120	30	
Bromoform	20.0	18.7	93.5	20.0	18.4	92.0	1.57	70 - 130	30	
Bromomethane	20.0	15.5	77.4	20.0	18.0	90.0	15.1	30 - 145	30	
Carbon disulfide	20.0	16.3	81.7	20.0	17.0	85.2	4.17	35 - 160	30	
Carbon tetrachloride	20.0	20.8	104	20.0	21.2	106	1.98	65 - 140	30	
Chlorobenzene	20.0	18.6	93.1	20.0	18.8	93.8	0.794	80 - 120	30	
Chloroethane	20.0	19.8	99.1	20.0	21.2	106	7.01	60 - 135	30	
Chloroform	20.0	18.8	94.2	20.0	19.1	95.6	1.46	65 - 135	30	
Chloromethane	20.0	22.6	113	20.0	22.5	112	0.830	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.7	98.5	20.0	19.9	99.5	1.01	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5218350
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L17031339 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG607735 Units: ug/L
QC Key: DOD4 Lot #: STD81038

Sample ID: WG607735-02 LCS File ID: 8M418566 Run Date: 03/27/2017 14:28
Sample ID: WG607735-03 LCS2 File ID: 8M418567 Run Date: 03/27/2017 14:58

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	20.4	102	20.0	20.5	103	0.625	70 - 130	30	
Chlorodibromomethane	20.0	19.0	95.0	20.0	18.7	93.6	1.52	60 - 135	30	
Dibromomethane	20.0	20.9	104	20.0	20.4	102	2.26	75 - 125	30	
Dichlorodifluoromethane	20.0	18.4	92.2	20.0	20.6	103	11.0	30 - 155	30	
Ethylbenzene	20.0	19.3	96.4	20.0	19.3	96.5	0.104	75 - 125	30	
Hexachlorobutadiene	20.0	14.7	73.4	20.0	15.4	77.2	5.05	50 - 140	30	
Isopropylbenzene	20.0	19.3	96.7	20.0	19.7	98.5	1.84	75 - 125	30	
m-,p-Xylene	40.0	39.0	97.5	40.0	39.7	99.3	1.87	75 - 130	30	
Methylene chloride	20.0	18.7	93.7	20.0	19.5	97.5	3.98	55 - 140	30	
n-Butylbenzene	20.0	18.4	91.9	20.0	19.0	95.1	3.45	70 - 135	30	
n-Propylbenzene	20.0	18.2	90.8	20.0	19.0	95.0	4.52	70 - 130	30	
Naphthalene	20.0	16.7	83.6	20.0	16.5	82.6	1.13	55 - 140	30	
o-Xylene	20.0	18.6	92.8	20.0	18.9	94.6	1.97	80 - 120	30	
p-Isopropyltoluene	20.0	18.8	94.2	20.0	19.7	98.6	4.52	75 - 130	30	
sec-Butylbenzene	20.0	18.7	93.5	20.0	19.4	97.0	3.66	70 - 125	30	
Styrene	20.0	19.8	99.1	20.0	20.2	101	1.78	65 - 135	30	
tert-Butylbenzene	20.0	17.1	85.7	20.0	18.3	91.4	6.44	70 - 130	30	
Tetrachloroethene	20.0	18.3	91.7	20.0	19.2	95.8	4.35	45 - 150	30	
Toluene	20.0	19.6	97.8	20.0	20.0	100	2.14	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.9	94.4	20.0	19.7	98.7	4.50	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	94.1	20.0	18.8	94.0	0.0308	55 - 140	30	
Trichloroethene	20.0	19.5	97.4	20.0	19.5	97.7	0.357	70 - 125	30	
Trichlorofluoromethane	20.0	18.4	92.2	20.0	19.4	97.2	5.25	60 - 145	30	
Vinyl chloride	20.0	23.5	118	20.0	23.9	120	1.56	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	96.1	93.5	70 - 120	PASS
Dibromofluoromethane	97.7	96.3	85 - 115	PASS
4-Bromofluorobenzene	90.3	92.6	75 - 120	PASS
Toluene-d8	98.4	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 5218350
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031339
Instrument: HPMS8
Analyst: TMB
Workgroup: WG594051

Tune ID: WG594051-01
Run Date: 12/08/2016
Run Time: 08:55
File ID: 8M416518
Cal ID: HPMS8-08-DEC-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	15.9	3959	PASS
75.0	95.0	30.0	60.0	50.2	12523	PASS
95.0	95.0	100	100	100	24967	PASS
96.0	95.0	5.00	9.00	6.61	1651	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.9	18700	PASS
175	174	5.00	9.00	7.25	1355	PASS
176	174	95.0	101	96.0	17959	PASS
177	176	5.00	9.00	6.08	1092	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG594051-02	STD	01	12/08/2016 09:19	
WG594051-03	STD	01	12/08/2016 09:48	
WG594051-04	STD	01	12/08/2016 10:17	
WG594051-05	STD-CCV	01	12/08/2016 10:47	
WG594051-06	STD	01	12/08/2016 11:16	
WG594051-07	STD	01	12/08/2016 11:46	
WG594051-08	STD	01	12/08/2016 12:16	
WG594051-09	STD	01	12/08/2016 12:45	
WG594051-10	SSCV	01	12/08/2016 14:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5218352
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031339
Instrument: HPMS8
Analyst: TMB
Workgroup: WG607066

Tune ID: WG607066-01
Run Date: 03/21/2017
Run Time: 15:10
File ID: 8M418406
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.8	6993	PASS
75.0	95.0	30.0	60.0	52.2	20477	PASS
95.0	95.0	100	100	100	39240	PASS
96.0	95.0	5.00	9.00	6.89	2704	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.6	31623	PASS
175	174	5.00	9.00	6.77	2141	PASS
176	174	95.0	101	98.6	31189	PASS
177	176	5.00	9.00	6.60	2060	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607066-02	STD	01	03/21/2017 16:09	
WG607066-03	STD	01	03/21/2017 16:39	
WG607066-04	STD	01	03/21/2017 17:09	
WG607066-05	STD	01	03/21/2017 17:40	
WG607066-06	STD	01	03/21/2017 18:10	
WG607066-07	STD	01	03/21/2017 18:41	
WG607066-08	STD-CCV	01	03/21/2017 19:11	
WG607066-09	STD	01	03/21/2017 19:42	
WG607066-10	STD	01	03/21/2017 20:12	
WG607066-11	STD	01	03/21/2017 20:43	
WG607066-12	SSCV	01	03/21/2017 22:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5218352
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031339
Instrument: HPMS8
Analyst: JDS
Workgroup: WG607680

Tune ID: WG607680-01
Run Date: 03/25/2017
Run Time: 11:42
File ID: 8M418524
Cal ID: HPMS8-21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.3	6240	PASS
75.0	95.0	30.0	60.0	53.0	18105	PASS
95.0	95.0	100	100	100	34160	PASS
96.0	95.0	5.00	9.00	7.01	2395	PASS
173	174	0	2.00	0.364	113	PASS
174	95.0	50.0	100	90.8	31005	PASS
175	174	5.00	9.00	7.16	2219	PASS
176	174	95.0	101	98.6	30578	PASS
177	176	5.00	9.00	6.36	1945	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607680-02	CCV	01	03/25/2017 12:05	
WG607681-01	BLANK	01	03/25/2017 13:06	
WG607681-02	LCS	01	03/25/2017 13:36	
WG607681-03	LCS2	01	03/25/2017 14:05	
L17031339-05	MW2-032117	DL01	03/25/2017 20:35	
WG607681-04	BLANK2	01	03/25/2017 23:04	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5218352
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031339
Instrument: HPMS8
Analyst: TMB
Workgroup: WG607733

Tune ID: WG607733-01
Run Date: 03/27/2017
Run Time: 09:29
File ID: 8M418556
Cal ID: HPMS8-21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.0	4601	PASS
75.0	95.0	30.0	60.0	51.2	13074	PASS
95.0	95.0	100	100	100	25530	PASS
96.0	95.0	5.00	9.00	6.58	1679	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.5	22850	PASS
175	174	5.00	9.00	7.07	1615	PASS
176	174	95.0	101	99.7	22776	PASS
177	176	5.00	9.00	6.14	1398	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607733-02	CCV	01	03/27/2017 10:28	
WG607735-01	BLANK	01	03/27/2017 11:29	
WG607735-02	LCS	01	03/27/2017 14:28	
WG607735-03	LCS2	01	03/27/2017 14:58	
L17031339-05	MW2-032117	DL02	03/27/2017 15:28	
L17031339-01	126-032117	01	03/27/2017 16:57	
L17031339-03	126FD-032117	01	03/27/2017 17:28	
L17031339-16	TRIP BLANK	01	03/27/2017 17:58	
L17031339-06	18CPTMW01DW-032117	01	03/27/2017 18:27	
L17031339-08	MW13-032117	01	03/27/2017 18:57	
L17031339-09	MW13FD-032117	01	03/27/2017 19:40	
L17031339-10	CO2-032117	01	03/27/2017 20:10	
L17031339-14	MW19-032217	01	03/27/2017 20:40	
L17031339-07	18CPTMW01SW-032117	DL01	03/27/2017 21:10	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5218352
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031339
Instrument: HPMS8
Analyst: FJB
Workgroup: WG607985

Tune ID: WG607985-01
Run Date: 03/28/2017
Run Time: 17:24
File ID: 8M418586
Cal ID: HPMS8-21-MAR-17

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.1	6731	PASS
75.0	95.0	30.0	60.0	53.4	19853	PASS
95.0	95.0	100	100	100	37165	PASS
96.0	95.0	5.00	9.00	6.62	2461	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.5	32514	PASS
175	174	5.00	9.00	7.30	2375	PASS
176	174	95.0	101	97.6	31728	PASS
177	176	5.00	9.00	6.87	2180	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG607985-02	CCV	01	03/28/2017 18:19	
WG607986-01	BLANK	01	03/28/2017 19:20	
WG607986-02	LCS	01	03/28/2017 19:50	
L17031339-12	MW16-032217	DL01	03/28/2017 22:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5218352
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L17031339
Instrument: HPMS8
Analyst: TMB
Workgroup: WG608100

Tune ID: WG608100-01
Run Date: 03/29/2017
Run Time: 14:15
File ID: 8M418622
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	7350	PASS
75.0	95.0	30.0	60.0	53.7	20615	PASS
95.0	95.0	100	100	100	38397	PASS
96.0	95.0	5.00	9.00	6.68	2563	PASS
173	174	0	2.00	0.966	324	PASS
174	95.0	50.0	100	87.4	33546	PASS
175	174	5.00	9.00	7.45	2500	PASS
176	174	95.0	101	99.4	33357	PASS
177	176	5.00	9.00	6.69	2230	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG608100-02	CCV	01	03/29/2017 15:10	
WG608101-01	BLANK	01	03/29/2017 16:21	
WG608101-02	LCS	01	03/29/2017 16:52	
WG608101-03	LCS2	01	03/29/2017 17:22	
L17031339-12	MW16-032217	DL02	03/29/2017 17:52	
WG607864-01	FBLK1	DL01	03/30/2017 05:23	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 5218352
Report generated 03/31/2017 10:48

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Calibration: Thu Dec 08 13:41:47 2016
Curve: WG594051
Calibration Files

	Compound	5 8M416519.D	20 8M416520.D	50 8M416521.D	100 8M416522.D	200 8M416523.D	300 8M416524.D	400 8M416525.D	500 8M416526.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.007	0.007	0.008	0.007	0.007	0.007	0.007	0.007	2.734
T	3-Chloro-1-propene	0.285	0.281	0.282	0.286	0.290	0.298	0.298	0.306	0.291	3.019
T	2-Chloro-1,3-butadiene	0.282	0.298	0.305	0.315	0.325	0.335	0.338	0.343	0.318	6.789
T	Ethyl Acetate		0.065	0.063	0.064	0.066	0.064	0.067	0.066	0.065	2.080
T	Methacrylonitrile	0.032	0.041	0.043	0.043	0.044	0.044	0.046	0.045	0.042	10.556
T	Isobutyl Alcohol			0.002	0.002	0.002	0.002	0.002	0.002	0.002	6.131
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.055	0.067	0.068	0.069	0.071	0.070	0.074	0.074	0.068	8.866
T	2-Nitropropane		0.020	0.020	0.021	0.023	0.023	0.024	0.024	0.022	7.043
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.007	0.008	0.008	0.008	0.008	0.008	0.008	7.809

Thu Dec 08 15:05:15 2016

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Calibration: Thu Mar 23 09:07:42 2017
Curve: WG607066
Calibration Files

	Compound	0.3 8M418408.D	0.4 8M418409.D	1 8M418410.D	2 8M418411.D	5 8M418412.D	20 8M418413.D	50 8M418414.D	100 8M418415.D	200 8M418416.D	300 8M418417.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.365	0.339	0.354	0.406	0.433	0.432	0.413		0.392	9.845		
P	Chloromethane			0.561	0.481	0.480	0.467	0.465	0.449	0.420		0.475	9.181		
C	Vinyl Chloride		0.522	0.492	0.462	0.450	0.440	0.425	0.399	0.360		0.444	11.541		
T	1,3-Butadiene				0.256	0.253	0.235	0.174	0.111	0.091	0.088	0.173	44.128		0.994
T	Bromomethane			0.220	0.210	0.215	0.212	0.225	0.237	0.254		0.225	6.976		
T	Chloroethane		0.164	0.177	0.169	0.176	0.181	0.186	0.192	0.194		0.180	5.764		
T	Trichlorofluoromethane		0.491	0.482	0.451	0.464	0.469	0.491	0.497	0.497		0.480	3.565		
T	Diethyl ether			0.156	0.146	0.151	0.153	0.159	0.155		0.167	0.155	4.339		
T	Isoprene					0.354	0.350	0.368	0.382	0.374	0.398	0.371	4.814		
T	Acrolein				0.021	0.019	0.020	0.020	0.020		0.020	0.020	3.525		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.254	0.238	0.260	0.252	0.269	0.272	0.264		0.258	4.444		
T	Acetone					0.028	0.031	0.031	0.028	0.032	0.029	0.030	5.215		
C	1,1-Dichloroethene		0.377	0.363	0.325	0.352	0.349	0.366	0.375	0.375		0.360	4.930		
T	Tert-Butyl Alcohol				0.009	0.009	0.010	0.010	0.009		0.010	0.010	5.290		
T	Dimethyl Sulfide					0.242	0.246	0.255	0.258	0.268	0.268	0.256	4.156		
T	Iodomethane			0.227	0.204	0.235	0.261	0.298	0.318	0.317	0.290	0.269	16.181	0.997	
T	Methyl acetate					0.083	0.082	0.084	0.084	0.090	0.089	0.085	4.049		
T	Methylene Chloride			0.290	0.251	0.262	0.267	0.276	0.281	0.294		0.274	5.692		
T	Carbon Disulfide			0.876	0.782	0.819	0.813	0.836	0.848	0.830	0.764	0.821	4.336		
T	Acrylonitrile			0.040	0.040	0.040	0.042	0.046	0.045		0.041	0.042	5.937		
T	Methyl Tert Butyl Ether			0.519	0.484	0.503	0.533	0.556	0.536	0.567		0.528	5.471		
T	trans-1,2-Dichloroethene		0.369	0.352	0.326	0.338	0.338	0.348	0.360	0.365		0.349	4.283		
T	n-Hexane					0.312	0.279	0.293	0.297	0.289	0.307	0.296	4.010		
T	Diisopropyl ether			0.683	0.641	0.674	0.668	0.683	0.670		0.654	0.668	2.316		
T	Vinyl Acetate					0.283	0.262	0.254	0.246	0.280	0.252	0.263	5.853		
P	1,1-Dichloroethane		0.457	0.446	0.429	0.451	0.446	0.464	0.476	0.477		0.456	3.523		
T	Ethyl-Tert-Butyl ether			0.634	0.600	0.636	0.649	0.667	0.645		0.643	0.639	3.163		
T	2-Butanone					0.047	0.048	0.048	0.047	0.050	0.048	0.048	2.346		
T	Propionitrile			0.012	0.015	0.014	0.015	0.015	0.014		0.015	0.014	7.137		
T	2,2-Dichloropropane		0.445	0.414	0.394	0.409	0.385	0.398	0.406	0.403		0.407	4.403		
T	cis-1,2-Dichloroethene		0.294	0.289	0.270	0.290	0.293	0.302	0.314	0.321		0.297	5.370		
C	Chloroform	0.670	0.608	0.515	0.477	0.491	0.484	0.500	0.506	0.504		0.528	12.418		
T	1-Bromopropane			0.050	0.050	0.056	0.056	0.057	0.060	0.061	0.064	0.057	8.723		
T	Bromochloromethane		0.151	0.160	0.150	0.153	0.157	0.166	0.166	0.171		0.159	4.835		
T	Tetrahydrofuran			0.036	0.029	0.029	0.030	0.032	0.029		0.030	0.031	8.295		
S	Dibromofluoromethane				0.277	0.275	0.278	0.277	0.289	0.294	0.295	0.284	3.074		
T	1,1,1-Trichloroethane		0.405	0.426	0.387	0.429	0.422	0.450	0.469	0.488		0.435	7.610		
T	Cyclohexane			0.377	0.348	0.367	0.359	0.378	0.387	0.392	0.396	0.376	4.441		
T	1,1-Dichloropropene			0.377	0.349	0.366	0.363	0.376	0.389	0.392		0.373	4.028		
T	Tert-Amyl-Methyl ether			0.580	0.564	0.592	0.603	0.628	0.607		0.602	0.596	3.411		
T	Carbon Tetrachloride		0.375	0.364	0.334	0.379	0.381	0.41	0.437	0.431		0.3888	9.01028		
S	1,2-Dichloroethane-d4				0.251	0.234	0.245	0.242	0.246	0.252	0.249	0.2457	2.56178		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.299	0.294	0.276	0.286	0.294	0.305	0.308	0.324		0.2982	4.87776		
T	Benzene		1.144	1.082	1.017	1.09	1.066	1.09	1.099	1.022		1.0761	3.85617		
T	Trichloroethene		0.282	0.267	0.261	0.279	0.282	0.297	0.31	0.324		0.2877	7.45091		
T	Methylcyclohexane					0.428	0.409	0.425	0.438	0.433	0.462	0.4323	4.01264		
C	1,2-Dichloropropane		0.227	0.243	0.232	0.245	0.248	0.253	0.261	0.27		0.2474	5.70702		
T	Bromodichloromethane		0.332	0.33	0.314	0.328	0.348	0.371	0.38	0.395		0.3498	8.26577		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0012	10.0042		
T	Dibromomethane		0.093	0.132	0.126	0.131	0.137	0.144	0.143	0.155		0.1326	13.823		
T	2-Chloroethyl Vinyl Ether				0.101	0.107	0.108	0.112	0.114	0.123	0.122	0.1125	7.11154		
T	4-Methyl-2-Pentanone					0.042	0.046	0.049	0.047	0.053	0.052	0.0481	8.06815		
T	cis-1,3-Dichloropropene		0.393	0.387	0.371	0.388	0.405	0.425	0.432	0.448		0.406	6.45571		

T	Dimethyl Disulfide					0.159	0.196	0.22	0.231	0.257	0.257	0.2197	17.2311	0.998
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.195	1.269	1.261	1.225	1.302	1.283	1.269	1.2576	2.85929	
C	Toluene		1.544	1.543	1.406	1.506	1.485	1.517	1.549	1.346		1.4869	4.94343	
T	Ethyl Methacrylate			0.249	0.239	0.265	0.298	0.304	0.302	0.323	0.32	0.2875	11.2531	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.416	0.378	0.415	0.44	0.463	0.469	0.489		0.4386	8.75675	
T	1,1,2-Trichloroethane		0.223	0.226	0.208	0.232	0.237	0.243	0.244	0.261		0.2342	6.81927	
T	2-Hexanone					0.045	0.055	0.058	0.056	0.062	0.06	0.0562	10.7796	
T	1,3-Dichloropropane		0.421	0.417	0.393	0.405	0.421	0.427	0.427	0.443		0.4194	3.60274	
T	Tetrachloroethene		0.305	0.327	0.287	0.315	0.303	0.321	0.347	0.372		0.3222	8.35255	
T	Dibromochloromethane		0.203	0.251	0.243	0.271	0.296	0.323	0.336	0.366		0.2861	18.8764	1.000
T	1,2-Dibromoethane		0.228	0.236	0.217	0.232	0.244	0.251	0.249	0.267		0.2403	6.53165	
T	1-Chlorohexane		0.543	0.505	0.46	0.498	0.479	0.489	0.52	0.528	0.54	0.5067	5.53864	
P	Chlorobenzene		1.019	1.011	0.957	0.997	0.997	1.074	1.173	1.145		1.0465	7.3529	
T	1,1,1,2-Tetrachloroethane		0.31	0.305	0.304	0.326	0.363	0.413	0.48	0.542		0.3805	23.6944	1.001
C	Ethylbenzene		0.541	0.546	0.515	0.556	0.559	0.628	0.722			0.5808	12.244	
T	m-,p-Xylene		0.677	0.666	0.631	0.672	0.683	0.74	0.8	0.704		0.6966	7.49879	
T	o-Xylene			0.635	0.63	0.648	0.659	0.698	0.763	0.802		0.6907	9.76299	
T	Styrene		1.018	1.033	0.999	1.083	1.118	1.195	1.273	1.201		1.1151	8.93255	
P	Bromoform			0.129	0.136	0.14	0.173	0.197	0.207	0.236		0.1739	23.4918	1.000
T	Isopropylbenzene		1.697	1.683	1.58	1.688	1.672	1.757	1.776	1.517		1.6711	5.13622	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.449	0.51	0.451	0.492	0.495	0.505	0.483	0.514		0.4873	5.14107	
S	p-Bromofluorobenzene				0.947	0.928	0.921	0.899	0.942	0.956	1.03	0.946	4.39688	
T	1,2,3-Trichloropropane			0.131	0.131	0.135	0.138	0.146	0.14	0.149		0.1387	5.09526	
T	trans-1,4-Dichloro-2-Butene			0.098	0.097	0.117	0.116	0.125	0.125	0.119	0.117	0.1143	9.45734	
T	n-Propylbenzene		4.01	3.885	3.661	3.908	3.753	3.8	3.622	2.819		3.6822	10.0999	
T	Bromobenzene	0.851	0.768	0.757	0.755	0.783	0.79	0.837	0.875	0.919		0.815	7.14151	
T	1,3,5-Trimethylbenzene		2.725	2.624	2.532	2.686	2.662	2.801	2.829	2.417		2.6595	5.12759	
T	2-Chlorotoluene		2.64	2.51	2.341	2.519	2.505	2.539	2.593	2.155		2.4751	6.29617	
T	4-Chlorotoluene		2.183	2.216	2.162	2.151	2.107	2.241	2.221	2.018		2.1623	3.34861	
T	a-Methylstyrene					1.37	1.407	1.493	1.584	1.552	1.514	1.4867	5.5986	
T	tert-Butylbenzene			0.531	0.54	0.556	0.549	0.595	0.646	0.694		0.5873	10.4863	
T	1,2,4-Trimethylbenzene		2.785	2.797	2.613	2.808	2.805	2.92	2.929	2.463		2.7649	5.63985	
T	sec-Butylbenzene			3.451	3.251	3.466	3.33	3.466	3.399	2.744		3.3012	7.81848	
T	p-Isopropyltoluene			2.668	2.562	2.751	2.717	2.871	2.905	2.455		2.7041	5.93081	
T	1,3-Dichlorobenzene		1.611	1.613	1.52	1.6	1.577	1.671	1.734	1.67		1.6245	4.04016	
T	1,4-Dichlorobenzene	1.768	1.634	1.651	1.54	1.572	1.56	1.651	1.703	1.647		1.6362	4.40361	
T	n-Butylbenzene			2.731	2.594	2.706	2.618	2.734	2.719	2.264		2.6236	6.41729	
T	1,2-Dichlorobenzene	1.417	1.362	1.414	1.333	1.376	1.38	1.468	1.496	1.494		1.4155	4.16177	
T	1,2-Dibromo-3-Chloropropane				0.068	0.066	0.077	0.082	0.079	0.085		0.0765	9.84774	
T	1,2,4-Trichlorobenzene		1.096	1.056	0.929	0.997	1.007	1.067	1.129	1.19		1.0587	7.74032	
T	Hexachlorobutadiene		0.539	0.533	0.478	0.493	0.469	0.503	0.544	0.582		0.5176	7.43716	
T	Naphthalene		1.385	1.388	1.295	1.341	1.404	1.5	1.427	1.446		1.3983	4.5068	
T	1,2,3-Trichlorobenzene	0.853	0.929	0.879	0.798	0.801	0.839	0.89	0.91	0.981		0.8755	6.84769	

Thu Mar 23 12:32:39 2017

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031339 Run Date: 03/21/2017 Sample ID: WG607066-12
Instrument ID: HPMS8 Run Time: 22:14 Method: 8260B
File ID: 8M418420 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG607066 Cal ID: HPMS8 - 21-MAR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.3	ug/L	0.489	7.40	20	
1,1-Dichloroethene	CCC	50.0	48.5	ug/L	0.349	3.10	20	
1,2-Dichloropropane	CCC	50.0	48.9	ug/L	0.242	2.20	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.601	3.50	20	
Toluene	CCC	50.0	48.4	ug/L	1.44	3.10	20	
Vinyl Chloride	CCC	50.0	42.7	ug/L	0.379	14.7	20	
Bromoform	SPCC	50.0	48.4	ug/L	0.185	3.10	20	
Chlorobenzene	SPCC	50.0	48.7	ug/L	1.02	2.60	20	
Chloromethane	SPCC	50.0	46.2	ug/L	0.439	7.60	20	
1,1-Dichloroethane	SPCC	50.0	48.4	ug/L	0.441	3.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/L	0.462	5.10	20	
Acetone		50.0	47.4	ug/L	0.0284	5.20	20	
Benzene		50.0	48.8	ug/L	1.05	2.30	20	
Bromobenzene		50.0	48.7	ug/L	0.794	2.50	20	
Bromochloromethane		50.0	49.5	ug/L	0.158	1.10	20	
Bromodichloromethane		50.0	49.6	ug/L	0.347	0.700	20	
Bromomethane		50.0	38.2	ug/L	0.172	23.6	20	*
2-Butanone		50.0	45.8	ug/L	0.0441	8.50	20	
n-Butylbenzene		50.0	49.9	ug/L	2.62	0.300	20	
sec-Butylbenzene		50.0	49.7	ug/L	3.28	0.600	20	
tert-Butylbenzene		50.0	48.5	ug/L	0.570	3.00	20	
Carbon Disulfide		50.0	43.8	ug/L	0.720	12.3	20	
Carbon Tetrachloride		50.0	52.7	ug/L	0.409	5.30	20	
Dibromochloromethane		50.0	47.4	ug/L	0.300	5.20	20	
Chloroethane		50.0	51.8	ug/L	0.187	3.60	20	
2-Chlorotoluene		50.0	48.4	ug/L	2.40	3.10	20	
4-Chlorotoluene		50.0	48.5	ug/L	2.10	3.10	20	
1,2-Dibromo-3-Chloropropane		50.0	49.1	ug/L	0.0751	1.80	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.234	2.50	20	
Dibromomethane		50.0	52.4	ug/L	0.139	4.80	20	
1,2-Dichlorobenzene		50.0	48.8	ug/L	1.38	2.40	20	
1,3-Dichlorobenzene		50.0	48.3	ug/L	1.57	3.30	20	
1,4-Dichlorobenzene		50.0	48.0	ug/L	1.57	4.00	20	
Dichlorodifluoromethane		50.0	52.0	ug/L	0.407	4.00	20	
1,2-Dichloroethane		50.0	48.5	ug/L	0.290	2.90	20	
cis-1,2-Dichloroethene		50.0	49.4	ug/L	0.293	1.10	20	
trans-1,2-Dichloroethene		50.0	48.3	ug/L	0.338	3.40	20	
1,3-Dichloropropane		50.0	49.1	ug/L	0.412	1.90	20	
2,2-Dichloropropane		50.0	45.8	ug/L	0.372	8.40	20	
cis-1,3-Dichloropropene		50.0	51.7	ug/L	0.420	3.40	20	
trans-1,3-Dichloropropene		50.0	48.2	ug/L	0.423	3.60	20	
1,1-Dichloropropene		50.0	48.9	ug/L	0.365	2.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5218351
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L17031339 Run Date: 03/21/2017 Sample ID: WG607066-12
Instrument ID: HPMS8 Run Time: 22:14 Method: 8260B
File ID: 8M418420 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG607066 Cal ID: HPMS8 - 21-MAR-17

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.6	ug/L	0.0557	0.800	20	
Hexachlorobutadiene		50.0	46.8	ug/L	0.485	6.30	20	
Isopropylbenzene		50.0	50.0	ug/L	1.67	0	20	
p-Isopropyltoluene		50.0	51.2	ug/L	2.77	2.40	20	
4-Methyl-2-Pentanone		50.0	48.8	ug/L	0.0470	2.40	20	
Methylene Chloride		50.0	48.9	ug/L	0.269	2.20	20	
Naphthalene		50.0	49.3	ug/L	1.38	1.50	20	
n-Propylbenzene		50.0	47.8	ug/L	3.52	4.30	20	
Styrene		50.0	52.3	ug/L	1.17	4.70	20	
1,1,1,2-Tetrachloroethane		50.0	46.3	ug/L	0.385	7.30	20	
Tetrachloroethene		50.0	49.0	ug/L	0.316	2.00	20	
1,2,3-Trichlorobenzene		50.0	48.1	ug/L	0.842	3.80	20	
1,2,4-Trichlorobenzene		50.0	47.9	ug/L	1.01	4.30	20	
1,1,1-Trichloroethane		50.0	51.7	ug/L	0.449	3.30	20	
1,1,2-Trichloroethane		50.0	48.4	ug/L	0.227	3.30	20	
Trichloroethene		50.0	49.8	ug/L	0.286	0.500	20	
Trichlorofluoromethane		50.0	49.0	ug/L	0.470	2.10	20	
1,2,3-Trichloropropane		50.0	50.0	ug/L	0.139	0.100	20	
1,2,4-Trimethylbenzene		50.0	50.2	ug/L	2.77	0.300	20	
1,3,5-Trimethylbenzene		50.0	50.1	ug/L	2.67	0.300	20	
o-Xylene		50.0	48.9	ug/L	0.675	2.30	20	
m-,p-Xylene		100	103	ug/L	0.716	2.80	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 5218351
Report generated 03/31/2017 10:48

Login Number: L17031339 Run Date: 03/25/2017 Sample ID: WG607680-02
Instrument ID: HPMS8 Run Time: 12:05 Method: 8260B
File ID: 8M418525 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG607681 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.9	ug/L	0.496	6.19	20	
1,1-Dichloroethene	CCC	50.0	50.7	ug/L	0.365	1.33	20	
1,2-Dichloropropane	CCC	50.0	50.9	ug/L	0.252	1.82	20	
Ethylbenzene	CCC	50.0	53.6	ug/L	0.623	7.18	20	
Toluene	CCC	50.0	51.4	ug/L	1.53	2.87	20	
Vinyl Chloride	CCC	50.0	58.0	ug/L	0.515	16.1	20	
Bromoform	SPCC	50.0	50.2	ug/L	0.192	0.339	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	1.12	6.62	20	
Chloromethane	SPCC	50.0	54.2	ug/L	0.514	8.40	20	
1,1-Dichloroethane	SPCC	50.0	50.7	ug/L	0.462	1.42	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.480	1.46	20	
Xylenes		150	158	ug/L	0.723	5.43	20	
Acetone		50.0	46.9	ug/L	0.0281	6.13	20	
Benzene		50.0	51.1	ug/L	1.10	2.16	20	
Bromobenzene		50.0	48.9	ug/L	0.797	2.15	20	
Bromochloromethane		50.0	48.8	ug/L	0.156	2.43	20	
Bromodichloromethane		50.0	52.2	ug/L	0.365	4.37	20	
Bromomethane		50.0	49.3	ug/L	0.222	1.48	20	
2-Butanone		50.0	46.5	ug/L	0.0448	7.05	20	
n-Butylbenzene		50.0	52.0	ug/L	2.73	4.10	20	
sec-Butylbenzene		50.0	52.3	ug/L	3.45	4.63	20	
tert-Butylbenzene		50.0	49.6	ug/L	0.582	0.868	20	
Carbon Disulfide		50.0	55.8	ug/L	0.917	11.7	20	
Carbon Tetrachloride		50.0	54.0	ug/L	0.420	8.03	20	
Dibromochloromethane		50.0	48.9	ug/L	0.310	2.18	20	
Chloroethane		50.0	50.3	ug/L	0.181	0.578	20	
2-Chlorotoluene		50.0	50.4	ug/L	2.50	0.814	20	
4-Chlorotoluene		50.0	50.5	ug/L	2.18	0.903	20	
1,2-Dibromo-3-Chloropropane		50.0	49.0	ug/L	0.0749	2.02	20	
1,2-Dibromoethane		50.0	48.9	ug/L	0.235	2.16	20	
Dibromomethane		50.0	51.6	ug/L	0.137	3.28	20	
1,2-Dichlorobenzene		50.0	49.9	ug/L	1.41	0.162	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.64	0.973	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.60	2.36	20	
Dichlorodifluoromethane		50.0	54.4	ug/L	0.426	8.77	20	
1,2-Dichloroethane		50.0	49.1	ug/L	0.293	1.72	20	
cis-1,2-Dichloroethene		50.0	50.8	ug/L	0.301	1.61	20	
trans-1,2-Dichloroethene		50.0	49.7	ug/L	0.348	0.569	20	
1,3-Dichloropropane		50.0	48.1	ug/L	0.404	3.79	20	
2,2-Dichloropropane		50.0	54.9	ug/L	0.447	9.88	20	
cis-1,3-Dichloropropene		50.0	51.7	ug/L	0.420	3.33	20	
trans-1,3-Dichloropropene		50.0	50.9	ug/L	0.446	1.78	20	

CCV - Modified 03/05/2008
PDF File ID: 5218353
Report generated 03/31/2017 10:48

Login Number: L17031339 Run Date: 03/25/2017 Sample ID: WG607680-02
Instrument ID: HPMS8 Run Time: 12:05 Method: 8260B
File ID: 8M418525 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG607681 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.4	ug/L	0.384	2.77	20	
2-Hexanone		50.0	44.9	ug/L	0.0504	10.3	20	
Hexachlorobutadiene		50.0	44.5	ug/L	0.461	10.9	20	
Isopropylbenzene		50.0	52.6	ug/L	1.76	5.24	20	
p-Isopropyltoluene		50.0	52.9	ug/L	2.86	5.78	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/L	0.0437	9.21	20	
Naphthalene		50.0	45.3	ug/L	1.27	9.33	20	
n-Propylbenzene		50.0	51.3	ug/L	3.78	2.63	20	
Styrene		50.0	53.8	ug/L	1.20	7.62	20	
1,1,1,2-Tetrachloroethane		50.0	48.7	ug/L	0.407	2.60	20	
Tetrachloroethene		50.0	49.3	ug/L	0.318	1.44	20	
1,2,3-Trichlorobenzene		50.0	44.4	ug/L	0.778	11.2	20	
1,2,4-Trichlorobenzene		50.0	45.9	ug/L	0.971	8.30	20	
1,1,1-Trichloroethane		50.0	51.8	ug/L	0.450	3.64	20	
1,1,2-Trichloroethane		50.0	48.9	ug/L	0.229	2.14	20	
Trichloroethene		50.0	49.7	ug/L	0.286	0.581	20	
Trichlorofluoromethane		50.0	50.2	ug/L	0.482	0.409	20	
1,2,3-Trichloropropane		50.0	46.4	ug/L	0.129	7.16	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.90	4.97	20	
1,3,5-Trimethylbenzene		50.0	51.4	ug/L	2.73	2.70	20	
o-Xylene		50.0	50.2	ug/L	0.694	0.402	20	
m-,p-Xylene		100	108	ug/L	0.752	7.94	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5218353
Report generated 03/31/2017 10:48

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607733-02
Instrument ID: HPMS8 Run Time: 10:28 Method: 8260B
File ID: 8M418558 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG607735 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.503	4.83	20	
1,1-Dichloroethene	CCC	50.0	50.5	ug/L	0.364	0.902	20	
1,2-Dichloropropane	CCC	50.0	51.6	ug/L	0.255	3.21	20	
Ethylbenzene	CCC	50.0	53.1	ug/L	0.617	6.26	20	
Toluene	CCC	50.0	50.6	ug/L	1.51	1.24	20	
Vinyl Chloride	CCC	50.0	56.4	ug/L	0.501	12.9	20	
Bromoform	SPCC	50.0	52.8	ug/L	0.203	5.61	20	
Chlorobenzene	SPCC	50.0	50.8	ug/L	1.06	1.59	20	
Chloromethane	SPCC	50.0	53.2	ug/L	0.505	6.38	20	
1,1-Dichloroethane	SPCC	50.0	51.2	ug/L	0.467	2.43	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.4	ug/L	0.501	2.76	20	
Xylenes		150	155	ug/L	0.711	3.62	20	
Acetone		50.0	48.0	ug/L	0.0287	4.04	20	
Benzene		50.0	51.5	ug/L	1.11	3.04	20	
Bromobenzene		50.0	49.3	ug/L	0.804	1.35	20	
Bromochloromethane		50.0	51.3	ug/L	0.164	2.61	20	
Bromodichloromethane		50.0	54.3	ug/L	0.380	8.60	20	
Bromomethane		50.0	45.7	ug/L	0.205	8.69	20	
2-Butanone		50.0	50.5	ug/L	0.0487	1.03	20	
n-Butylbenzene		50.0	50.0	ug/L	2.62	0.0364	20	
sec-Butylbenzene		50.0	50.8	ug/L	3.36	1.67	20	
tert-Butylbenzene		50.0	47.9	ug/L	0.563	4.24	20	
Carbon Disulfide		50.0	55.0	ug/L	0.903	9.94	20	
Carbon Tetrachloride		50.0	54.0	ug/L	0.420	7.95	20	
Dibromochloromethane		50.0	50.5	ug/L	0.320	0.960	20	
Chloroethane		50.0	51.6	ug/L	0.186	3.19	20	
2-Chlorotoluene		50.0	49.5	ug/L	2.45	0.977	20	
4-Chlorotoluene		50.0	49.1	ug/L	2.13	1.71	20	
1,2-Dibromo-3-Chloropropane		50.0	50.9	ug/L	0.0778	1.78	20	
1,2-Dibromoethane		50.0	50.8	ug/L	0.244	1.67	20	
Dibromomethane		50.0	54.2	ug/L	0.144	8.35	20	
1,2-Dichlorobenzene		50.0	50.3	ug/L	1.42	0.609	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.64	0.988	20	
1,4-Dichlorobenzene		50.0	49.4	ug/L	1.62	1.22	20	
Dichlorodifluoromethane		50.0	56.1	ug/L	0.439	12.2	20	
1,2-Dichloroethane		50.0	50.2	ug/L	0.300	0.480	20	
cis-1,2-Dichloroethene		50.0	51.8	ug/L	0.307	3.62	20	
trans-1,2-Dichloroethene		50.0	49.8	ug/L	0.348	0.480	20	
1,3-Dichloropropane		50.0	49.3	ug/L	0.413	1.49	20	
2,2-Dichloropropane		50.0	54.7	ug/L	0.445	9.48	20	
cis-1,3-Dichloropropene		50.0	53.4	ug/L	0.433	6.72	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/L	0.454	3.41	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/27/2017 Sample ID: WG607733-02
Instrument ID: HPMS8 Run Time: 10:28 Method: 8260B
File ID: 8M418558 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG607735 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.8	ug/L	0.379	1.64	20	
2-Hexanone		50.0	49.9	ug/L	0.0561	0.112	20	
Hexachlorobutadiene		50.0	43.6	ug/L	0.451	12.8	20	
Isopropylbenzene		50.0	51.7	ug/L	1.73	3.32	20	
p-Isopropyltoluene		50.0	51.2	ug/L	2.77	2.35	20	
4-Methyl-2-Pentanone		50.0	51.4	ug/L	0.0495	2.75	20	
Methylene Chloride		50.0	49.9	ug/L	0.274	0.130	20	
Naphthalene		50.0	45.1	ug/L	1.26	9.89	20	
n-Propylbenzene		50.0	49.7	ug/L	3.66	0.635	20	
Styrene		50.0	53.4	ug/L	1.19	6.85	20	
1,1,1,2-Tetrachloroethane		50.0	48.9	ug/L	0.409	2.13	20	
Tetrachloroethene		50.0	48.1	ug/L	0.310	3.88	20	
1,2,3-Trichlorobenzene		50.0	45.5	ug/L	0.797	8.97	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/L	0.978	7.66	20	
1,1,1-Trichloroethane		50.0	51.7	ug/L	0.450	3.46	20	
1,1,2-Trichloroethane		50.0	50.2	ug/L	0.235	0.373	20	
Trichloroethene		50.0	50.3	ug/L	0.290	0.673	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.487	1.34	20	
1,2,3-Trichloropropane		50.0	50.0	ug/L	0.139	0.0248	20	
1,2,4-Trimethylbenzene		50.0	51.4	ug/L	2.84	2.75	20	
1,3,5-Trimethylbenzene		50.0	50.4	ug/L	2.68	0.882	20	
o-Xylene		50.0	49.6	ug/L	0.686	0.740	20	
m-,p-Xylene		100	106	ug/L	0.737	5.79	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5218353
Report generated 03/31/2017 10:48

Login Number: L17031339 Run Date: 03/28/2017 Sample ID: WG607985-02
Instrument ID: HPMS8 Run Time: 18:19 Method: 8260B
File ID: 8M418588 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG607986 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.3	ug/L	0.500	5.42	20	
1,1-Dichloroethene	CCC	50.0	51.4	ug/L	0.370	2.72	20	
1,2-Dichloropropane	CCC	50.0	50.9	ug/L	0.252	1.73	20	
Ethylbenzene	CCC	50.0	52.1	ug/L	0.606	4.26	20	
Toluene	CCC	50.0	50.1	ug/L	1.49	0.217	20	
Vinyl Chloride	CCC	50.0	58.2	ug/L	0.516	16.3	20	
Bromoform	SPCC	50.0	51.3	ug/L	0.197	2.55	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	1.04	0.434	20	
Chloromethane	SPCC	50.0	53.5	ug/L	0.508	6.94	20	
1,1-Dichloroethane	SPCC	50.0	50.9	ug/L	0.464	1.73	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.3	ug/L	0.471	3.35	20	
Xylenes		150	154	ug/L	0.704	2.61	20	
Acetone		50.0	43.2	ug/L	0.0258	13.6	20	
Benzene		50.0	50.9	ug/L	1.10	1.76	20	
Bromobenzene		50.0	47.5	ug/L	0.774	5.03	20	
Bromochloromethane		50.0	50.6	ug/L	0.161	1.17	20	
Bromodichloromethane		50.0	52.8	ug/L	0.369	5.61	20	
Bromomethane		50.0	49.0	ug/L	0.220	2.04	20	
2-Butanone		50.0	41.9	ug/L	0.0404	16.1	20	
n-Butylbenzene		50.0	48.1	ug/L	2.52	3.89	20	
sec-Butylbenzene		50.0	49.5	ug/L	3.27	0.976	20	
tert-Butylbenzene		50.0	47.1	ug/L	0.553	5.83	20	
Carbon Disulfide		50.0	57.1	ug/L	0.938	14.3	20	
Carbon Tetrachloride		50.0	55.0	ug/L	0.428	10.1	20	
Dibromochloromethane		50.0	49.3	ug/L	0.312	1.45	20	
Chloroethane		50.0	51.0	ug/L	0.184	1.99	20	
2-Chlorotoluene		50.0	47.5	ug/L	2.35	5.00	20	
4-Chlorotoluene		50.0	48.7	ug/L	2.11	2.58	20	
1,2-Dibromo-3-Chloropropane		50.0	45.3	ug/L	0.0693	9.34	20	
1,2-Dibromoethane		50.0	49.2	ug/L	0.236	1.68	20	
Dibromomethane		50.0	53.4	ug/L	0.142	6.76	20	
1,2-Dichlorobenzene		50.0	48.7	ug/L	1.38	2.50	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.59	1.88	20	
1,4-Dichlorobenzene		50.0	48.0	ug/L	1.57	3.97	20	
Dichlorodifluoromethane		50.0	56.3	ug/L	0.441	12.7	20	
1,2-Dichloroethane		50.0	49.6	ug/L	0.296	0.874	20	
cis-1,2-Dichloroethene		50.0	51.3	ug/L	0.305	2.69	20	
trans-1,2-Dichloroethene		50.0	49.9	ug/L	0.349	0.278	20	
1,3-Dichloropropane		50.0	48.3	ug/L	0.405	3.48	20	
2,2-Dichloropropane		50.0	55.4	ug/L	0.451	10.8	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/L	0.424	4.36	20	
trans-1,3-Dichloropropene		50.0	50.9	ug/L	0.447	1.81	20	

CCV - Modified 03/05/2008
PDF File ID: 5218353
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Login Number: L17031339 Run Date: 03/28/2017 Sample ID: WG607985-02
Instrument ID: HPMS8 Run Time: 18:19 Method: 8260B
File ID: 8M418588 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG607986 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.5	ug/L	0.385	3.08	20	
2-Hexanone		50.0	44.5	ug/L	0.0500	11.0	20	
Hexachlorobutadiene		50.0	41.8	ug/L	0.433	16.4	20	
Isopropylbenzene		50.0	51.3	ug/L	1.72	2.67	20	
p-Isopropyltoluene		50.0	50.2	ug/L	2.71	0.361	20	
4-Methyl-2-Pentanone		50.0	46.5	ug/L	0.0448	6.92	20	
Methylene Chloride		50.0	49.6	ug/L	0.272	0.806	20	
Naphthalene		50.0	42.3	ug/L	1.18	15.5	20	
n-Propylbenzene		50.0	48.7	ug/L	3.58	2.66	20	
Styrene		50.0	52.7	ug/L	1.18	5.49	20	
1,1,1,2-Tetrachloroethane		50.0	48.0	ug/L	0.400	3.98	20	
Tetrachloroethene		50.0	48.8	ug/L	0.315	2.37	20	
1,2,3-Trichlorobenzene		50.0	43.5	ug/L	0.761	13.0	20	
1,2,4-Trichlorobenzene		50.0	44.1	ug/L	0.934	11.8	20	
1,1,1-Trichloroethane		50.0	52.8	ug/L	0.459	5.55	20	
1,1,2-Trichloroethane		50.0	49.6	ug/L	0.232	0.836	20	
Trichlorofluoromethane		50.0	51.9	ug/L	0.499	3.83	20	
1,2,3-Trichloropropane		50.0	46.8	ug/L	0.130	6.47	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.77	0.143	20	
1,3,5-Trimethylbenzene		50.0	49.5	ug/L	2.63	0.940	20	
o-Xylene		50.0	49.1	ug/L	0.678	1.82	20	
m-,p-Xylene		100	105	ug/L	0.730	4.83	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5218353
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L17031339 Run Date: 03/29/2017 Sample ID: WG608100-02
Instrument ID: HPMS8 Run Time: 15:10 Method: 8260B
File ID: 8M418624 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG608101 Cal ID: HPMS8 - 21-MAR-17
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.1	ug/L	0.508	3.78	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/L	0.370	2.57	20	
1,2-Dichloropropane	CCC	50.0	51.9	ug/L	0.257	3.86	20	
Ethylbenzene	CCC	50.0	52.8	ug/L	0.614	5.66	20	
Toluene	CCC	50.0	50.1	ug/L	1.49	0.217	20	
Vinyl Chloride	CCC	50.0	59.7	ug/L	0.530	19.4	20	
Bromoform	SPCC	50.0	52.2	ug/L	0.201	4.44	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.286	20	
Chloromethane	SPCC	50.0	55.3	ug/L	0.525	10.6	20	
1,1-Dichloroethane	SPCC	50.0	52.2	ug/L	0.476	4.43	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.7	ug/L	0.465	4.54	20	
Trichloroethene		50.0	51.1	ug/L	0.294	2.12	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 5218353
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339
Instrument ID: HPMS8
Workgroup (AAB#): WG607681

ICAL CCV Number: WG607066-08
CAL ID: HPMS8-21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	345493	635449	821515
Upper Limit	NA	NA	690986	1270898	1643030
Lower Limit	NA	NA	172747	317725	410758
L17031339-05	1000	DL01	220278	423182	543177
WG607681-01	1.00	01	245754	473591	618397
WG607681-02	1.00	01	278901	505777	650586
WG607681-03	1.00	01	287727	523866	672323

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5220676
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339
Instrument ID: HPMS8
Workgroup (AAB#): WG607735

ICAL CCV Number: WG607066-08
CAL ID: HPMS8-21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	345493	635449	821515
Upper Limit	NA	NA	690986	1270898	1643030
Lower Limit	NA	NA	172747	317725	410758
L17031339-01	1.00	01	234140	443792	559811
L17031339-03	1.00	01	231900	432170	546847
L17031339-05	5000	DL02	252034	472321	607611
L17031339-06	1.00	01	226333	417725	530836
L17031339-07	10.0	DL01	210321	395784	499662
L17031339-08	1.00	01	219960	416096	526593
L17031339-09	1.00	01	217676	407913	515414
L17031339-10	1.00	01	216647	405314	512745
L17031339-14	1.00	01	216808	406536	508795
L17031339-16	1.00	01	227445	423852	538511
WG607735-01	1.00	01	271399	514548	649536
WG607735-02	1.00	01	275401	477425	600378
WG607735-03	1.00	01	279331	498427	632692

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5220676
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339
Instrument ID: HPMS8
Workgroup (AAB#): WG607986

ICAL CCV Number: WG607066-08
CAL ID: HPMS8 - 21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	345493	635449	821515
Upper Limit	NA	NA	690986	1270898	1643030
Lower Limit	NA	NA	172747	317725	410758
L17031339-12	2.00	DL01	244370	460343	577206
WG607986-01	1.00	01	295933	554960	700624
WG607986-02	1.00	01	316227	567792	715432

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5220676
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.
INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339
Instrument ID: HPMS8
Workgroup (AAB#): WG608101

ICAL CCV Number: WG607066-08
CAL ID: HPMS8-21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	345493	635449	821515
Upper Limit	NA	NA	690986	1270898	1643030
Lower Limit	NA	NA	172747	317725	410758
L17031339-12	10.0	DL02	373961	700456	881586
WG608101-01	1.00	01	355604	686263	860933
WG608101-02	1.00	01	407864	719675	906534
WG608101-03	1.00	01	427479	745496	927329

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 5220676
Report generated 03/31/2017 10:48

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339
Instrument ID: HPMS8
Workgroup (AAB#): WG607681

ICAL CCV Number: WG607066-08
CAL ID: HPMS8 - 21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	17.83	14.81	10.94
Upper Limit	NA	NA	18.33	15.31	11.44
Lower Limit	NA	NA	17.33	14.31	10.44
L17031339-05	1000	DL01	17.82	14.81	10.94
WG607681-01	1.00	01	17.83	14.81	10.94
WG607681-02	1.00	01	17.82	14.81	10.94
WG607681-03	1.00	01	17.83	14.81	10.94

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5220677
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339
Instrument ID: HPMS8
Workgroup (AAB#): WG607735

ICAL CCV Number: WG607066-08
CAL ID: HPMS8 - 21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	17.83	14.81	10.94
Upper Limit	NA	NA	18.33	15.31	11.44
Lower Limit	NA	NA	17.33	14.31	10.44
L17031339-01	1.00	01	17.83	14.81	10.94
L17031339-03	1.00	01	17.83	14.81	10.94
L17031339-05	5000	DL02	17.82	14.81	10.94
L17031339-06	1.00	01	17.83	14.8	10.94
L17031339-07	10.0	DL01	17.82	14.8	10.94
L17031339-08	1.00	01	17.83	14.81	10.94
L17031339-09	1.00	01	17.83	14.81	10.94
L17031339-10	1.00	01	17.82	14.8	10.94
L17031339-14	1.00	01	17.82	14.81	10.94
L17031339-16	1.00	01	17.82	14.8	10.94
WG607735-01	1.00	01	17.82	14.81	10.94
WG607735-02	1.00	01	17.83	14.8	10.94
WG607735-03	1.00	01	17.83	14.81	10.94

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5220677
Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY

(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339

Instrument ID: HPMS8

Workgroup (AAB#): WG607986

ICAL CCV Number: WG607066-08

CAL ID: HPMS8 - 21-MAR-17

Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	17.83	14.81	10.94
Upper Limit	NA	NA	18.33	15.31	11.44
Lower Limit	NA	NA	17.33	14.31	10.44
L17031339-12	2.00	DL01	17.82	14.81	10.94
WG607986-01	1.00	01	17.83	14.81	10.94
WG607986-02	1.00	01	17.83	14.81	10.94

IS-1 - 1,4-Dichlorobenzene-d4

IS-2 - Chlorobenzene-d5

IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008

PDF File ID: 5220677

Report generated: 03/31/2017 10:48

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L17031339
Instrument ID: HPMS8
Workgroup (AAB#): WG608101

ICAL CCV Number: WG607066-08
CAL ID: HPMS8 - 21-MAR-17
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG607066-08	NA	NA	17.83	14.81	10.94
Upper Limit	NA	NA	18.33	15.31	11.44
Lower Limit	NA	NA	17.33	14.31	10.44
L17031339-12	10.0	DL02	17.83	14.81	10.94
WG608101-01	1.00	01	17.83	14.81	10.94
WG608101-02	1.00	01	17.83	14.81	10.94
WG608101-03	1.00	01	17.83	14.81	10.94

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 5220677
Report generated: 03/31/2017 10:48

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418571.D Vial: 16
Acq On : 27 Mar 2017 16:57 Operator: TMB
Sample : L17031339-01 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 17:19:40 2017 Quant Results File: 8260WTR.RES

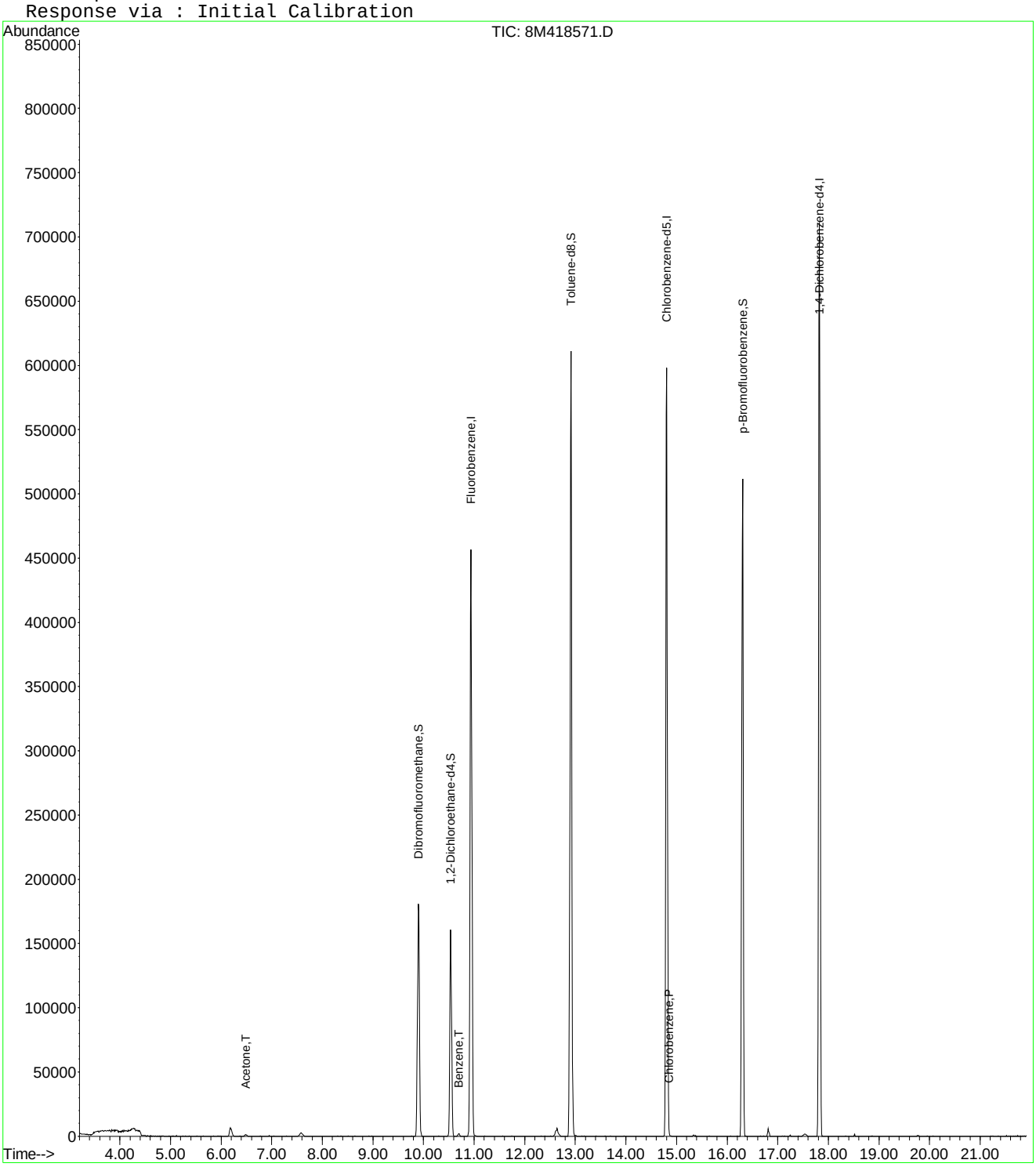
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

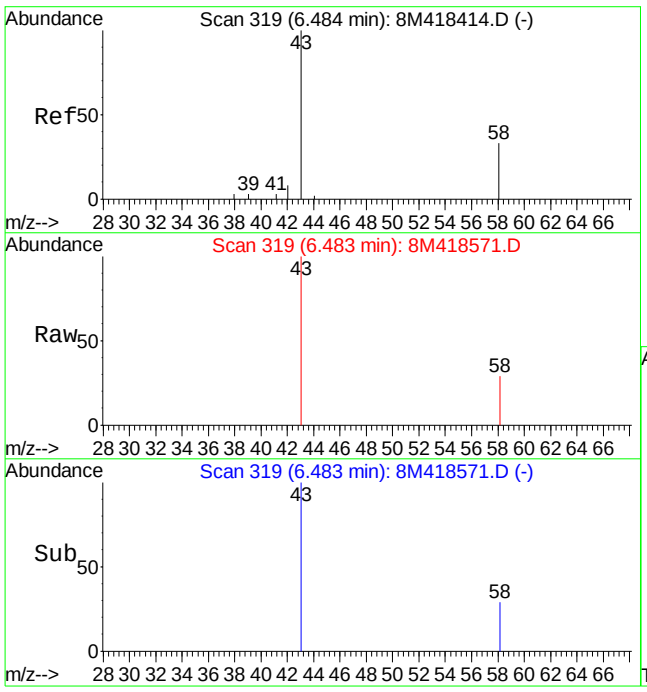
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	559811	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	443792	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	234140	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	152420	24.0068	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.04%			
43) 1,2-Dichloroethane-d4	10.54	65	135378	24.6050	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.44%			
58) Toluene-d8	12.91	98	555364	24.8775	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.52%			
80) p-Bromofluorobenzene	16.31	95	211159	23.8324	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.32%			
Target Compounds						Qvalue
13) Acetone	6.48	43	2983	4.4558	ug/L #	65
46) Benzene	10.69	78	3621	0.1503	ug/L #	63
70) Chlorobenzene	14.85	112	2248	0.1210	ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M418571.D 8260WTR.M Tue Mar 28 08:30:14 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418571.D Vial: 16
Acq On : 27 Mar 2017 16:57 Operator: TMB
Sample : L17031339-01 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 18:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

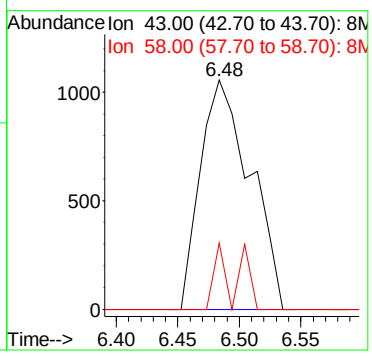


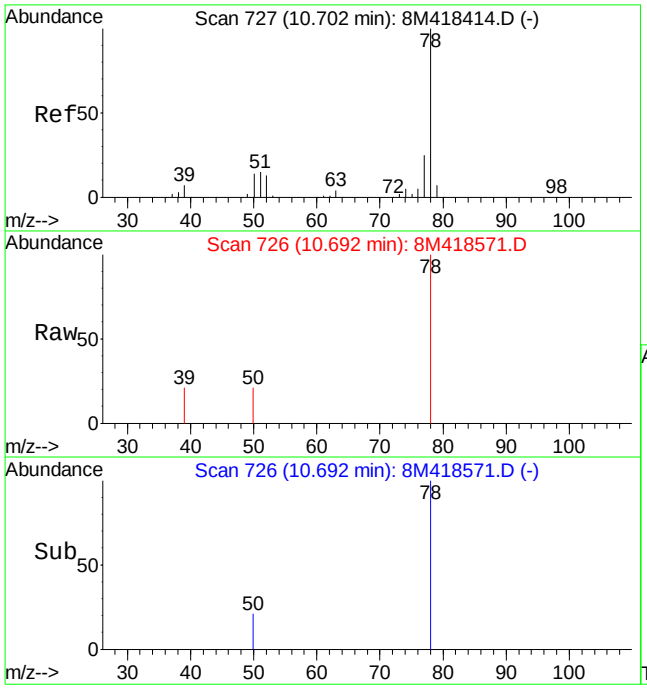


#13
Acetone
Concen: 4.46 ug/L
RT: 6.48 min Scan# 319
Delta R.T. -0.00 min
Lab File: 8M418571.D
Acq: 27 Mar 2017 16:57

Tgt Ion: 43 Resp: 2983

Ion	Ratio	Lower	Upper
43	100		
58	12.6	19.4	45.4#

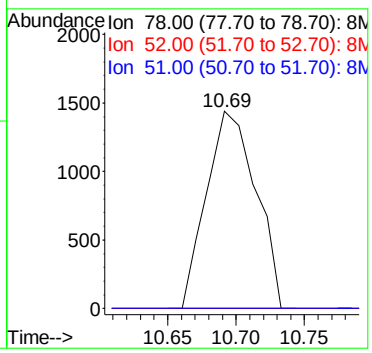


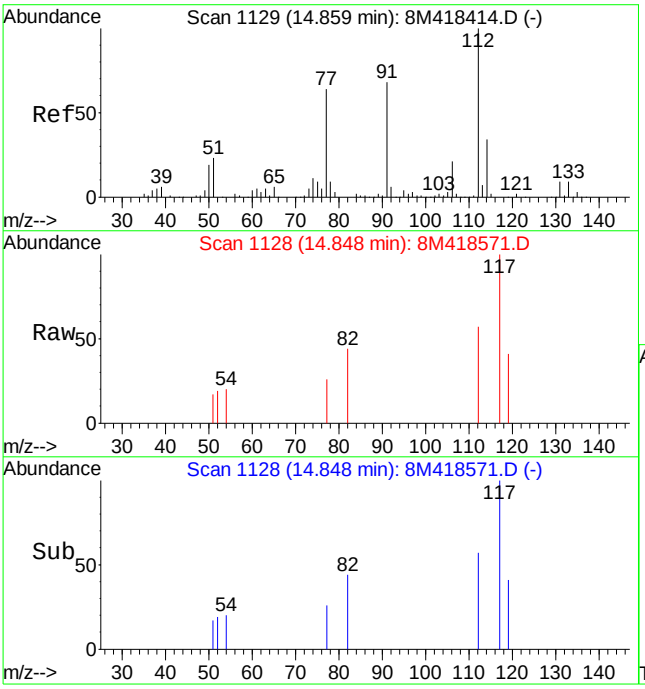


#46
Benzene
Concen: 0.15 ug/L
RT: 10.69 min Scan# 726
Delta R.T. -0.01 min
Lab File: 8M418571.D
Acq: 27 Mar 2017 16:57

Tgt Ion: 78 Resp: 3621

Ion	Ratio	Lower	Upper
78	100		
52	0.0	8.1	18.9#
51	0.0	10.1	23.7#

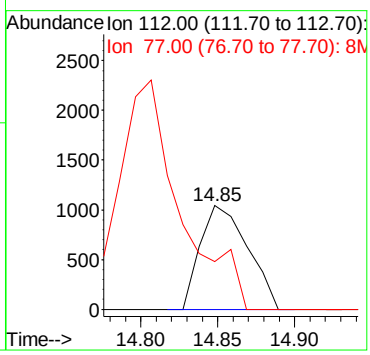




#70
Chlorobenzene
Concen: 0.12 ug/L
RT: 14.85 min Scan# 1128
Delta R.T. -0.01 min
Lab File: 8M418571.D
Acq: 27 Mar 2017 16:57

Tgt Ion:112 Resp: 2248

Ion	Ratio	Lower	Upper
112	100		
77	278.6	45.5	106.1#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418572.D Vial: 17
Acq On : 27 Mar 2017 17:28 Operator: TMB
Sample : L17031339-03 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 17:49:59 2017 Quant Results File: 8260WTR.RES

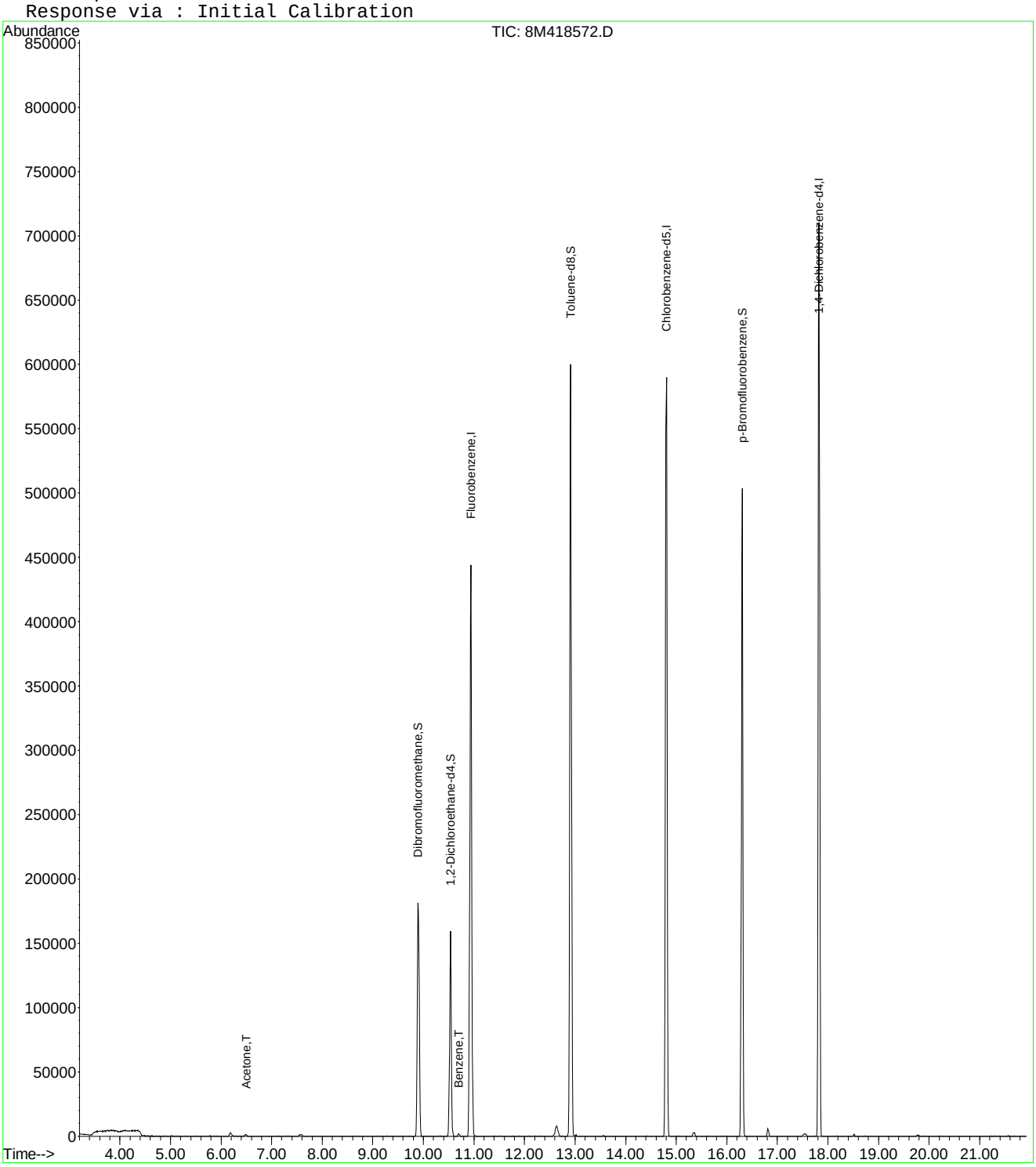
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

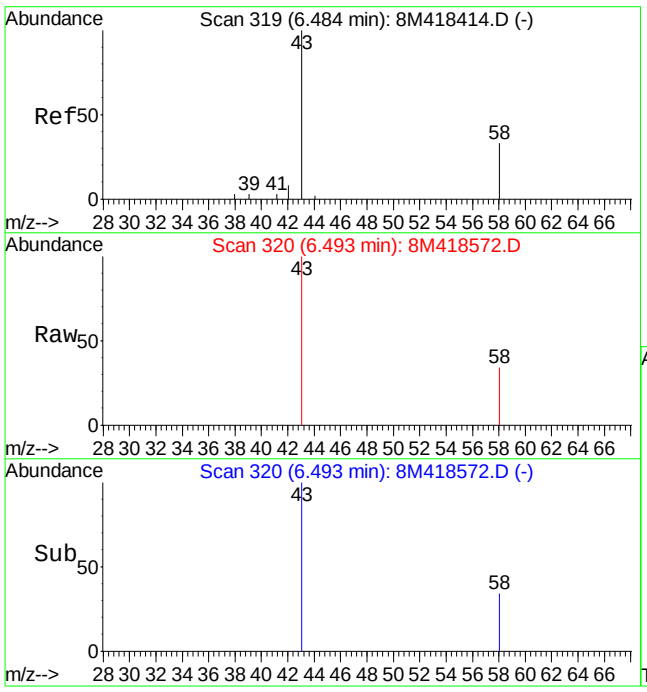
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	546847	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	432170	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	231900	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	148540	23.9504 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.80%		
43) 1,2-Dichloroethane-d4	10.54	65	133194	24.7820 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.12%		
58) Toluene-d8	12.91	98	544405	25.0424 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.16%		
80) p-Bromofluorobenzene	16.31	95	208500	23.7596 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.04%		
Target Compounds					Qvalue
13) Acetone	6.49	43	2659	4.0660 ug/L #	70
46) Benzene	10.70	78	2975	0.1264 ug/L #	63

(#) = qualifier out of range (m) = manual integration
8M418572.D 8260WTR.M Tue Mar 28 08:30:18 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418572.D Vial: 17
Acq On : 27 Mar 2017 17:28 Operator: TMB
Sample : L17031339-03 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 18:49 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

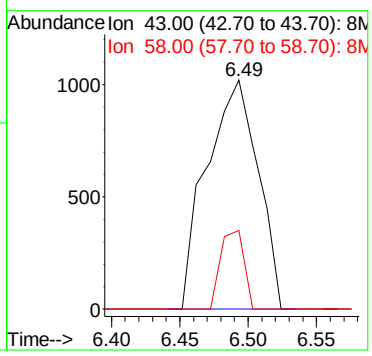


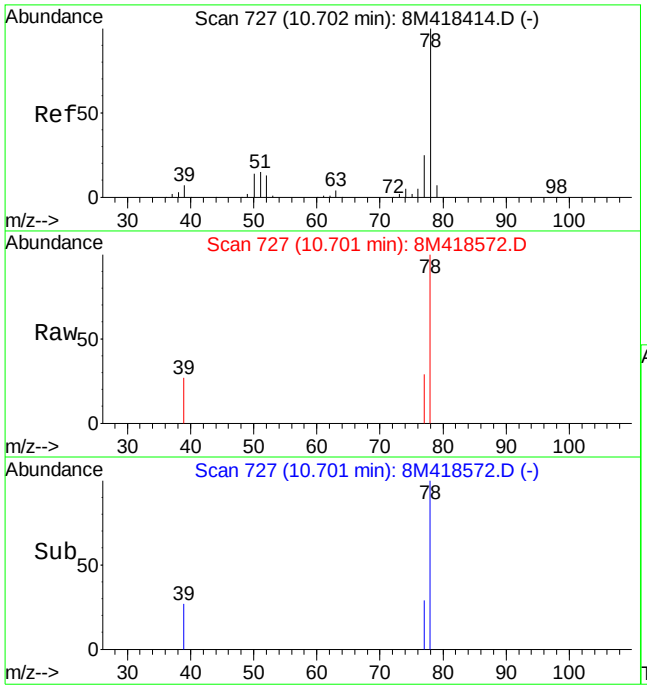


#13
Acetone
Concen: 4.07 ug/L
RT: 6.49 min Scan# 320
Delta R.T. 0.01 min
Lab File: 8M418572.D
Acq: 27 Mar 2017 17:28

Tgt Ion: 43 Resp: 2659

Ion	Ratio	Lower	Upper
43	100		
58	15.8	19.4	45.4#

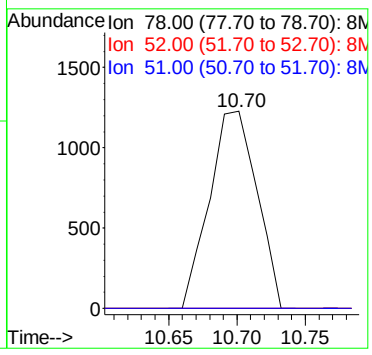




#46
Benzene
Concen: 0.13 ug/L
RT: 10.70 min Scan# 727
Delta R.T. -0.00 min
Lab File: 8M418572.D
Acq: 27 Mar 2017 17:28

Tgt Ion: 78 Resp: 2975

Ion	Ratio	Lower	Upper
78	100		
52	0.0	8.1	18.9#
51	0.0	10.1	23.7#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418542.D Vial: 19
Acq On : 25 Mar 2017 20:35 Operator: JDS
Sample : L17031339-05 A 1000X 826-LOW Inst : HPMS8
Misc : 1,1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 08:30:31 2017 Quant Results File: 8260WTR.RES

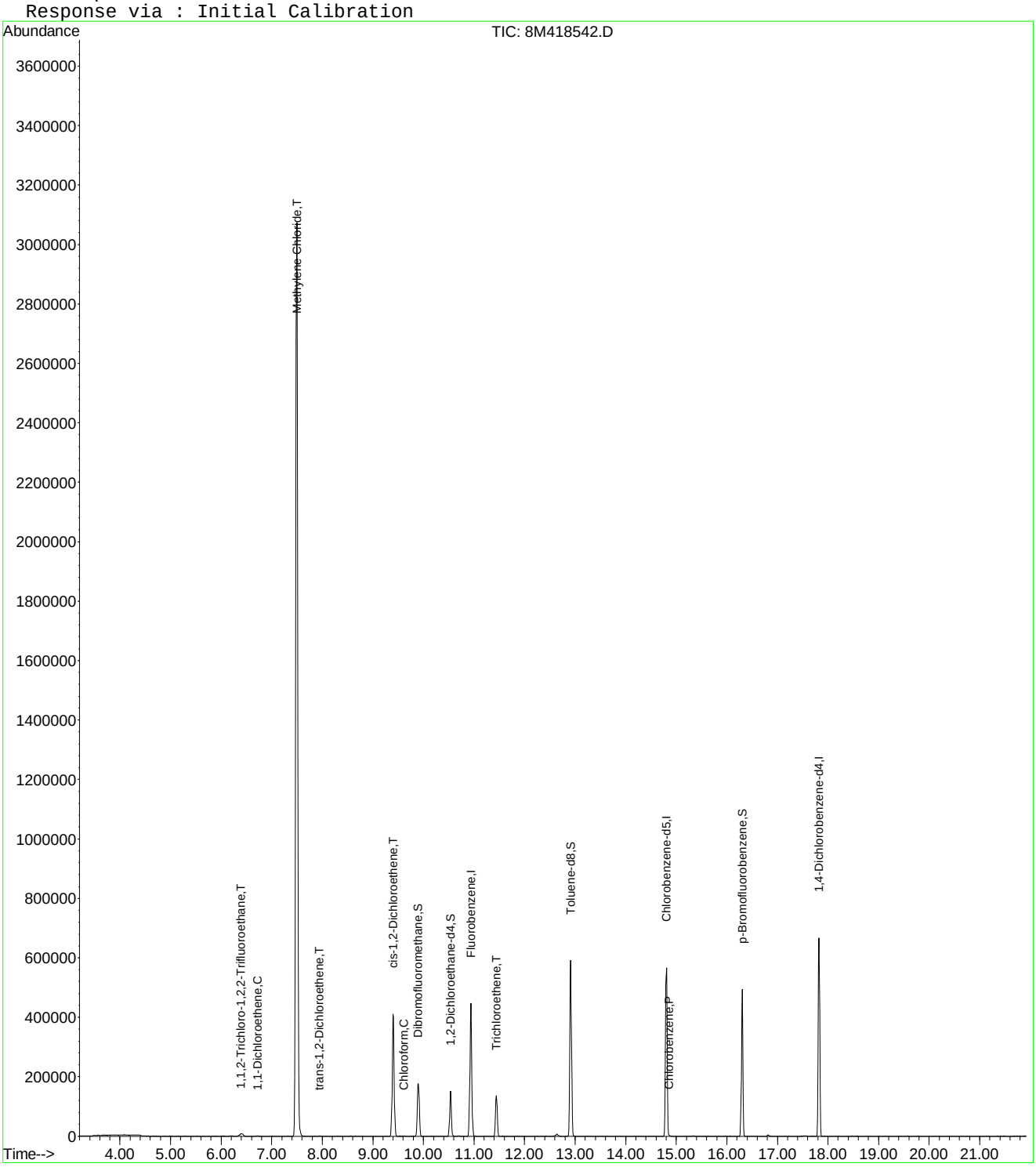
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

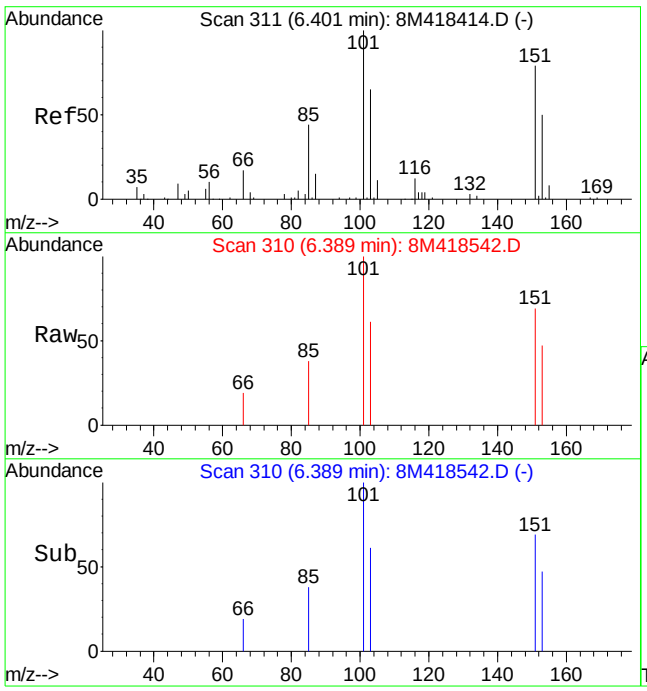
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	543177	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	423182	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	220278	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.89	111	149072	24.1985 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.80%		
43) 1,2-Dichloroethane-d4	10.54	65	127111	23.8100 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.24%		
58) Toluene-d8	12.91	98	534615	25.1144 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.30	95	201326	24.1526 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.60%		
Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.39	101	10961	1.9531 ug/L	98
14) 1,1-Dichloroethene	6.72	61	2103	0.2685 ug/L	92
19) Methylene Chloride	7.50	84	2011531	337.3264 ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	1016	0.1338 ug/L	67
32) cis-1,2-Dichloroethene	9.40	96	248845	38.6126 ug/L	87
33) Chloroform	9.61	83	1549	0.1350 ug/L	79
47) Trichloroethene	11.44	130	54531	8.7229 ug/L	97
70) Chlorobenzene	14.86	112	3213	0.1814 ug/L #	2

(#) = qualifier out of range (m) = manual integration
8M418542.D 8260WTR.M Mon Mar 27 08:30:34 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032517\8M418542.D Vial: 19
Acq On : 25 Mar 2017 20:35 Operator: JDS
Sample : L17031339-05 A 1000X 826-LOW Inst : HPMS8
Misc : 1,1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 8:30 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

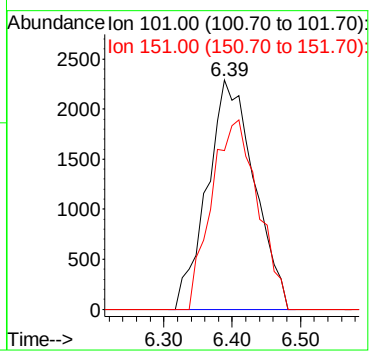


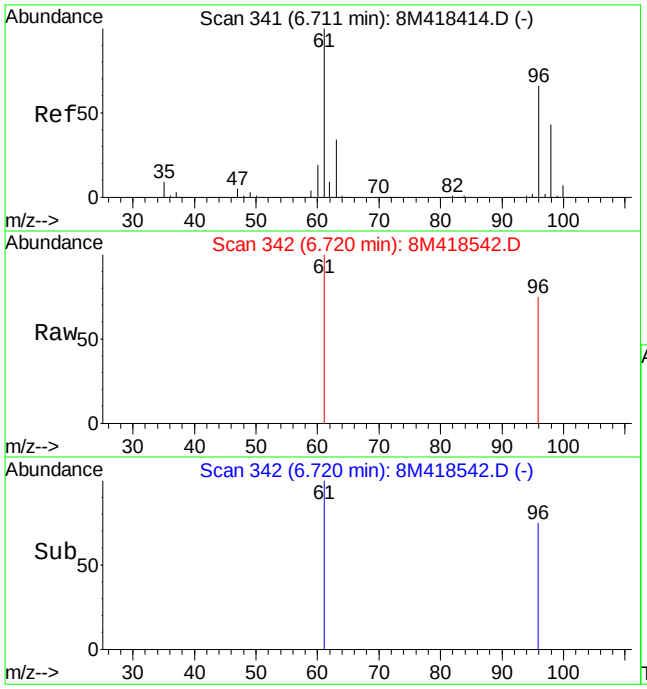


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.95 ug/L
RT: 6.39 min Scan# 310
Delta R.T. -0.01 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion:101 Resp: 10961

Ion	Ratio	Lower	Upper
101	100		
151	81.8	39.9	119.9

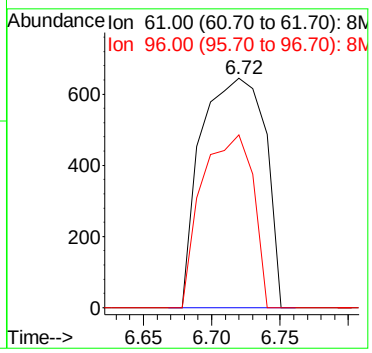


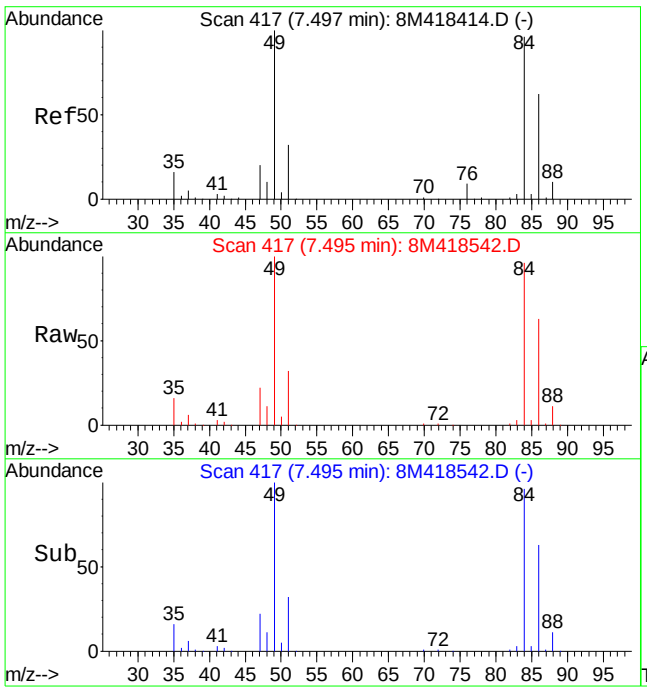


#14
1,1-Dichloroethene
Concen: 0.27 ug/L
RT: 6.72 min Scan# 342
Delta R.T. 0.01 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion: 61 Resp: 2103

Ion	Ratio	Lower	Upper
61	100		
96	60.2	40.0	93.4

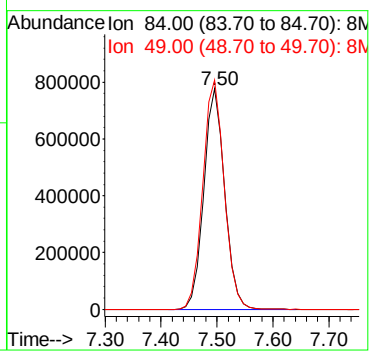


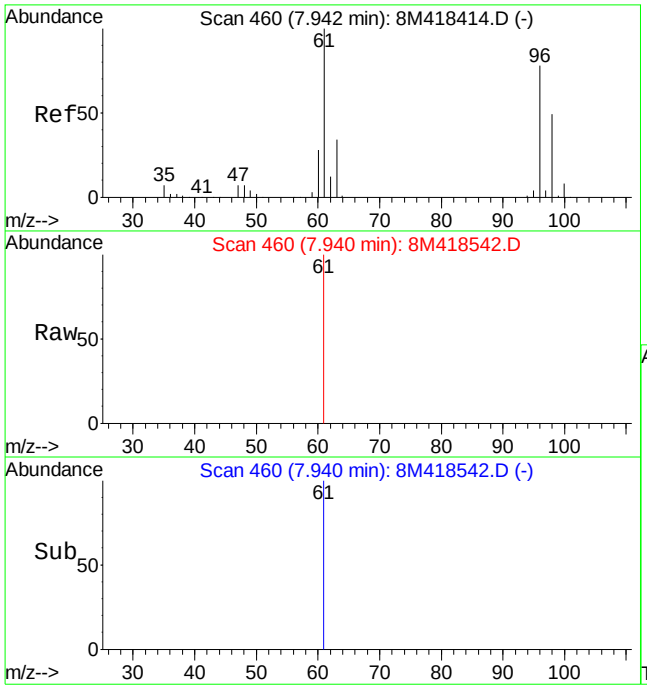


#19
Methylene Chloride
Concen: 337.33 ug/L
RT: 7.50 min Scan# 417
Delta R.T. -0.00 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion: 84 Resp: 2011531

Ion	Ratio	Lower	Upper
84	100		
49	106.4	63.9	149.1

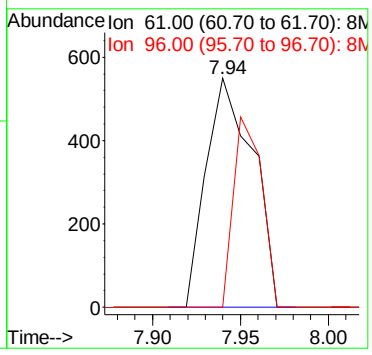


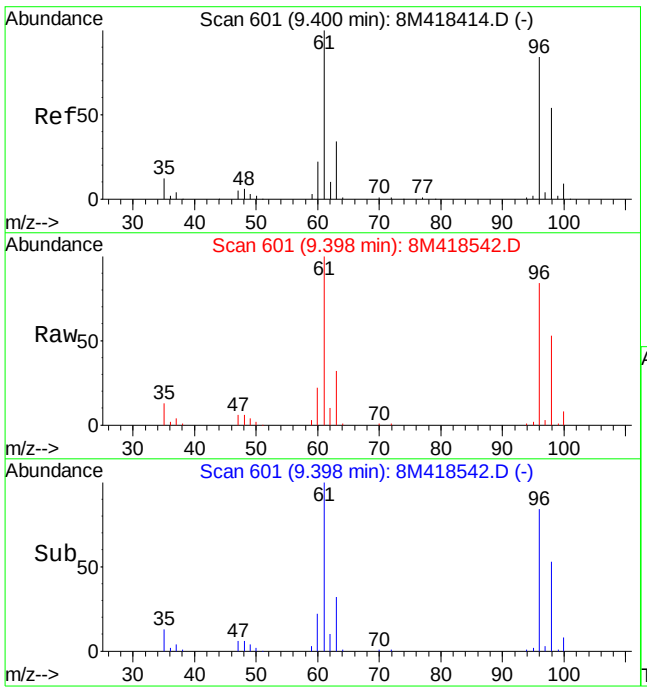


#23
trans-1,2-Dichloroethene
Concen: 0.13 ug/L
RT: 7.94 min Scan# 460
Delta R.T. -0.00 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion: 61 Resp: 1016

Ion	Ratio	Lower	Upper
61	100		
96	50.2	47.2	110.0

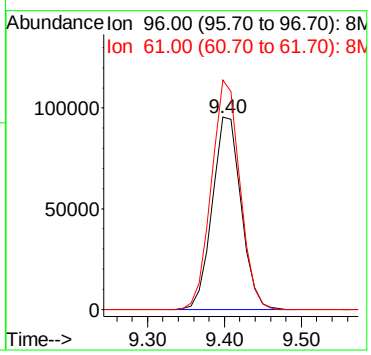


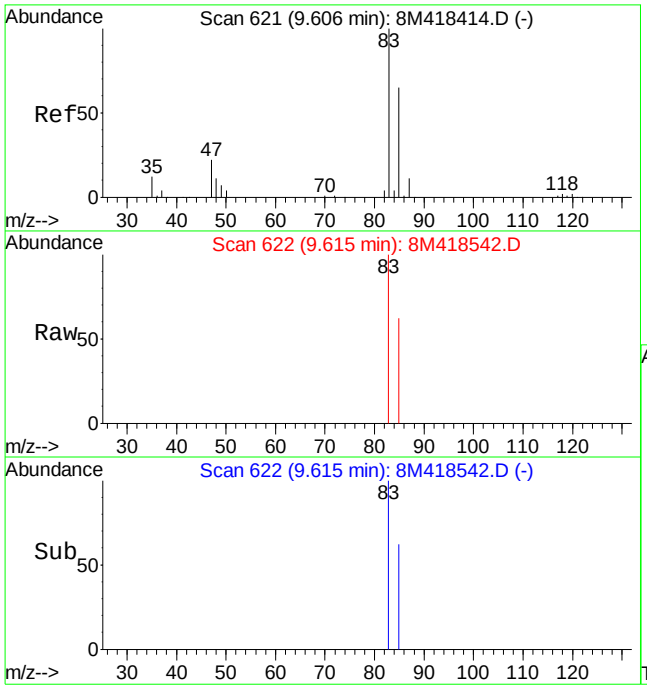


#32
cis-1,2-Dichloroethene
Concen: 38.61 ug/L
RT: 9.40 min Scan# 601
Delta R.T. -0.00 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion: 96 Resp: 248845

Ion	Ratio	Lower	Upper
96	100		
61	118.2	80.3	187.3

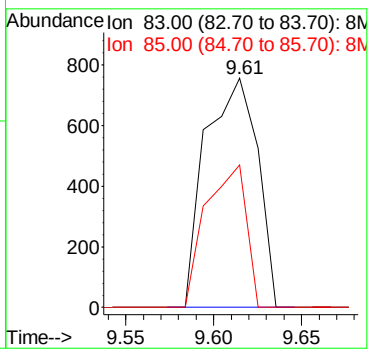


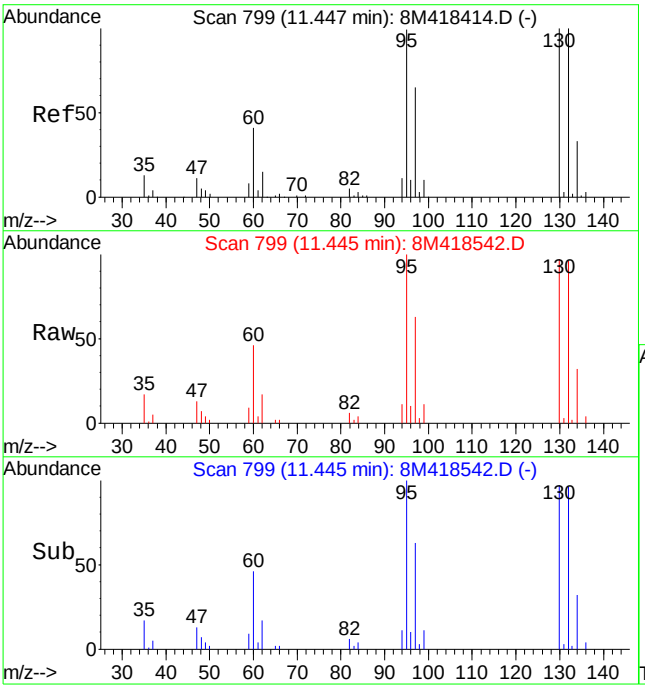


#33
Chloroform
Concen: 0.13 ug/L
RT: 9.61 min Scan# 622
Delta R.T. 0.01 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion: 83 Resp: 1549

Ion	Ratio	Lower	Upper
83	100		
85	48.2	39.1	91.3

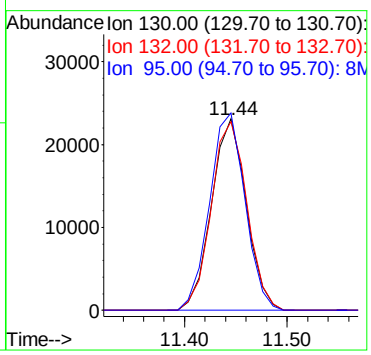


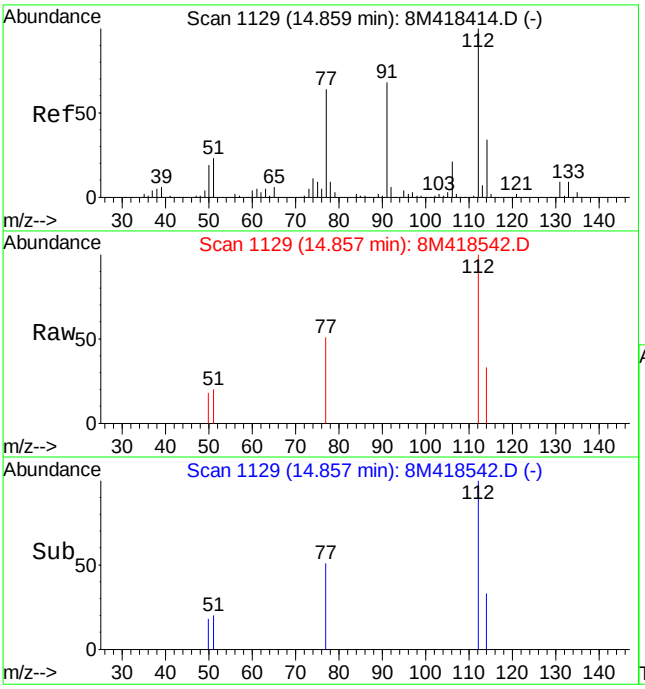


#47
Trichloroethene
Concen: 8.72 ug/L
RT: 11.44 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion:130 Resp: 54531

Ion	Ratio	Lower	Upper
130	100		
132	101.0	59.4	138.6
95	104.8	60.1	140.3

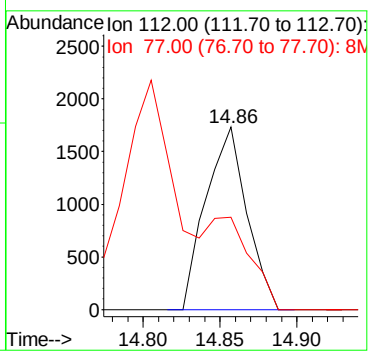




#70
Chlorobenzene
Concen: 0.18 ug/L
RT: 14.86 min Scan# 1129
Delta R.T. -0.00 min
Lab File: 8M418542.D
Acq: 25 Mar 2017 20:35

Tgt Ion:112 Resp: 3213

Ion	Ratio	Lower	Upper
112	100		
77	160.0	45.5	106.1#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418568.D Vial: 13
Acq On : 27 Mar 2017 15:28 Operator: TMB
Sample : L17031339-05 B 5000X 826-LOW D1 Inst : HPMS8
Misc : 1,5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 15:50:26 2017 Quant Results File: 8260WTR.RES

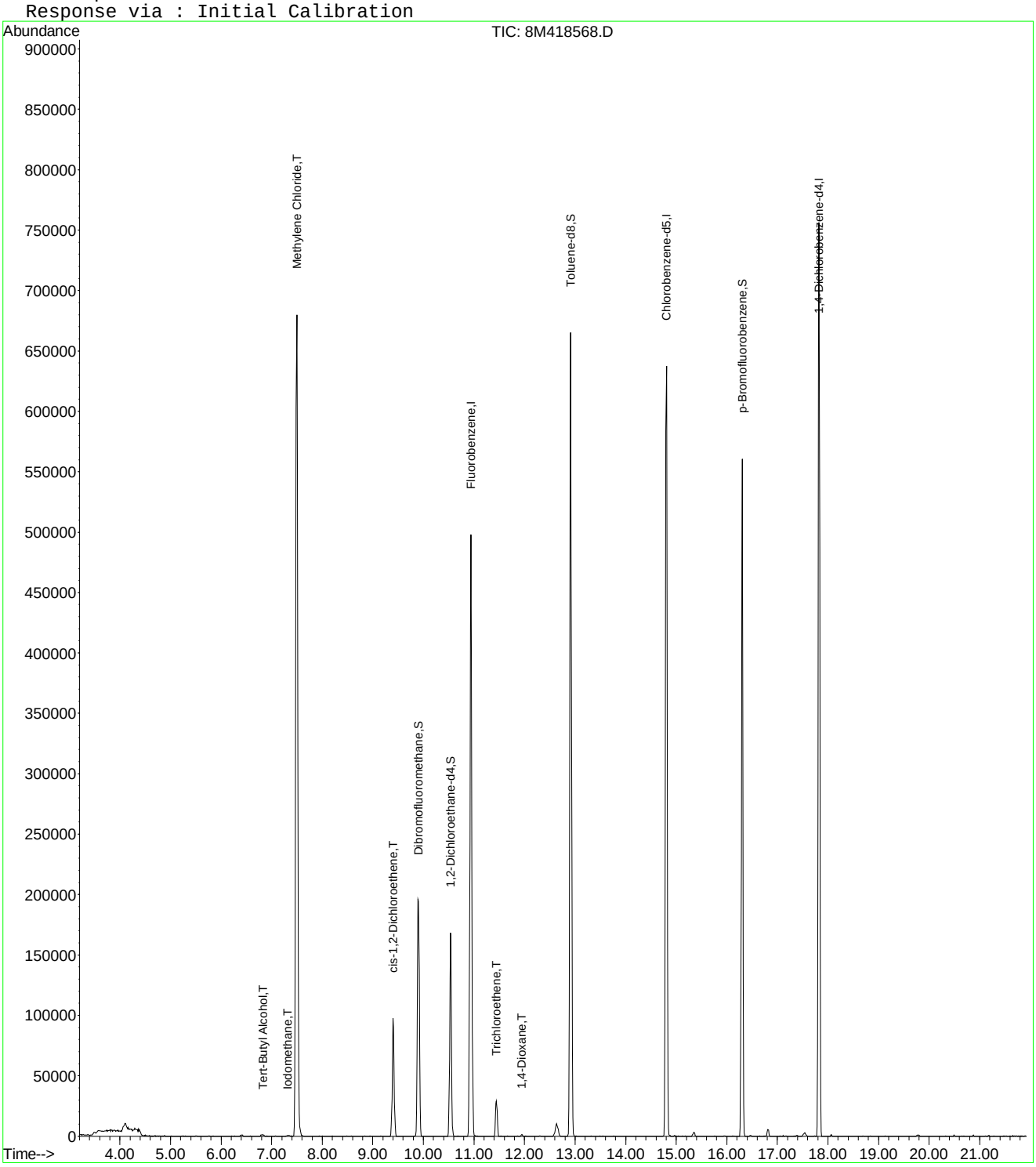
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

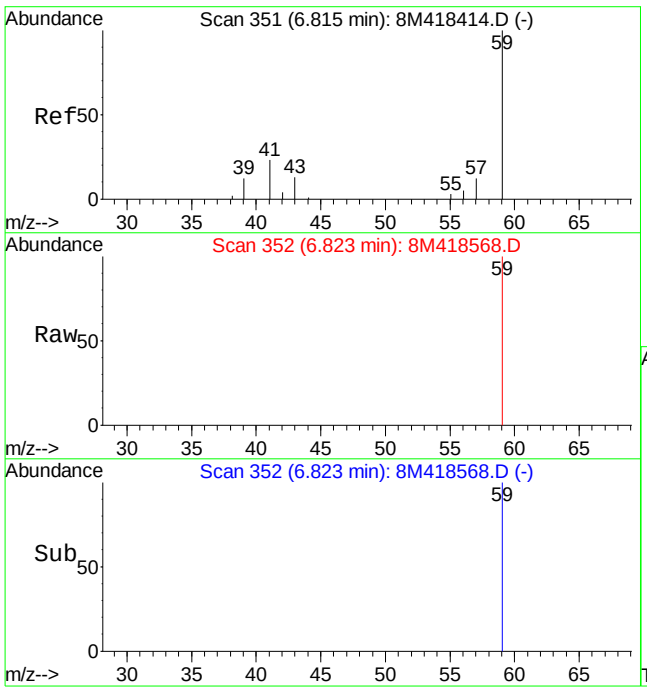
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	607611	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	472321	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	252034	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	167352	24.2851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.16%		
43) 1,2-Dichloroethane-d4	10.54	65	143600	24.0462 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.20%		
58) Toluene-d8	12.91	98	595536	25.0657 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.28%		
80) p-Bromofluorobenzene	16.30	95	229892	24.1046 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.40%		
Target Compounds					Qvalue
15) Tert-Butyl Alcohol	6.82	59	3882	16.7853 ug/L #	66
17) Iodomethane	7.31	142	2491	0.8428 ug/L #	31
19) Methylene Chloride	7.50	84	461549	69.1922 ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	58764	8.1513 ug/L	88
47) Trichloroethene	11.45	130	12976	1.8556 ug/L	98
51) 1,4-Dioxane	11.94	88	2153	74.5095 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M418568.D 8260WTR.M Tue Mar 28 08:29:59 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418568.D Vial: 13
Acq On : 27 Mar 2017 15:28 Operator: TMB
Sample : L17031339-05 B 5000X 826-LOW D1 Inst : HPMS8
Misc : 1,5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 16:50 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

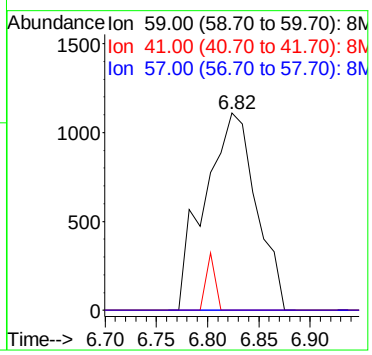


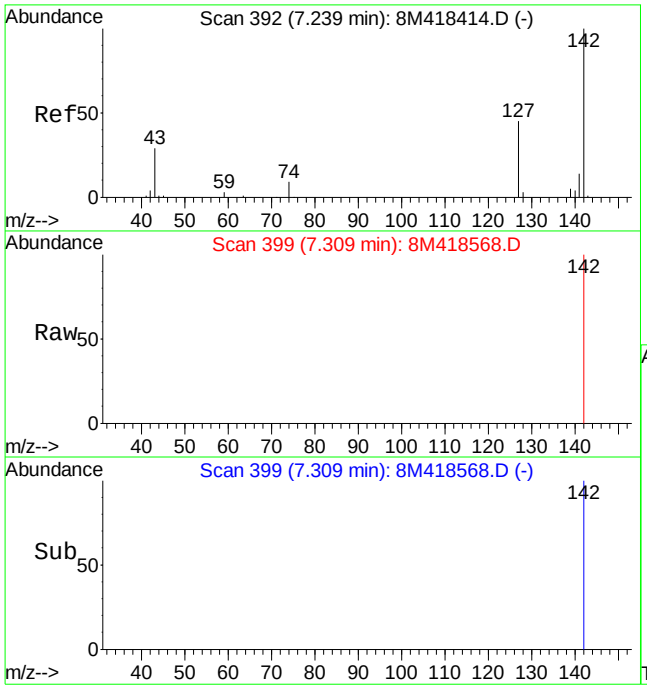


#15
Tert-Butyl Alcohol
Concen: 16.79 ug/L
RT: 6.82 min Scan# 352
Delta R.T. 0.01 min
Lab File: 8M418568.D
Acq: 27 Mar 2017 15:28

Tgt Ion: 59 Resp: 3882

Ion	Ratio	Lower	Upper
59	100		
41	5.2	14.0	32.6#
57	0.0	5.8	13.4#

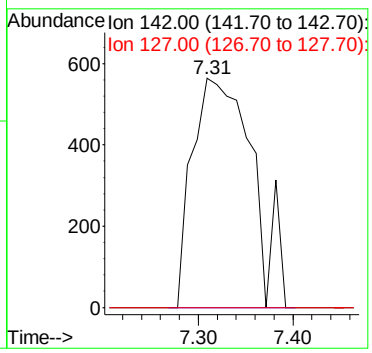


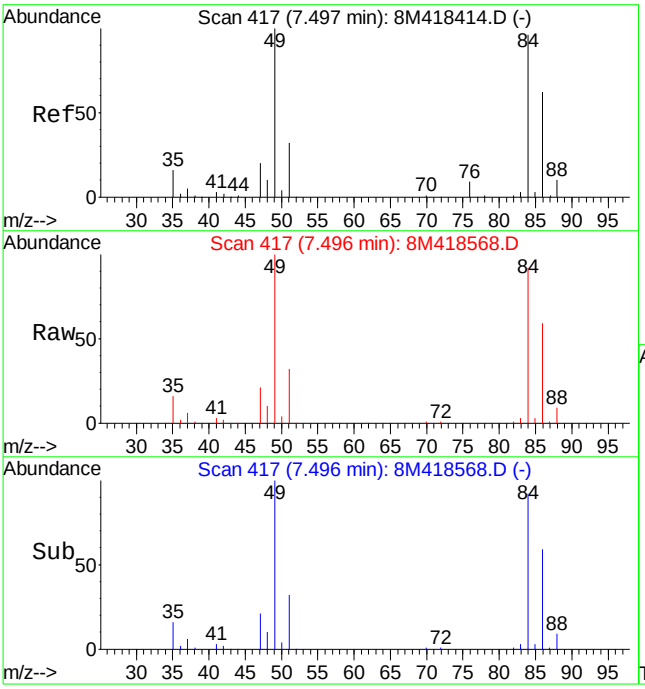


#17
Iodomethane
Concen: 0.84 ug/L
RT: 7.31 min Scan# 399
Delta R.T. 0.07 min
Lab File: 8M418568.D
Acq: 27 Mar 2017 15:28

Tgt Ion:142 Resp: 2491

Ion	Ratio	Lower	Upper
142	100		
127	0.0	27.0	63.0#

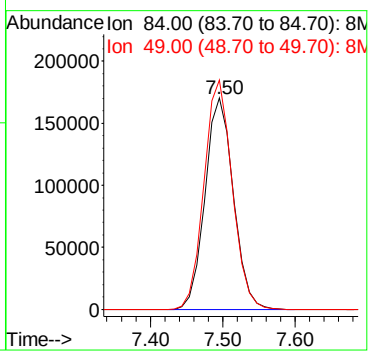


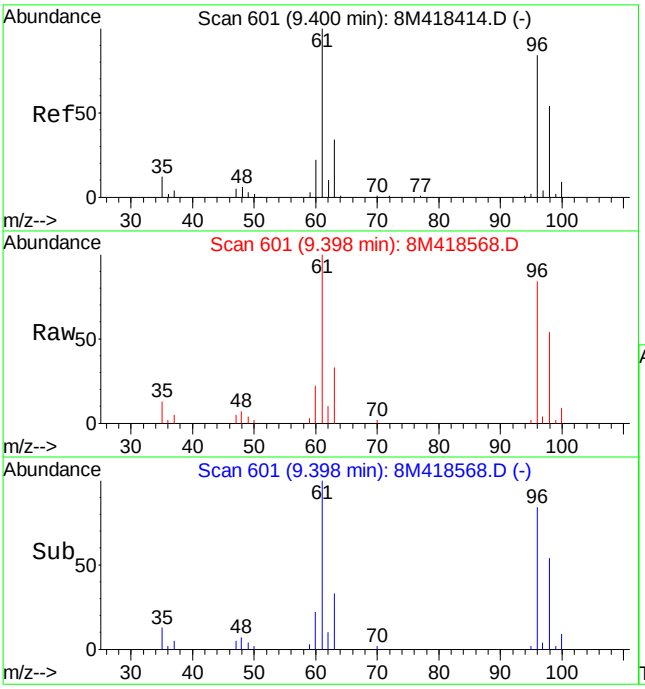


#19
Methylene Chloride
Concen: 69.19 ug/L
RT: 7.50 min Scan# 417
Delta R.T. -0.00 min
Lab File: 8M418568.D
Acq: 27 Mar 2017 15:28

Tgt Ion: 84 Resp: 461549

Ion	Ratio	Lower	Upper
84	100		
49	107.9	63.9	149.1

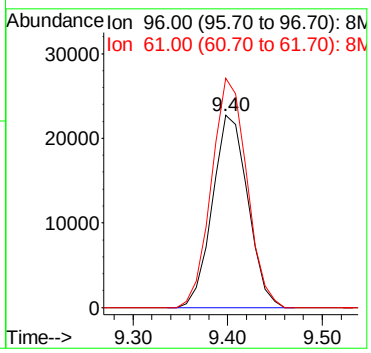


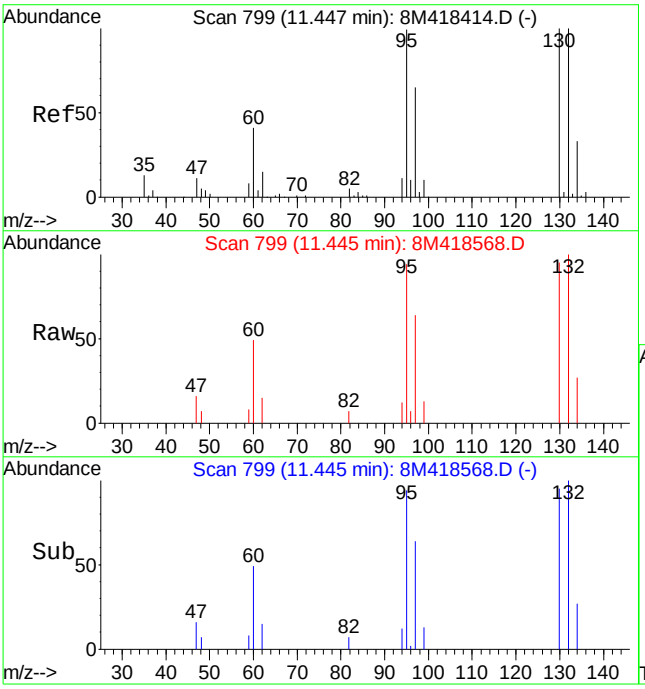


#32
cis-1,2-Dichloroethene
Concen: 8.15 ug/L
RT: 9.40 min Scan# 601
Delta R.T. -0.00 min
Lab File: 8M418568.D
Acq: 27 Mar 2017 15:28

Tgt Ion: 96 Resp: 58764

Ion	Ratio	Lower	Upper
96	100		
61	119.3	80.3	187.3

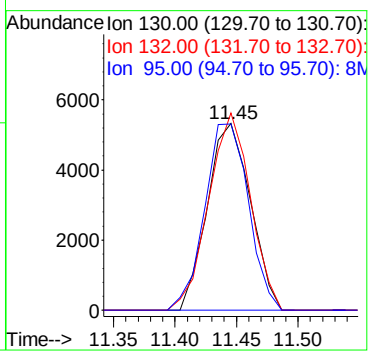


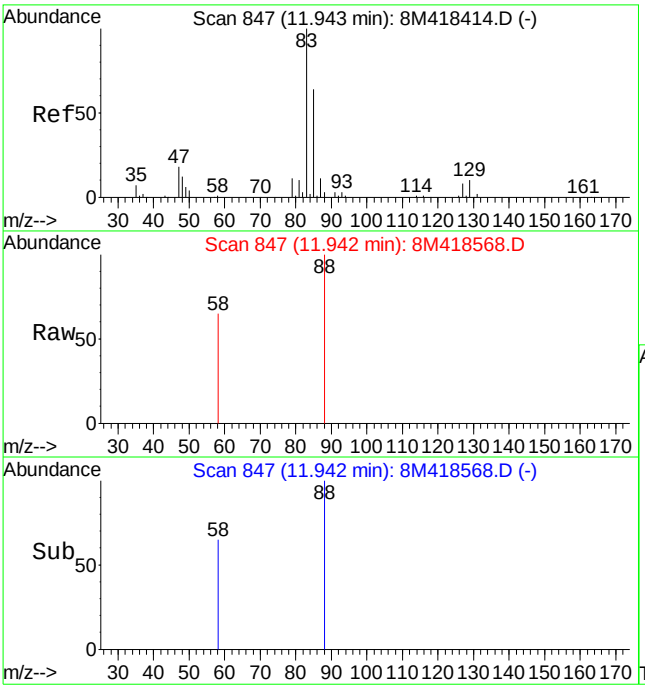


#47
Trichloroethene
Concen: 1.86 ug/L
RT: 11.45 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M418568.D
Acq: 27 Mar 2017 15:28

Tgt Ion:130 Resp: 12976

Ion	Ratio	Lower	Upper
130	100		
132	102.7	59.4	138.6
95	101.2	60.1	140.3

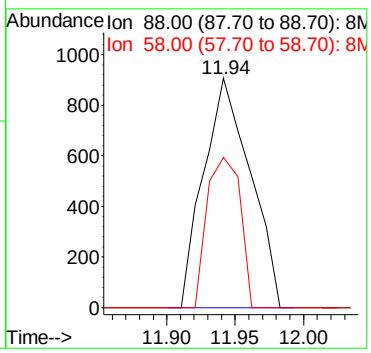




#51
1,4-Dioxane
Concen: 74.51 ug/L
RT: 11.94 min Scan# 847
Delta R.T. -0.00 min
Lab File: 8M418568.D
Acq: 27 Mar 2017 15:28

Tgt Ion: 88 Resp: 2153

Ion	Ratio	Lower	Upper
88	100		
58	46.5	30.0	70.0



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418574.D Vial: 19
Acq On : 27 Mar 2017 18:27 Operator: TMB
Sample : L17031339-06 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 18:49:52 2017 Quant Results File: 8260WTR.RES

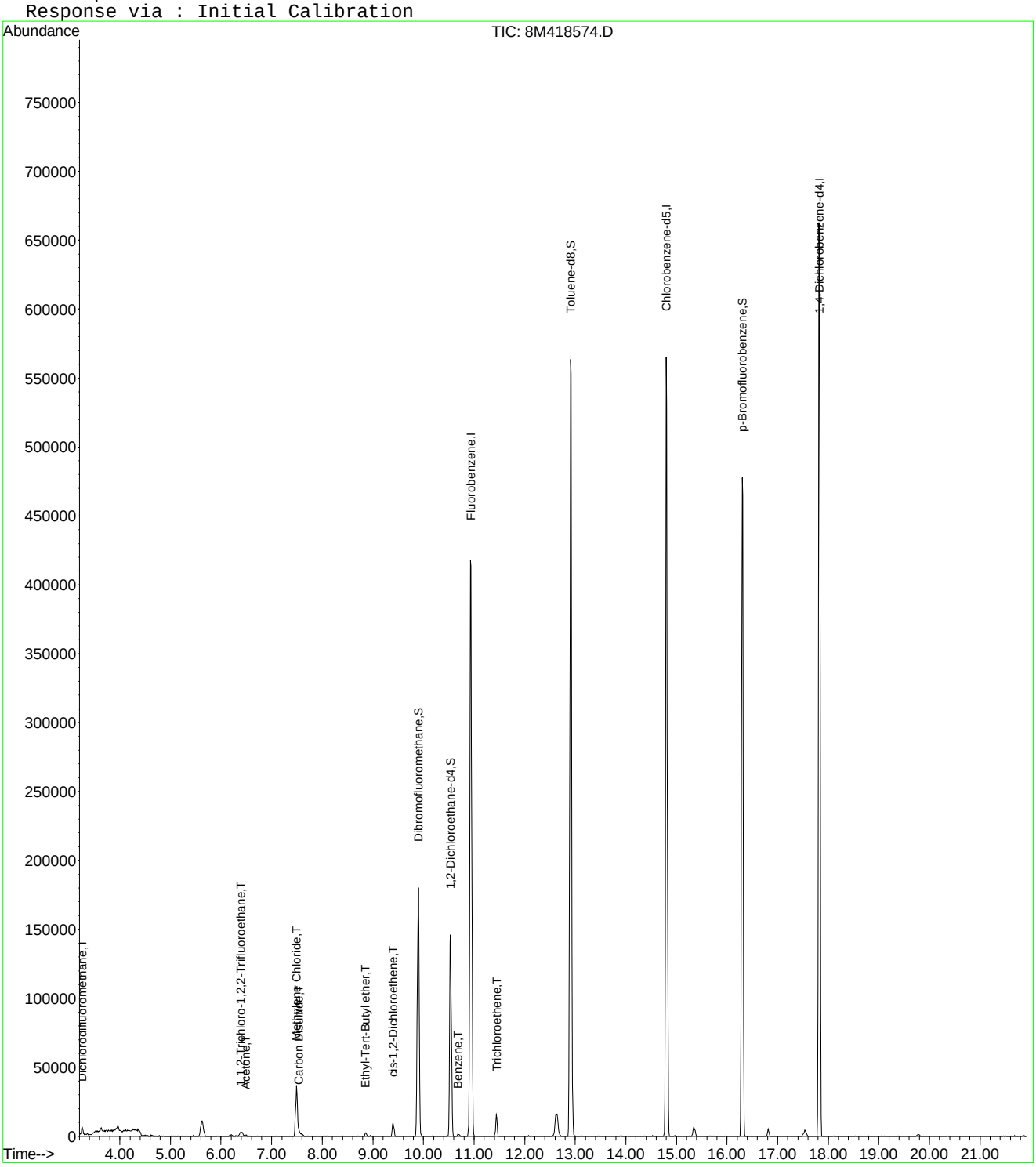
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

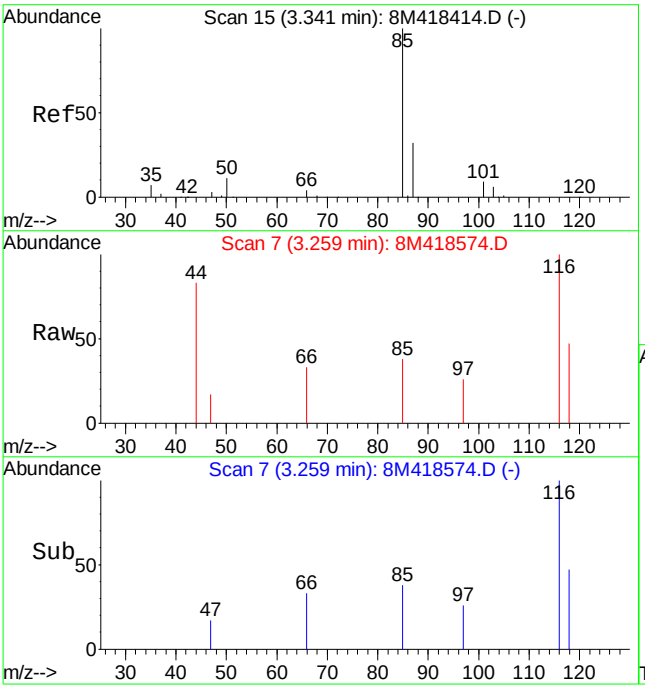
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	530836	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.80	117	417725	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	226333	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	143926	23.9064 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.64%		
43) 1,2-Dichloroethane-d4	10.54	65	128930	24.7122 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.84%		
58) Toluene-d8	12.91	98	530074	25.2264 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.92%		
80) p-Bromofluorobenzene	16.30	95	199634	23.3089 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.24%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	1022	0.1229 ug/L #	42
12) 1,1,2-Trichloro-1,2,2-Trif	6.39	101	4348	0.7928 ug/L	96
13) Acetone	6.48	43	1825	2.8748 ug/L #	42
19) Methylene Chloride	7.49	84	24631	4.2266 ug/L	92
20) Carbon Disulfide	7.54	76	4726	0.2711 ug/L #	87
28) Ethyl-Tert-Butyl ether	8.85	59	1647	0.1214 ug/L #	36
32) cis-1,2-Dichloroethene	9.40	96	6327	1.0046 ug/L	91
46) Benzene	10.68	78	2855	0.1250 ug/L #	63
47) Trichloroethene	11.45	130	7317	1.1977 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M418574.D 8260WTR.M Tue Mar 28 08:30:24 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418574.D Vial: 19
Acq On : 27 Mar 2017 18:27 Operator: TMB
Sample : L17031339-06 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 19:49 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

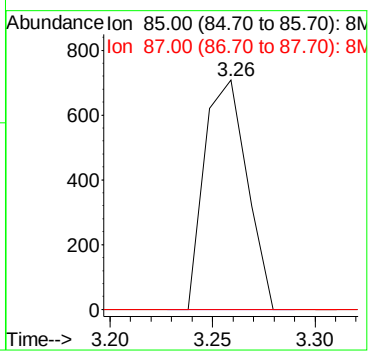


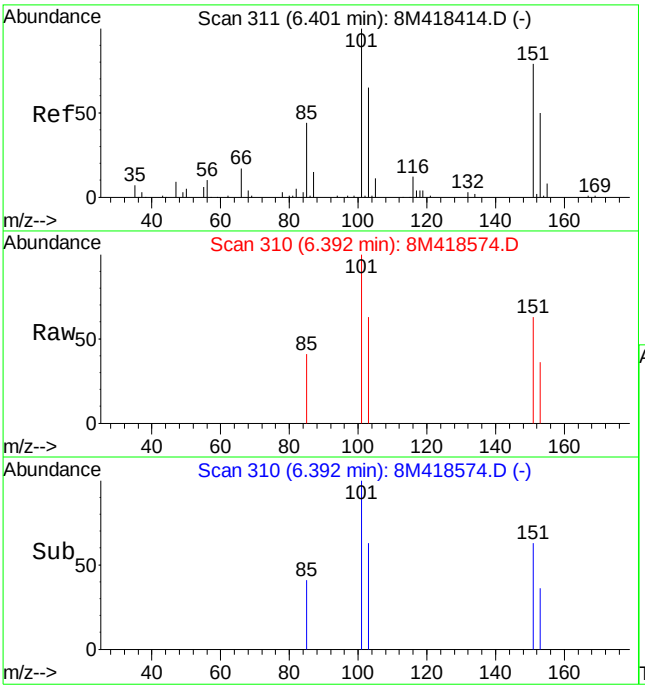


#2
Dichlorodifluoromethane
Concen: 0.12 ug/L
RT: 3.26 min Scan# 7
Delta R.T. -0.08 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion: 85 Resp: 1022

Ion	Ratio	Lower	Upper
85	100		
87	0.0	19.4	45.4#

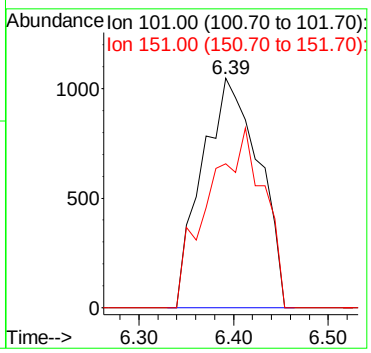


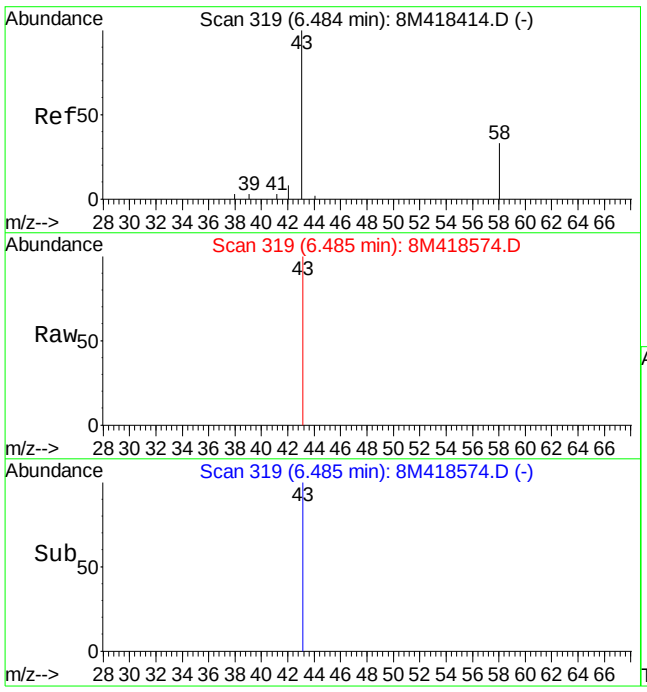


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.79 ug/L
RT: 6.39 min Scan# 310
Delta R.T. -0.01 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion:101 Resp: 4348

Ion	Ratio	Lower	Upper
101	100		
151	76.8	39.9	119.9

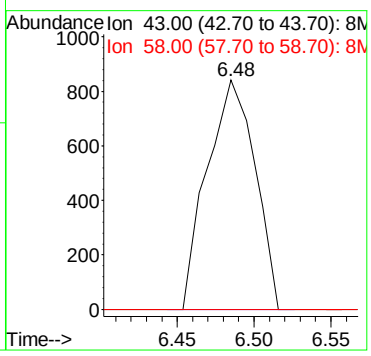


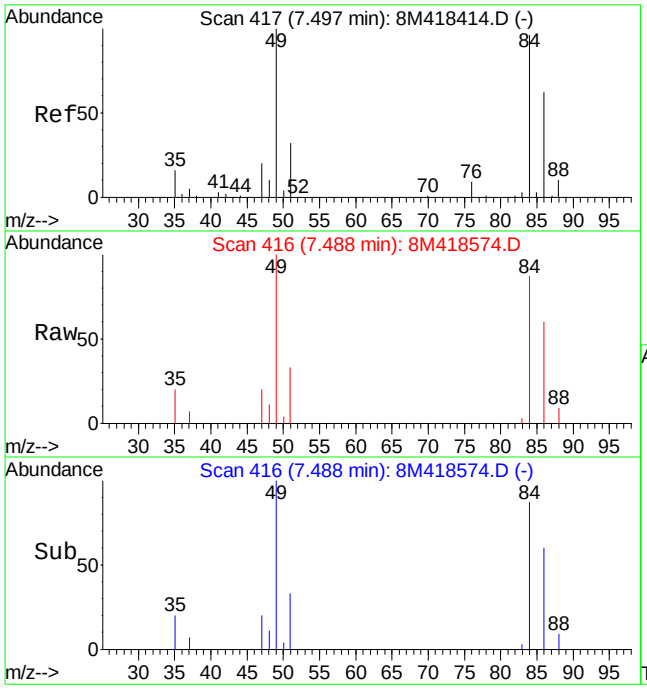


#13
Acetone
Concen: 2.87 ug/L
RT: 6.48 min Scan# 319
Delta R.T. 0.00 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion: 43 Resp: 1825

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

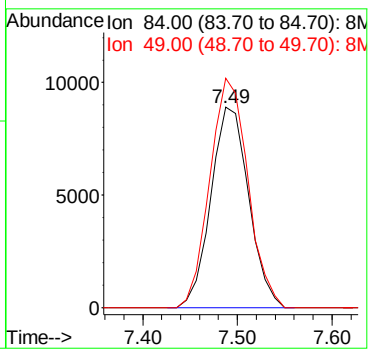


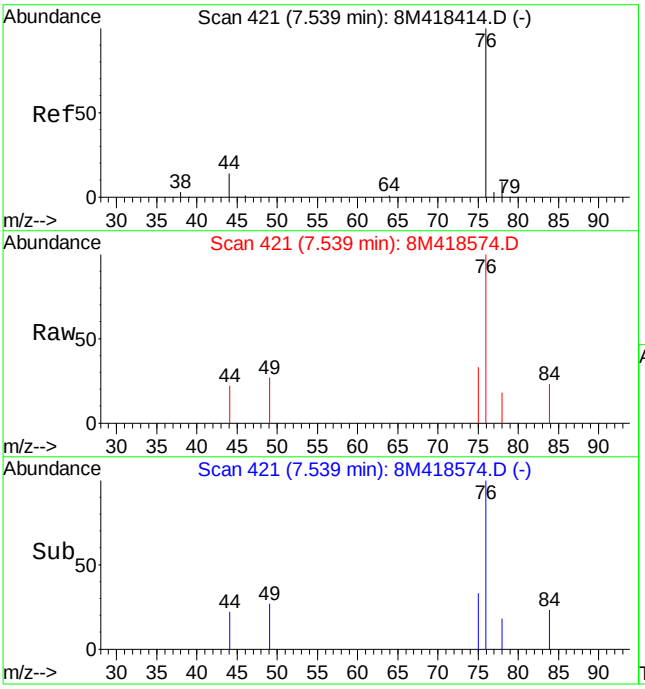


#19
Methylene Chloride
Concen: 4.23 ug/L
RT: 7.49 min Scan# 416
Delta R.T. -0.01 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion: 84 Resp: 24631

Ion	Ratio	Lower	Upper
84	100		
49	115.0	63.9	149.1

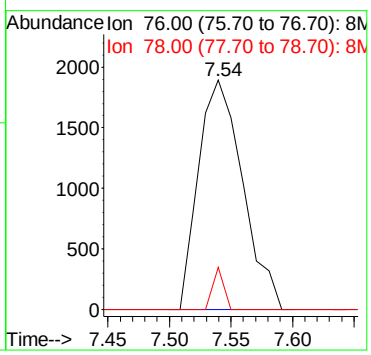


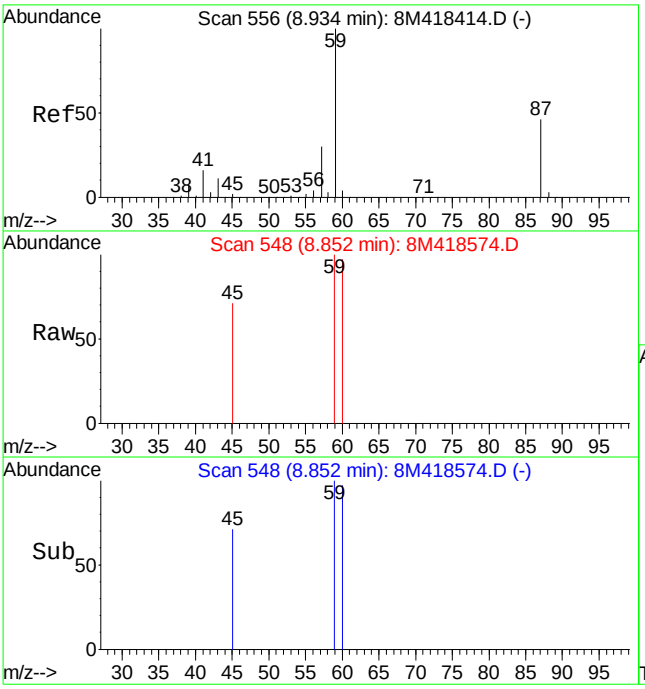


#20
Carbon Disulfide
Concen: 0.27 ug/L
RT: 7.54 min Scan# 421
Delta R.T. 0.00 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion: 76 Resp: 4726

Ion	Ratio	Lower	Upper
76	100		
78	4.5	5.6	13.0#

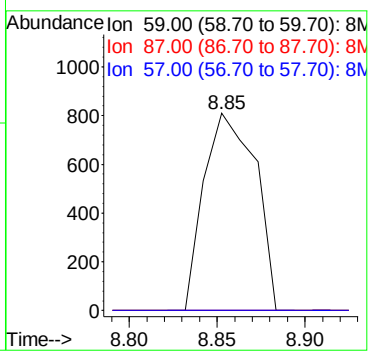


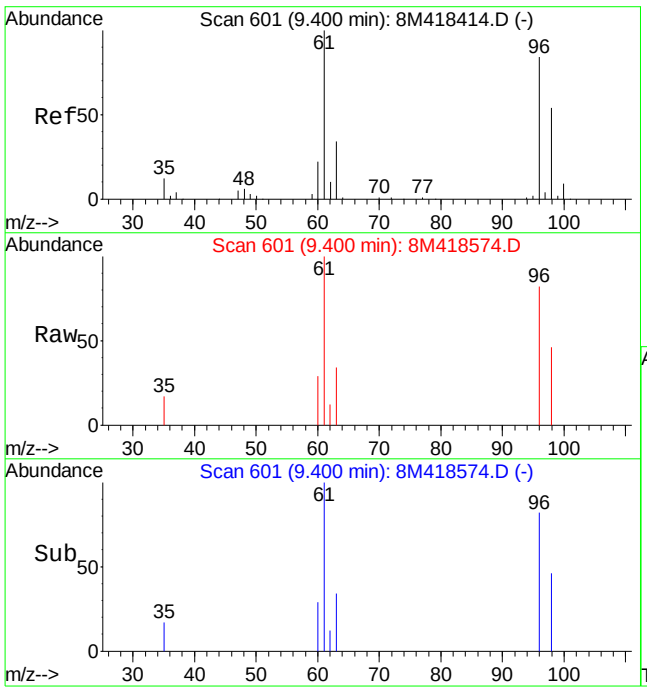


#28
Ethyl-Tert-Butyl ether
Concen: 0.12 ug/L
RT: 8.85 min Scan# 548
Delta R.T. -0.08 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion: 59 Resp: 1647

Ion	Ratio	Lower	Upper
59	100		
87	0.0	27.5	64.1#
57	0.0	18.2	42.4#

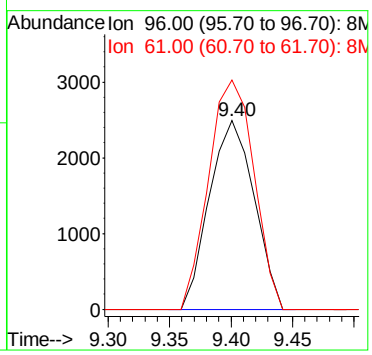


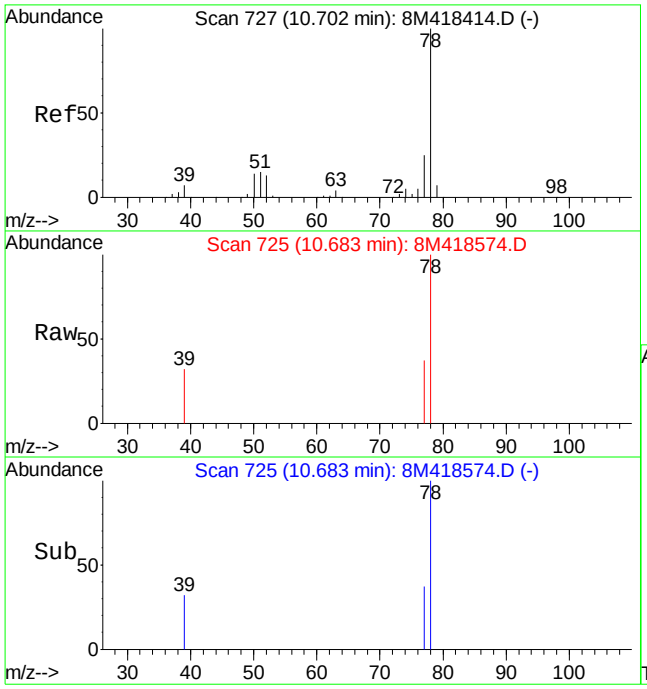


#32
cis-1,2-Dichloroethene
Concen: 1.00 ug/L
RT: 9.40 min Scan# 601
Delta R.T. 0.00 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion: 96 Resp: 6327

Ion	Ratio	Lower	Upper
96	100		
61	122.9	80.3	187.3

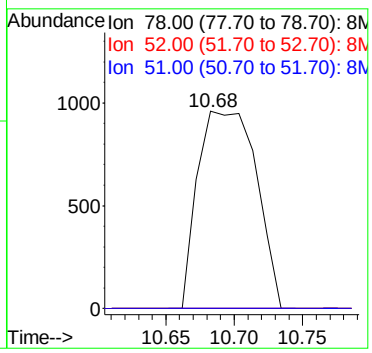


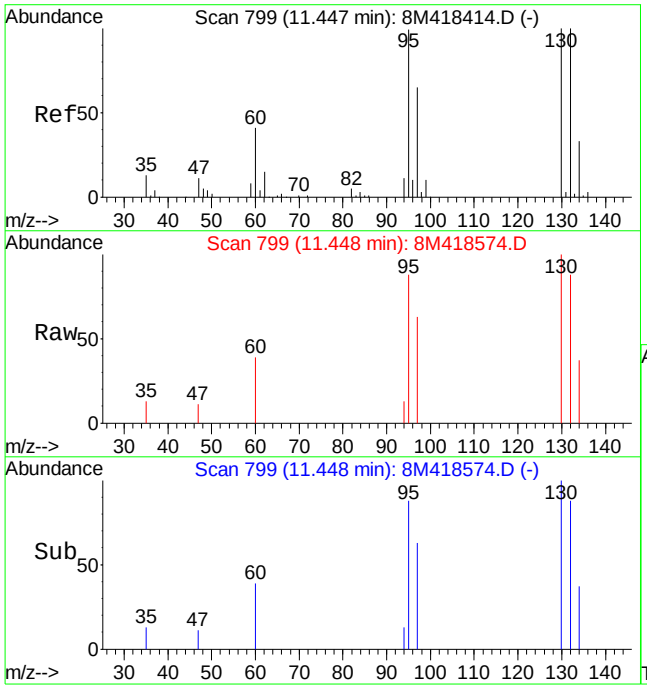


#46
Benzene
Concen: 0.12 ug/L
RT: 10.68 min Scan# 725
Delta R.T. -0.02 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion: 78 Resp: 2855

Ion	Ratio	Lower	Upper
78	100		
52	0.0	8.1	18.9#
51	0.0	10.1	23.7#

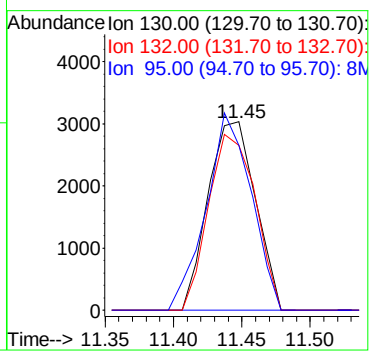




#47
Trichloroethene
Concen: 1.20 ug/L
RT: 11.45 min Scan# 799
Delta R.T. 0.00 min
Lab File: 8M418574.D
Acq: 27 Mar 2017 18:27

Tgt Ion:130 Resp: 7317

Ion	Ratio	Lower	Upper
130	100		
132	92.0	59.4	138.6
95	99.1	60.1	140.3



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418579.D Vial: 24
Acq On : 27 Mar 2017 21:10 Operator: TMB
Sample : L17031339-07 A 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 21:31:59 2017 Quant Results File: 8260WTR.RES

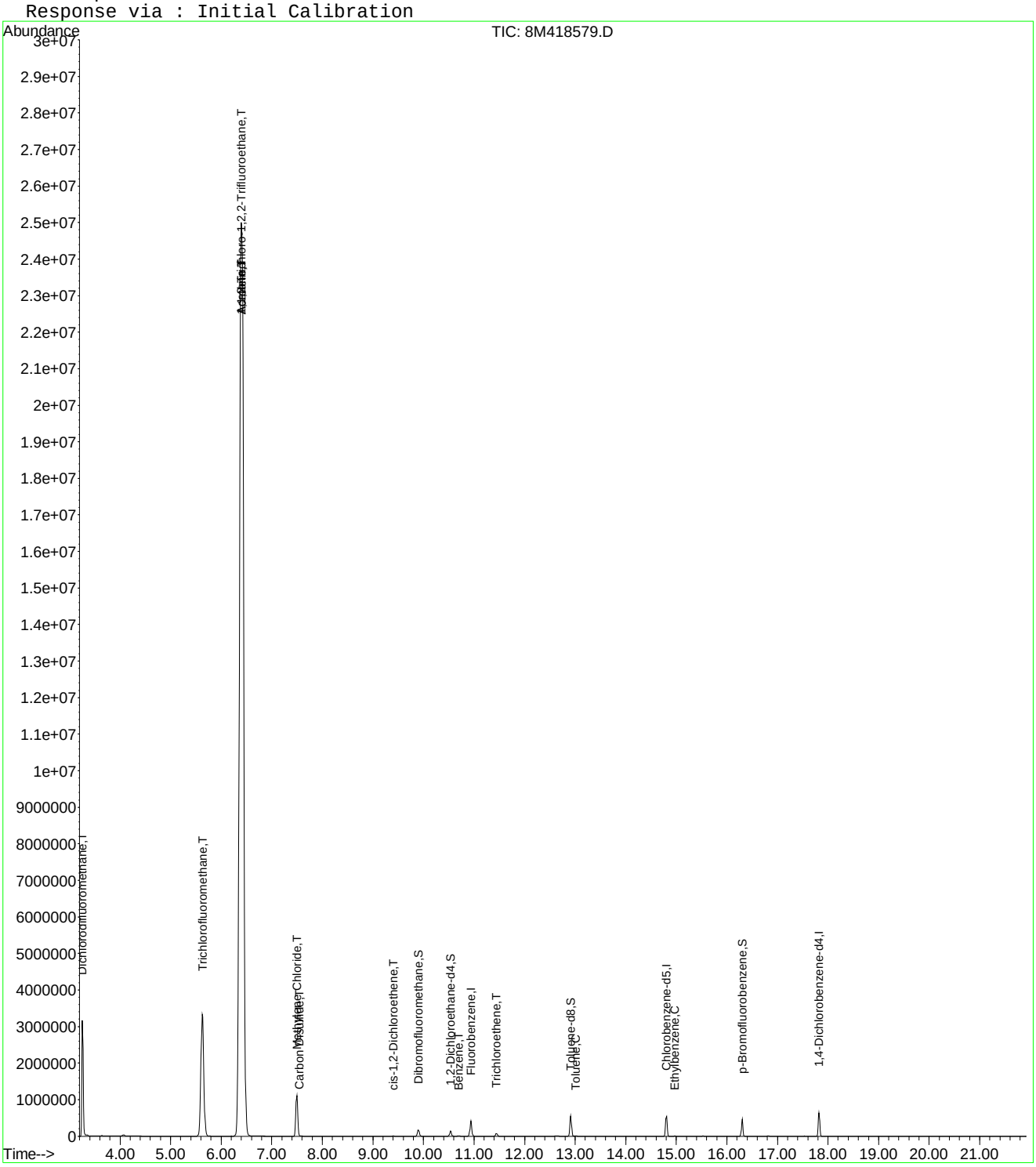
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

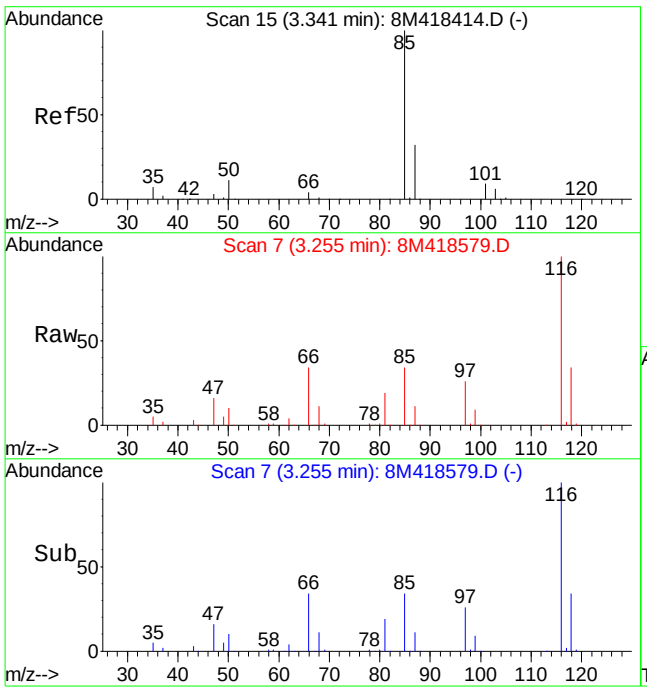
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	499662	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.80	117	395784	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	210321	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	136803	24.1409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.56%		
43) 1,2-Dichloroethane-d4	10.53	65	123761	25.2014 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.80%		
58) Toluene-d8	12.91	98	494211	24.8235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.28%		
80) p-Bromofluorobenzene	16.30	95	187470	23.5550 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.24%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	536056	68.4854 ug/L	98
8) Trichlorofluoromethane	5.63	101	30872	3.2166 ug/L #	1
11) Acrolein	6.41	56	2415	6.0846 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	21399096	4145.0493 ug/L	84
13) Acetone	6.40	43	239017	400.0027 ug/L	89
19) Methylene Chloride	7.49	84	719558	131.1760 ug/L	95
20) Carbon Disulfide	7.55	76	3727	0.2271 ug/L #	74
32) cis-1,2-Dichloroethene	9.41	96	2176	0.3670 ug/L	79
46) Benzene	10.70	78	12906	0.6001 ug/L	93
47) Trichloroethene	11.44	130	30459	5.2966 ug/L	98
59) Toluene	13.01	91	8546	0.3630 ug/L	99
72) Ethylbenzene	14.97	106	1276	0.1388 ug/L	73

(#) = qualifier out of range (m) = manual integration
8M418579.D 8260WTR.M Tue Mar 28 08:32:44 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418579.D Vial: 24
Acq On : 27 Mar 2017 21:10 Operator: TMB
Sample : L17031339-07 A 10X 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 22:32 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

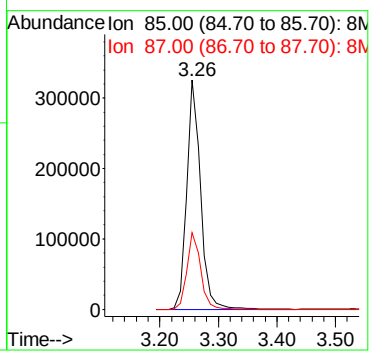


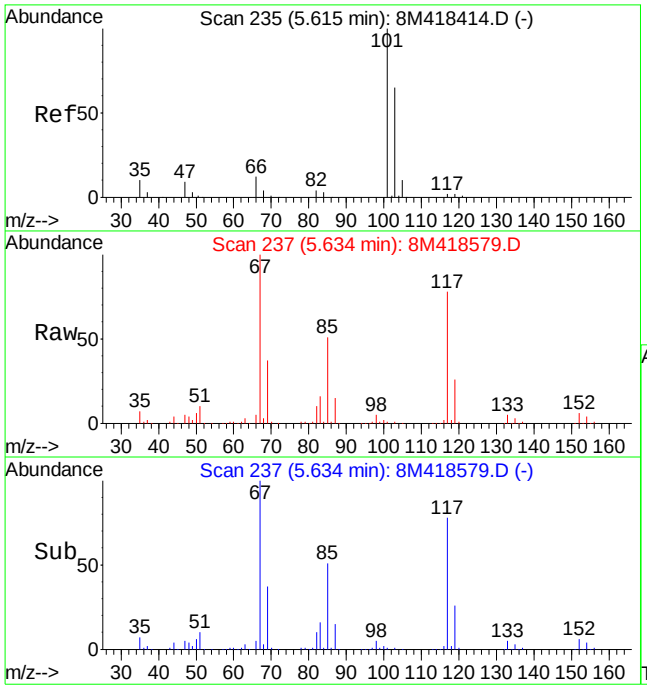


#2
Dichlorodifluoromethane
Concen: 68.49 ug/L
RT: 3.26 min Scan# 7
Delta R.T. -0.08 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 85 Resp: 536056

Ion	Ratio	Lower	Upper
85	100		
87	33.4	19.4	45.4

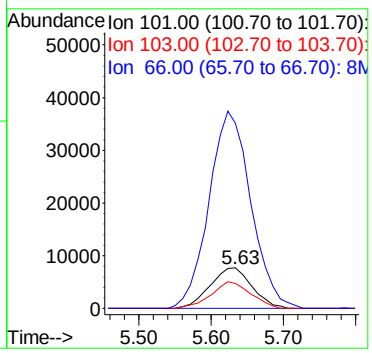


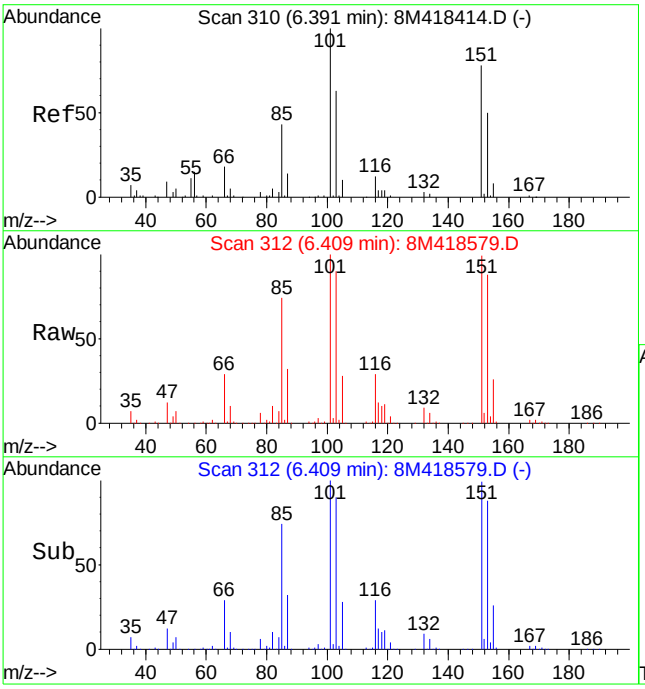


#8
Trichlorofluoromethane
Concen: 3.22 ug/L
RT: 5.63 min Scan# 237
Delta R.T. 0.02 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion:101 Resp: 30872

Ion	Ratio	Lower	Upper
101	100		
103	62.0	38.9	90.9
66	486.3	7.3	17.1#

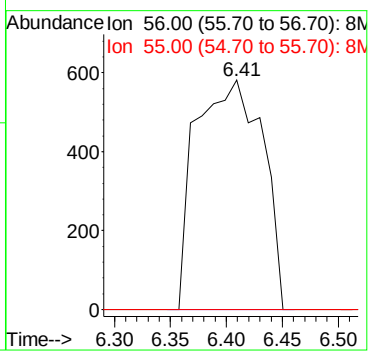


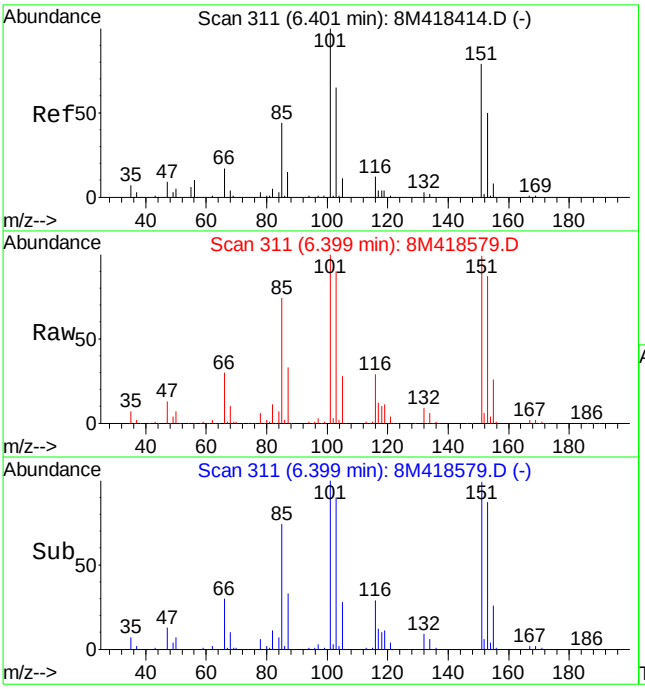


#11
Acrolein
Concen: 6.08 ug/L
RT: 6.41 min Scan# 312
Delta R.T. 0.02 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 56 Resp: 2415

Ion	Ratio	Lower	Upper
56	100		
55	0.0	42.1	98.1#

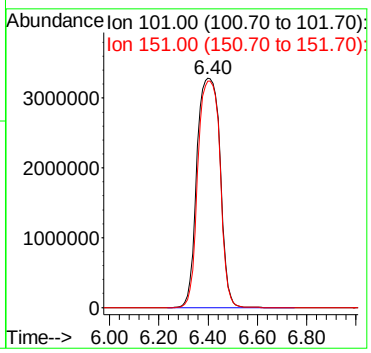


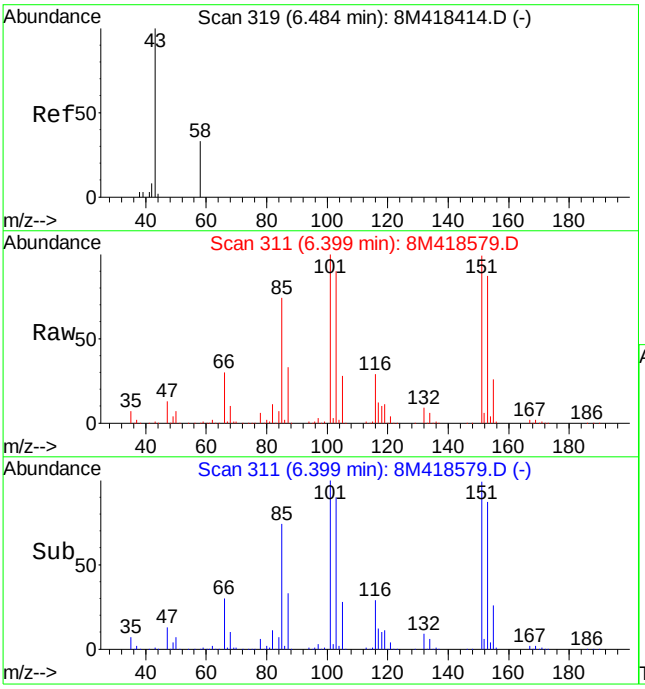


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 4145.05 ug/L
RT: 6.40 min Scan# 311
Delta R.T. -0.00 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion:101 Resp:21399096

Ion	Ratio	Lower	Upper
101	100		
151	93.9	39.9	119.9

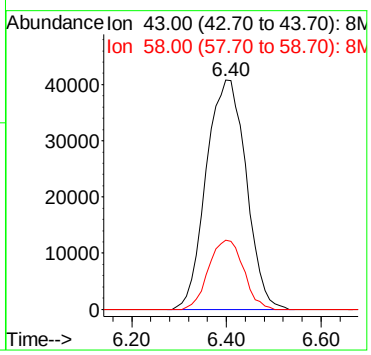


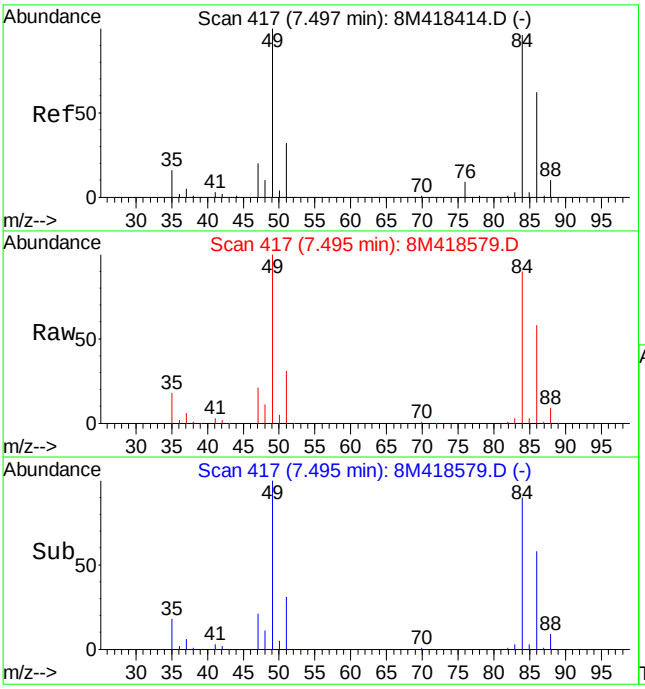


#13
Acetone
Concen: 400.00 ug/L
RT: 6.40 min Scan# 311
Delta R.T. -0.09 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 43 Resp: 239017

Ion	Ratio	Lower	Upper
43	100		
58	26.4	19.4	45.4

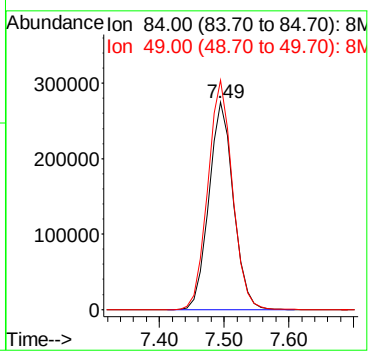


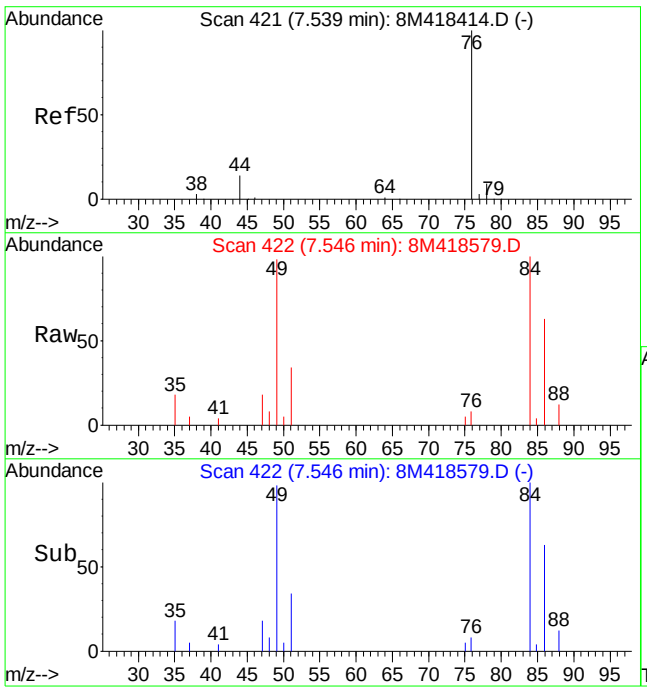


#19
Methylene Chloride
Concen: 131.18 ug/L
RT: 7.49 min Scan# 417
Delta R.T. -0.00 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 84 Resp: 719558

Ion	Ratio	Lower	Upper
84	100		
49	111.3	63.9	149.1

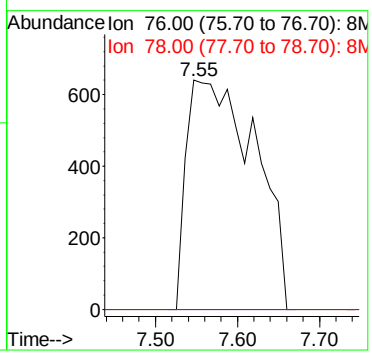


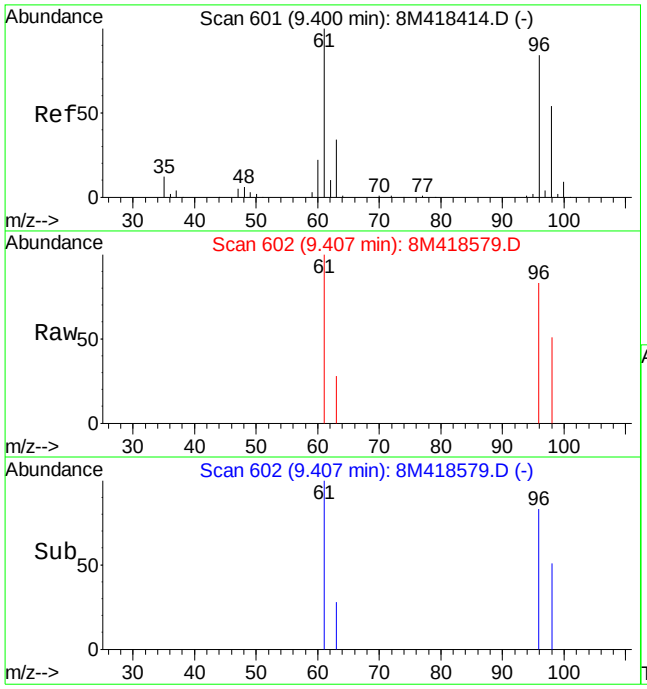


#20
Carbon Disulfide
Concen: 0.23 ug/L
RT: 7.55 min Scan# 422
Delta R.T. 0.01 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 76 Resp: 3727

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

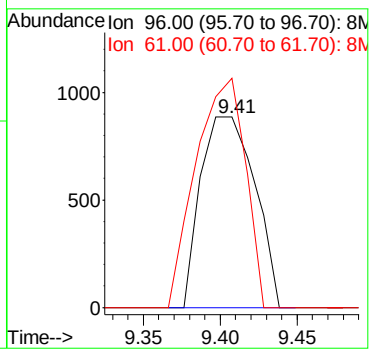


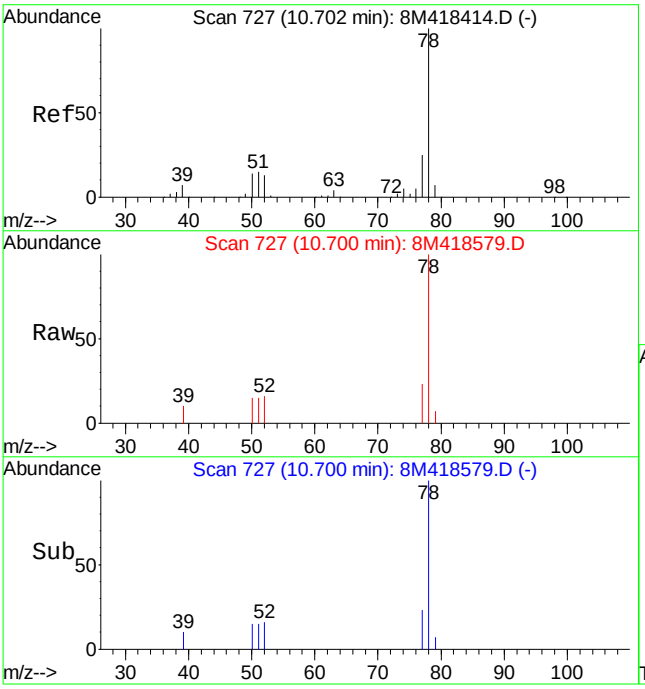


#32
cis-1,2-Dichloroethene
Concen: 0.37 ug/L
RT: 9.41 min Scan# 602
Delta R.T. 0.01 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 96 Resp: 2176

Ion	Ratio	Lower	Upper
96	100		
61	109.5	80.3	187.3

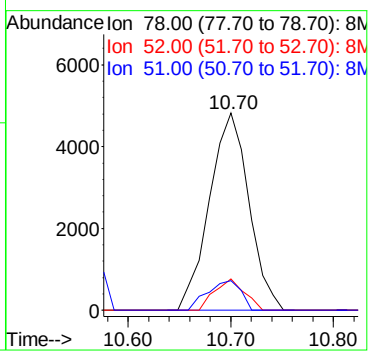


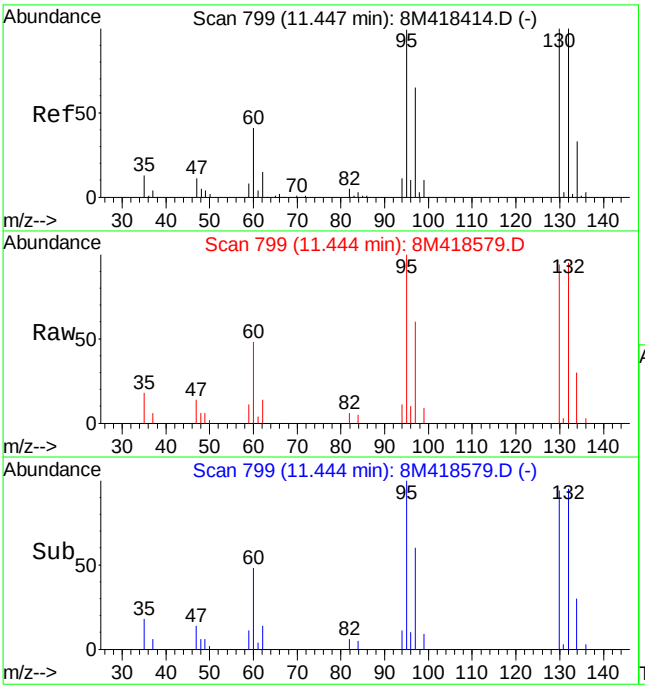


#46
Benzene
Concen: 0.60 ug/L
RT: 10.70 min Scan# 727
Delta R.T. -0.00 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 78 Resp: 12906

Ion	Ratio	Lower	Upper
78	100		
52	12.0	8.1	18.9
51	12.7	10.1	23.7

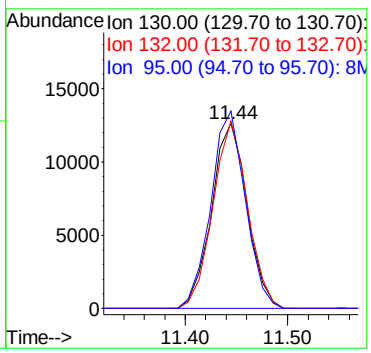


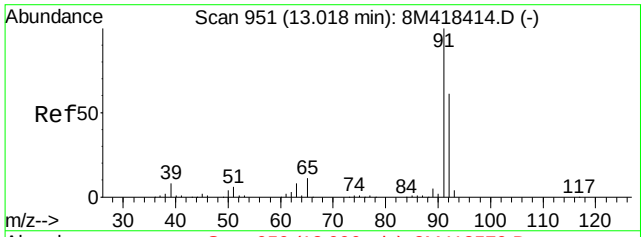


#47
Trichloroethene
Concen: 5.30 ug/L
RT: 11.44 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion:130 Resp: 30459

Ion	Ratio	Lower	Upper
130	100		
132	98.1	59.4	138.6
95	103.5	60.1	140.3

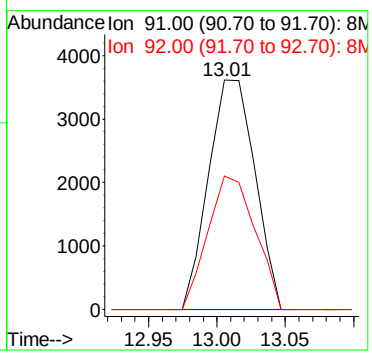


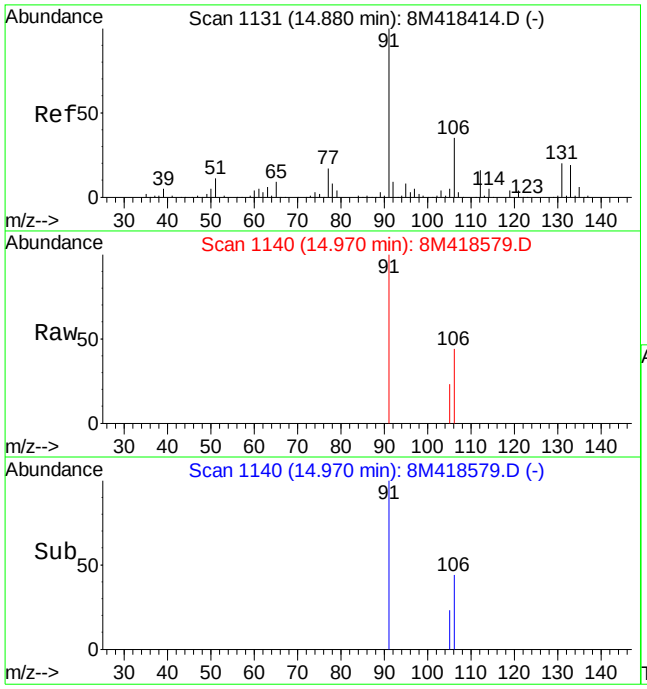


#59
Toluene
Concen: 0.36 ug/L
RT: 13.01 min Scan# 950
Delta R.T. -0.01 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion: 91 Resp: 8546

Ion	Ratio	Lower	Upper
91	100		
92	59.2	35.9	83.7

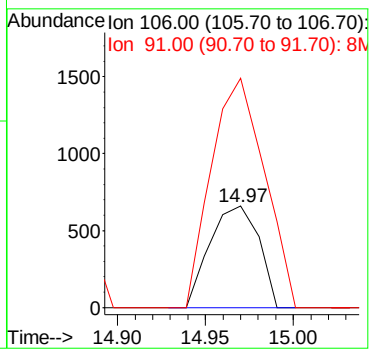




#72
Ethylbenzene
Concen: 0.14 ug/L
RT: 14.97 min Scan# 1140
Delta R.T. 0.09 min
Lab File: 8M418579.D
Acq: 27 Mar 2017 21:10

Tgt Ion:106 Resp: 1276

Ion	Ratio	Lower	Upper
106	100		
91	245.5	179.2	418.2



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418575.D Vial: 20
Acq On : 27 Mar 2017 18:57 Operator: TMB
Sample : L17031339-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 19:19:55 2017 Quant Results File: 8260WTR.RES

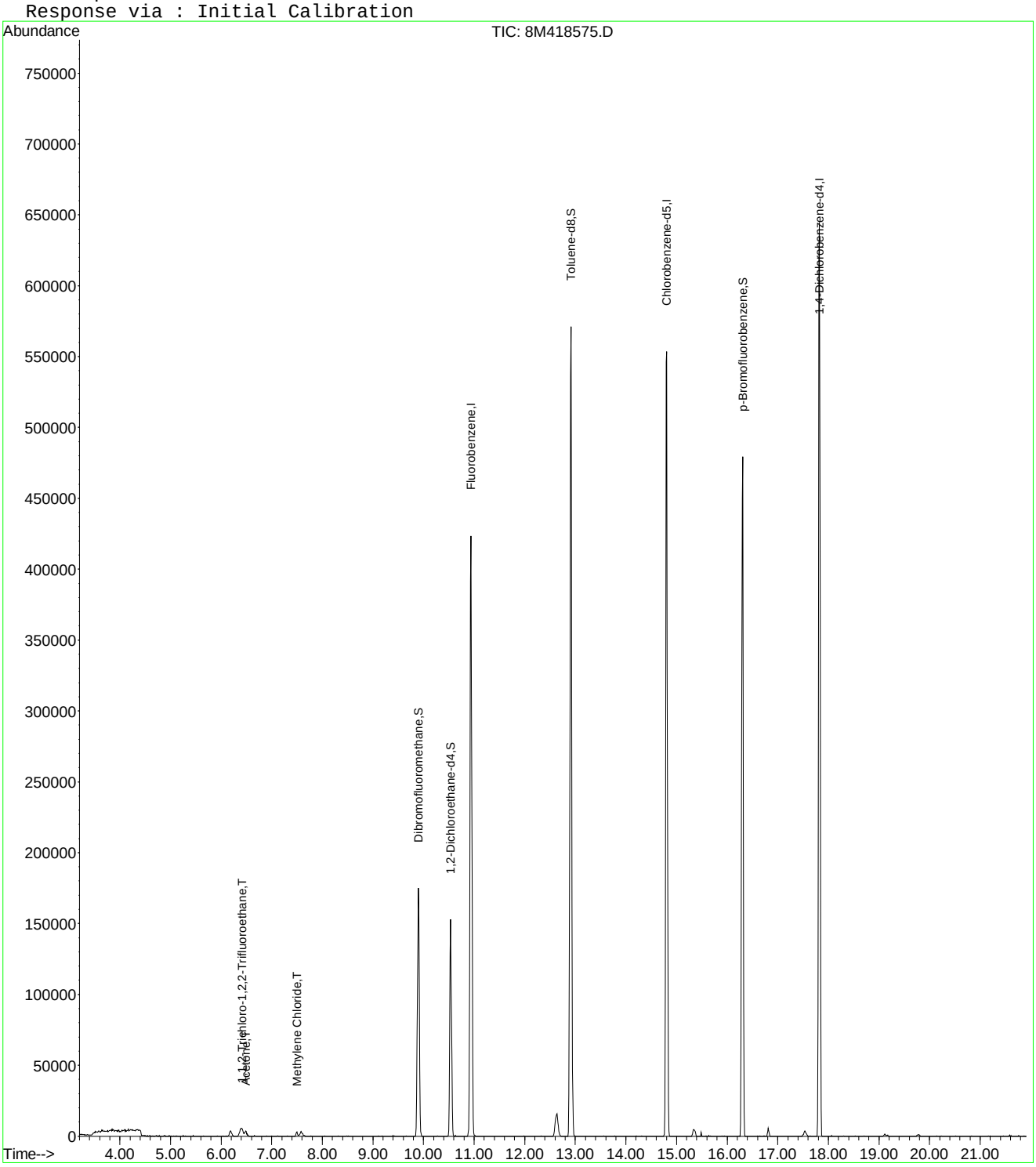
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

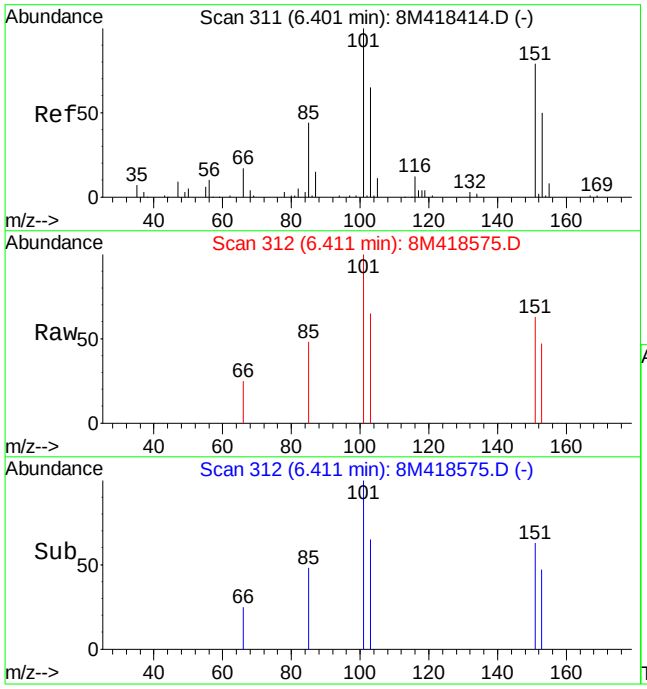
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	526593	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	416096	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	219960	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	142734	23.8994	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.60%			
43) 1,2-Dichloroethane-d4	10.54	65	128728	24.8723	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.48%			
58) Toluene-d8	12.91	98	525110	25.0880	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.36%			
80) p-Bromofluorobenzene	16.31	95	195185	23.4497	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.80%			
Target Compounds						Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.41	101	7295	1.3408	ug/L	96
13) Acetone	6.48	43	7096	11.2681	ug/L	94
19) Methylene Chloride	7.50	84	2138	0.3698	ug/L	90

(#) = qualifier out of range (m) = manual integration
8M418575.D 8260WTR.M Tue Mar 28 08:30:29 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418575.D Vial: 20
Acq On : 27 Mar 2017 18:57 Operator: TMB
Sample : L17031339-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 20:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

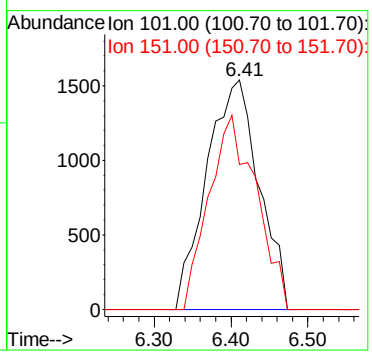


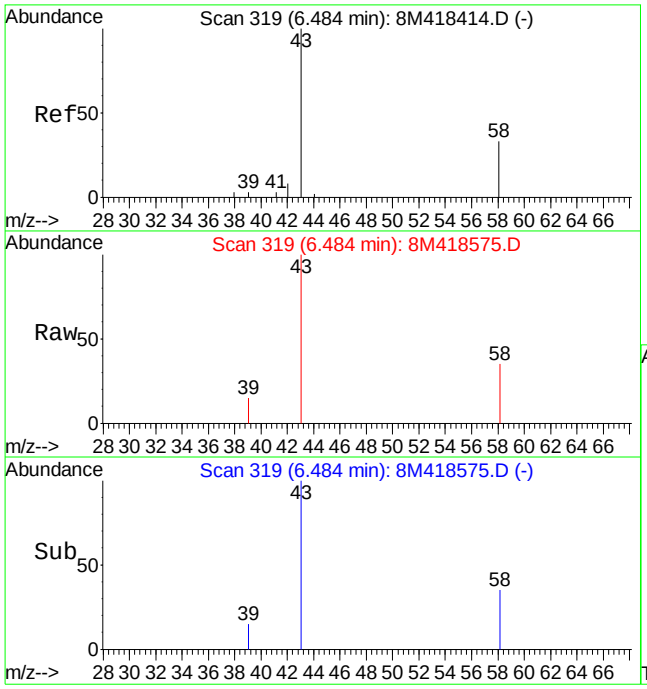


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.34 ug/L
RT: 6.41 min Scan# 312
Delta R.T. 0.01 min
Lab File: 8M418575.D
Acq: 27 Mar 2017 18:57

Tgt Ion:101 Resp: 7295

Ion	Ratio	Lower	Upper
101	100		
151	76.3	39.9	119.9

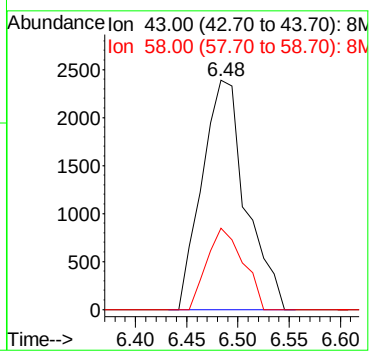


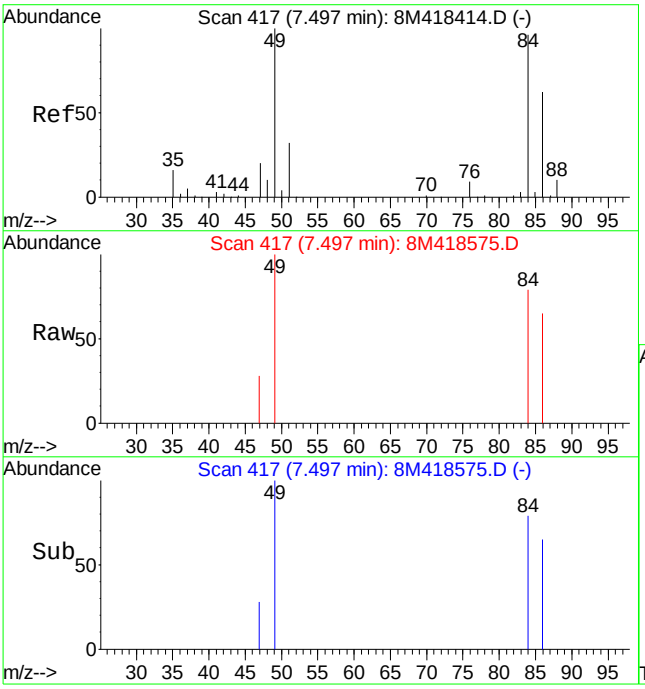


#13
Acetone
Concen: 11.27 ug/L
RT: 6.48 min Scan# 319
Delta R.T. -0.00 min
Lab File: 8M418575.D
Acq: 27 Mar 2017 18:57

Tgt Ion: 43 Resp: 7096

Ion	Ratio	Lower	Upper
43	100		
58	29.3	19.4	45.4

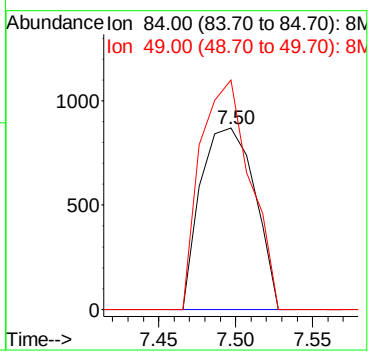




#19
Methylene Chloride
Concen: 0.37 ug/L
RT: 7.50 min Scan# 417
Delta R.T. -0.00 min
Lab File: 8M418575.D
Acq: 27 Mar 2017 18:57

Tgt Ion: 84 Resp: 2138

Ion	Ratio	Lower	Upper
84	100		
49	116.4	63.9	149.1



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418576.D Vial: 21
Acq On : 27 Mar 2017 19:40 Operator: TMB
Sample : L17031339-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 20:02:33 2017 Quant Results File: 8260WTR.RES

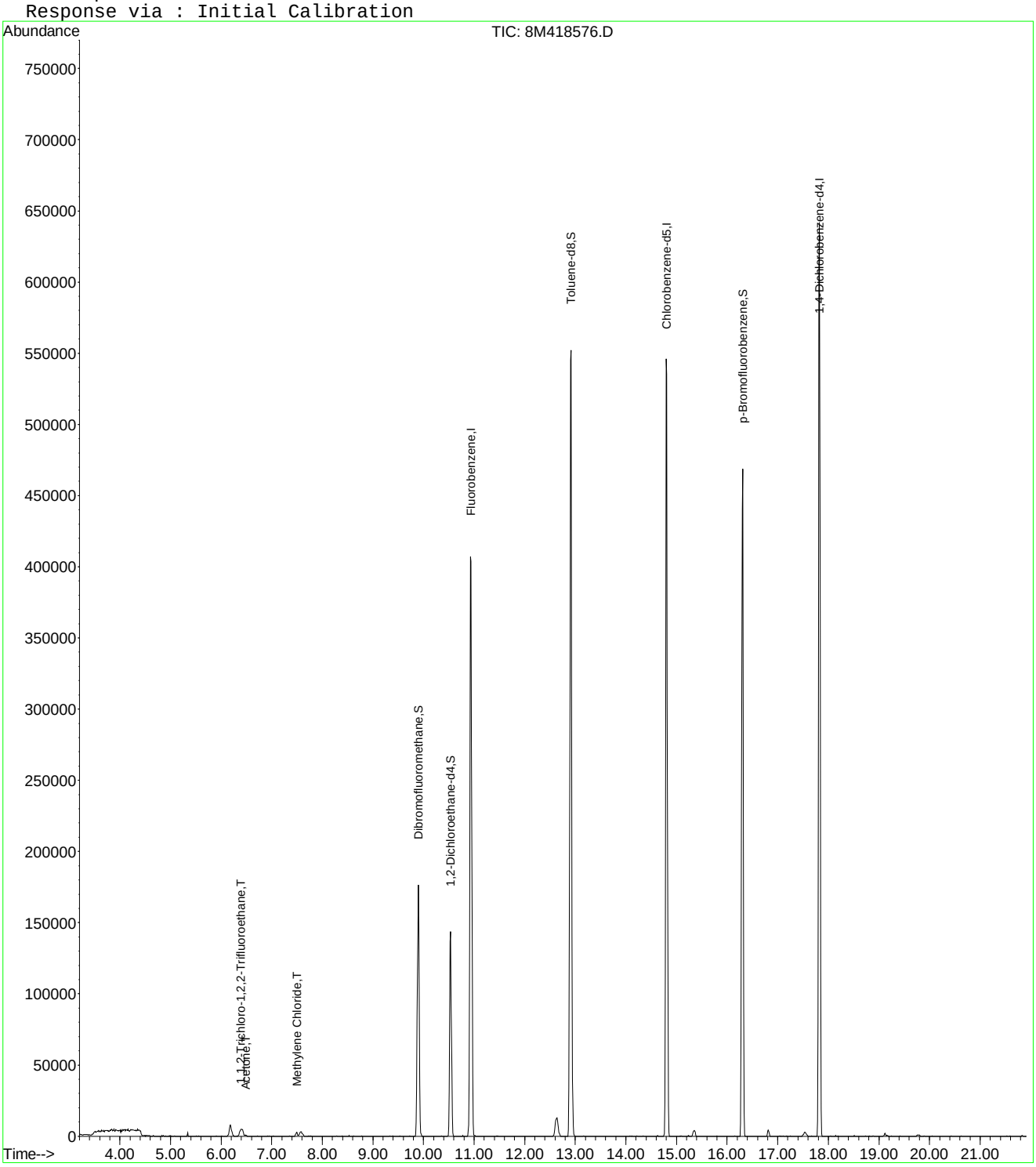
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

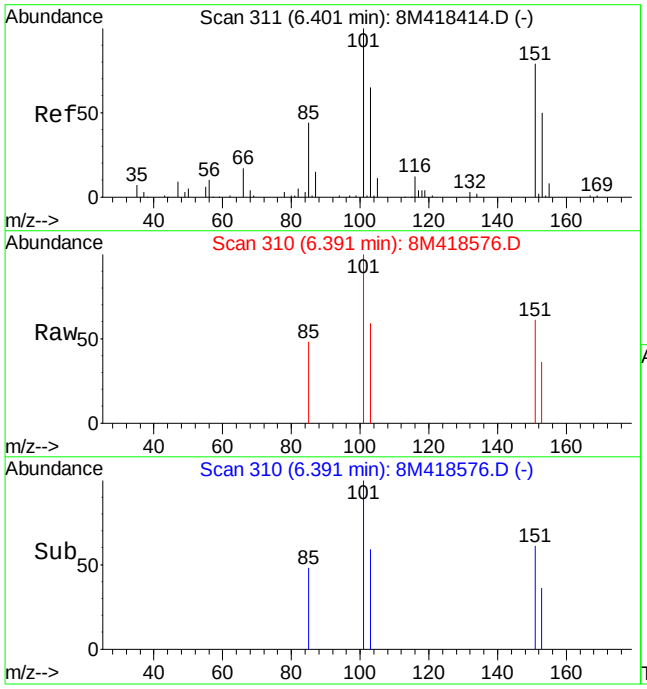
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	515414	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	407913	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	217676	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	139918	23.9360	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.76%			
43) 1,2-Dichloroethane-d4	10.54	65	124392	24.5558	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%			
58) Toluene-d8	12.92	98	513147	25.0083	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%			
80) p-Bromofluorobenzene	16.31	95	192957	23.4253	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.72%			
Target Compounds						Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.39	101	7159	1.3443	ug/L	95
13) Acetone	6.48	43	1673	2.7143	ug/L #	42
19) Methylene Chloride	7.50	84	2267	0.4006	ug/L	93

(#) = qualifier out of range (m) = manual integration
8M418576.D 8260WTR.M Tue Mar 28 08:30:32 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418576.D Vial: 21
Acq On : 27 Mar 2017 19:40 Operator: TMB
Sample : L17031339-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 21:02 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

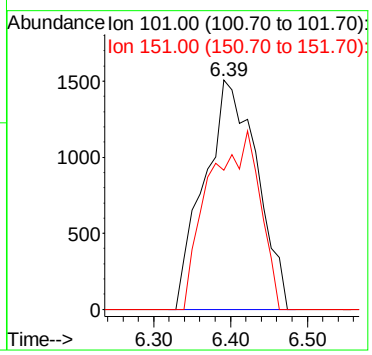


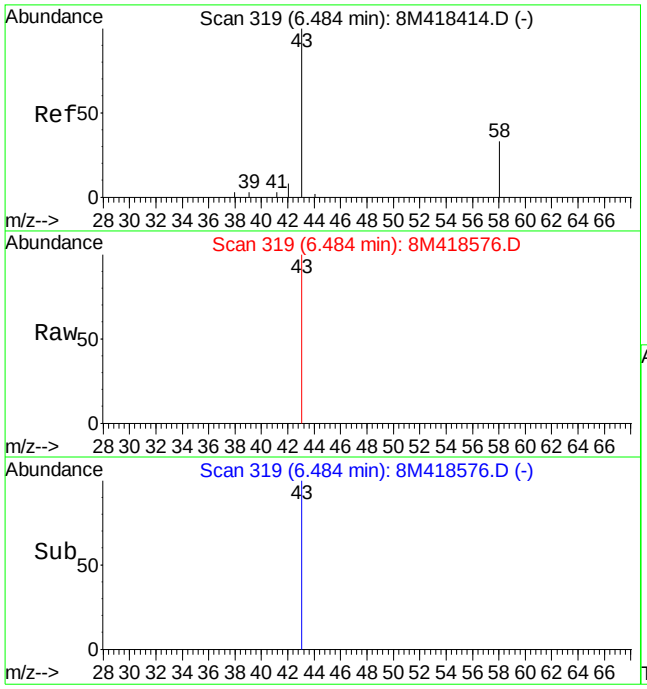


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.34 ug/L
RT: 6.39 min Scan# 310
Delta R.T. -0.01 min
Lab File: 8M418576.D
Acq: 27 Mar 2017 19:40

Tgt Ion:101 Resp: 7159

Ion	Ratio	Lower	Upper
101	100		
151	75.5	39.9	119.9

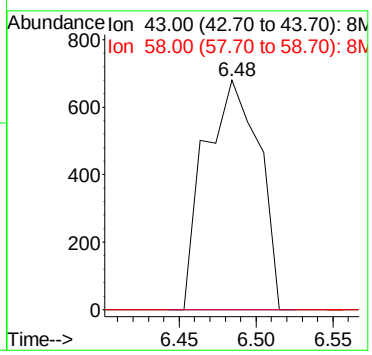


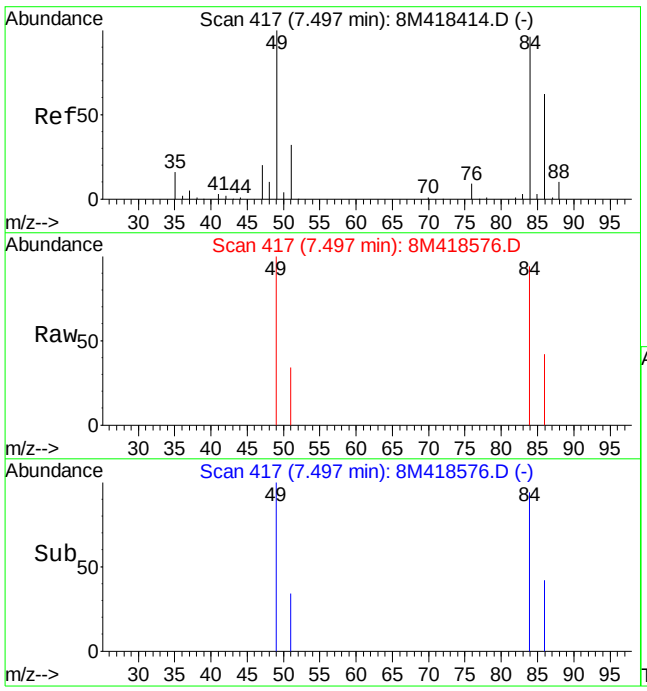


#13
Acetone
Concen: 2.71 ug/L
RT: 6.48 min Scan# 319
Delta R.T. 0.00 min
Lab File: 8M418576.D
Acq: 27 Mar 2017 19:40

Tgt Ion: 43 Resp: 1673

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

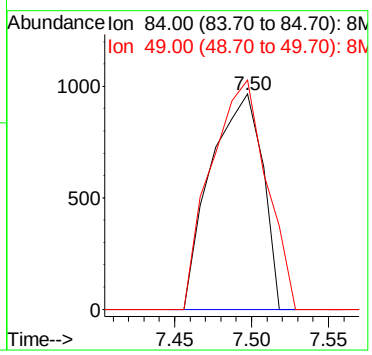




#19
Methylene Chloride
Concen: 0.40 ug/L
RT: 7.50 min Scan# 417
Delta R.T. 0.00 min
Lab File: 8M418576.D
Acq: 27 Mar 2017 19:40

Tgt Ion: 84 Resp: 2267

Ion	Ratio	Lower	Upper
84	100		
49	113.5	63.9	149.1



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418577.D Vial: 22
Acq On : 27 Mar 2017 20:10 Operator: TMB
Sample : L17031339-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 20:32:51 2017 Quant Results File: 8260WTR.RES

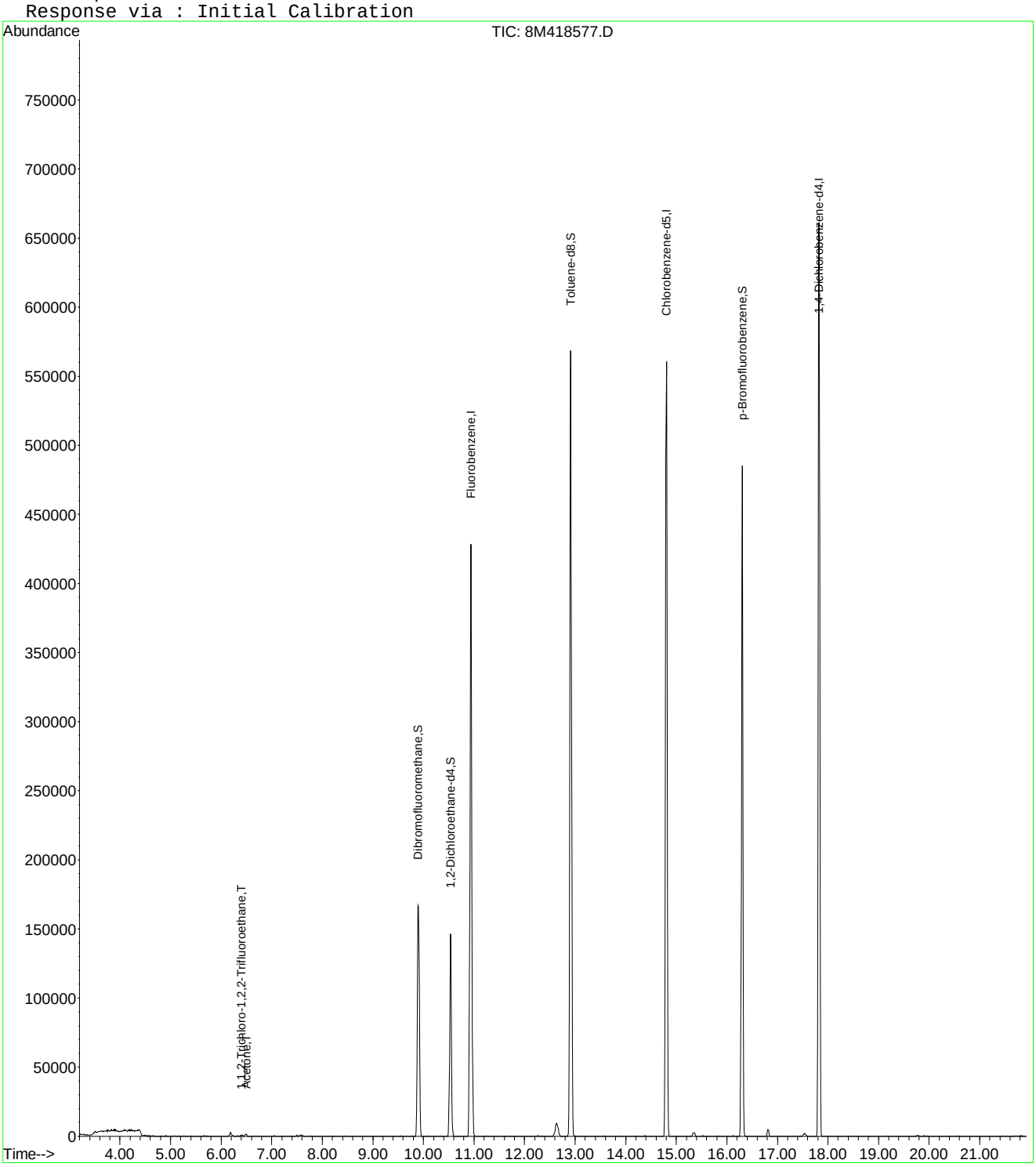
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

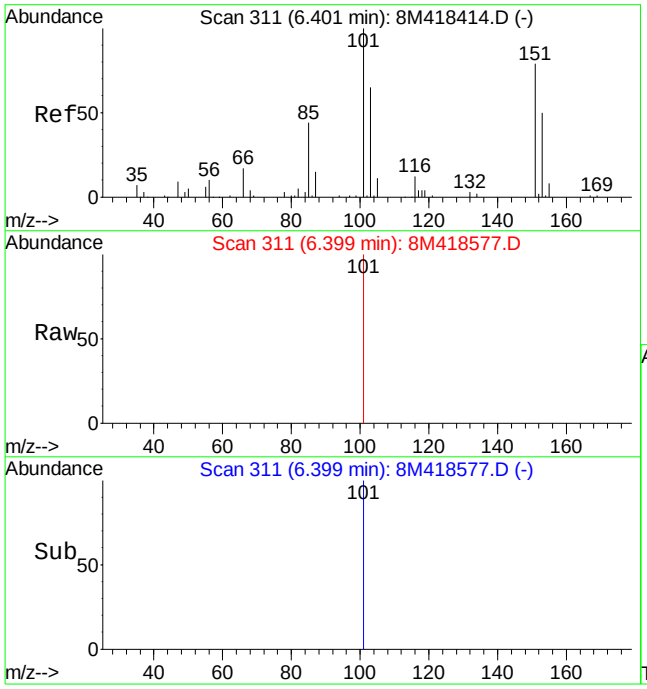
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	512745	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.80	117	405314	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	216647	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	139144	23.9275	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.72%			
43) 1,2-Dichloroethane-d4	10.53	65	123652	24.5368	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.16%			
58) Toluene-d8	12.91	98	507793	24.9060	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%			
80) p-Bromofluorobenzene	16.30	95	194579	23.7344	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.92%			
Target Compounds						Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	965	0.1822	ug/L #	9
13) Acetone	6.49	43	2655	4.3299	ug/L #	73

(#) = qualifier out of range (m) = manual integration
8M418577.D 8260WTR.M Tue Mar 28 08:30:36 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418577.D Vial: 22
Acq On : 27 Mar 2017 20:10 Operator: TMB
Sample : L17031339-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 21:32 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

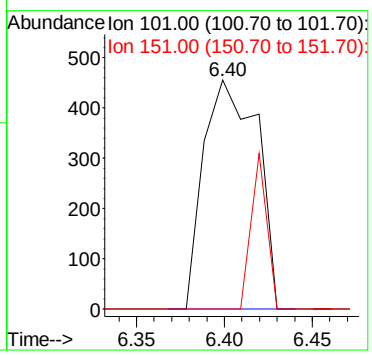


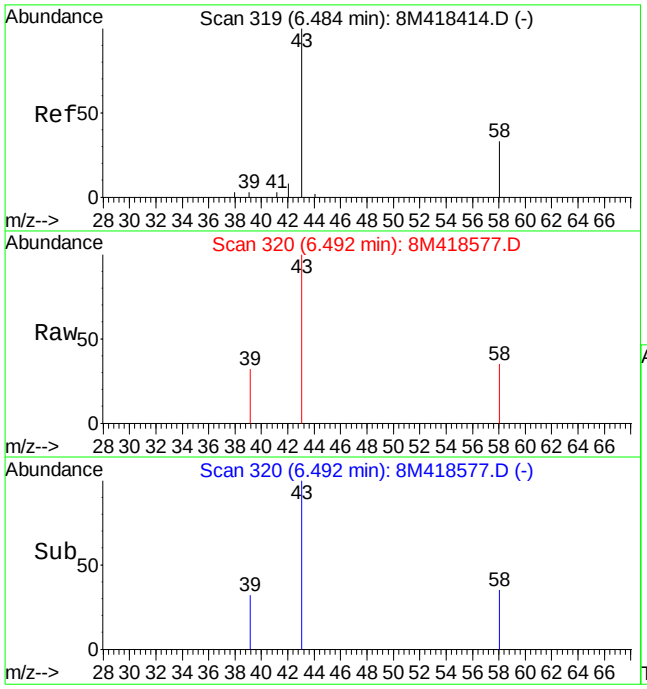


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.18 ug/L
RT: 6.40 min Scan# 311
Delta R.T. -0.00 min
Lab File: 8M418577.D
Acq: 27 Mar 2017 20:10

Tgt Ion:101 Resp: 965

Ion	Ratio	Lower	Upper
101	100		
151	0.0	39.9	119.9#

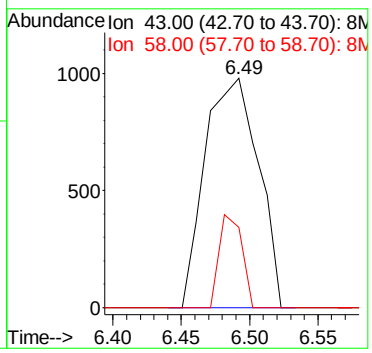




#13
Acetone
Concen: 4.33 ug/L
RT: 6.49 min Scan# 320
Delta R.T. 0.01 min
Lab File: 8M418577.D
Acq: 27 Mar 2017 20:10

Tgt Ion: 43 Resp: 2655

Ion	Ratio	Lower	Upper
43	100		
58	17.3	19.4	45.4#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418597.D Vial: 12
Acq On : 28 Mar 2017 22:51 Operator: FJB
Sample : L17031339-12 2X C 826-SPE 00 Inst : HPMS8
Misc : 1,2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 08:41:15 2017 Quant Results File: 8260WTR.RES

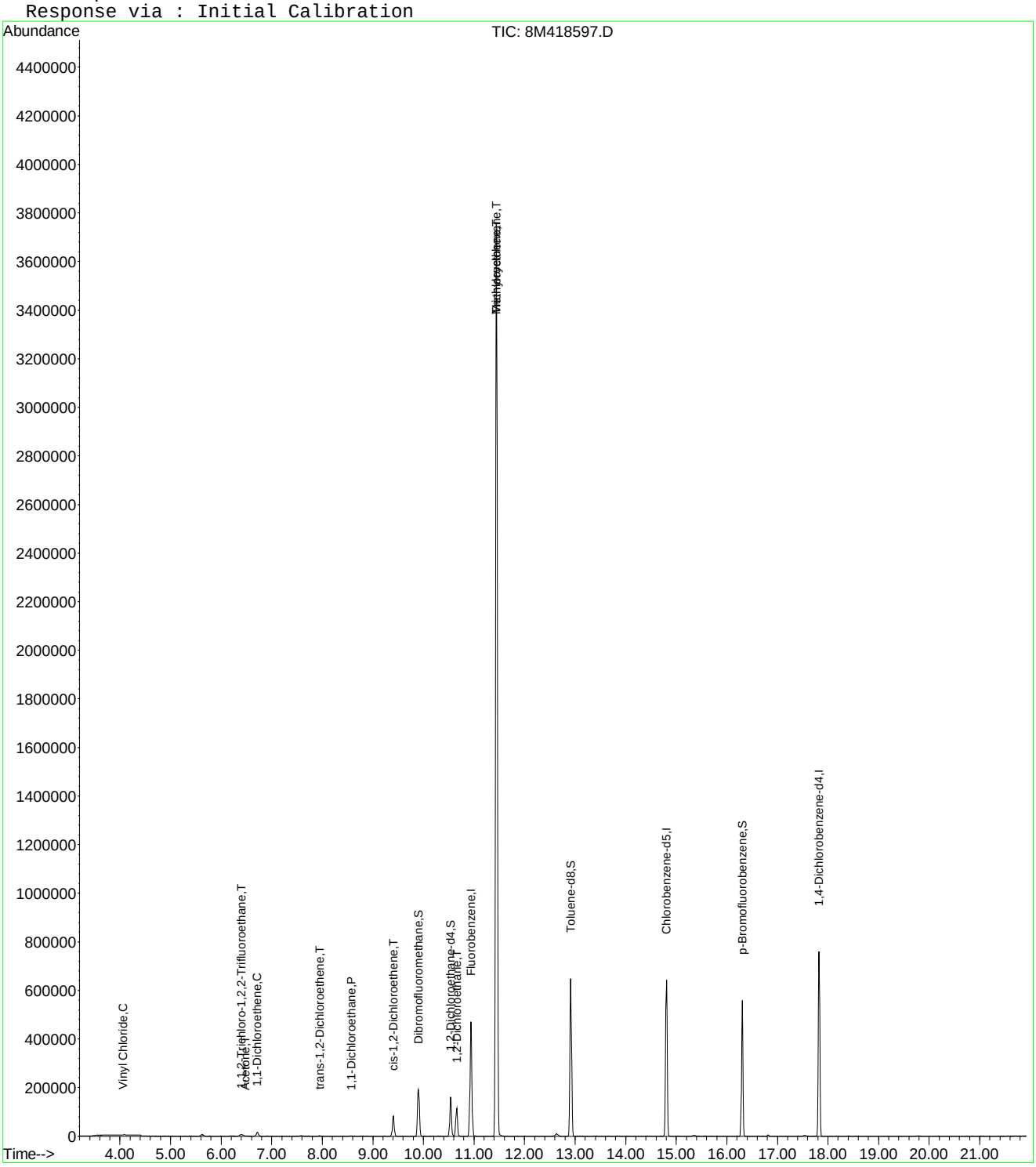
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

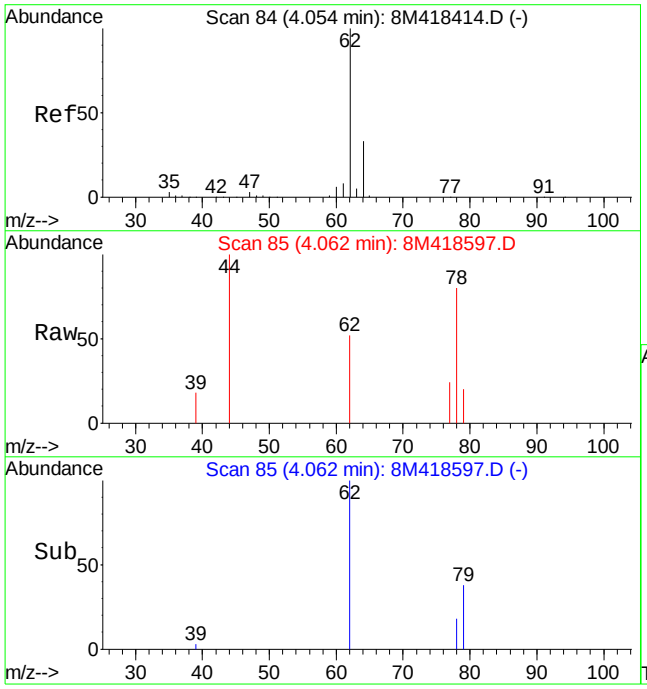
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	577206	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	460343	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	244370	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	157417	24.0467	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.20%			
43) 1,2-Dichloroethane-d4	10.53	65	139238	24.5439	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.16%			
58) Toluene-d8	12.91	98	575132	24.8368	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.36%			
80) p-Bromofluorobenzene	16.30	95	220668	23.8631	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.44%			
Target Compounds						Qvalue
4) Vinyl Chloride	4.06	62	2194	0.2141	ug/L #	42
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	9847	1.6511	ug/L	90
13) Acetone	6.48	43	2572	3.7261	ug/L #	57
14) 1,1-Dichloroethene	6.71	61	18462	2.2185	ug/L	95
23) trans-1,2-Dichloroethene	7.95	61	1908	0.2365	ug/L	85
27) 1,1-Dichloroethane	8.57	63	4192	0.3984	ug/L #	72
32) cis-1,2-Dichloroethene	9.41	96	50193	7.3292	ug/L	87
45) 1,2-Dichloroethane	10.66	62	112221	16.2970	ug/L	95
47) Trichloroethene	11.44	130	1443984	217.3658	ug/L	99
48) Methylcyclohexane	11.44	83	18399	1.8432	ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M418597.D 8260WTR.M Wed Mar 29 08:41:18 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032817\8M418597.D Vial: 12
Acq On : 28 Mar 2017 22:51 Operator: FJB
Sample : L17031339-12 2X C 826-SPE 00 Inst : HPMS8
Misc : 1,2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 29 8:41 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

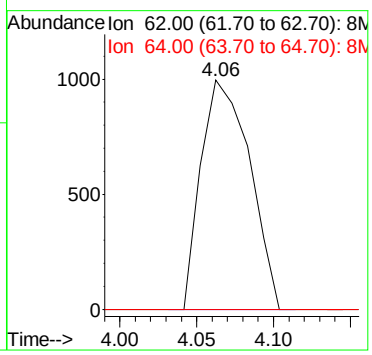


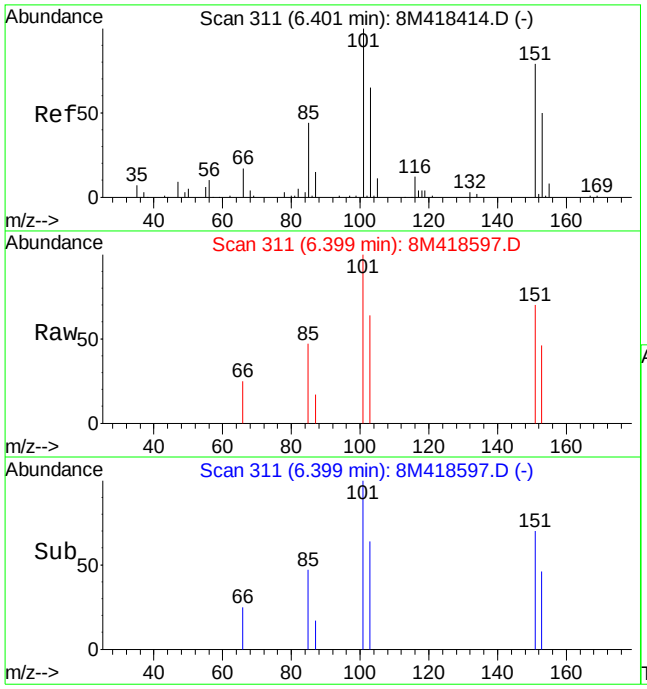


#4
Vinyl Chloride
Concen: 0.21 ug/L
RT: 4.06 min Scan# 85
Delta R.T. 0.01 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 62 Resp: 2194

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.9	46.3#

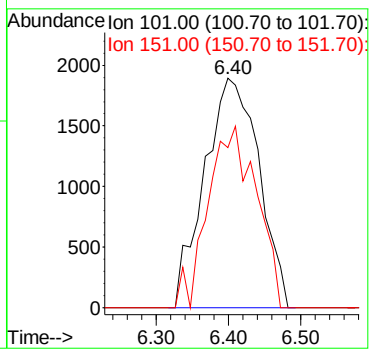


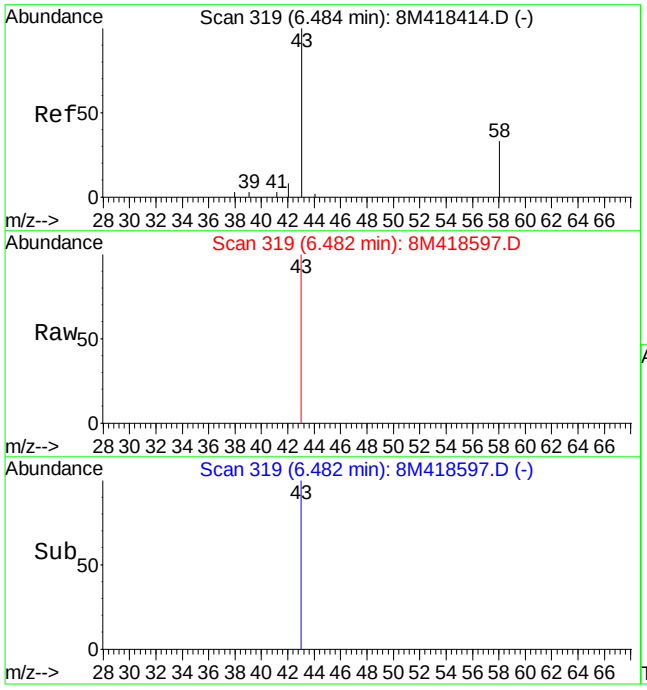


#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.65 ug/L
RT: 6.40 min Scan# 311
Delta R.T. -0.00 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion:101 Resp: 9847

Ion	Ratio	Lower	Upper
101	100		
151	70.7	39.9	119.9

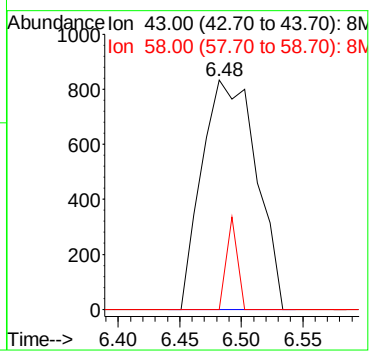


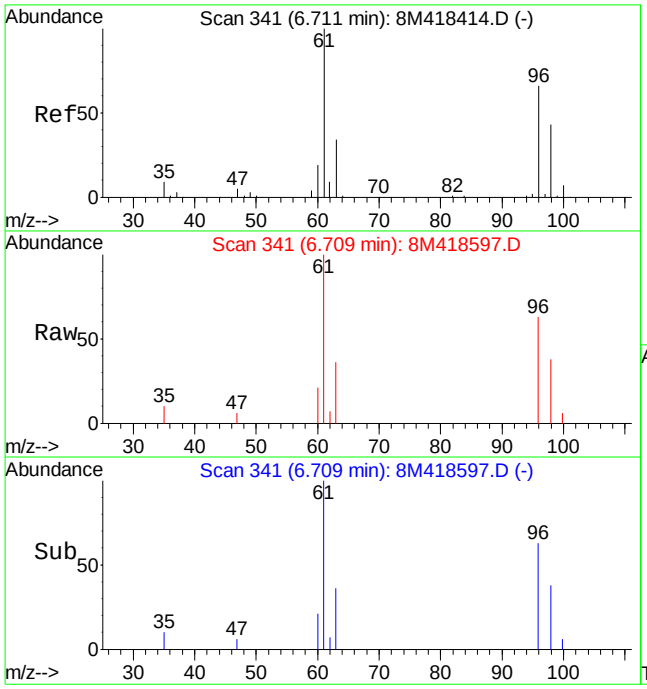


#13
Acetone
Concen: 3.73 ug/L
RT: 6.48 min Scan# 319
Delta R.T. -0.00 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 43 Resp: 2572

Ion	Ratio	Lower	Upper
43	100		
58	8.1	19.4	45.4#

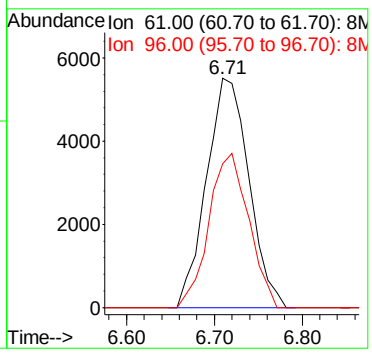


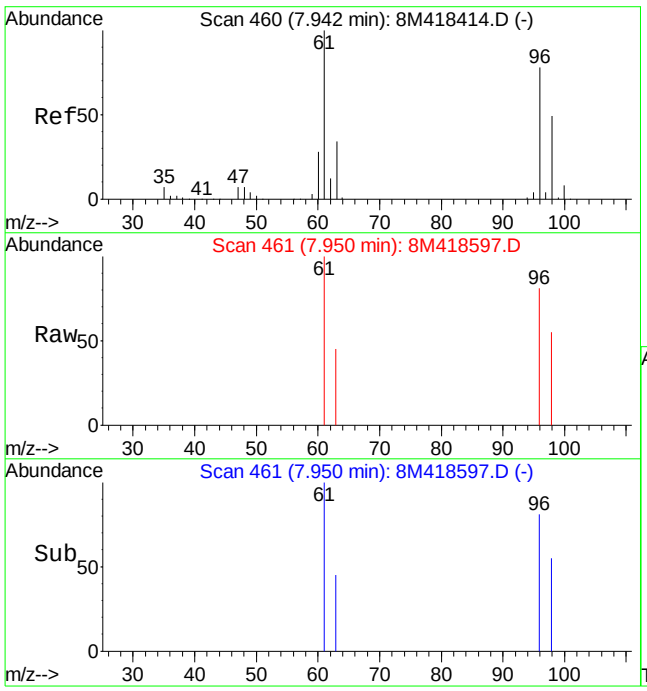


#14
1,1-Dichloroethene
Concen: 2.22 ug/L
RT: 6.71 min Scan# 341
Delta R.T. -0.00 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 61 Resp: 18462

Ion	Ratio	Lower	Upper
61	100		
96	63.1	40.0	93.4

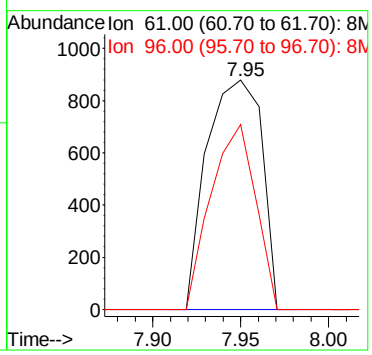


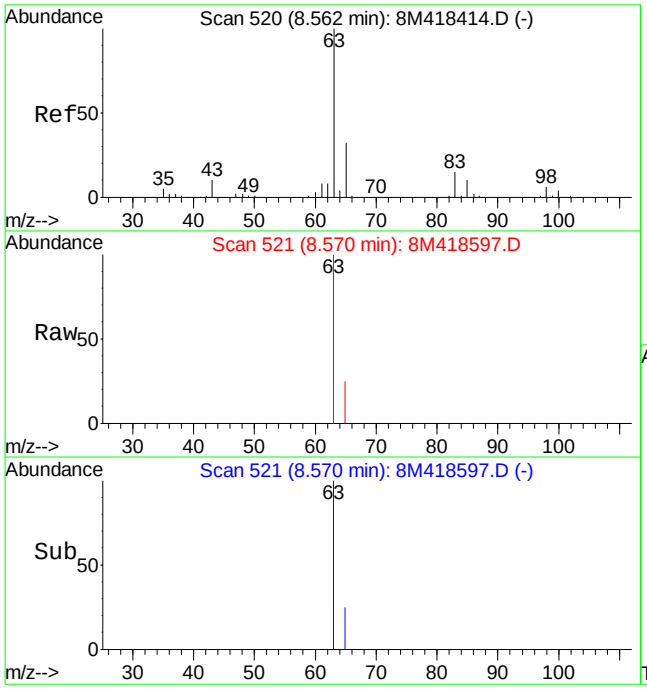


#23
trans-1,2-Dichloroethene
Concen: 0.24 ug/L
RT: 7.95 min Scan# 461
Delta R.T. 0.01 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 61 Resp: 1908

Ion	Ratio	Lower	Upper
61	100		
96	65.6	47.2	110.0

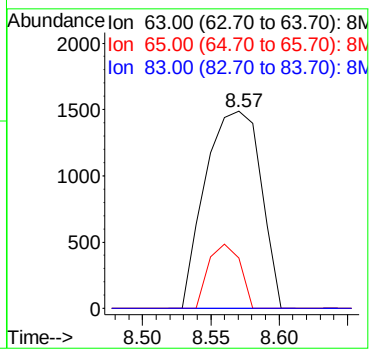


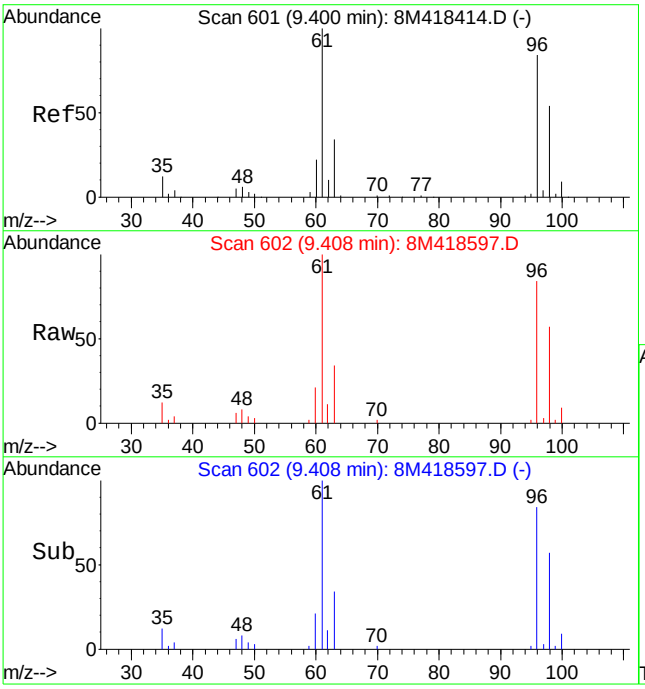


#27
1,1-Dichloroethane
Concen: 0.40 ug/L
RT: 8.57 min Scan# 521
Delta R.T. 0.01 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 63 Resp: 4192

Ion	Ratio	Lower	Upper
63	100		
65	18.6	19.1	44.7#
83	0.0	9.0	21.0#

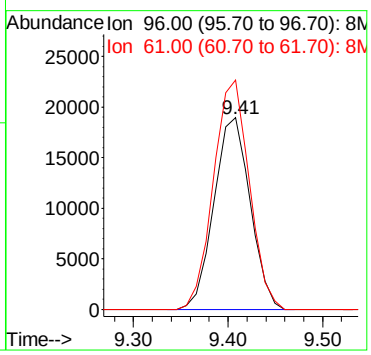


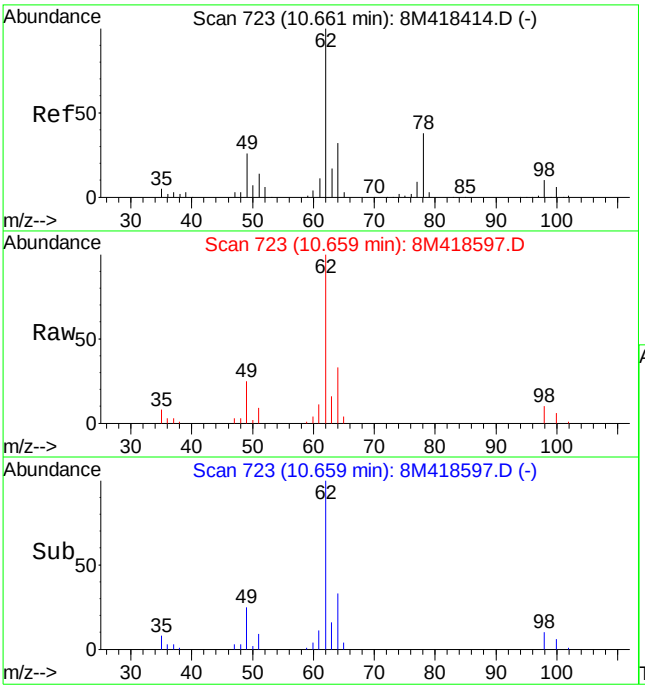


#32
cis-1,2-Dichloroethene
Concen: 7.33 ug/L
RT: 9.41 min Scan# 602
Delta R.T. 0.01 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 96 Resp: 50193

Ion	Ratio	Lower	Upper
96	100		
61	118.4	80.3	187.3

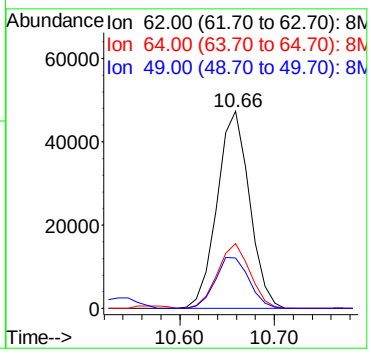


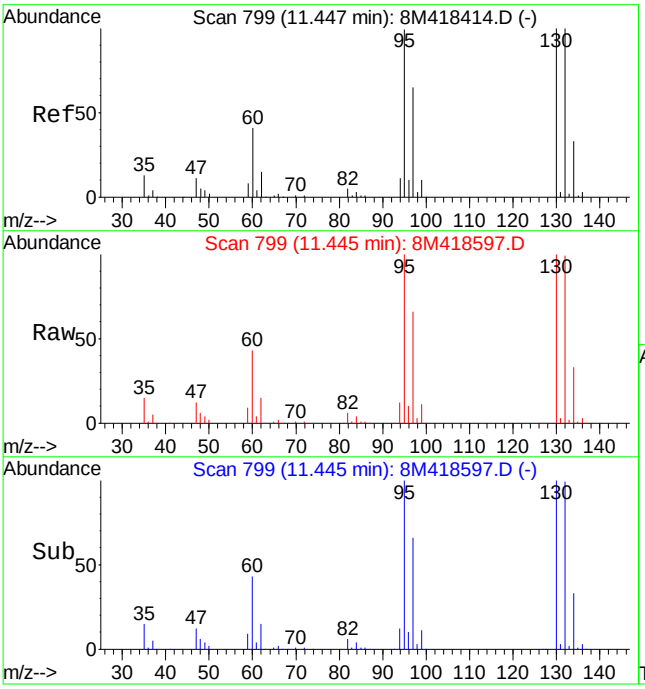


#45
1,2-Dichloroethane
Concen: 16.30 ug/L
RT: 10.66 min Scan# 723
Delta R.T. -0.00 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 62 Resp: 112221

Ion	Ratio	Lower	Upper
62	100		
64	33.0	19.6	45.8
49	26.9	19.4	45.4

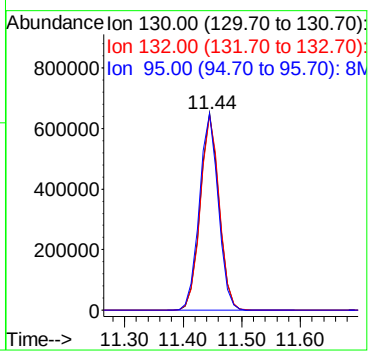


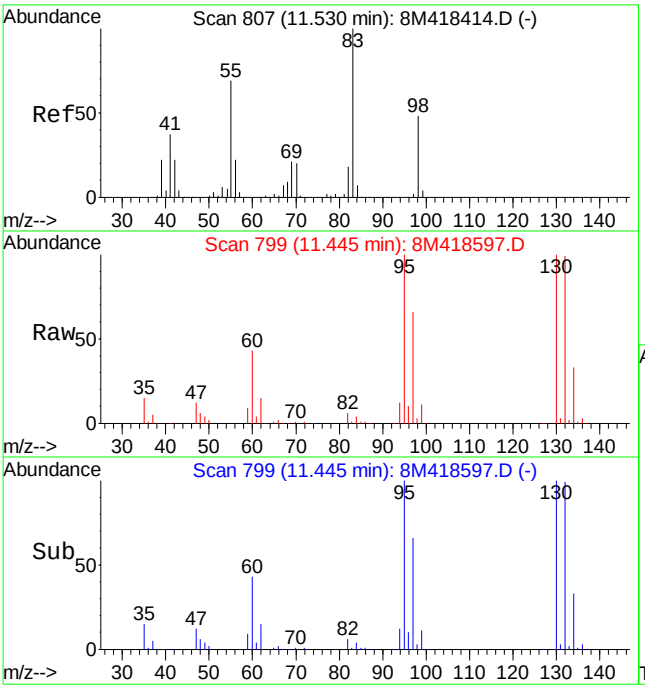


#47
Trichloroethene
Concen: 217.37 ug/L
RT: 11.44 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion:130 Resp: 1443984

Ion	Ratio	Lower	Upper
130	100		
132	100.2	59.4	138.6
95	100.8	60.1	140.3

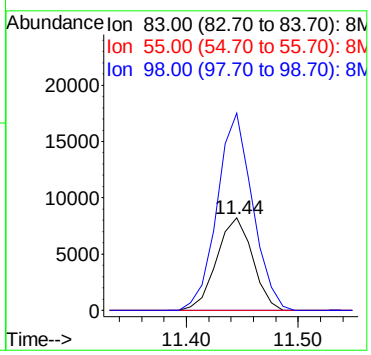




#48
Methylcyclohexane
Concen: 1.84 ug/L
RT: 11.44 min Scan# 799
Delta R.T. -0.08 min
Lab File: 8M418597.D
Acq: 28 Mar 2017 22:51

Tgt Ion: 83 Resp: 18399

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.6	94.6#
98	209.7	28.4	66.2#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418629.D Vial: 8
Acq On : 29 Mar 2017 17:52 Operator: TMB
Sample : L17031339-12 C 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 08:25:35 2017 Quant Results File: 8260WTR.RES

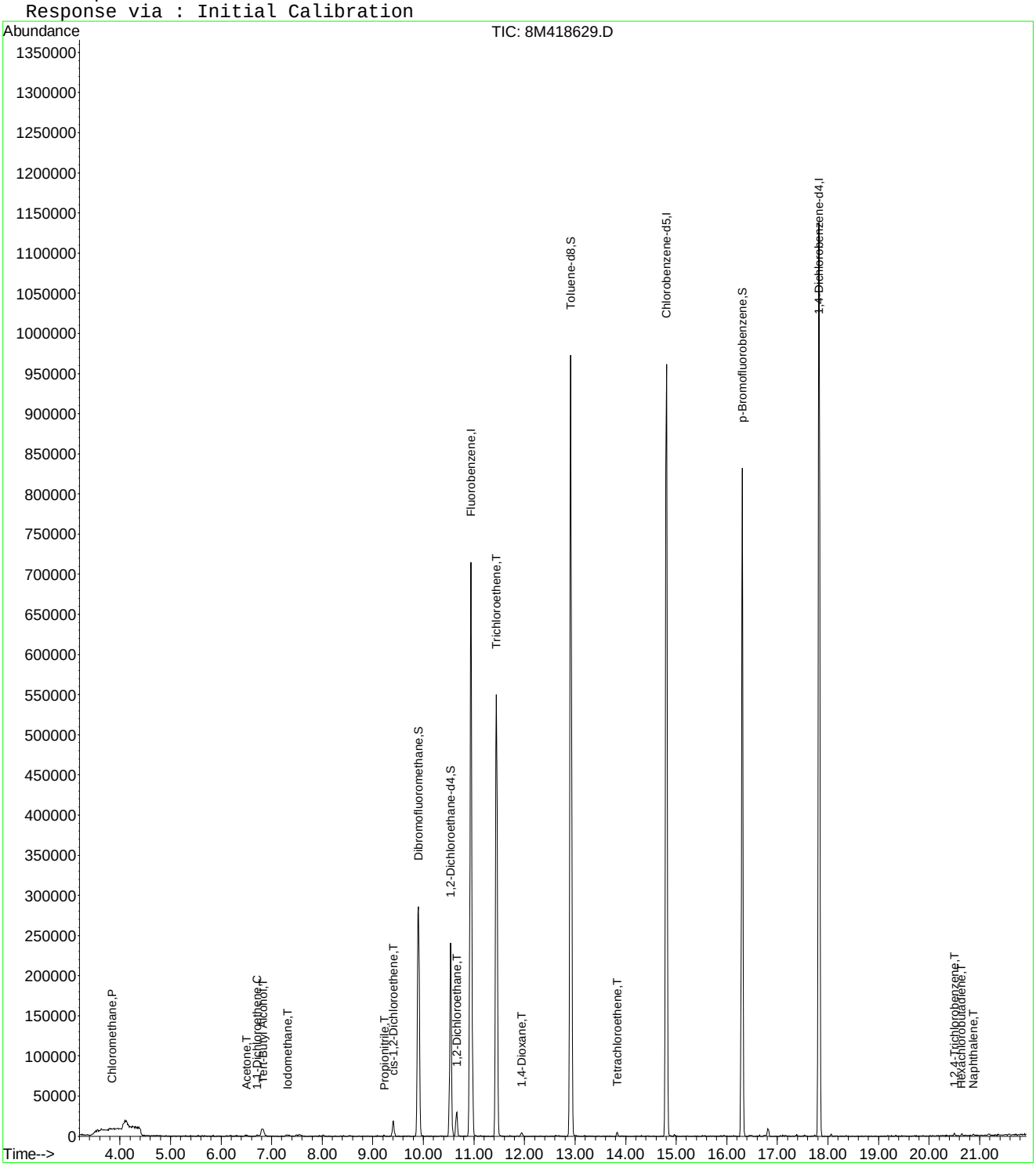
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

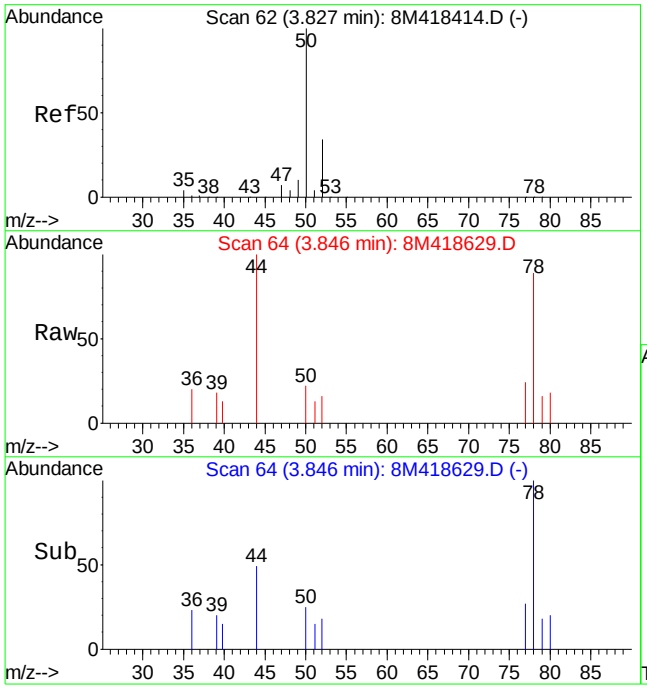
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	881586	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	700456	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	373961	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.91	111	236825	23.6863	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.76%			
43) 1,2-Dichloroethane-d4	10.54	65	205626	23.7318	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.92%			
58) Toluene-d8	12.91	98	881544	25.0191	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%			
80) p-Bromofluorobenzene	16.31	95	337768	23.8686	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.48%			
Target Compounds						Qvalue
3) Chloromethane	3.85	50	3087	0.1845	ug/L #	73
13) Acetone	6.50	43	1963	1.8619	ug/L #	42
14) 1,1-Dichloroethene	6.71	61	2248	0.1769	ug/L	83
15) Tert-Butyl Alcohol	6.82	59	23436	69.8424	ug/L	95
17) Iodomethane	7.31	142	5244	0.9954	ug/L #	61
30) Propionitrile	9.23	54	1288	2.5614	ug/L #	56
32) cis-1,2-Dichloroethene	9.41	96	12157	1.1623	ug/L	87
45) 1,2-Dichloroethane	10.66	62	30016	2.8540	ug/L	92
47) Trichloroethene	11.45	130	227327	22.4051	ug/L	99
51) 1,4-Dioxane	11.94	88	5376	128.2295	ug/L	88
66) Tetrachloroethene	13.83	164	1939	0.2148	ug/L	94
98) 1,2,4-Trichlorobenzene	20.50	180	1963	0.1240	ug/L #	81
99) Hexachlorobutadiene	20.64	225	1342	0.1733	ug/L #	69
100) Naphthalene	20.88	128	3081	0.1473	ug/L #	67

(#) = qualifier out of range (m) = manual integration
8M418629.D 8260WTR.M Thu Mar 30 08:25:37 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032917\8M418629.D Vial: 8
Acq On : 29 Mar 2017 17:52 Operator: TMB
Sample : L17031339-12 C 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 30 8:25 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

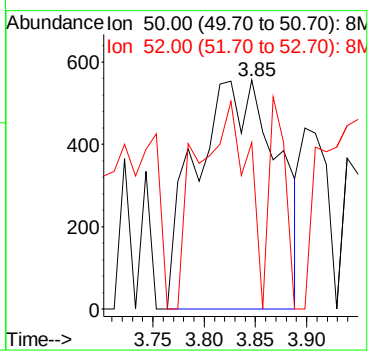


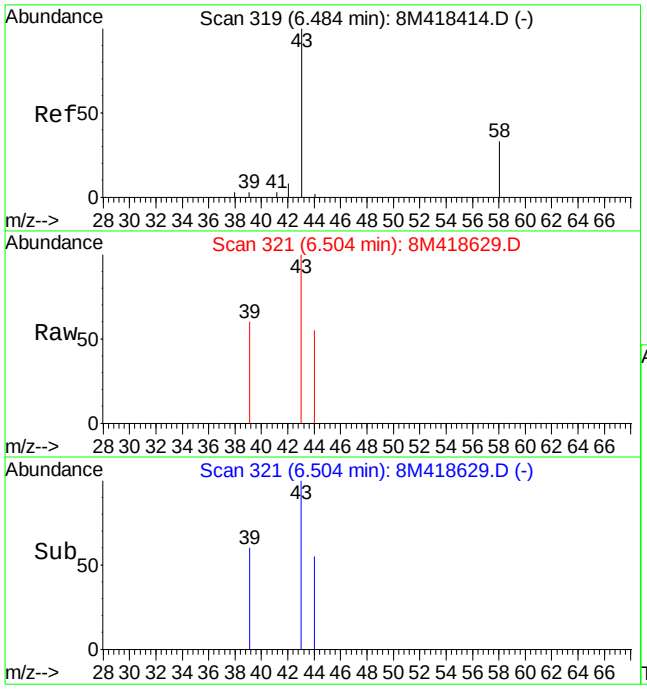


#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.85 min Scan# 64
Delta R.T. 0.02 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 50 Resp: 3087

Ion	Ratio	Lower	Upper
50	100		
52	18.5	20.4	47.6#

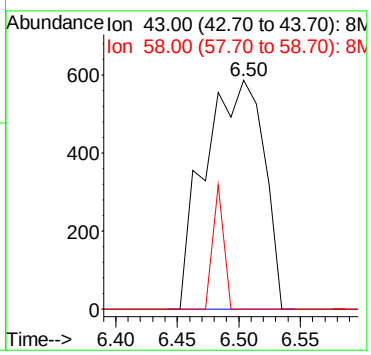


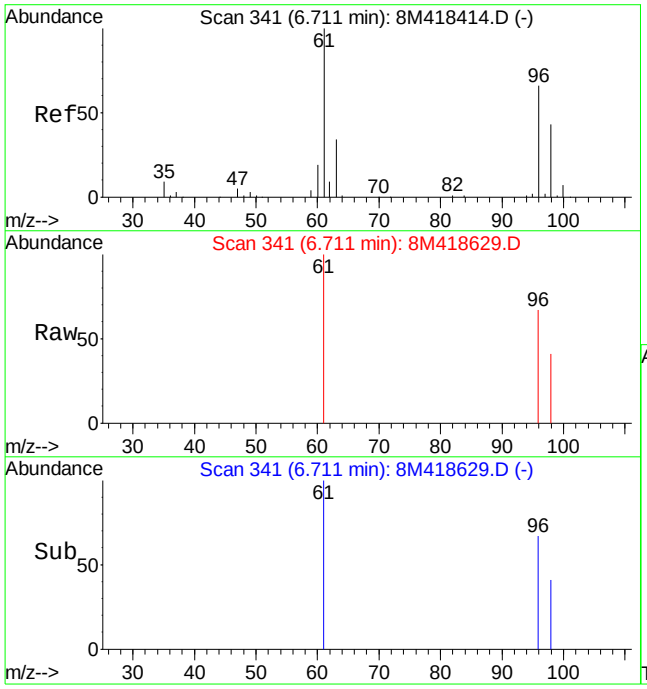


#13
Acetone
Concen: 1.86 ug/L
RT: 6.50 min Scan# 321
Delta R.T. 0.02 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 43 Resp: 1963

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

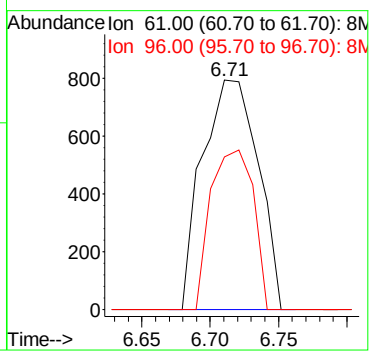


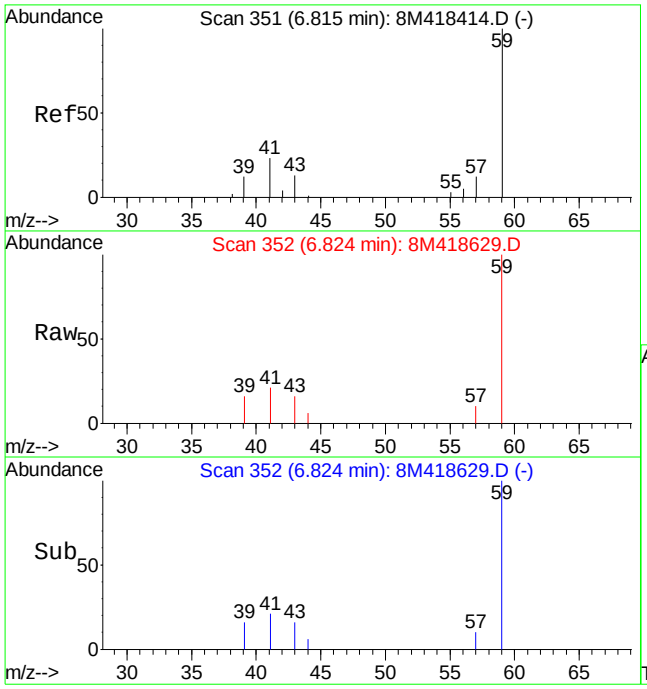


#14
1,1-Dichloroethene
Concen: 0.18 ug/L
RT: 6.71 min Scan# 341
Delta R.T. -0.00 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 61 Resp: 2248

Ion	Ratio	Lower	Upper
61	100		
96	53.2	40.0	93.4

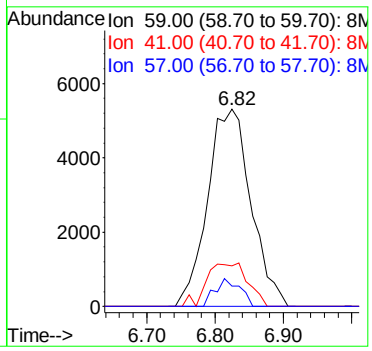


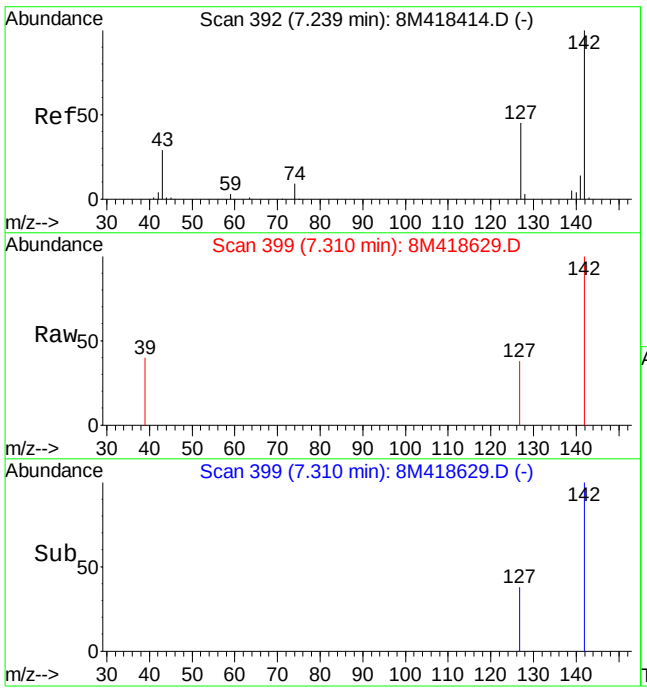


#15
Tert-Butyl Alcohol
Concen: 69.84 ug/L
RT: 6.82 min Scan# 352
Delta R.T. 0.01 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 59 Resp: 23436

Ion	Ratio	Lower	Upper
59	100		
41	20.9	14.0	32.6
57	8.1	5.8	13.4

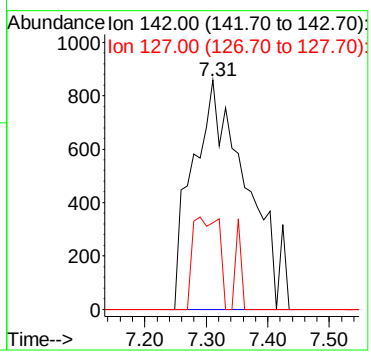


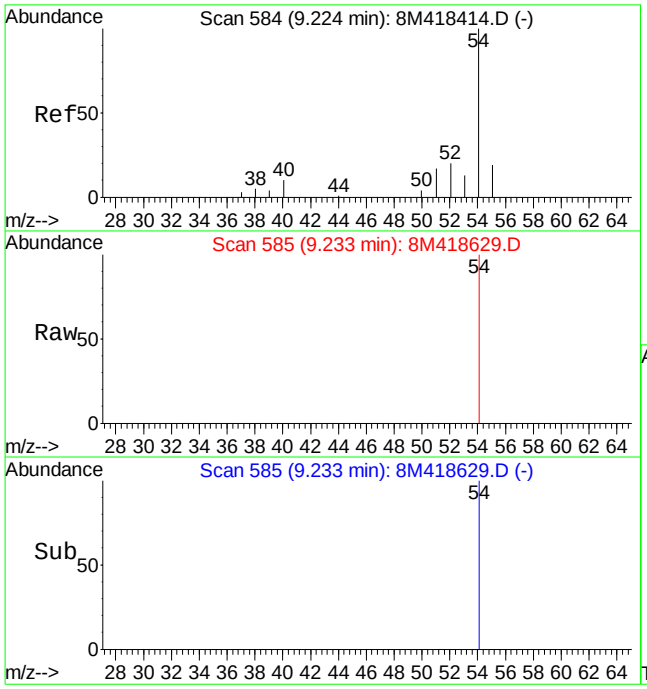


#17
Iodomethane
Concen: 1.00 ug/L
RT: 7.31 min Scan# 399
Delta R.T. 0.07 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion:142 Resp: 5244

Ion	Ratio	Lower	Upper
142	100		
127	19.5	27.0	63.0#

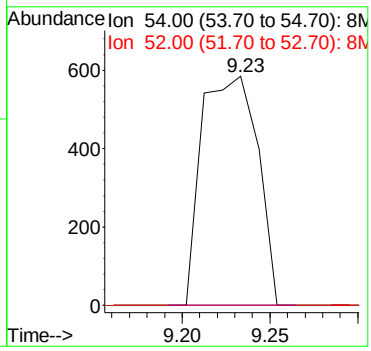


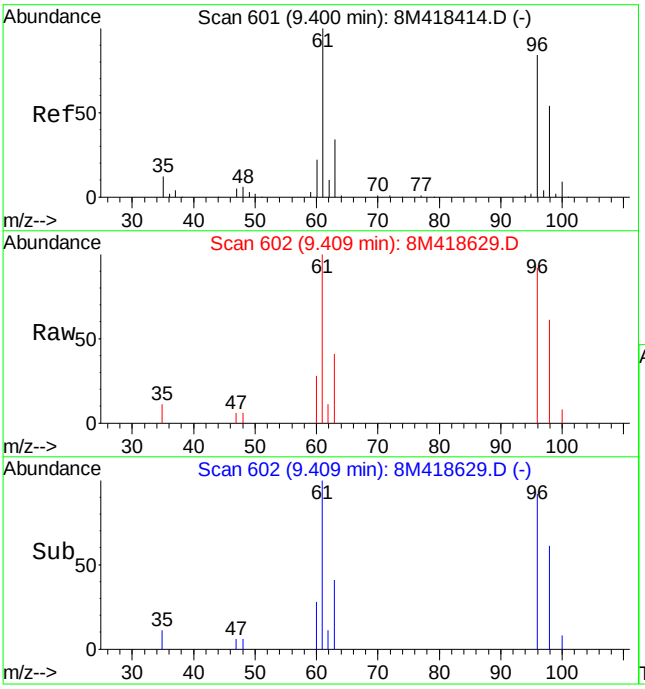


#30
Propionitrile
Concen: 2.56 ug/L
RT: 9.23 min Scan# 585
Delta R.T. 0.01 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 54 Resp: 1288

Ion	Ratio	Lower	Upper
54	100		
52	0.0	12.1	28.3#

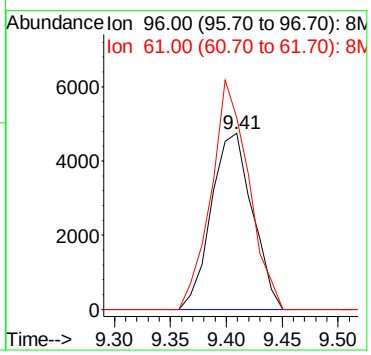


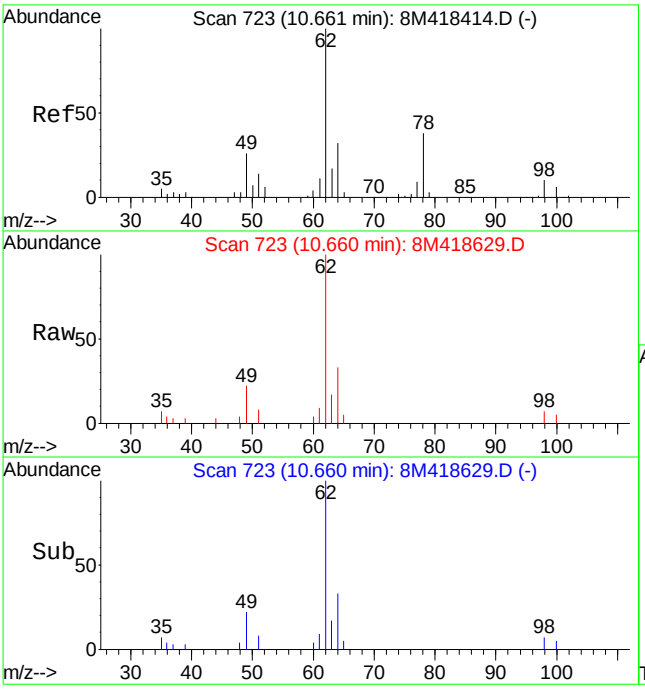


#32
cis-1,2-Dichloroethene
Concen: 1.16 ug/L
RT: 9.41 min Scan# 602
Delta R.T. 0.01 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 96 Resp: 12157

Ion	Ratio	Lower	Upper
96	100		
61	118.5	80.3	187.3

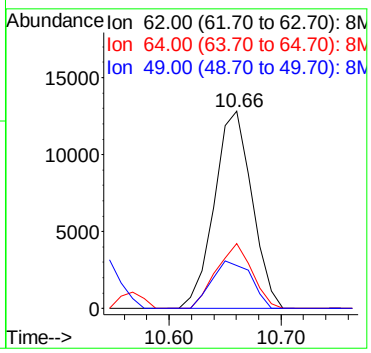


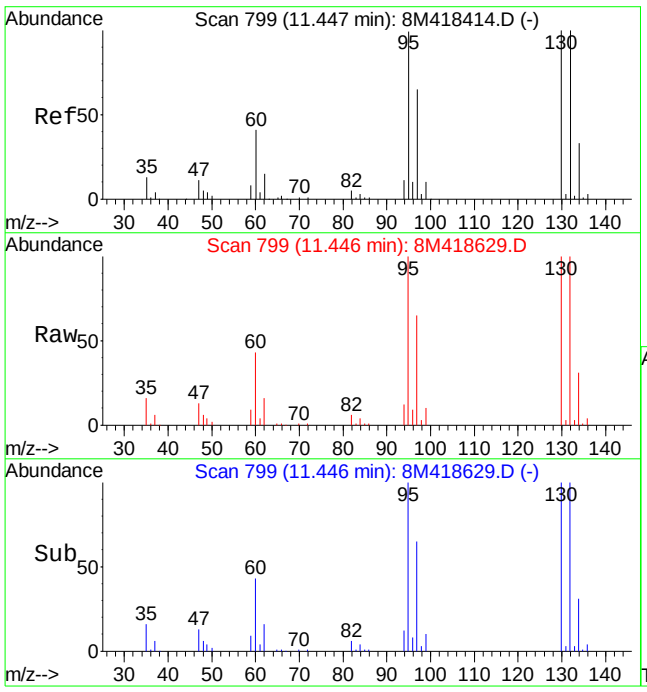


#45
1,2-Dichloroethane
Concen: 2.85 ug/L
RT: 10.66 min Scan# 723
Delta R.T. -0.00 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 62 Resp: 30016

Ion	Ratio	Lower	Upper
62	100		
64	31.4	19.6	45.8
49	25.2	19.4	45.4

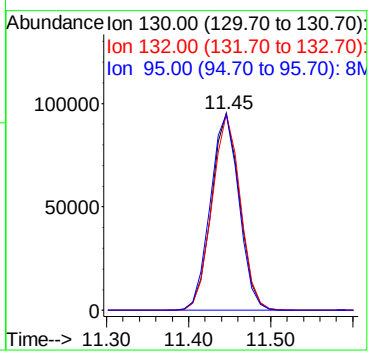


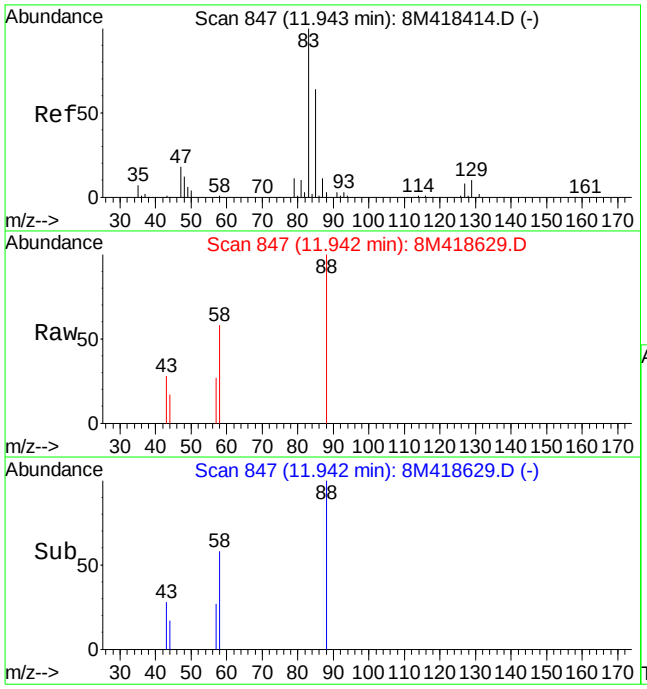


#47
Trichloroethene
Concen: 22.41 ug/L
RT: 11.45 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion:130 Resp: 227327

Ion	Ratio	Lower	Upper
130	100		
132	100.0	59.4	138.6
95	101.2	60.1	140.3

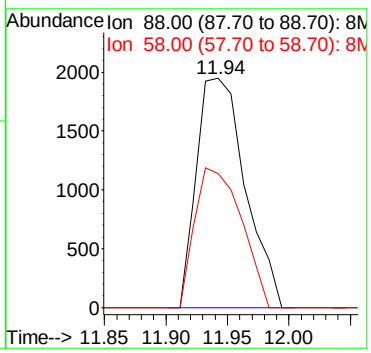


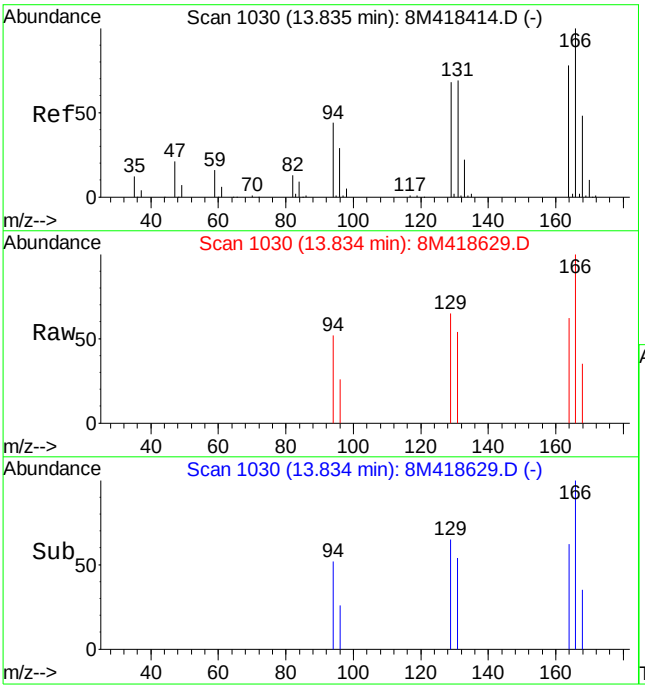


#51
1,4-Dioxane
Concen: 128.23 ug/L
RT: 11.94 min Scan# 847
Delta R.T. -0.00 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion: 88 Resp: 5376

Ion	Ratio	Lower	Upper
88	100		
58	58.2	30.0	70.0

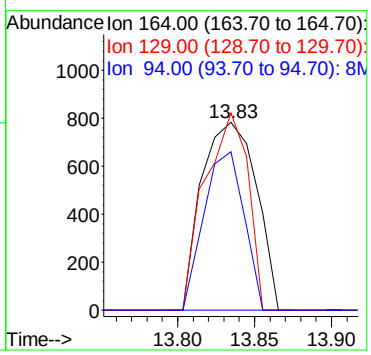


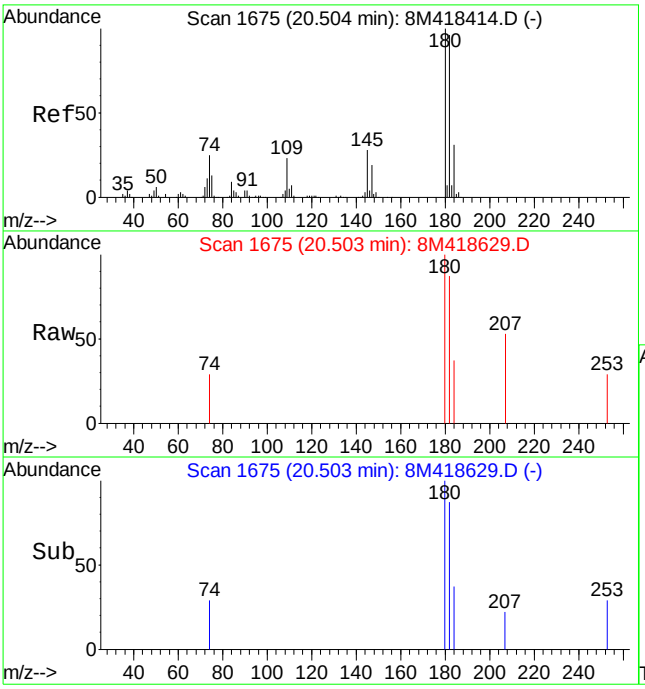


#66
Tetrachloroethene
Concen: 0.21 ug/L
RT: 13.83 min Scan# 1030
Delta R.T. -0.00 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion:164 Resp: 1939

Ion	Ratio	Lower	Upper
164	100		
129	82.6	53.4	124.6
94	61.6	34.7	81.1

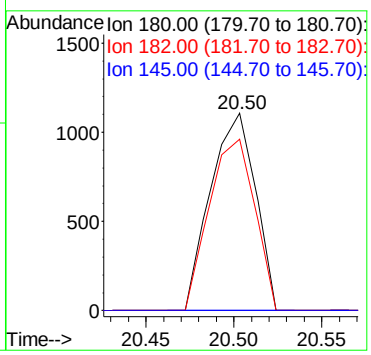


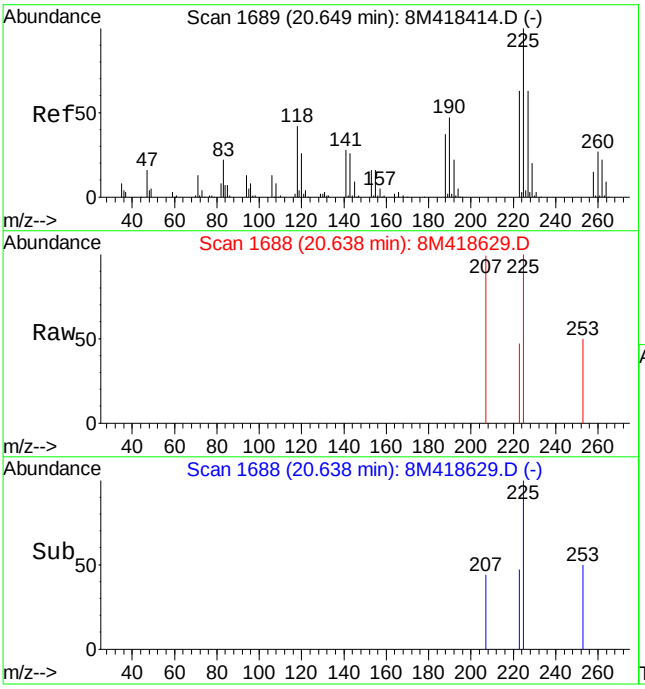


#98
1,2,4-Trichlorobenzene
Concen: 0.12 ug/L
RT: 20.50 min Scan# 1675
Delta R.T. -0.00 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion:180 Resp: 1963

Ion	Ratio	Lower	Upper
180	100		
182	88.0	57.3	133.7
145	0.0	17.3	40.5#

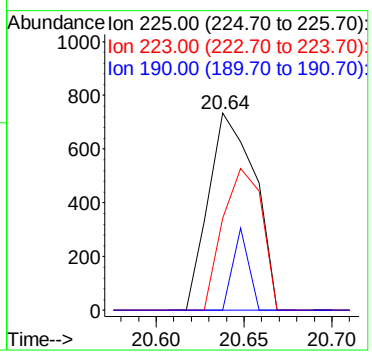


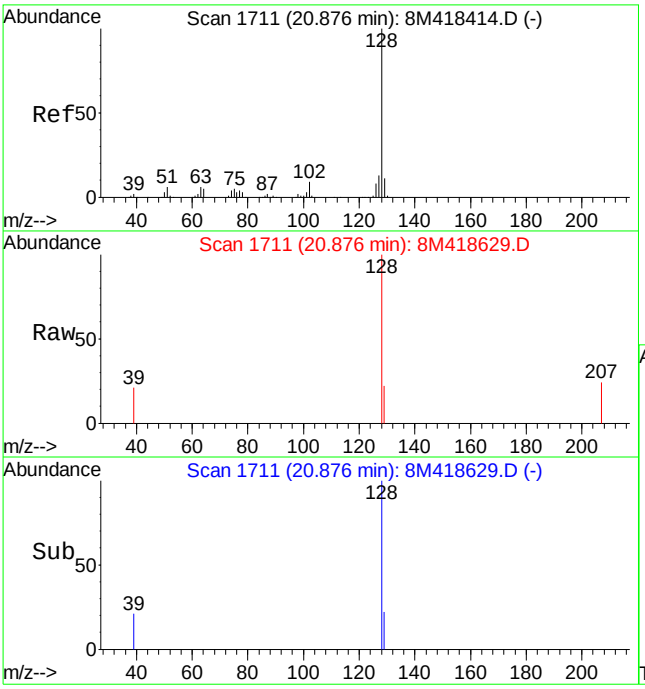


#99
Hexachlorobutadiene
Concen: 0.17 ug/L
RT: 20.64 min Scan# 1688
Delta R.T. -0.01 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion:225 Resp: 1342

Ion	Ratio	Lower	Upper
225	100		
223	60.7	37.3	87.1
190	0.0	27.4	64.0#

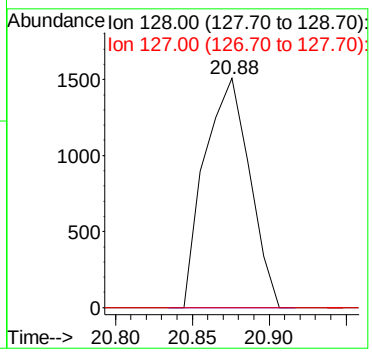




#100
Naphthalene
Concen: 0.15 ug/L
RT: 20.88 min Scan# 1711
Delta R.T. -0.00 min
Lab File: 8M418629.D
Acq: 29 Mar 2017 17:52

Tgt Ion:128 Resp: 3081

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418578.D Vial: 23
Acq On : 27 Mar 2017 20:40 Operator: TMB
Sample : L17031339-14 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 21:02:16 2017 Quant Results File: 8260WTR.RES

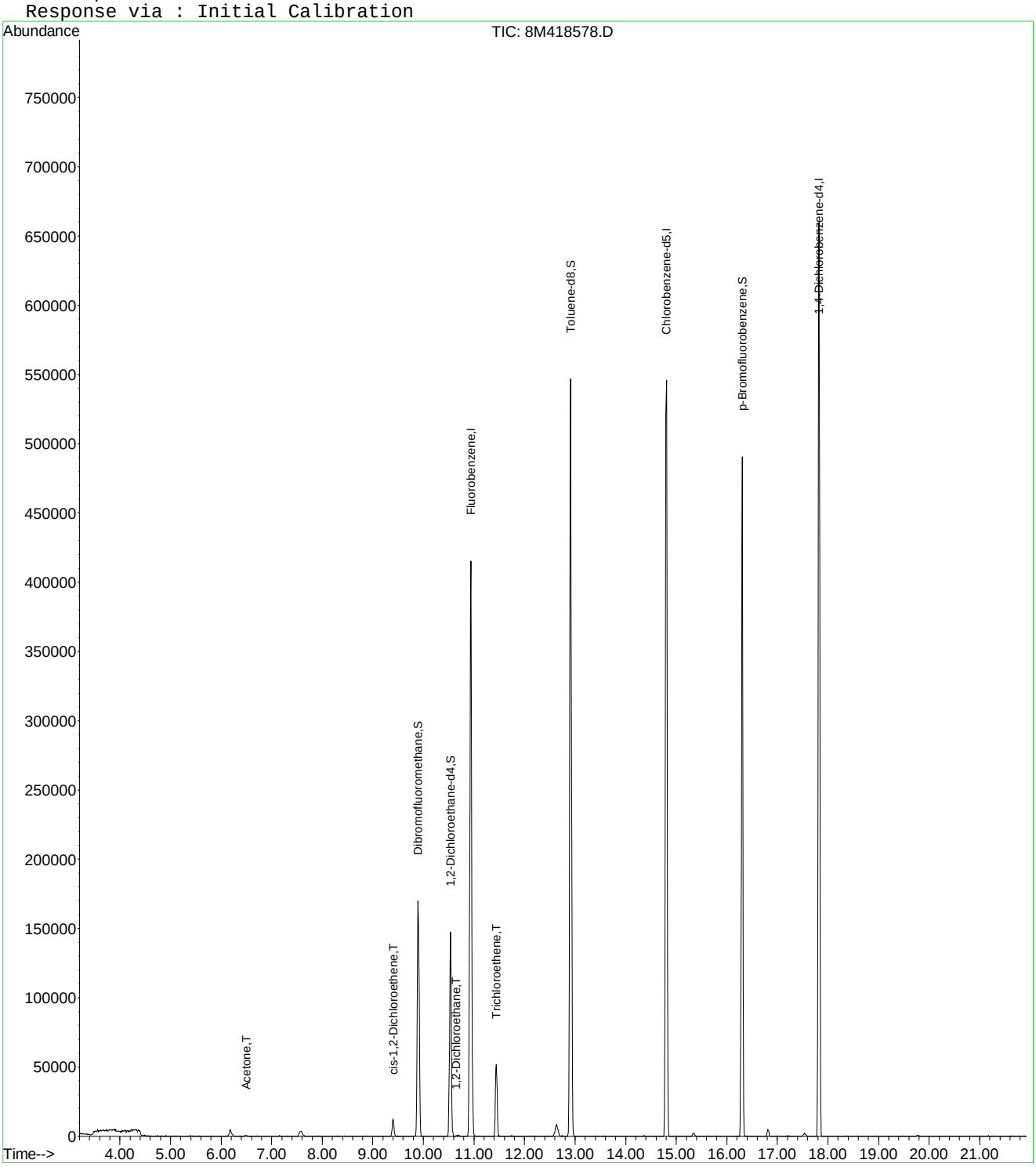
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

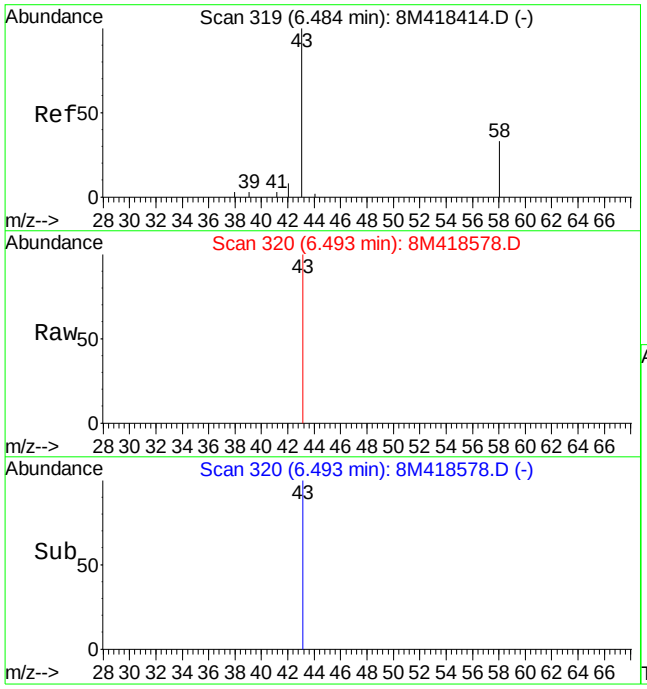
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	508795	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	406536	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	216808	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	140312	24.3157	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.28%			
43) 1,2-Dichloroethane-d4	10.54	65	124915	24.9798	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.92%			
58) Toluene-d8	12.91	98	509582	24.9186	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.68%			
80) p-Bromofluorobenzene	16.30	95	194143	23.6636	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.64%			
Target Compounds						Qvalue
13) Acetone	6.49	43	1546	2.5408	ug/L #	42
32) cis-1,2-Dichloroethene	9.41	96	8268	1.3696	ug/L	94
45) 1,2-Dichloroethane	10.65	62	748	0.1232	ug/L #	42
47) Trichloroethene	11.45	130	21752	3.7146	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418578.D 8260WTR.M Tue Mar 28 08:32:41 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418578.D Vial: 23
Acq On : 27 Mar 2017 20:40 Operator: TMB
Sample : L17031339-14 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 22:02 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

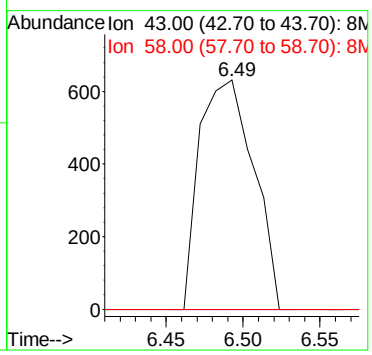


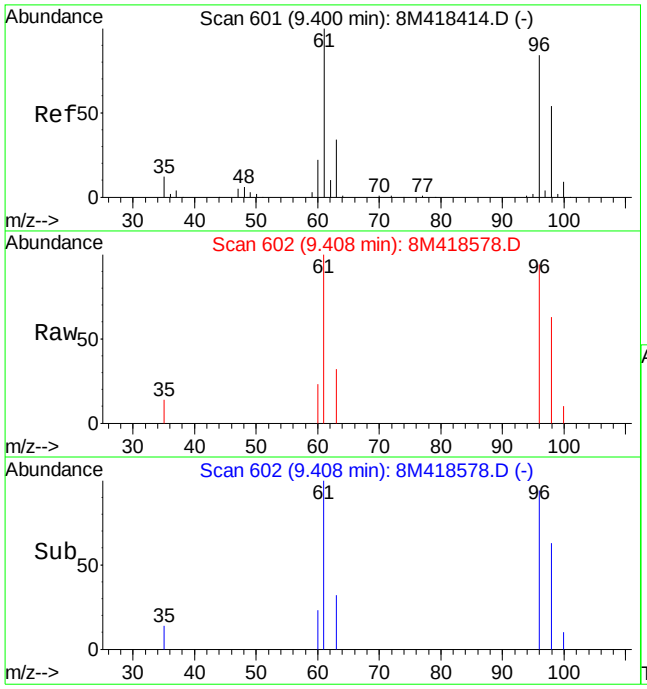


#13
Acetone
Concen: 2.54 ug/L
RT: 6.49 min Scan# 320
Delta R.T. 0.01 min
Lab File: 8M418578.D
Acq: 27 Mar 2017 20:40

Tgt Ion: 43 Resp: 1546

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

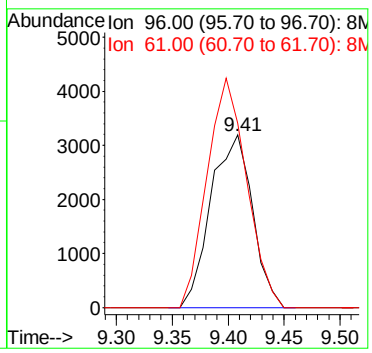


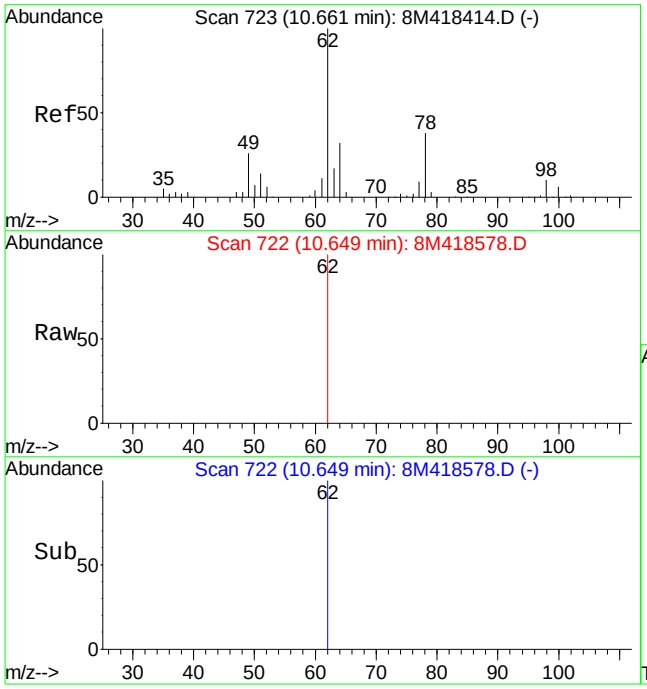


#32
cis-1,2-Dichloroethene
Concen: 1.37 ug/L
RT: 9.41 min Scan# 602
Delta R.T. 0.01 min
Lab File: 8M418578.D
Acq: 27 Mar 2017 20:40

Tgt Ion: 96 Resp: 8268

Ion	Ratio	Lower	Upper
96	100		
61	126.5	80.3	187.3

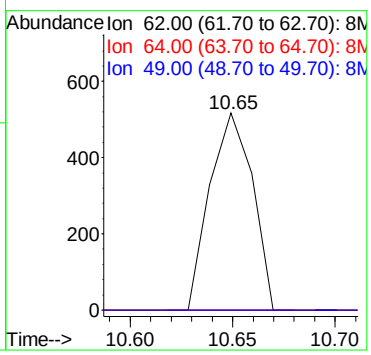


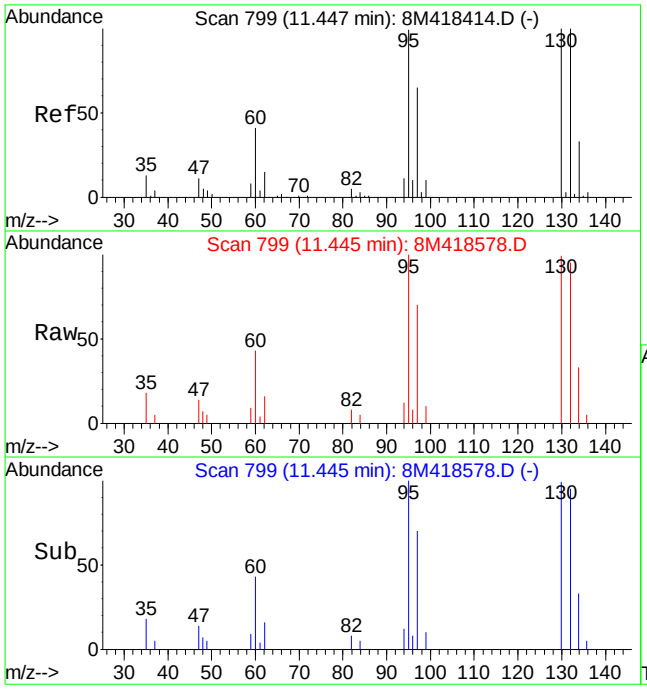


#45
1,2-Dichloroethane
Concen: 0.12 ug/L
RT: 10.65 min Scan# 722
Delta R.T. -0.01 min
Lab File: 8M418578.D
Acq: 27 Mar 2017 20:40

Tgt Ion: 62 Resp: 748

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.6	45.8#
49	0.0	19.4	45.4#

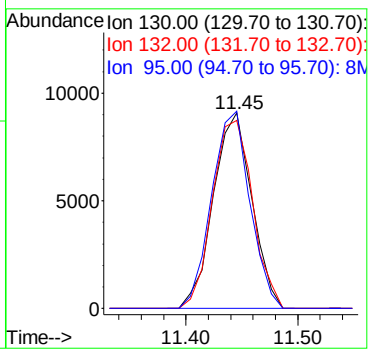




#47
Trichloroethene
Concen: 3.71 ug/L
RT: 11.45 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M418578.D
Acq: 27 Mar 2017 20:40

Tgt Ion:130 Resp: 21752

Ion	Ratio	Lower	Upper
130	100		
132	100.1	59.4	138.6
95	100.1	60.1	140.3



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418573.D Vial: 18
Acq On : 27 Mar 2017 17:58 Operator: TMB
Sample : L17031339-16 B TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 18:20:30 2017 Quant Results File: 8260WTR.RES

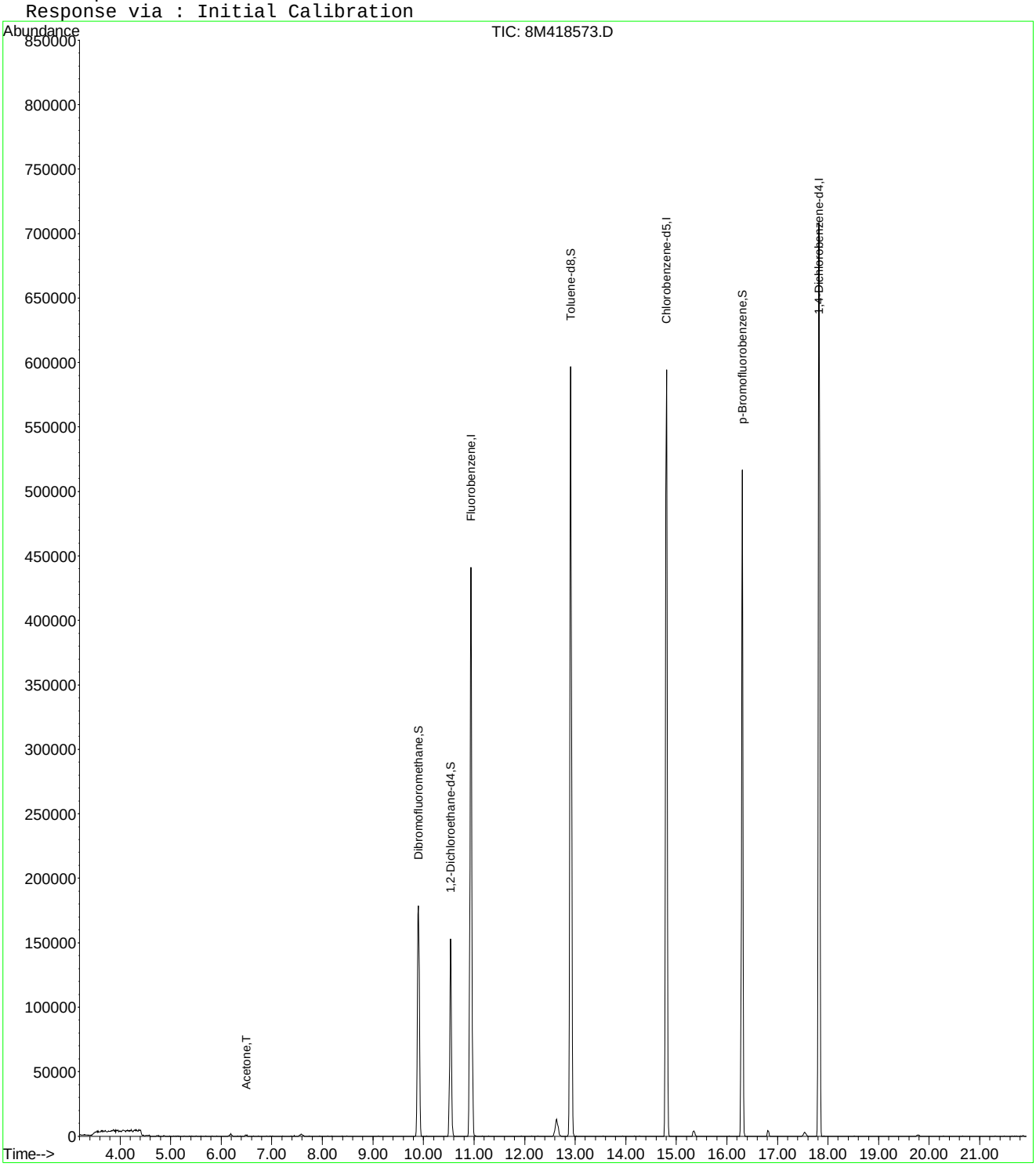
Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 09:07:42 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

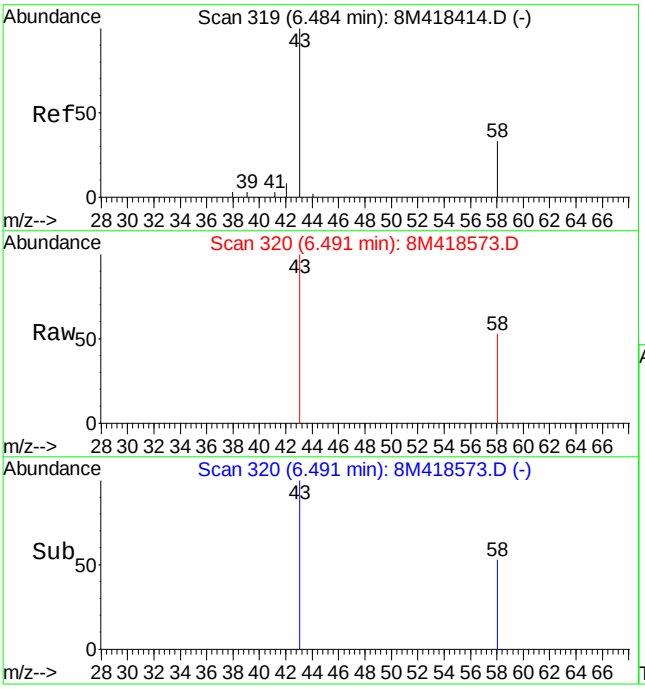
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	538511	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.80	117	423852	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	227445	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	147140	24.0919 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.36%		
43) 1,2-Dichloroethane-d4	10.53	65	130952	24.7420 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.96%		
58) Toluene-d8	12.91	98	538118	25.2390 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%		
80) p-Bromofluorobenzene	16.30	95	206849	24.0332 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.12%		
Target Compounds					Qvalue
13) Acetone	6.49	43	1648	2.5590 ug/L #	65

(#) = qualifier out of range (m) = manual integration
8M418573.D 8260WTR.M Tue Mar 28 08:30:21 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032717\8M418573.D Vial: 18
Acq On : 27 Mar 2017 17:58 Operator: TMB
Sample : L17031339-16 B TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 27 19:20 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

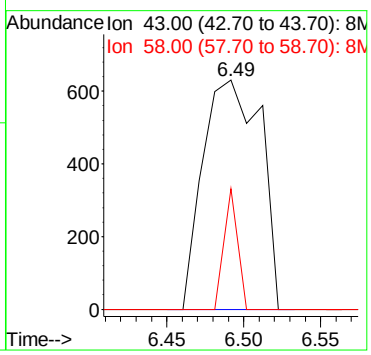




#13
Acetone
Concen: 2.56 ug/L
RT: 6.49 min Scan# 320
Delta R.T. 0.01 min
Lab File: 8M418573.D
Acq: 27 Mar 2017 17:58

Tgt Ion: 43 Resp: 1648

Ion	Ratio	Lower	Upper
43	100		
58	12.5	19.4	45.4#



2.1.1.4 Standards Data

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416519.D Vial: 2
Acq On : 8 Dec 2016 9:19 Operator: TMB
Sample : WG594051-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:51 2016 Quant Results File: A9FOOWTR.RES

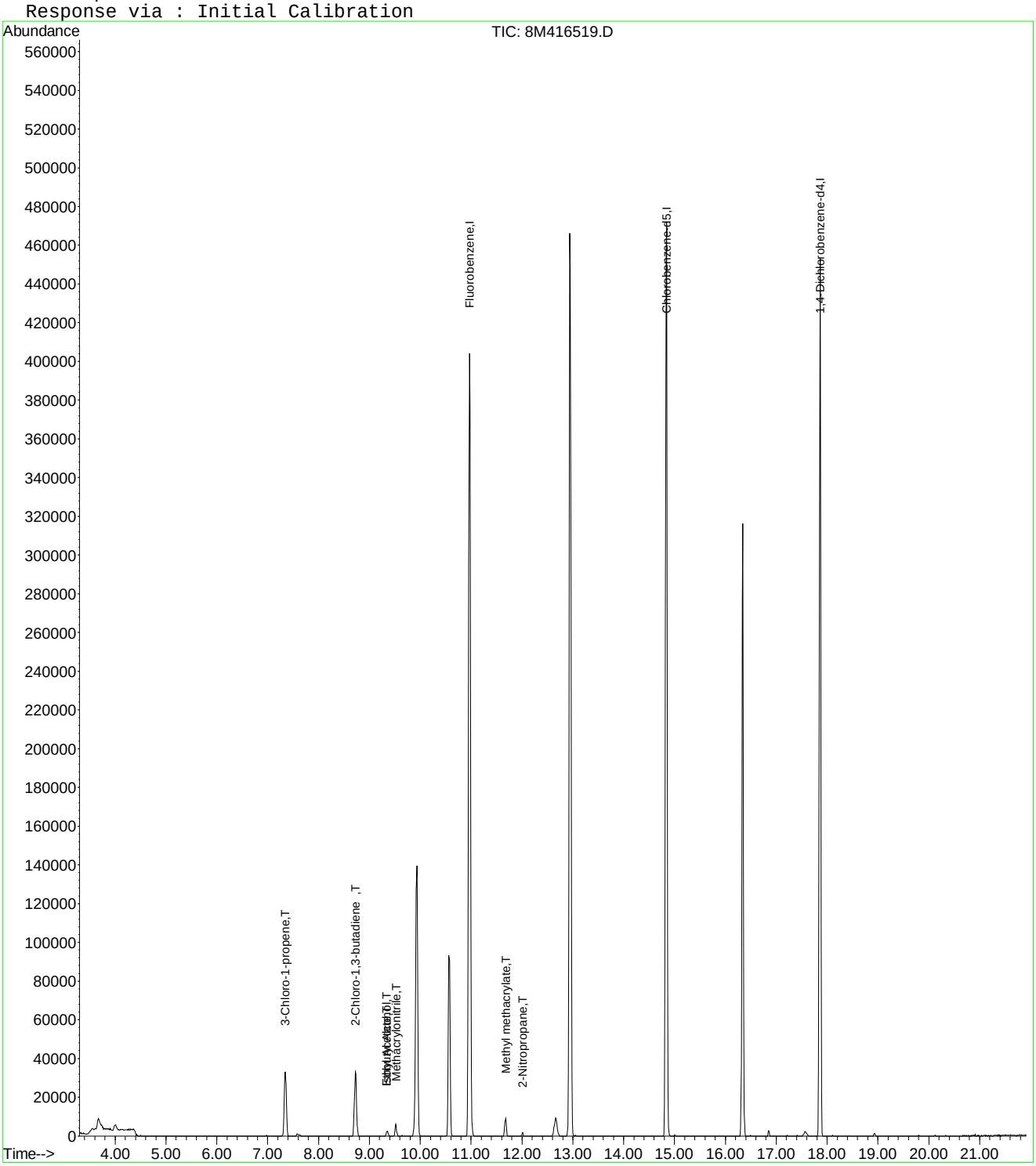
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.97	96	524008	25.00	ug/L		0.00
11) Chlorobenzene-d5	14.84	117	364349	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	144698	25.00	ug/L		0.00
Target Compounds							Qvalue
3) 3-Chloro-1-propene	7.35	41	29881	4.9041	ug/L		96
4) 2-Chloro-1,3-butadiene	8.72	53	29557	4.4384	ug/L		94
5) Ethyl Acetate	9.34	43	5291	3.8864	ug/L	#	59
6) Methacrylonitrile	9.53	67	3339	3.7723	ug/L		88
7) Isobutyl Alcohol	9.34	43	5291	117.7955	ug/L	#	10
9) Methyl methacrylate	11.68	41	5754	4.0085	ug/L		90
10) 2-Nitropropane	12.01	43	1384	2.9662	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M416519.D A9FOOWTR.M Thu Dec 08 14:33:52 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416519.D Vial: 2
Acq On : 8 Dec 2016 9:19 Operator: TMB
Sample : WG594051-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416519.D Vial: 2
Acq On : 8 Dec 2016 9:19 Operator: TMB
Sample : WG594051-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	0.0000	0.0	0	-6.97#
3	T	3-Chloro-1-propene	5.0000	4.9041	1.9	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.4384	11.2	100	0.00
5	T	Ethyl Acetate	-1.0000	3.8864	0.0	0	0.00
6	T	Methacrylonitrile	5.0000	3.7723	24.6	100	0.00
7	T	Isobutyl Alcohol	-1.0000	117.7955	0.0	0	-0.18
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.45#
9	T	Methyl methacrylate	5.0000	4.0085	19.8	100	0.00
10	T	2-Nitropropane	-1.0000	2.9662	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-16.11#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416519.D A9FOOWTR.M Thu Dec 08 14:40:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416520.D Vial: 3
Acq On : 8 Dec 2016 9:48 Operator: TMB
Sample : WG594051-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:53 2016 Quant Results File: A9FOOWTR.RES

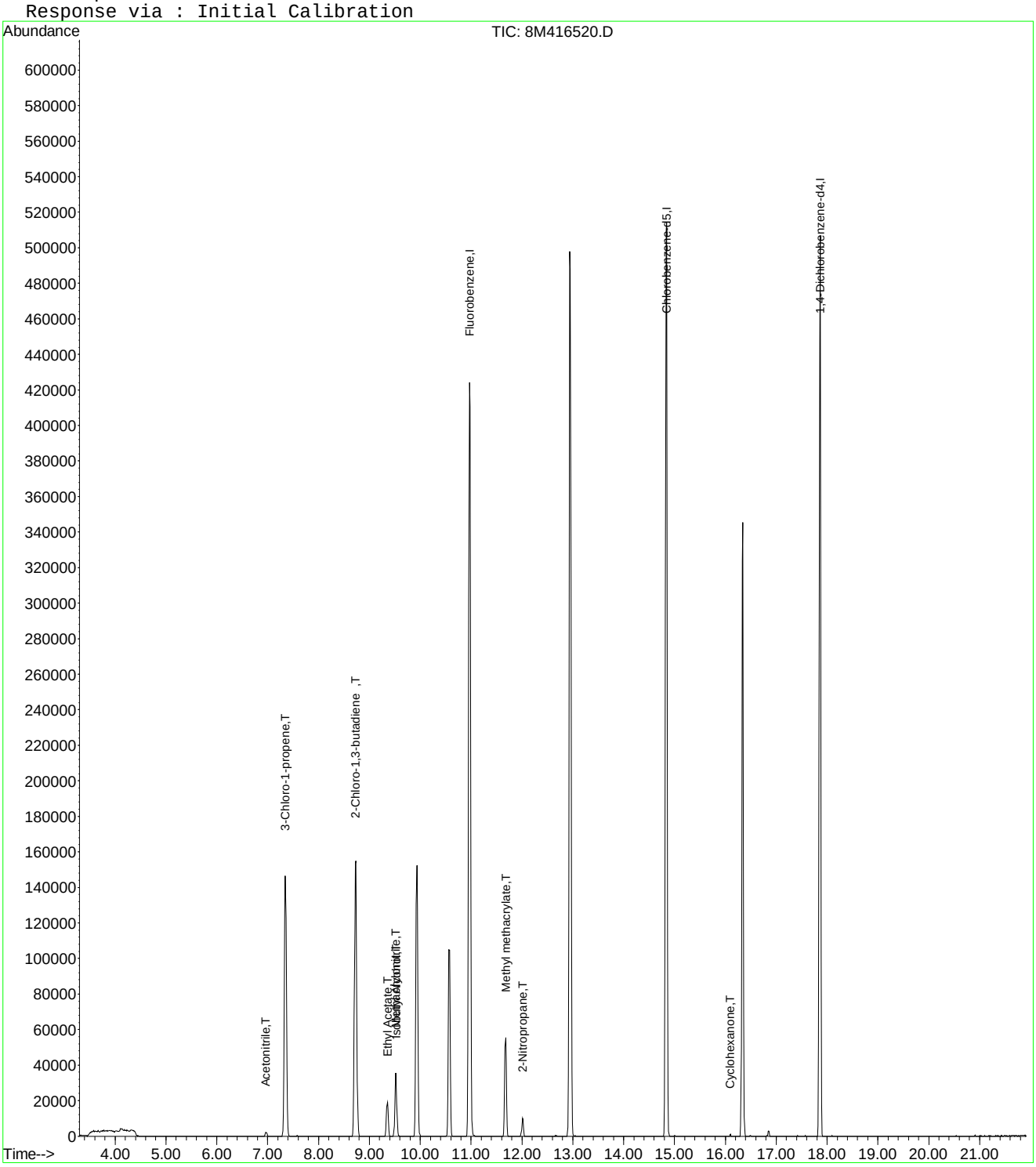
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.97	96	562112	25.00	ug/L		0.00
11) Chlorobenzene-d5	14.84	117	401339	25.00	ug/L		0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	163574	25.00	ug/L		0.00
Target Compounds							Qvalue
2) Acetonitrile	6.96	41	3251	20.0530	ug/L		86
3) 3-Chloro-1-propene	7.35	41	126513	19.3558	ug/L		94
4) 2-Chloro-1,3-butadiene	8.72	53	133862	18.7385	ug/L		93
5) Ethyl Acetate	9.35	43	29216	20.0054	ug/L		96
6) Methacrylonitrile	9.52	67	18458	19.4399	ug/L		89
7) Isobutyl Alcohol	9.53	43	1383	28.7031	ug/L	#	86
9) Methyl methacrylate	11.68	41	30029	19.5014	ug/L		97
10) 2-Nitropropane	12.01	43	9171	18.3231	ug/L		92
13) Cyclohexanone	16.09	55	573	11.3348	ug/L	#	22

(#) = qualifier out of range (m) = manual integration
8M416520.D A9FOOWTR.M Thu Dec 08 14:33:55 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416520.D Vial: 3
Acq On : 8 Dec 2016 9:48 Operator: TMB
Sample : WG594051-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416520.D Vial: 3
Acq On : 8 Dec 2016 9:48 Operator: TMB
Sample : WG594051-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.0530	-0.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.3558	3.2	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.7385	6.3	100	0.00
5	T	Ethyl Acetate	20.0000	20.0054	-0.0	100	0.00
6	T	Methacrylonitrile	20.0000	19.4399	2.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	28.7031	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.45#
9	T	Methyl methacrylate	20.0000	19.5014	2.5	100	0.00
10	T	2-Nitropropane	20.0000	18.3231	8.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	11.3348	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416520.D A9FOOWTR.M Thu Dec 08 14:40:47 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416521.D Vial: 4
Acq On : 8 Dec 2016 10:17 Operator: TMB
Sample : WG594051-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:56 2016 Quant Results File: A9FOOWTR.RES

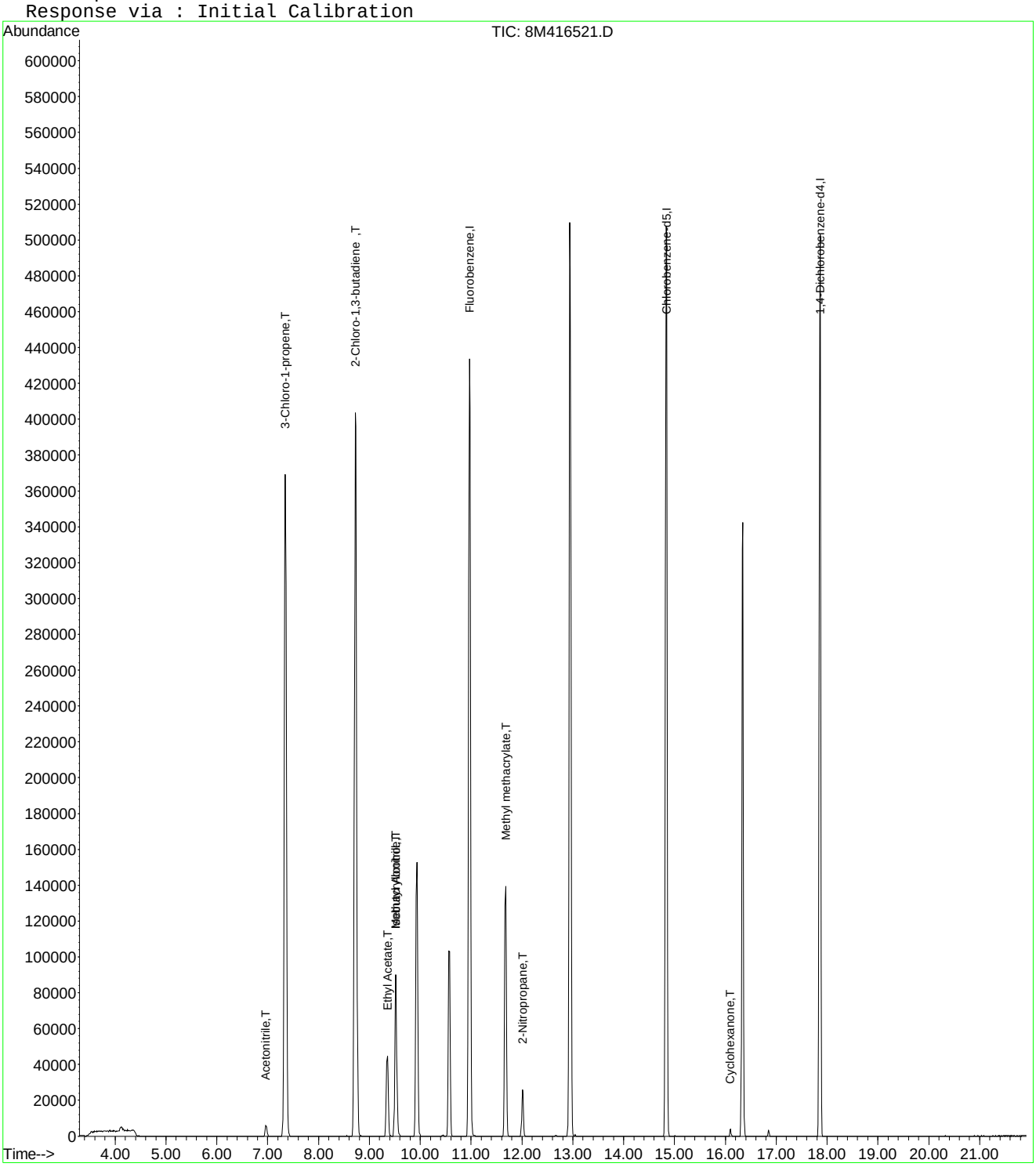
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	564001	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	394560	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	164538	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.96	41	7864	48.3447	ug/L	100
3) 3-Chloro-1-propene	7.35	41	318087	48.5026	ug/L	96
4) 2-Chloro-1,3-butadiene	8.72	53	344272	48.0312	ug/L	93
5) Ethyl Acetate	9.35	43	70890	48.3788	ug/L	100
6) Methacrylonitrile	9.52	67	48404	50.8082	ug/L	93
7) Isobutyl Alcohol	9.52	43	4449	92.0262	ug/L #	94
9) Methyl methacrylate	11.68	41	76637	49.6027	ug/L	97
10) 2-Nitropropane	12.01	43	23103	46.0039	ug/L	95
13) Cyclohexanone	16.09	55	2163	42.5368	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M416521.D A9FOOWTR.M Thu Dec 08 14:33:58 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416521.D Vial: 4
Acq On : 8 Dec 2016 10:17 Operator: TMB
Sample : WG594051-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416521.D Vial: 4
Acq On : 8 Dec 2016 10:17 Operator: TMB
Sample : WG594051-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	48.3447	3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	48.5026	3.0	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	48.0312	3.9	100	0.00
5	T	Ethyl Acetate	50.0000	48.3788	3.2	100	0.00
6	T	Methacrylonitrile	50.0000	50.8082	-1.6	100	0.00
7	T	Isobutyl Alcohol	100.0000	92.0262	8.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-0.01
9	T	Methyl methacrylate	50.0000	49.6027	0.8	100	0.00
10	T	2-Nitropropane	50.0000	46.0039	8.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	42.5368	14.9	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416521.D A9FOOWTR.M Thu Dec 08 14:41:01 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416522.D Vial: 5
Acq On : 8 Dec 2016 10:47 Operator: TMB
Sample : WG594051-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:33:59 2016 Quant Results File: A9FOOWTR.RES

Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

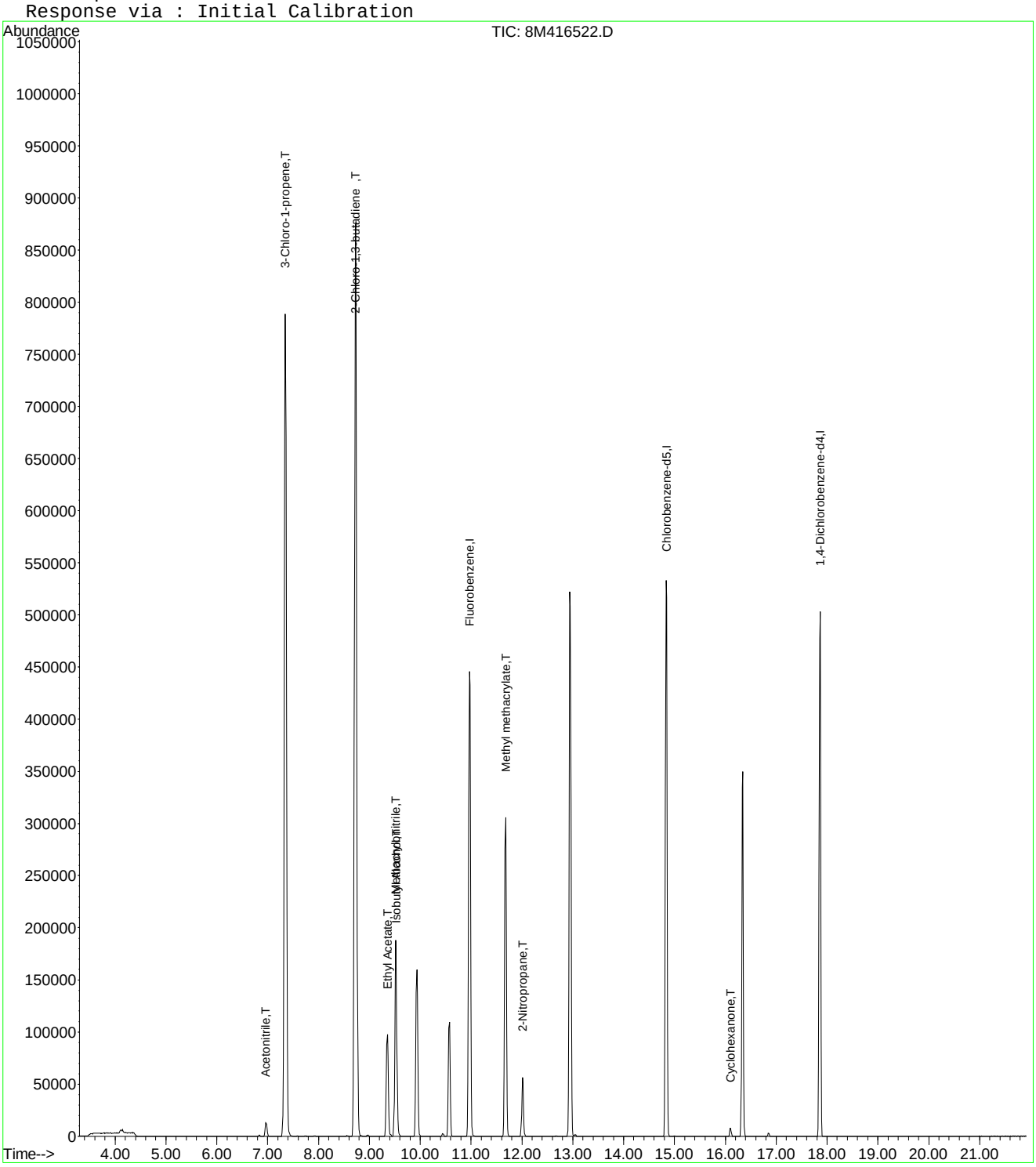
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	591526	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	415270	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	167978	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.97	41	17844	104.5933	ug/L	96
3) 3-Chloro-1-propene	7.35	41	676105	98.2967	ug/L	97
4) 2-Chloro-1,3-butadiene	8.72	53	745903	99.2224	ug/L	94
5) Ethyl Acetate	9.35	43	151658	98.6828	ug/L	100
6) Methacrylonitrile	9.52	67	101361	101.4448	ug/L	99
7) Isobutyl Alcohol	9.53	43	10092	199.0363	ug/L	96
9) Methyl methacrylate	11.68	41	163688	101.0159	ug/L	97
10) 2-Nitropropane	12.01	43	50322	95.5410	ug/L	95
13) Cyclohexanone	16.11	55	5170	99.5894	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M416522.D A9FOOWTR.M Thu Dec 08 14:34:01 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416522.D Vial: 5
Acq On : 8 Dec 2016 10:47 Operator: TMB
Sample : WG594051-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:33 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416522.D Vial: 5
Acq On : 8 Dec 2016 10:47 Operator: TMB
Sample : WG594051-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	104.5933	-4.6	100	0.00
3	T	3-Chloro-1-propene	100.0000	98.2967	1.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	99.2224	0.8	100	0.00
5	T	Ethyl Acetate	100.0000	98.6828	1.3	100	0.00
6	T	Methacrylonitrile	100.0000	101.4448	-1.4	100	0.00
7	T	Isobutyl Alcohol	200.0000	199.0363	0.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	101.0159	-1.0	100	0.00
10	T	2-Nitropropane	100.0000	95.5410	4.5	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	99.5894	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416522.D A9FOOWTR.M Thu Dec 08 14:41:12 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416523.D Vial: 6
Acq On : 8 Dec 2016 11:16 Operator: TMB
Sample : WG594051-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:02 2016 Quant Results File: A9FOOWTR.RES

Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

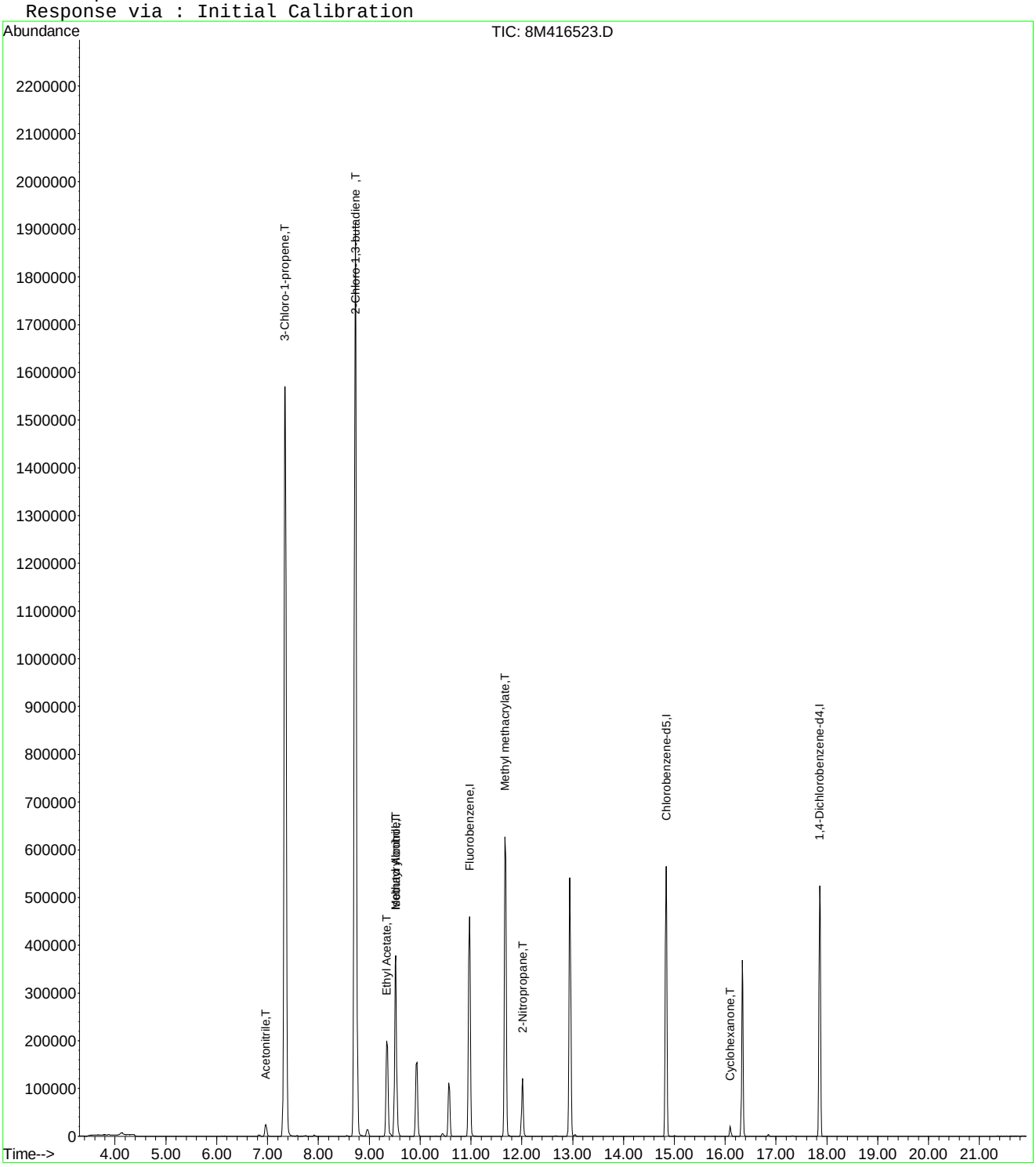
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	594977	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	420464	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.85	152	172604	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	34536	201.2600	ug/L	98
3) 3-Chloro-1-propene	7.34	41	1382110	199.7750	ug/L	97
4) 2-Chloro-1,3-butadiene	8.73	53	1548323	204.7683	ug/L	96
5) Ethyl Acetate	9.35	43	311769	201.6892	ug/L	100
6) Methacrylonitrile	9.52	67	209671	208.6271	ug/L	99
7) Isobutyl Alcohol	9.52	43	19754	387.3323	ug/L	94
9) Methyl methacrylate	11.67	41	335849	206.0586	ug/L	99
10) 2-Nitropropane	12.01	43	108018	203.8928	ug/L	98
13) Cyclohexanone	16.10	55	10760	201.7141	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M416523.D A9FOOWTR.M Thu Dec 08 14:34:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416523.D Vial: 6
Acq On : 8 Dec 2016 11:16 Operator: TMB
Sample : WG594051-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416524.D Vial: 7
Acq On : 8 Dec 2016 11:46 Operator: TMB
Sample : WG594051-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:05 2016 Quant Results File: A9FOOWTR.RES

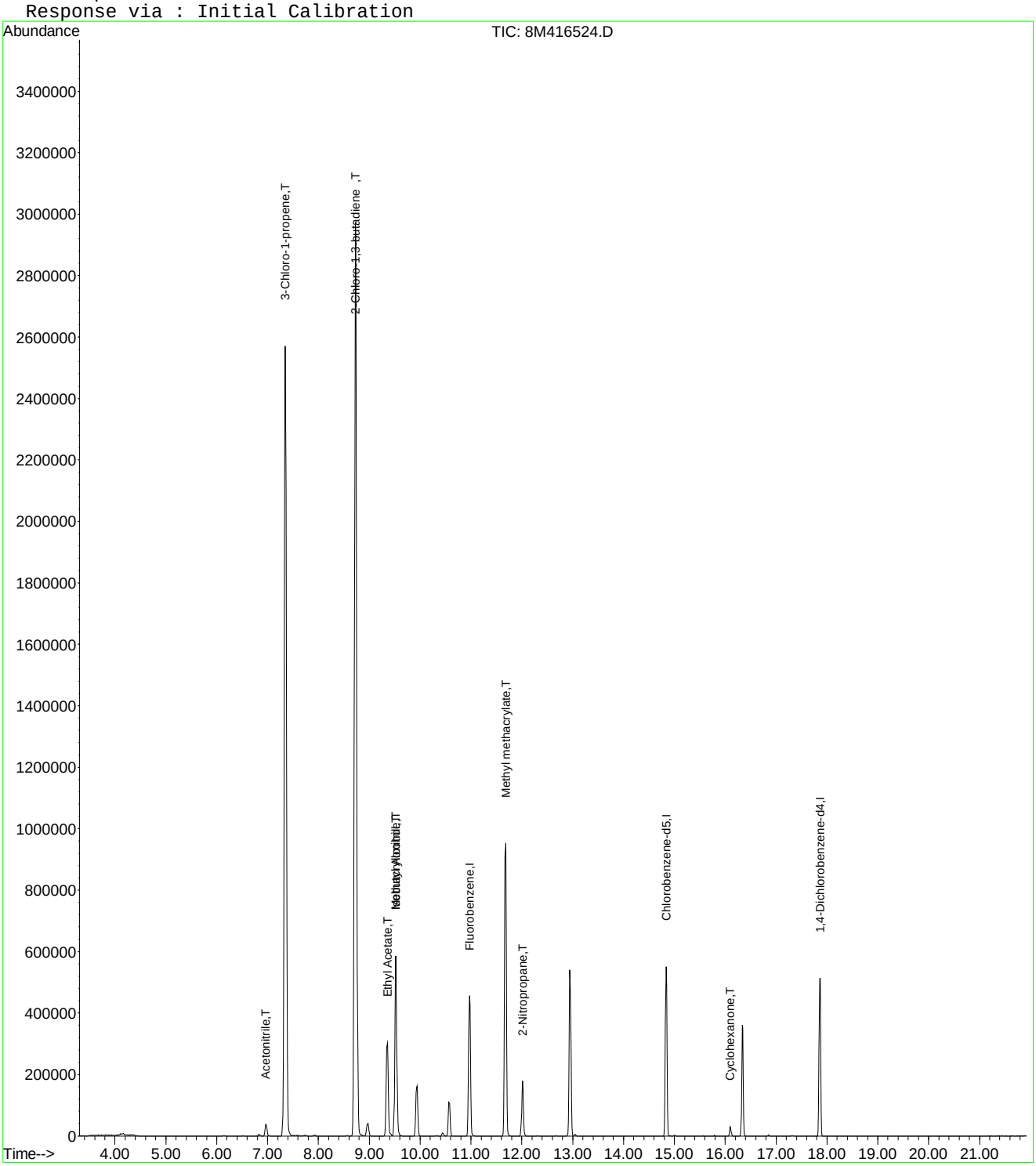
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	603930	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	427693	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	174680	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	50936	292.4312	ug/L	98
3) 3-Chloro-1-propene	7.35	41	2157997	307.3002	ug/L	98
4) 2-Chloro-1,3-butadiene	8.72	53	2431028	316.7413	ug/L	97
5) Ethyl Acetate	9.36	43	465757	296.8402	ug/L	100
6) Methacrylonitrile	9.52	67	317606	311.3398	ug/L	99
7) Isobutyl Alcohol	9.52	43	31446	607.4460	ug/L	97
9) Methyl methacrylate	11.68	41	510372	308.4942	ug/L	99
10) 2-Nitropropane	12.01	43	166198	309.0616	ug/L	100
13) Cyclohexanone	16.10	55	16564	306.8294	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M416524.D A9FOOWTR.M Thu Dec 08 14:34:06 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416524.D Vial: 7
Acq On : 8 Dec 2016 11:46 Operator: TMB
Sample : WG594051-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416525.D Vial: 8
Acq On : 8 Dec 2016 12:16 Operator: TMB
Sample : WG594051-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:08 2016 Quant Results File: A9FOOWTR.RES

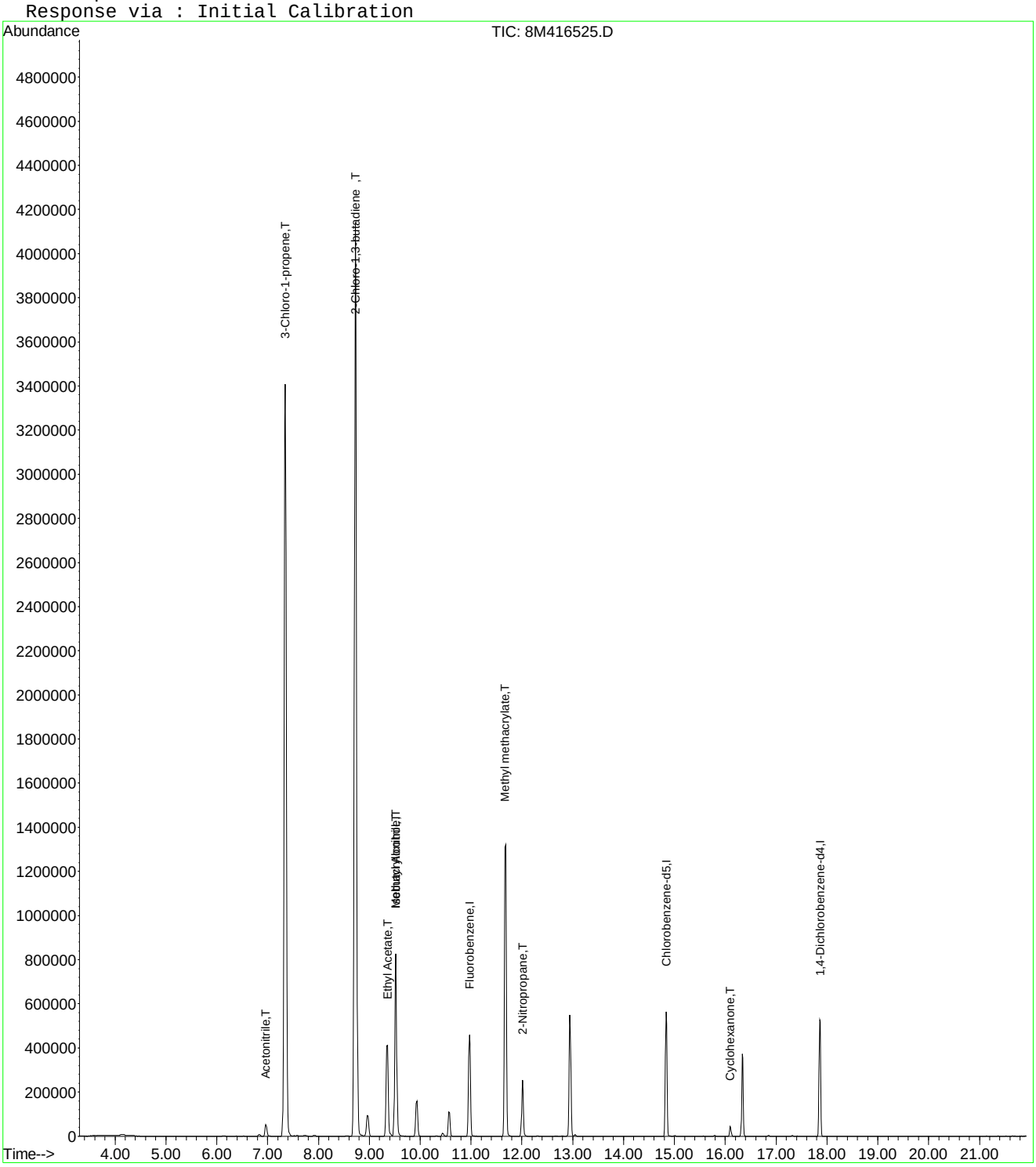
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	605694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.83	117	430760	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	180284	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	71198	407.5680	ug/L	99
3) 3-Chloro-1-propene	7.35	41	2884846	409.6076	ug/L	99
4) 2-Chloro-1,3-butadiene	8.72	53	3270965	424.9364	ug/L	98
5) Ethyl Acetate	9.35	43	647926	411.7391	ug/L	100
6) Methacrylonitrile	9.52	67	444486	434.4476	ug/L	100
7) Isobutyl Alcohol	9.52	43	45941	884.8630	ug/L	99
9) Methyl methacrylate	11.67	41	717453	432.4013	ug/L	100
10) 2-Nitropropane	12.01	43	236171	437.9042	ug/L	98
13) Cyclohexanone	16.10	55	23842	427.9179	ug/L	97

(#) = qualifier out of range (m) = manual integration
8M416525.D A9FOOWTR.M Thu Dec 08 14:34:09 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416525.D Vial: 8
Acq On : 8 Dec 2016 12:16 Operator: TMB
Sample : WG594051-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416526.D Vial: 9
Acq On : 8 Dec 2016 12:45 Operator: TMB
Sample : WG594051-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 14:34:10 2016 Quant Results File: A9FOOWTR.RES

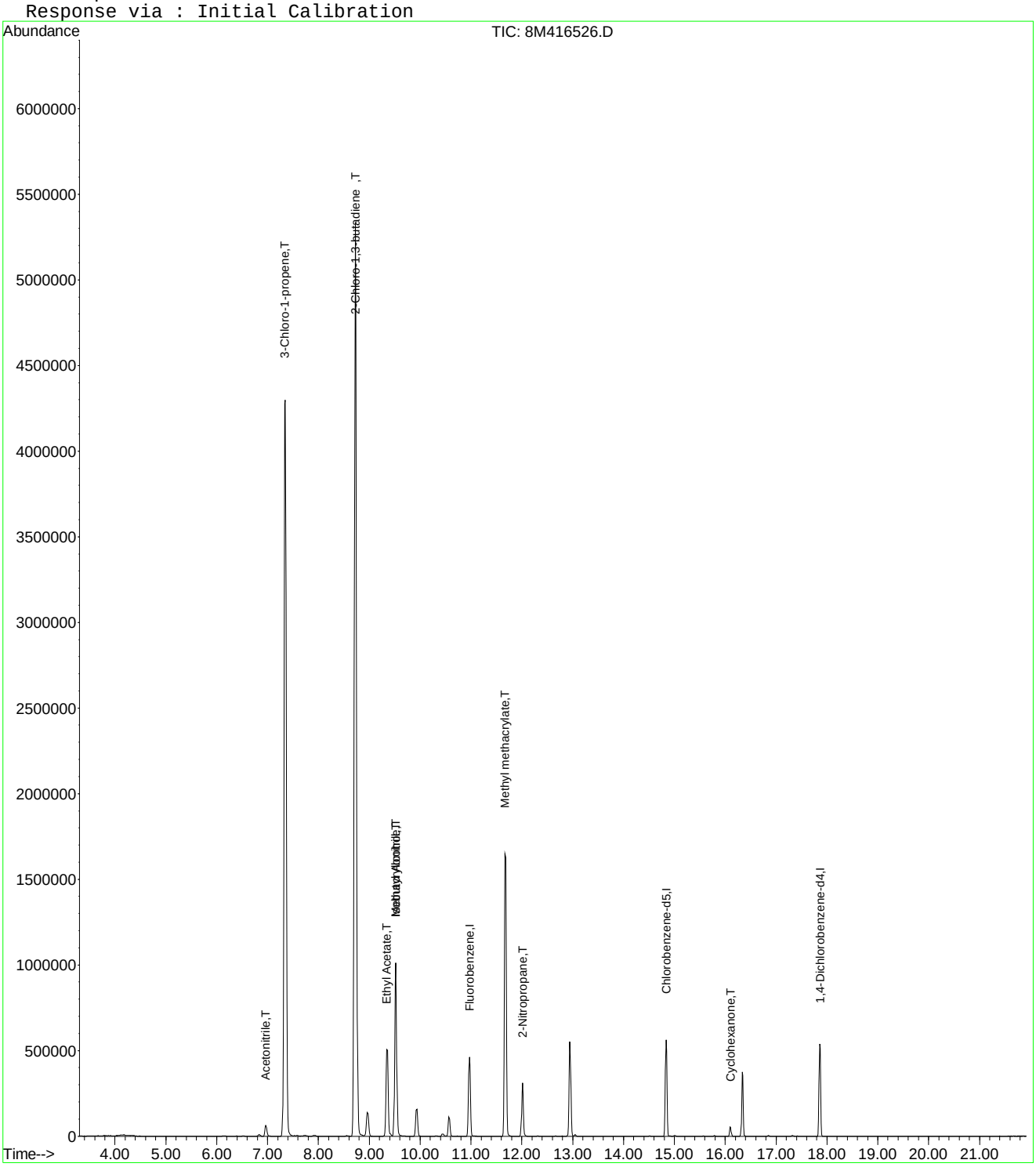
Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	602709	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	431889	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.86	152	183338	25.00	ug/L	0.00
Target Compounds						Qvalue
2) Acetonitrile	6.97	41	85570	492.2655	ug/L	100
3) 3-Chloro-1-propene	7.34	41	3683366	525.5763	ug/L	100
4) 2-Chloro-1,3-butadiene	8.72	53	4138456	540.2962	ug/L	100
5) Ethyl Acetate	9.35	43	797081	509.0316	ug/L	100
6) Methacrylonitrile	9.52	67	547652	537.9348	ug/L	100
7) Isobutyl Alcohol	9.52	43	51546	997.7372	ug/L	100
9) Methyl methacrylate	11.67	41	892736	540.7072	ug/L	100
10) 2-Nitropropane	12.01	43	285485	531.9631	ug/L	100
13) Cyclohexanone	16.11	55	29810	526.1195	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M416526.D A9FOOWTR.M Thu Dec 08 14:34:12 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416526.D Vial: 9
Acq On : 8 Dec 2016 12:45 Operator: TMB
Sample : WG594051-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79185 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 14:34 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416529.D Vial: 12
Acq On : 8 Dec 2016 14:12 Operator: TMB
Sample : WG594051-09 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 08 15:03:45 2016 Quant Results File: A9FOOWTR.RES

Quant Method : K:\ORGANICS\V...\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

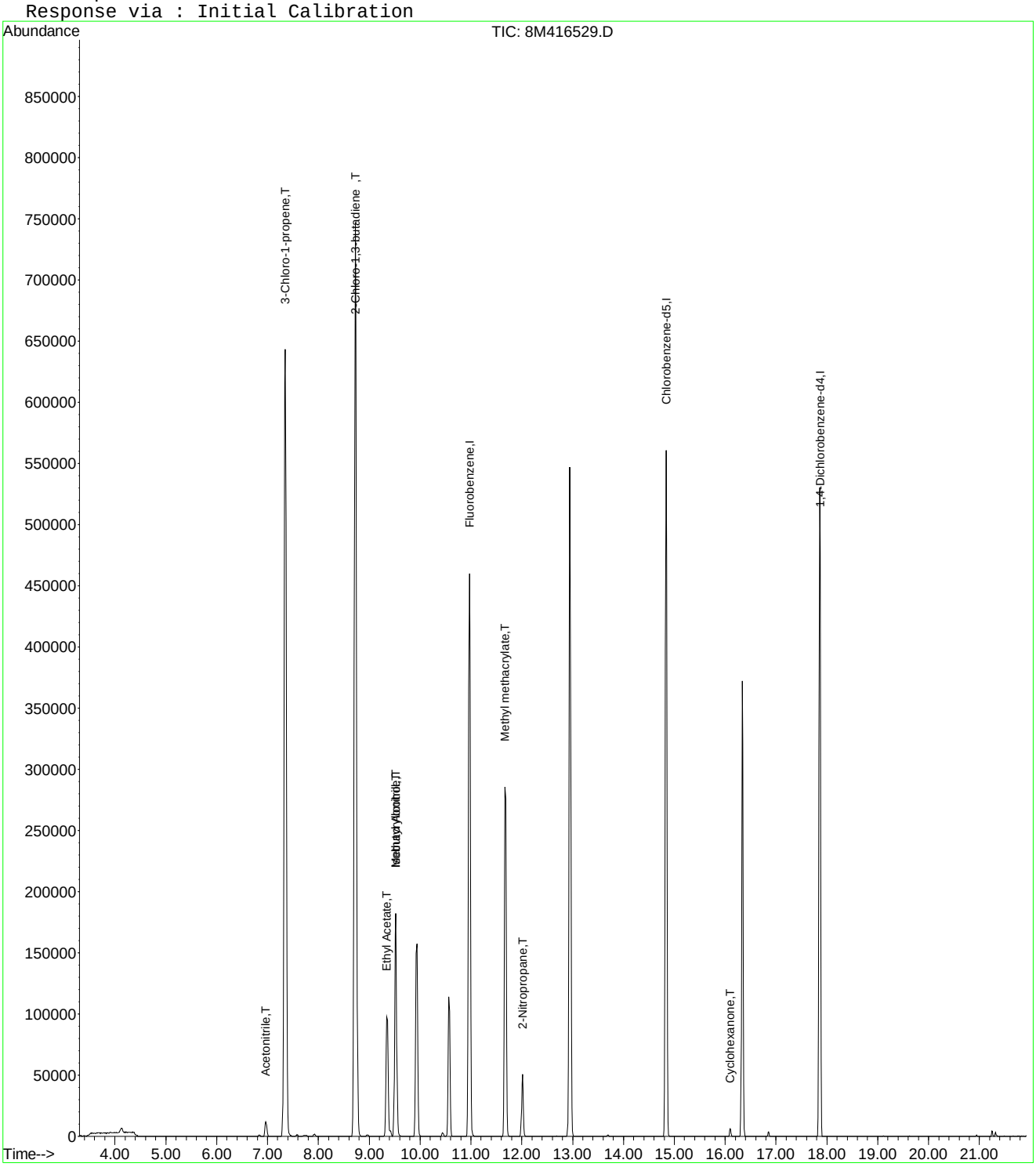
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.97	96	587664	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.84	117	419667	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.87	152	172171	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.97	41	16063	94.7727	ug/L	97
3) 3-Chloro-1-propene	7.35	41	567885	83.1055	ug/L	96
4) 2-Chloro-1,3-butadiene	8.73	53	618003	82.7490	ug/L	94
5) Ethyl Acetate	9.35	43	154055	100.9013	ug/L	99
6) Methacrylonitrile	9.52	67	99886	100.6255	ug/L	98
7) Isobutyl Alcohol	9.52	43	9727	193.0984	ug/L	95
9) Methyl methacrylate	11.67	41	157038	97.5489	ug/L	98
10) 2-Nitropropane	12.01	43	46163	88.2208	ug/L	98
13) Cyclohexanone	16.10	55	3773	70.9091	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M416529.D A9FOOWTR.M Thu Dec 08 15:03:47 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416529.D Vial: 12
Acq On : 8 Dec 2016 14:12 Operator: TMB
Sample : WG594051-09 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Dec 8 15:03 2016 Quant Results File: A9FOOWTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Initial Calibration



8M416529.D A9FOOWTR.M Thu Dec 08 15:03:47 2016 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\120816\8M416529.D Vial: 12
Acq On : 8 Dec 2016 14:12 Operator: TMB
Sample : WG594051-09 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD79186 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 12-08-16 HPMS8
Last Update : Thu Dec 08 13:41:47 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	99	0.00
2	T	Acetonitrile	100.0000	94.7727	5.2	90	0.00
3	T	3-Chloro-1-propene	100.0000	83.1055	16.9	84	0.01
4	T	2-Chloro-1,3-butadiene	100.0000	82.7490	17.3	83	0.00
5	T	Ethyl Acetate	100.0000	100.9013	-0.9	102	0.00
6	T	Methacrylonitrile	100.0000	100.6255	-0.6	99	0.00
7	T	Isobutyl Alcohol	200.0000	193.0984	3.5	96	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	97.5489	2.5	96	0.00
10	T	2-Nitropropane	100.0000	88.2208	11.8	92	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	102	0.00
13	T	Cyclohexanone	100.0000	70.9091	29.1	73	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M416529.D A9FOOWTR.M Thu Dec 08 15:03:52 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:05 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.94	96	839335	25.00	ug/L		0.00
57) Chlorobenzene-d5	14.81	117	637381	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	339393	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#			
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L		
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#			
58) Toluene-d8	12.92	98	210	0.0065	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#			
80) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.35	85	3754	0.2855	ug/L		89
3) Chloromethane	3.83	50	6806	0.4271	ug/L	#	26
4) Vinyl Chloride	4.06	62	5557	0.3730	ug/L		99
5) 1,3-Butadiene	4.13	54	2886	Below Cal		#	48
6) Bromomethane	4.97	94	2181	0.2890	ug/L		94
7) Chloroethane	5.14	64	1796	0.2972	ug/L	#	45
8) Trichlorofluoromethane	5.63	101	5090	0.3157	ug/L	#	87
10) Isoprene	6.19	67	4072	0.3269	ug/L		89
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	2781	0.3207	ug/L		85
13) Acetone	6.48	43	491	0.4892	ug/L	#	42
14) 1,1-Dichloroethene	6.72	61	3959	0.3272	ug/L		89
16) Dimethyl Sulfide	6.97	62	2517	0.2926	ug/L		91
17) Iodomethane	7.23	142	2421	0.7424	ug/L		74
18) Methyl acetate	7.23	43	850	0.2961	ug/L	#	53
19) Methylene Chloride	7.50	84	2705	0.2936	ug/L		77
20) Carbon Disulfide	7.54	76	12389	0.4495	ug/L		96
22) Methyl Tert Butyl Ether	7.71	73	5150	0.2904	ug/L	#	58
23) trans-1,2-Dichloroethene	7.94	61	3684	0.3140	ug/L		100
24) n-Hexane	8.01	57	4586	0.4614	ug/L		89
26) Vinyl Acetate	8.52	43	3265	0.3702	ug/L	#	69
27) 1,1-Dichloroethane	8.56	63	4491	0.2935	ug/L	#	82
31) 2,2-Dichloropropane	9.35	77	4238	0.3105	ug/L		90
32) cis-1,2-Dichloroethene	9.40	96	3073	0.3086	ug/L		83
33) Chloroform	9.61	83	6746	0.3804	ug/L		99
35) Bromochloromethane	9.84	130	1638	0.3062	ug/L		92
36) Tetrahydrofuran	9.86	42	645	0.6267	ug/L	#	24
38) 1,1,1-Trichloroethane	10.14	97	4212	0.2887	ug/L		86
39) Cyclohexane	10.18	56	4399	0.3489	ug/L		89
40) 1,1-Dichloropropene	10.34	75	4137	0.3302	ug/L	#	73
42) Carbon Tetrachloride	10.49	117	3640	0.2789	ug/L	#	94
45) 1,2-Dichloroethane	10.65	62	2524	0.2521	ug/L	#	70
46) Benzene	10.69	78	11345	0.3140	ug/L		93
47) Trichloroethene	11.45	130	3222	0.3335	ug/L		86
48) Methylcyclohexane	11.53	83	5548	0.3822	ug/L		94
49) 1,2-Dichloropropane	11.65	63	2682	0.3229	ug/L		84
50) Bromodichloromethane	11.95	83	3450	0.2938	ug/L	#	80
52) Dibromomethane	12.04	93	1279	0.2873	ug/L		95
53) 2-Chloroethyl Vinyl Ether	12.24	63	836	0.2213	ug/L	#	45
55) cis-1,3-Dichloropropene	12.58	75	4094	0.3004	ug/L		92
56) Dimethyl Disulfide	12.85	79	1292	2.9561	ug/L		93

(#) = qualifier out of range (m) = manual integration
8M418408.D 8260WTR.M Thu Mar 23 10:19:08 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:05 2017 Quant Results File: 8260WTR.RES

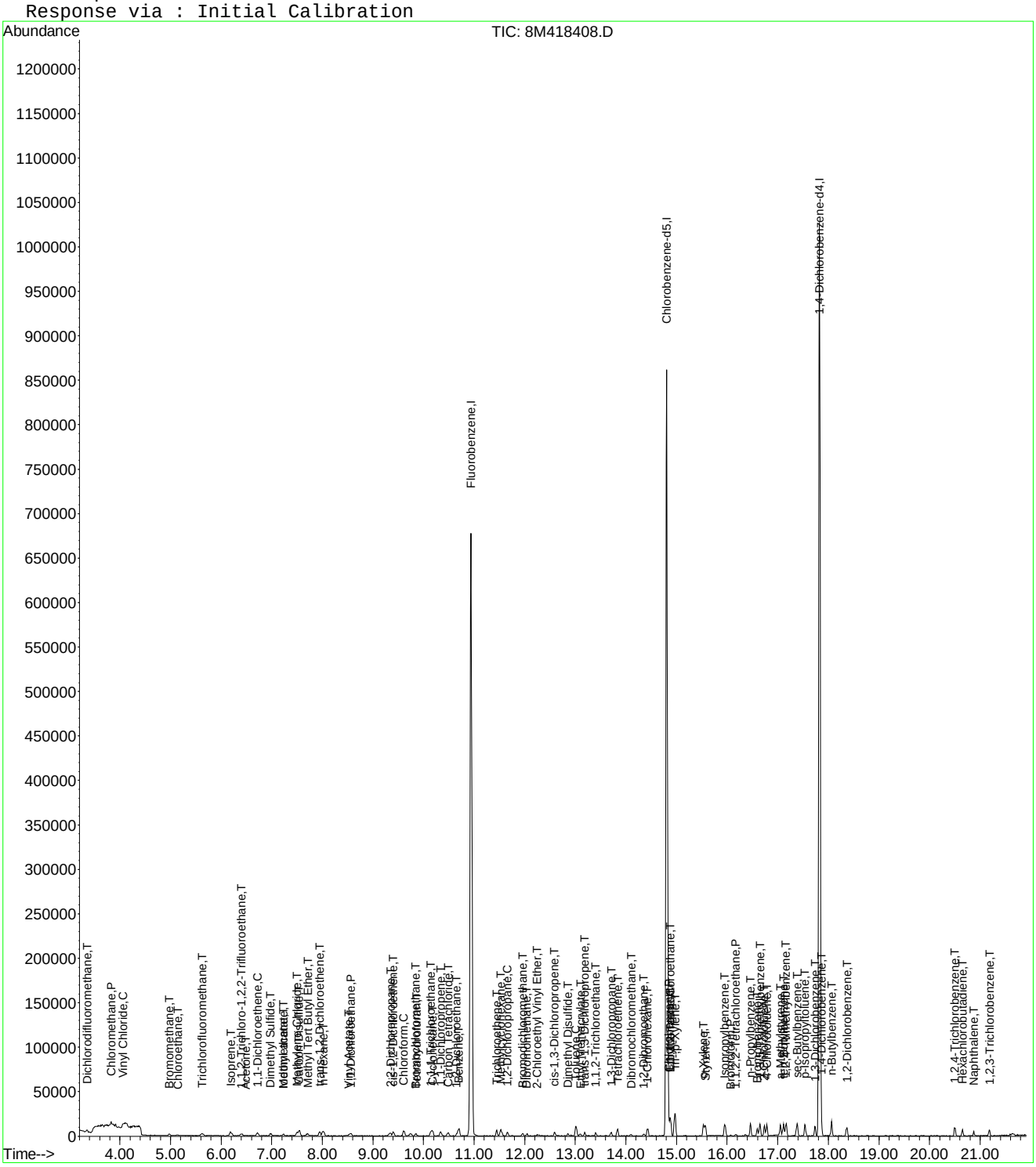
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
59)	Toluene	13.01	91	12509	0.3300	ug/L		95
60)	Ethyl Methacrylate	13.10	69	1898	0.2589	ug/L		95
62)	trans-1,3-Dichloropropene	13.18	75	3150	0.2817	ug/L		86
63)	1,1,2-Trichloroethane	13.40	97	1490	0.2495	ug/L		95
65)	1,3-Dichloropropane	13.71	76	3289	0.3076	ug/L		94
66)	Tetrachloroethene	13.84	164	2607	0.3174	ug/L		94
67)	Dibromochloromethane	14.10	129	1621	0.4036	ug/L		99
68)	1,2-Dibromoethane	14.35	107	1533	0.2502	ug/L		95
69)	1-Chlorohexane	14.42	91	4321	0.3345	ug/L		95
70)	Chlorobenzene	14.85	112	7738	0.2900	ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.88	131	1976	0.3884	ug/L		89
72)	Ethylbenzene	14.88	106	4159	0.2809	ug/L		76
73)	m-,p-Xylene	14.97	106	10522	0.5925	ug/L		83
74)	o-Xylene	15.53	106	4933	0.2801	ug/L		87
75)	Styrene	15.57	104	8095	0.2847	ug/L		91
76)	Bromoform	16.07	173	707	0.5972	ug/L	#	48
77)	Isopropylbenzene	15.95	105	13374	0.3139	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.16	83	1865	0.2819	ug/L	#	94
83)	n-Propylbenzene	16.46	91	17462	0.3493	ug/L		93
84)	Bromobenzene	16.60	156	3464	0.3131	ug/L		92
85)	1,3,5-Trimethylbenzene	16.65	105	12093	0.3349	ug/L		94
86)	2-Chlorotoluene	16.73	91	11551	0.3438	ug/L		98
87)	4-Chlorotoluene	16.78	91	9912	0.3377	ug/L		94
88)	a-Methylstyrene	17.05	118	5215	0.2584	ug/L		93
89)	tert-Butylbenzene	17.11	134	2174	0.2726	ug/L		80
90)	1,2,4-Trimethylbenzene	17.16	105	12145	0.3236	ug/L		90
91)	sec-Butylbenzene	17.38	105	15378	0.3431	ug/L		93
92)	p-Isopropyltoluene	17.54	119	12332	0.3359	ug/L		99
93)	1,3-Dichlorobenzene	17.74	146	7017	0.3182	ug/L		97
94)	1,4-Dichlorobenzene	17.87	146	7200	0.3241	ug/L	#	54
95)	n-Butylbenzene	18.06	91	13446	0.3775	ug/L		95
96)	1,2-Dichlorobenzene	18.36	146	5770	0.3003	ug/L		92
98)	1,2,4-Trichlorobenzene	20.50	180	4813	0.3349	ug/L		91
99)	Hexachlorobutadiene	20.65	225	2723	0.3875	ug/L		98
100)	Naphthalene	20.88	128	5734	0.3021	ug/L		89
101)	1,2,3-Trichlorobenzene	21.19	180	3474	0.2923	ug/L		96

(#) = qualifier out of range (m) = manual integration
8M418408.D 8260WTR.M Thu Mar 23 10:19:08 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2855	0.0	0	0.01
3	P	Chloromethane	-1.0000	0.4271	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3730	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.2890	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.2972	0.0	0	0.01
8	T	Trichlorofluoromethane	-1.0000	0.3157	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.14#
10	T	Isoprene	-1.0000	0.3269	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.39#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3207	0.0	0	0.00
13	T	Acetone	-1.0000	0.4892	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3272	0.0	0	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.81#
16	T	Dimethyl Sulfide	-1.0000	0.2926	0.0	100	-0.01
17	T	Iodomethane	-1.0000	0.7424	0.0	100	0.00
18	T	Methyl acetate	-1.0000	0.2961	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.2936	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.4495	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.67#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2904	0.0	0	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3140	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.4614	0.0	100	-0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.36#
26	T	Vinyl Acetate	-1.0000	0.3702	0.0	100	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.2935	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.93#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-9.11#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.22#
31	T	2,2-Dichloropropane	-1.0000	0.3105	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3086	0.0	0	0.00
33	C	Chloroform	0.3000	0.3804	-26.8#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.75#
35	T	Bromochloromethane	-1.0000	0.3062	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	0.6267	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.90#
38	T	1,1,1-Trichloroethane	-1.0000	0.2887	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3489	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3302	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.43#
42	T	Carbon Tetrachloride	-1.0000	0.2789	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.54#
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	-1.0000	0.2521	0.0	0	-0.01
46	T	Benzene	-1.0000	0.3140	0.0	0	0.00
47	T	Trichloroethene	-1.0000	0.3335	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.3822	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3229	0.0	0	0.00
50	T	Bromodichloromethane	-1.0000	0.2938	0.0	0	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
52	T	Dibromomethane	-1.0000	0.2873	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2213	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.27#

(#) = Out of Range
8M418408.D 8260WTR.M Thu Mar 23 10:21:13 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418408.D Vial: 3
Acq On : 21 Mar 2017 16:09 Operator: TMB
Sample : WG607066-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD810 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3004	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	2.9561	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0065	0.0	100	0.00
59	C	Toluene	-1.0000	0.3300	0.0	0	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2589	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2817	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2495	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.34#
65	T	1,3-Dichloropropane	-1.0000	0.3076	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.3174	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.4036	0.0	0	0.01
68	T	1,2-Dibromoethane	-1.0000	0.2502	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.3345	0.0	100	-0.01
70	P	Chlorobenzene	-1.0000	0.2900	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3884	0.0	0	0.00
72	C	Ethylbenzene	-1.0000	0.2809	0.0	0	0.00
73	T	m-,p-Xylene	-1.0000	0.5925	0.0	0	0.00
74	T	o-Xylene	-1.0000	0.2801	0.0	0	0.00
75	T	Styrene	-1.0000	0.2847	0.0	0	0.00
76	P	Bromoform	-1.0000	0.5972	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.3139	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2819	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.31#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.37#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.41#
83	T	n-Propylbenzene	-1.0000	0.3493	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3131	-4.4	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3349	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.3438	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.3377	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.2584	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2726	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3236	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.3431	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3359	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3182	0.0	0	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3241	-8.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3775	0.0	0	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3003	-0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.36#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3349	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3875	0.0	0	0.00
100	T	Naphthalene	-1.0000	0.3021	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2923	2.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M418408.D 8260WTR.M Thu Mar 23 10:21:14 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:09 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.94	96	820770	25.00	ug/L		0.00
57) Chlorobenzene-d5	14.81	117	630289	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	333801	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	0.00	111	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#			
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000	ug/L		
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#			
58) Toluene-d8	12.92	98	206	0.0065	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#			
80) p-Bromofluorobenzene	0.00	95	0	0.0000	ug/L		
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#			
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.34	85	5012	0.3898	ug/L		88
3) Chloromethane	3.83	50	7999	0.5134	ug/L	#	51
4) Vinyl Chloride	4.07	62	6861	0.4709	ug/L		94
5) 1,3-Butadiene	4.12	54	4284	Below Cal			86
6) Bromomethane	4.98	94	2762	0.3743	ug/L		95
7) Chloroethane	5.13	64	2158	0.3652	ug/L	#	45
8) Trichlorofluoromethane	5.62	101	6443	0.4087	ug/L	#	87
10) Isoprene	6.19	67	4531	0.3720	ug/L		95
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	3337	0.3935	ug/L		92
13) Acetone	6.50	43	400	0.4075	ug/L	#	42
14) 1,1-Dichloroethene	6.71	61	4956	0.4188	ug/L		92
16) Dimethyl Sulfide	6.98	62	3060	0.3638	ug/L		96
17) Iodomethane	7.24	142	2705	0.7764	ug/L		87
18) Methyl acetate	7.25	43	669	0.2383	ug/L	#	53
19) Methylene Chloride	7.49	84	4174	0.4632	ug/L		89
20) Carbon Disulfide	7.54	76	13082	0.4854	ug/L		93
22) Methyl Tert Butyl Ether	7.71	73	7110	0.4099	ug/L	#	72
23) trans-1,2-Dichloroethene	7.94	61	4851	0.4228	ug/L		98
24) n-Hexane	8.03	57	4861	0.5002	ug/L		94
26) Vinyl Acetate	8.53	43	4150	0.4812	ug/L	#	69
27) 1,1-Dichloroethane	8.56	63	6002	0.4011	ug/L	#	83
29) 2-Butanone	9.11	43	634	0.4009	ug/L	#	44
31) 2,2-Dichloropropane	9.33	77	5842	0.4376	ug/L		96
32) cis-1,2-Dichloroethene	9.41	96	3859	0.3963	ug/L		87
33) Chloroform	9.62	83	7984	0.4603	ug/L		95
35) Bromochloromethane	9.85	130	1987	0.3798	ug/L		88
38) 1,1,1-Trichloroethane	10.15	97	5320	0.3729	ug/L		90
39) Cyclohexane	10.19	56	5291	0.4292	ug/L		92
40) 1,1-Dichloropropene	10.34	75	4961	0.4049	ug/L		86
42) Carbon Tetrachloride	10.48	117	4928	0.3861	ug/L		93
45) 1,2-Dichloroethane	10.65	62	3926	0.4010	ug/L	#	87
46) Benzene	10.69	78	15023	0.4252	ug/L		97
47) Trichloroethene	11.45	130	3700	0.3917	ug/L		97
48) Methylcyclohexane	11.53	83	5981	0.4214	ug/L		96
49) 1,2-Dichloropropane	11.65	63	2986	0.3676	ug/L		99
50) Bromodichloromethane	11.95	83	4361	0.3798	ug/L	#	91
52) Dibromomethane	12.04	93	1225	0.2814	ug/L		81
53) 2-Chloroethyl Vinyl Ether	12.24	63	1105	0.2992	ug/L		81
55) cis-1,3-Dichloropropene	12.59	75	5159	0.3871	ug/L		94
56) Dimethyl Disulfide	12.85	79	1713	3.0100	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418409.D 8260WTR.M Thu Mar 23 10:19:12 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:09 2017 Quant Results File: 8260WTR.RES

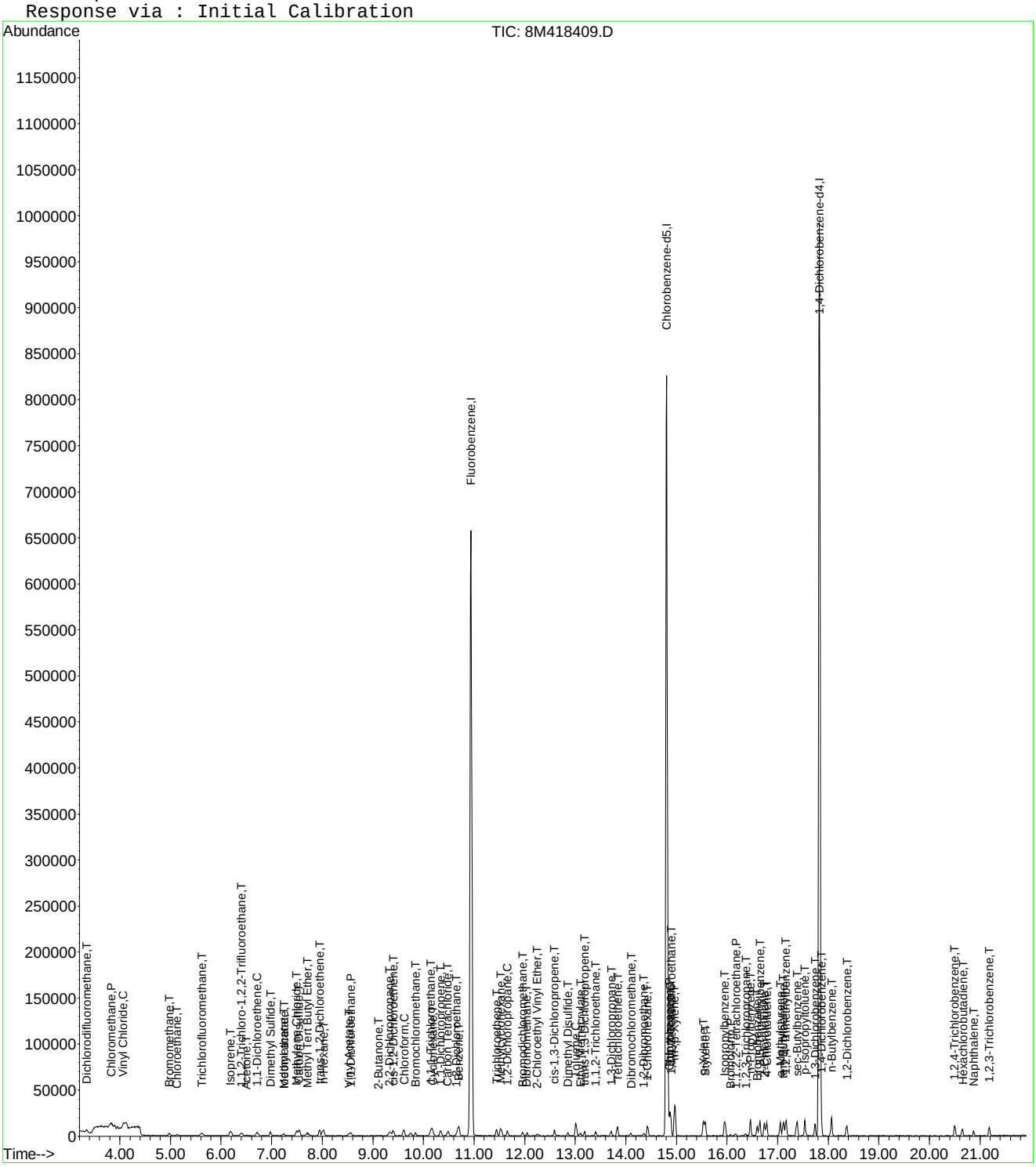
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
59)	Toluene	13.01	91	15569	0.4153	ug/L		94
60)	Ethyl Methacrylate	13.10	69	2480	0.3421	ug/L		88
62)	trans-1,3-Dichloropropene	13.19	75	4268	0.3860	ug/L		85
63)	1,1,2-Trichloroethane	13.40	97	2245	0.3802	ug/L		92
65)	1,3-Dichloropropane	13.71	76	4246	0.4016	ug/L		91
66)	Tetrachloroethene	13.84	164	3076	0.3787	ug/L		96
67)	Dibromochloromethane	14.11	129	2045	0.4616	ug/L		84
68)	1,2-Dibromoethane	14.35	107	2295	0.3788	ug/L		98
69)	1-Chlorohexane	14.43	91	5474	0.4285	ug/L		98
70)	Chlorobenzene	14.86	112	10272	0.3893	ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.89	131	3131	0.5117	ug/L		100
72)	Ethylbenzene	14.88	106	5452	0.3723	ug/L		94
73)	m-,p-Xylene	14.96	106	13646	0.7770	ug/L		85
74)	o-Xylene	15.53	106	6537	0.3754	ug/L		97
75)	Styrene	15.56	104	10271	0.3653	ug/L		92
76)	Bromoform	16.07	173	1215	0.7117	ug/L	#	41
77)	Isopropylbenzene	15.96	105	17113	0.4062	ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.17	83	2398	0.3686	ug/L	#	93
81)	1,2,3-Trichloropropane	16.37	110	554	0.2991	ug/L	#	84
83)	n-Propylbenzene	16.46	91	21418	0.4356	ug/L		95
84)	Bromobenzene	16.60	156	4101	0.3769	ug/L		89
85)	1,3,5-Trimethylbenzene	16.65	105	14553	0.4098	ug/L		97
86)	2-Chlorotoluene	16.74	91	14102	0.4267	ug/L		96
87)	4-Chlorotoluene	16.78	91	11659	0.4038	ug/L		96
88)	a-Methylstyrene	17.05	118	6251	0.3149	ug/L		98
89)	tert-Butylbenzene	17.10	134	2749	0.3505	ug/L		85
90)	1,2,4-Trimethylbenzene	17.17	105	14872	0.4028	ug/L		96
91)	sec-Butylbenzene	17.38	105	18440	0.4184	ug/L		95
92)	p-Isopropyltoluene	17.54	119	14467	0.4007	ug/L		99
93)	1,3-Dichlorobenzene	17.74	146	8606	0.3968	ug/L		95
94)	1,4-Dichlorobenzene	17.87	146	8728	0.3995	ug/L		79
95)	n-Butylbenzene	18.07	91	16096	0.4595	ug/L		95
96)	1,2-Dichlorobenzene	18.37	146	7275	0.3849	ug/L		99
98)	1,2,4-Trichlorobenzene	20.50	180	5853	0.4140	ug/L		97
99)	Hexachlorobutadiene	20.66	225	2881	0.4168	ug/L		91
100)	Naphthalene	20.88	128	7399	0.3963	ug/L		87
101)	1,2,3-Trichlorobenzene	21.18	180	4960	0.4243	ug/L		93

(#) = qualifier out of range (m) = manual integration
8M418409.D 8260WTR.M Thu Mar 23 10:19:12 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3898	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.5134	0.0	0	0.00
4	C	Vinyl Chloride	0.4000	0.4709	-17.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.3743	0.0	0	0.00
7	T	Chloroethane	0.4000	0.3652	8.7	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4087	-2.2	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.14#
10	T	Isoprene	-1.0000	0.3720	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.39#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3935	0.0	0	0.00
13	T	Acetone	-1.0000	0.4075	0.0	100	0.01
14	C	1,1-Dichloroethene	0.4000	0.4188	-4.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.81#
16	T	Dimethyl Sulfide	-1.0000	0.3638	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.7764	0.0	100	0.00
18	T	Methyl acetate	-1.0000	0.2383	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.4632	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.4854	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.67#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4099	0.0	0	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4228	-5.7	100	0.00
24	T	n-Hexane	-1.0000	0.5002	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.36#
26	T	Vinyl Acetate	-1.0000	0.4812	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4011	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.93#
29	T	2-Butanone	-1.0000	0.4009	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.22#
31	T	2,2-Dichloropropane	0.4000	0.4376	-9.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3963	0.9	100	0.01
33	C	Chloroform	0.4000	0.4603	-15.1	100	0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.75#
35	T	Bromochloromethane	0.4000	0.3798	5.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.86#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.90#
38	T	1,1,1-Trichloroethane	0.4000	0.3729	6.8	100	0.00
39	T	Cyclohexane	-1.0000	0.4292	0.0	100	0.01
40	T	1,1-Dichloropropene	-1.0000	0.4049	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.43#
42	T	Carbon Tetrachloride	0.4000	0.3861	3.5	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.54#
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	0.4000	0.4009	-0.2	100	0.00
46	T	Benzene	0.4000	0.4253	-6.3	100	0.00
47	T	Trichloroethene	0.4000	0.3917	2.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4214	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3676	8.1	100	0.00
50	T	Bromodichloromethane	0.4000	0.3798	5.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
52	T	Dibromomethane	0.4000	0.2814	29.6#	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2992	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.27#

(#) = Out of Range
8M418409.D 8260WTR.M Thu Mar 23 10:21:26 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418409.D Vial: 4
Acq On : 21 Mar 2017 16:39 Operator: TMB
Sample : WG607066-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3871	3.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.0100	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0065	0.0	100	0.00
59	C	Toluene	0.4000	0.4153	-3.8	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3421	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3860	0.0	0	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3802	5.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.34#
65	T	1,3-Dichloropropane	0.4000	0.4016	-0.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3787	5.3	100	0.00
67	T	Dibromochloromethane	0.4000	0.4616	-15.4	100	0.01
68	T	1,2-Dibromoethane	0.4000	0.3788	5.3	100	0.00
69	T	1-Chlorohexane	0.4000	0.4285	-7.1	100	0.00
70	P	Chlorobenzene	0.4000	0.3893	2.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.5117	-27.9#	100	0.01
72	C	Ethylbenzene	0.4000	0.3723	6.9	100	0.00
73	T	m-,p-Xylene	0.8000	0.7770	2.9	100	0.00
74	T	o-Xylene	-1.0000	0.3754	0.0	0	0.00
75	T	Styrene	0.4000	0.3654	8.7	100	0.00
76	P	Bromoform	-1.0000	0.7117	0.0	0	0.00
77	T	Isopropylbenzene	0.4000	0.4062	-1.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3686	7.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.31#
81	T	1,2,3-Trichloropropane	-1.0000	0.2991	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.41#
83	T	n-Propylbenzene	0.4000	0.4356	-8.9	100	0.00
84	T	Bromobenzene	0.4000	0.3769	5.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4098	-2.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4267	-6.7	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4038	-1.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3149	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3505	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4028	-0.7	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4184	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4007	0.0	0	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3968	0.8	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3995	0.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4595	0.0	0	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3849	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.36#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4140	-3.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4169	-4.2	100	0.01
100	T	Naphthalene	0.4000	0.3963	0.9	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4243	-6.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418409.D 8260WTR.M Thu Mar 23 10:21:26 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:13 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	807132	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	611741	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	324322	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.89	111	4045	0.4419	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.76%#		
43) 1,2-Dichloroethane-d4	10.54	65	3910	0.4929	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.96%#		
58) Toluene-d8	12.91	98	15493	0.5035	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#		
80) p-Bromofluorobenzene	16.30	95	6131	0.4996	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	11775	0.9313	ug/L	95
3) Chloromethane	3.83	50	18119	1.1825	ug/L	89
4) Vinyl Chloride	4.06	62	15890	1.1091	ug/L	99
5) 1,3-Butadiene	4.11	54	9126	Below Cal		81
6) Bromomethane	4.97	94	7100	0.9784	ug/L	96
7) Chloroethane	5.14	64	5724	0.9850	ug/L	96
8) Trichlorofluoromethane	5.62	101	15570	1.0043	ug/L	96
9) Diethyl ether	6.15	59	25161	5.0179	ug/L	99
10) Isoprene	6.18	67	11515	0.9613	ug/L	99
11) Acrolein	6.39	56	1211	1.8888	ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	8196	0.9828	ug/L	97
13) Acetone	6.48	43	961	0.9956	ug/L #	42
14) 1,1-Dichloroethene	6.71	61	11722	1.0073	ug/L	92
15) Tert-Butyl Alcohol	6.81	59	2565	8.3492	ug/L #	59
16) Dimethyl Sulfide	6.97	62	7853	0.9494	ug/L	99
17) Iodomethane	7.23	142	7328	1.2539	ug/L	93
18) Methyl acetate	7.24	43	2638	0.9557	ug/L #	66
19) Methylene Chloride	7.50	84	9378	1.0584	ug/L	95
20) Carbon Disulfide	7.54	76	28271	1.0667	ug/L	98
21) Acrylonitrile	7.67	53	3247	2.4051	ug/L	94
22) Methyl Tert Butyl Ether	7.70	73	16755	0.9824	ug/L	95
23) trans-1,2-Dichloroethene	7.94	61	11380	1.0086	ug/L	99
24) n-Hexane	8.02	57	10394	1.0875	ug/L	98
25) Diisopropyl ether	8.35	45	110210	5.1139	ug/L	98
26) Vinyl Acetate	8.53	43	10059	1.1860	ug/L #	87
27) 1,1-Dichloroethane	8.56	63	14397	0.9784	ug/L	94
28) Ethyl-Tert-Butyl ether	8.93	59	102308	4.9580	ug/L	99
29) 2-Butanone	9.12	43	1387	0.8919	ug/L #	44
30) Propionitrile	9.22	54	1959	4.2552	ug/L #	56
31) 2,2-Dichloropropane	9.34	77	13363	1.0179	ug/L	95
32) cis-1,2-Dichloroethene	9.41	96	9337	0.9750	ug/L	98
33) Chloroform	9.62	83	16620	0.9745	ug/L	98
34) 1-Bromopropane	9.75	122	1620	0.8855	ug/L	100
35) Bromochloromethane	9.84	130	5172	1.0054	ug/L	96
36) Tetrahydrofuran	9.87	42	5802	5.8622	ug/L	90
38) 1,1,1-Trichloroethane	10.14	97	13761	0.9810	ug/L	97
39) Cyclohexane	10.18	56	12156	1.0027	ug/L	99
40) 1,1-Dichloropropene	10.34	75	12179	1.0109	ug/L	94
41) Tert-Amyl-Methyl ether	10.44	73	93699	4.8658	ug/L	97
42) Carbon Tetrachloride	10.48	117	11739	0.9353	ug/L	95

(#) = qualifier out of range (m) = manual integration
8M418410.D 8260WTR.M Thu Mar 23 10:19:16 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:13 2017 Quant Results File: 8260WTR.RES

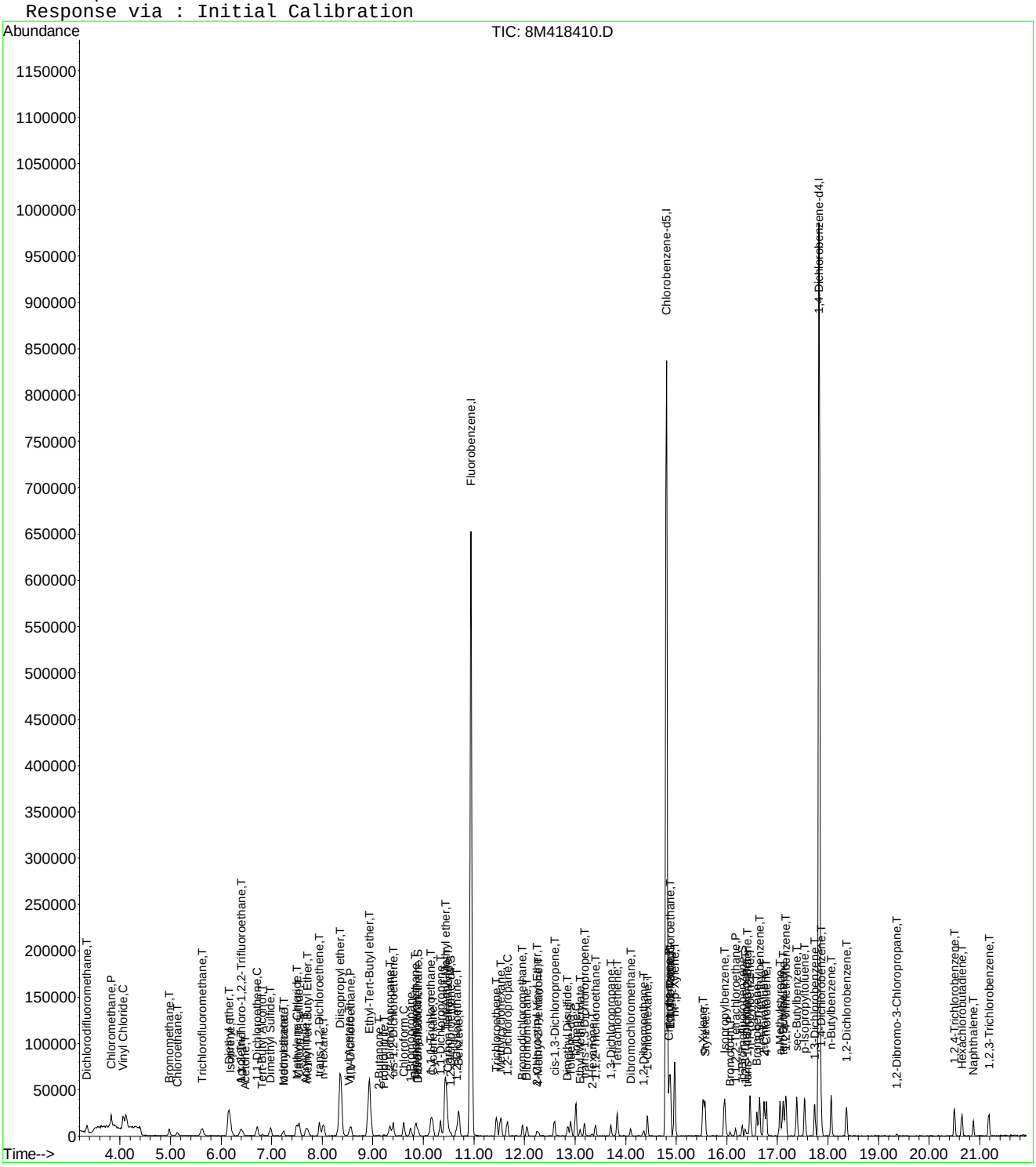
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.66	62	9506	0.9872 ug/L		95
46)	Benzene	10.70	78	34927	1.0054 ug/L		99
47)	Trichloroethene	11.45	130	8619	0.9278 ug/L		95
48)	Methylcyclohexane	11.53	83	14165	1.0148 ug/L		97
49)	1,2-Dichloropropane	11.66	63	7854	0.9833 ug/L		99
50)	Bromodichloromethane	11.95	83	10647	0.9428 ug/L		94
52)	Dibromomethane	12.05	93	4249	0.9926 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.25	63	3225	0.8879 ug/L		90
54)	4-Methyl-2-Pentanone	12.27	58	910	0.5854 ug/L	#	33
55)	cis-1,3-Dichloropropene	12.59	75	12482	0.9523 ug/L		96
56)	Dimethyl Disulfide	12.85	79	4366	3.3371 ug/L		98
59)	Toluene	13.02	91	37749	1.0375 ug/L		98
60)	Ethyl Methacrylate	13.10	69	6089	0.8655 ug/L		94
62)	trans-1,3-Dichloropropene	13.19	75	10170	0.9476 ug/L		98
63)	1,1,2-Trichloroethane	13.40	97	5520	0.9631 ug/L		99
64)	2-Hexanone	13.34	58	781	0.5684 ug/L	#	1
65)	1,3-Dichloropropane	13.71	76	10201	0.9940 ug/L		96
66)	Tetrachloroethene	13.83	164	7996	1.0142 ug/L		98
67)	Dibromochloromethane	14.10	129	6149	1.0240 ug/L		100
68)	1,2-Dibromoethane	14.35	107	5764	0.9802 ug/L		97
69)	1-Chlorohexane	14.43	91	12348	0.9958 ug/L		99
70)	Chlorobenzene	14.86	112	24749	0.9665 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.88	131	7452	0.9876 ug/L		100
72)	Ethylbenzene	14.88	106	13352	0.9395 ug/L		92
73)	m-,p-Xylene	14.97	106	32582	1.9116 ug/L		90
74)	o-Xylene	15.53	106	15550	0.9200 ug/L		94
75)	Styrene	15.57	104	25281	0.9265 ug/L		98
76)	Bromoform	16.07	173	3165	1.1654 ug/L		87
77)	Isopropylbenzene	15.95	105	41185	1.0072 ug/L		95
79)	1,1,2,2-Tetrachloroethane	16.17	83	6618	1.0470 ug/L	#	87
81)	1,2,3-Trichloropropane	16.37	110	1699	0.9441 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.41	53	1275	0.8599 ug/L		78
83)	n-Propylbenzene	16.46	91	50394	1.0550 ug/L		96
84)	Bromobenzene	16.59	156	9822	0.9290 ug/L		89
85)	1,3,5-Trimethylbenzene	16.65	105	34036	0.9865 ug/L		98
86)	2-Chlorotoluene	16.74	91	32556	1.0139 ug/L		97
87)	4-Chlorotoluene	16.78	91	28745	1.0247 ug/L		97
88)	a-Methylstyrene	17.05	118	16432	0.8520 ug/L		100
89)	tert-Butylbenzene	17.11	134	6891	0.9044 ug/L		91
90)	1,2,4-Trimethylbenzene	17.16	105	36289	1.0117 ug/L		96
91)	sec-Butylbenzene	17.38	105	44768	1.0454 ug/L		96
92)	p-Isopropyltoluene	17.54	119	34608	0.9866 ug/L		98
93)	1,3-Dichlorobenzene	17.74	146	20930	0.9932 ug/L		96
94)	1,4-Dichlorobenzene	17.87	146	21416	1.0089 ug/L	#	73
95)	n-Butylbenzene	18.06	91	35423	1.0408 ug/L		95
96)	1,2-Dichlorobenzene	18.36	146	18350	0.9993 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.37	75	633	0.6381 ug/L		78
98)	1,2,4-Trichlorobenzene	20.50	180	13698	0.9973 ug/L		95
99)	Hexachlorobutadiene	20.65	225	6917	1.0301 ug/L		96
100)	Naphthalene	20.87	128	18000	0.9923 ug/L		97
101)	1,2,3-Trichlorobenzene	21.19	180	11397	1.0034 ug/L		95

(#) = qualifier out of range (m) = manual integration
8M418410.D 8260WTR.M Thu Mar 23 10:19:16 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9313	6.9	100	0.00
3	P	Chloromethane	1.0000	1.1825	-18.3	100	0.00
4	C	Vinyl Chloride	1.0000	1.1091	-10.9	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.00
6	T	Bromomethane	1.0000	0.9784	2.2	100	0.00
7	T	Chloroethane	1.0000	0.9850	1.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0043	-0.4	100	0.00
9	T	Diethyl ether	5.0000	5.0179	-0.4	100	0.00
10	T	Isoprene	-1.0000	0.9613	0.0	100	0.00
11	T	Acrolein	-1.0000	1.8888	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9828	1.7	100	0.00
13	T	Acetone	-1.0000	0.9956	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0073	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	8.3492	0.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.9494	0.0	100	-0.01
17	T	Iodomethane	1.0000	1.2539	-25.4#	100	-0.01
18	T	Methyl acetate	-1.0000	0.9557	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0583	-5.8	100	0.00
20	T	Carbon Disulfide	1.0000	1.0667	-6.7	100	0.00
21	T	Acrylonitrile	2.5000	2.4051	3.8	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9823	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0086	-0.9	100	0.00
24	T	n-Hexane	-1.0000	1.0875	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1139	-2.3	100	0.00
26	T	Vinyl Acetate	-1.0000	1.1860	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9784	2.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9580	0.8	100	0.00
29	T	2-Butanone	-1.0000	0.8919	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2552	14.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0179	-1.8	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9750	2.5	100	0.00
33	C	Chloroform	1.0000	0.9745	2.6	100	0.00
34		1-Bromopropane	1.0000	0.8855	11.5	100	0.00
35	T	Bromochloromethane	1.0000	1.0054	-0.5	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8622	-17.2	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.4419	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9809	1.9	100	0.00
39	T	Cyclohexane	1.0000	1.0027	-0.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0109	-1.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8658	2.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9353	6.5	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4929	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	1.0000	0.9872	1.3	100	0.00
46	T	Benzene	1.0000	1.0054	-0.5	100	0.00
47	T	Trichloroethene	1.0000	0.9278	7.2	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0148	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9833	1.7	100	0.00
50	T	Bromodichloromethane	1.0000	0.9428	5.7	100	-0.01
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
52	T	Dibromomethane	1.0000	0.9926	0.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8879	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.5854	0.0	100	0.00

(#) = Out of Range
8M418410.D 8260WTR.M Thu Mar 23 10:21:37 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418410.D Vial: 5
Acq On : 21 Mar 2017 17:09 Operator: TMB
Sample : WG607066-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9523	4.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.3371	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5035	0.0	100	0.00
59	C	Toluene	1.0000	1.0375	-3.7	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8655	13.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	1.0000	0.9476	5.2	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9631	3.7	100	0.00
64	T	2-Hexanone	-1.0000	0.5684	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9940	0.6	100	0.00
66	T	Tetrachloroethene	1.0000	1.0142	-1.4	100	0.00
67	T	Dibromochloromethane	1.0000	1.0240	-2.4	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9802	2.0	100	0.00
69	T	1-Chlorohexane	1.0000	0.9958	0.4	100	0.00
70	P	Chlorobenzene	1.0000	0.9665	3.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9876	1.2	100	0.00
72	C	Ethylbenzene	1.0000	0.9395	6.0	100	0.00
73	T	m-,p-Xylene	2.0000	1.9116	4.4	100	0.00
74	T	o-Xylene	1.0000	0.9200	8.0	100	0.00
75	T	Styrene	1.0000	0.9265	7.3	100	0.00
76	P	Bromoform	1.0000	1.1654	-16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0072	-0.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0470	-4.7	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.4996	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9441	5.6	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.8599	14.0	100	0.00
83	T	n-Propylbenzene	1.0000	1.0550	-5.5	100	0.00
84	T	Bromobenzene	1.0000	0.9290	7.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9865	1.3	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0139	-1.4	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0247	-2.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8520	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9044	9.6	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0117	-1.2	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0454	-4.5	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9866	1.3	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	0.9931	0.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0090	-0.9	100	0.00
95	T	n-Butylbenzene	1.0000	1.0408	-4.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	0.9993	0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.6381	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9973	0.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0301	-3.0	100	0.00
100	T	Naphthalene	1.0000	0.9923	0.8	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0034	-0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418410.D 8260WTR.M Thu Mar 23 10:21:37 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:17 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	806453	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	613590	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	323797	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	8948	0.9783	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.92%#		
43) 1,2-Dichloroethane-d4	10.54	65	8112	1.0234	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.08%#		
58) Toluene-d8	12.91	98	29338	0.9505	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.80%#		
80) p-Bromofluorobenzene	16.31	95	12269	1.0013	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	21878	1.7318	ug/L	99
3) Chloromethane	3.83	50	31055	2.0285	ug/L	96
4) Vinyl Chloride	4.06	62	29775	2.0800	ug/L	97
5) 1,3-Butadiene	4.11	54	16496	0.7791	ug/L	96
6) Bromomethane	4.97	94	13569	1.8713	ug/L	99
7) Chloroethane	5.14	64	10934	1.8832	ug/L	94
8) Trichlorofluoromethane	5.62	101	29078	1.8771	ug/L	98
9) Diethyl ether	6.15	59	117459	23.4449	ug/L	99
10) Isoprene	6.19	67	22062	1.8433	ug/L	96
11) Acrolein	6.39	56	8387	13.0924	ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	15360	1.8434	ug/L	97
13) Acetone	6.50	43	2257	2.3403	ug/L #	42
14) 1,1-Dichloroethene	6.71	61	20970	1.8036	ug/L	98
15) Tert-Butyl Alcohol	6.80	59	14767	48.1076	ug/L	95
16) Dimethyl Sulfide	6.98	62	14593	1.7657	ug/L	98
17) Iodomethane	7.24	142	13138	1.8493	ug/L	98
18) Methyl acetate	7.23	43	5277	1.9134	ug/L #	82
19) Methylene Chloride	7.50	84	16184	1.8280	ug/L	96
20) Carbon Disulfide	7.55	76	50438	1.9046	ug/L	100
21) Acrylonitrile	7.67	53	15987	11.8516	ug/L	97
22) Methyl Tert Butyl Ether	7.70	73	31235	1.8329	ug/L	99
23) trans-1,2-Dichloroethene	7.94	61	21040	1.8663	ug/L	98
24) n-Hexane	8.01	57	19614	2.0540	ug/L	97
25) Diisopropyl ether	8.35	45	516674	23.9944	ug/L	99
26) Vinyl Acetate	8.53	43	18265	2.1553	ug/L	95
27) 1,1-Dichloroethane	8.56	63	27702	1.8841	ug/L	97
28) Ethyl-Tert-Butyl ether	8.93	59	484054	23.4779	ug/L	100
29) 2-Butanone	9.12	43	3328	2.1418	ug/L #	67
30) Propionitrile	9.22	54	11779	25.6068	ug/L	98
31) 2,2-Dichloropropane	9.34	77	25398	1.9364	ug/L	97
32) cis-1,2-Dichloroethene	9.41	96	17398	1.8183	ug/L	96
33) Chloroform	9.62	83	30803	1.8076	ug/L	98
34) 1-Bromopropane	9.75	122	3199	1.7500	ug/L	88
35) Bromochloromethane	9.84	130	9699	1.8870	ug/L	99
36) Tetrahydrofuran	9.86	42	23391	23.6536	ug/L	96
38) 1,1,1-Trichloroethane	10.14	97	24958	1.7806	ug/L	99
39) Cyclohexane	10.17	56	22456	1.8539	ug/L	98
40) 1,1-Dichloropropene	10.34	75	22537	1.8722	ug/L	96
41) Tert-Amyl-Methyl ether	10.43	73	454781	23.6366	ug/L	99
42) Carbon Tetrachloride	10.48	117	21530	1.7168	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418411.D 8260WTR.M Thu Mar 23 10:19:20 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:17 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

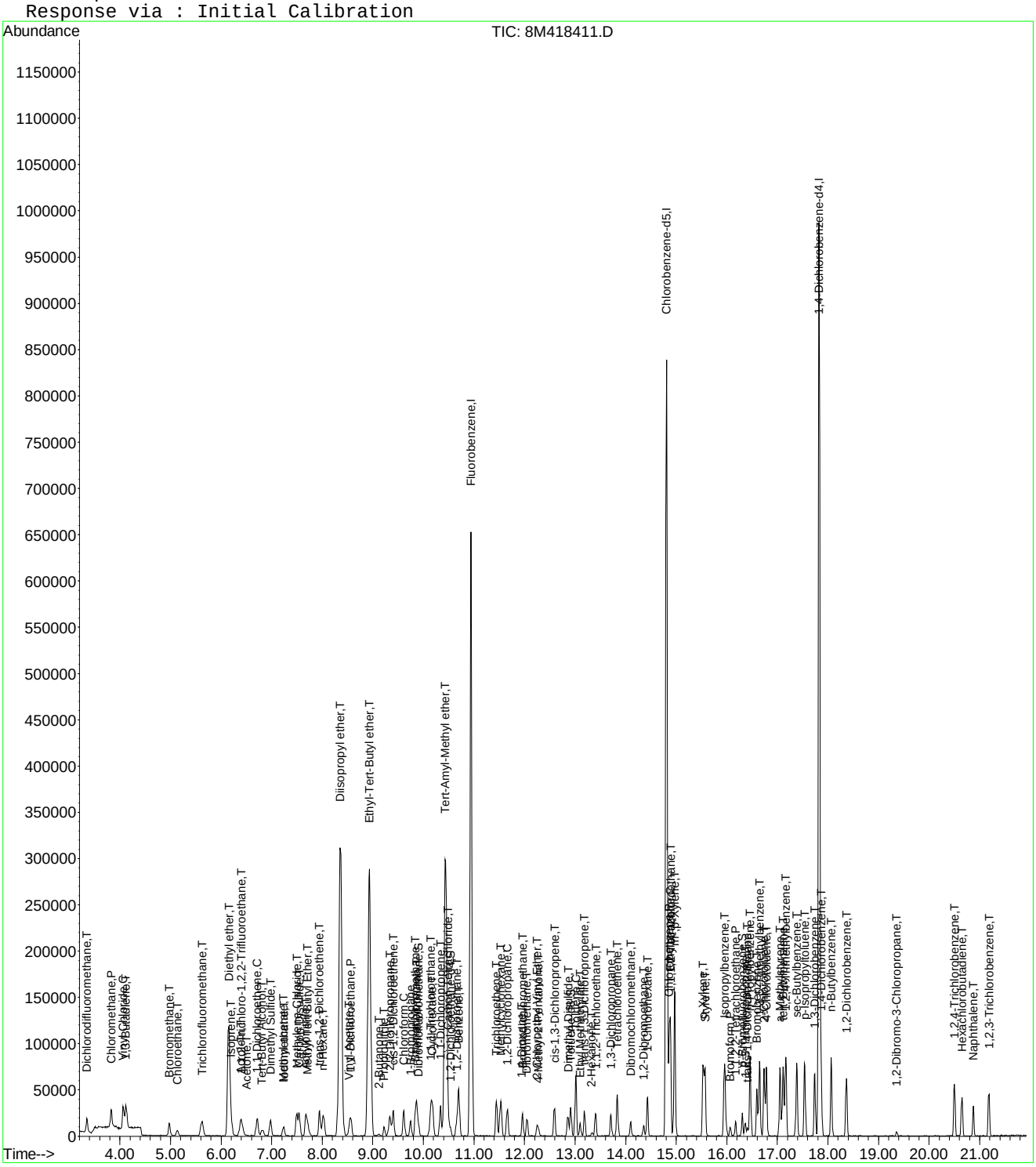
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.66	62	17821	1.8523	ug/L		99
46)	Benzene	10.70	78	65616	1.8903	ug/L		100
47)	Trichloroethene	11.45	130	16820	1.8122	ug/L		99
48)	Methylcyclohexane	11.53	83	25932	1.8594	ug/L		99
49)	1,2-Dichloropropane	11.65	63	14941	1.8721	ug/L		99
50)	Bromodichloromethane	11.96	83	20252	1.7949	ug/L		99
51)	1,4-Dioxane	11.94	88	1517	39.5549	ug/L		100
52)	Dibromomethane	12.05	93	8117	1.8978	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.25	63	6517	1.7957	ug/L		97
54)	4-Methyl-2-Pentanone	12.27	58	2133	1.3733	ug/L		93
55)	cis-1,3-Dichloropropene	12.59	75	23959	1.8295	ug/L		97
56)	Dimethyl Disulfide	12.86	79	9095	3.9150	ug/L		99
59)	Toluene	13.02	91	69007	1.8909	ug/L		97
60)	Ethyl Methacrylate	13.10	69	11717	1.6604	ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	18538	1.7221	ug/L		96
63)	1,1,2-Trichloroethane	13.41	97	10232	1.7799	ug/L		96
64)	2-Hexanone	13.33	58	2014	1.4614	ug/L	#	20
65)	1,3-Dichloropropane	13.71	76	19307	1.8757	ug/L		99
66)	Tetrachloroethene	13.83	164	14088	1.7816	ug/L		99
67)	Dibromochloromethane	14.10	129	11941	1.8003	ug/L		98
68)	1,2-Dibromoethane	14.35	107	10646	1.8049	ug/L		96
69)	1-Chlorohexane	14.43	91	22602	1.8173	ug/L		97
70)	Chlorobenzene	14.86	112	46971	1.8287	ug/L		87
71)	1,1,1,2-Tetrachloroethane	14.89	131	14902	1.7838	ug/L		94
72)	Ethylbenzene	14.88	106	25266	1.7725	ug/L		89
73)	m-,p-Xylene	14.97	106	61972	3.6249	ug/L		91
74)	o-Xylene	15.53	106	30925	1.8242	ug/L		99
75)	Styrene	15.57	104	49014	1.7909	ug/L		99
76)	Bromoform	16.07	173	6654	1.9563	ug/L		91
77)	Isopropylbenzene	15.95	105	77538	1.8905	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.17	83	11686	1.8517	ug/L		96
81)	1,2,3-Trichloropropane	16.37	110	3387	1.8852	ug/L		90
82)	trans-1,4-Dichloro-2-Buten	16.41	53	2517	1.7004	ug/L		86
83)	n-Propylbenzene	16.46	91	94833	1.9885	ug/L		97
84)	Bromobenzene	16.59	156	19552	1.8524	ug/L		91
85)	1,3,5-Trimethylbenzene	16.65	105	65580	1.9039	ug/L		100
86)	2-Chlorotoluene	16.74	91	60631	1.8914	ug/L		98
87)	4-Chlorotoluene	16.78	91	55993	1.9993	ug/L		96
88)	a-Methylstyrene	17.05	118	31365	1.6288	ug/L		98
89)	tert-Butylbenzene	17.11	134	13978	1.8375	ug/L		99
90)	1,2,4-Trimethylbenzene	17.16	105	67699	1.8905	ug/L		99
91)	sec-Butylbenzene	17.38	105	84222	1.9698	ug/L		98
92)	p-Isopropyltoluene	17.55	119	66367	1.8950	ug/L		98
93)	1,3-Dichlorobenzene	17.74	146	39368	1.8711	ug/L		98
94)	1,4-Dichlorobenzene	17.87	146	39901	1.8829	ug/L		82
95)	n-Butylbenzene	18.06	91	67203	1.9777	ug/L		98
96)	1,2-Dichlorobenzene	18.36	146	34521	1.8830	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.36	75	1770	1.7871	ug/L		90
98)	1,2,4-Trichlorobenzene	20.50	180	24058	1.7544	ug/L		97
99)	Hexachlorobutadiene	20.65	225	12372	1.8454	ug/L		98
100)	Naphthalene	20.88	128	33545	1.8522	ug/L		99
101)	1,2,3-Trichlorobenzene	21.19	180	20663	1.8222	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418411.D 8260WTR.M Thu Mar 23 10:19:20 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7318	13.4	100	0.00
3	P	Chloromethane	2.0000	2.0285	-1.4	100	0.00
4	C	Vinyl Chloride	2.0000	2.0800	-4.0	100	0.00
5	T	1,3-Butadiene	2.0000	0.7791	61.0#	100	0.00
6	T	Bromomethane	2.0000	1.8714	6.4	100	0.00
7	T	Chloroethane	2.0000	1.8832	5.8	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.8771	6.1	100	0.00
9	T	Diethyl ether	25.0000	23.4449	6.2	100	0.00
10	T	Isoprene	-1.0000	1.8433	0.0	100	0.00
11	T	Acrolein	12.5000	13.0924	-4.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8434	7.8	100	0.00
13	T	Acetone	-1.0000	2.3403	0.0	100	0.02
14	C	1,1-Dichloroethene	2.0000	1.8036	9.8	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.1076	3.8	100	-0.01
16	T	Dimethyl Sulfide	-1.0000	1.7657	0.0	100	0.00
17	T	Iodomethane	2.0000	1.8493	7.5	100	0.00
18	T	Methyl acetate	-1.0000	1.9134	0.0	100	-0.01
19	T	Methylene Chloride	2.0000	1.8280	8.6	100	0.00
20	T	Carbon Disulfide	2.0000	1.9046	4.8	100	0.00
21	T	Acrylonitrile	12.5000	11.8516	5.2	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8329	8.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8663	6.7	100	0.00
24	T	n-Hexane	-1.0000	2.0540	0.0	100	-0.01
25	T	Diisopropyl ether	25.0000	23.9944	4.0	100	0.00
26	T	Vinyl Acetate	-1.0000	2.1553	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	1.8841	5.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	23.4779	6.1	100	0.00
29	T	2-Butanone	-1.0000	2.1418	0.0	100	0.00
30	T	Propionitrile	25.0000	25.6068	-2.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9364	3.2	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.8183	9.1	100	0.00
33	C	Chloroform	2.0000	1.8076	9.6	100	0.00
34		1-Bromopropane	2.0000	1.7500	12.5	100	0.00
35	T	Bromochloromethane	2.0000	1.8870	5.6	100	0.00
36	T	Tetrahydrofuran	25.0000	23.6536	5.4	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9783	2.2	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.7806	11.0	100	0.00
39	T	Cyclohexane	2.0000	1.8539	7.3	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.8723	6.4	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.6366	5.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.7168	14.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0235	-2.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	2.0000	1.8523	7.4	100	0.00
46	T	Benzene	2.0000	1.8903	5.5	100	0.00
47	T	Trichloroethene	2.0000	1.8122	9.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.8594	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.8721	6.4	100	0.00
50	T	Bromodichloromethane	2.0000	1.7949	10.3	100	0.00
51	T	1,4-Dioxane	-1.0000	39.5549	0.0	100	0.00
52	T	Dibromomethane	2.0000	1.8978	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.7957	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.3733	0.0	100	0.00

(#) = Out of Range
8M418411.D 8260WTR.M Thu Mar 23 10:21:56 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418411.D Vial: 6
Acq On : 21 Mar 2017 17:40 Operator: TMB
Sample : WG607066-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8295	8.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.9150	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9505	4.9	100	0.00
59	C	Toluene	2.0000	1.8909	5.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.6604	17.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	2.0000	1.7221	13.9	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7799	11.0	100	0.00
64	T	2-Hexanone	-1.0000	1.4614	0.0	100	-0.01
65	T	1,3-Dichloropropane	2.0000	1.8757	6.2	100	0.00
66	T	Tetrachloroethene	2.0000	1.7816	10.9	100	0.00
67	T	Dibromochloromethane	2.0000	1.8003	10.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.8049	9.8	100	0.00
69	T	1-Chlorohexane	2.0000	1.8173	9.1	100	0.00
70	P	Chlorobenzene	2.0000	1.8287	8.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.7838	10.8	100	0.00
72	C	Ethylbenzene	2.0000	1.7725	11.4	100	0.00
73	T	m-,p-Xylene	4.0000	3.6249	9.4	100	0.00
74	T	o-Xylene	2.0000	1.8242	8.8	100	0.00
75	T	Styrene	2.0000	1.7909	10.5	100	0.00
76	P	Bromoform	2.0000	1.9563	2.2	100	0.00
77	T	Isopropylbenzene	2.0000	1.8905	5.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.8517	7.4	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8852	5.7	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7004	15.0	100	0.00
83	T	n-Propylbenzene	2.0000	1.9885	0.6	100	0.00
84	T	Bromobenzene	2.0000	1.8524	7.4	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.9039	4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	1.8914	5.4	100	0.00
87	T	4-Chlorotoluene	2.0000	1.9993	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	1.6288	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.8375	8.1	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.8905	5.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.9698	1.5	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.8950	5.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8711	6.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.8829	5.9	100	0.00
95	T	n-Butylbenzene	2.0000	1.9777	1.1	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.8830	5.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.7871	10.6	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.7545	12.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.8454	7.7	100	0.00
100	T	Naphthalene	2.0000	1.8522	7.4	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.8222	8.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418411.D 8260WTR.M Thu Mar 23 10:21:57 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:21 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	815035	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	615657	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	327108	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	22395	2.4228	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.68%#		
43) 1,2-Dichloroethane-d4	10.54	65	19064	2.3799	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.52%#		
58) Toluene-d8	12.92	98	78100	2.5219	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.08%#		
80) p-Bromofluorobenzene	16.31	95	30346	2.4516	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.80%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	57648	4.5151	ug/L	100
3) Chloromethane	3.83	50	78191	5.0536	ug/L	97
4) Vinyl Chloride	4.06	62	73384	5.0724	ug/L	99
5) 1,3-Butadiene	4.12	54	41269	5.8119	ug/L	96
6) Bromomethane	4.97	94	35005	4.7768	ug/L	98
7) Chloroethane	5.13	64	28649	4.8823	ug/L	98
8) Trichlorofluoromethane	5.62	101	75703	4.8355	ug/L	99
9) Diethyl ether	6.14	59	246013	48.5872	ug/L	99
10) Isoprene	6.18	67	57716	4.7714	ug/L	99
11) Acrolein	6.38	56	15359	23.7235	ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	42364	5.0307	ug/L	99
13) Acetone	6.48	43	4624	4.7441	ug/L	84
14) 1,1-Dichloroethene	6.71	61	57417	4.8863	ug/L	100
15) Tert-Butyl Alcohol	6.82	59	29560	95.2859	ug/L	97
16) Dimethyl Sulfide	6.98	62	39521	4.7315	ug/L	100
17) Iodomethane	7.24	142	38342	4.3883	ug/L	99
18) Methyl acetate	7.24	43	13546	4.8600	ug/L #	89
19) Methylene Chloride	7.50	84	42736	4.7762	ug/L	99
20) Carbon Disulfide	7.54	76	133568	4.9906	ug/L	100
21) Acrylonitrile	7.67	53	32246	23.6530	ug/L	99
22) Methyl Tert Butyl Ether	7.70	73	81973	4.7595	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	55034	4.8304	ug/L	98
24) n-Hexane	8.01	57	50816	5.2654	ug/L	99
25) Diisopropyl ether	8.36	45	1098144	50.4609	ug/L	98
26) Vinyl Acetate	8.53	43	46164	5.3902	ug/L	99
27) 1,1-Dichloroethane	8.56	63	73534	4.9487	ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	1037371	49.7855	ug/L	100
29) 2-Butanone	9.12	43	7736	4.9261	ug/L	87
30) Propionitrile	9.22	54	22643	48.7062	ug/L	99
31) 2,2-Dichloropropane	9.34	77	66646	5.0276	ug/L	98
32) cis-1,2-Dichloroethene	9.41	96	47223	4.8834	ug/L	98
33) Chloroform	9.61	83	79976	4.6438	ug/L	98
34) 1-Bromopropane	9.74	122	9164	4.9603	ug/L	99
35) Bromochloromethane	9.84	130	24923	4.7979	ug/L	97
36) Tetrahydrofuran	9.87	42	46575	46.6019	ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	69902	4.9346	ug/L	99
39) Cyclohexane	10.18	56	59815	4.8861	ug/L	99
40) 1,1-Dichloropropene	10.34	75	59701	4.9074	ug/L	97
41) Tert-Amyl-Methyl ether	10.43	73	964872	49.6198	ug/L	100
42) Carbon Tetrachloride	10.49	117	61702	4.8682	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418412.D 8260WTR.M Thu Mar 23 10:19:24 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:21 2017 Quant Results File: 8260WTR.RES

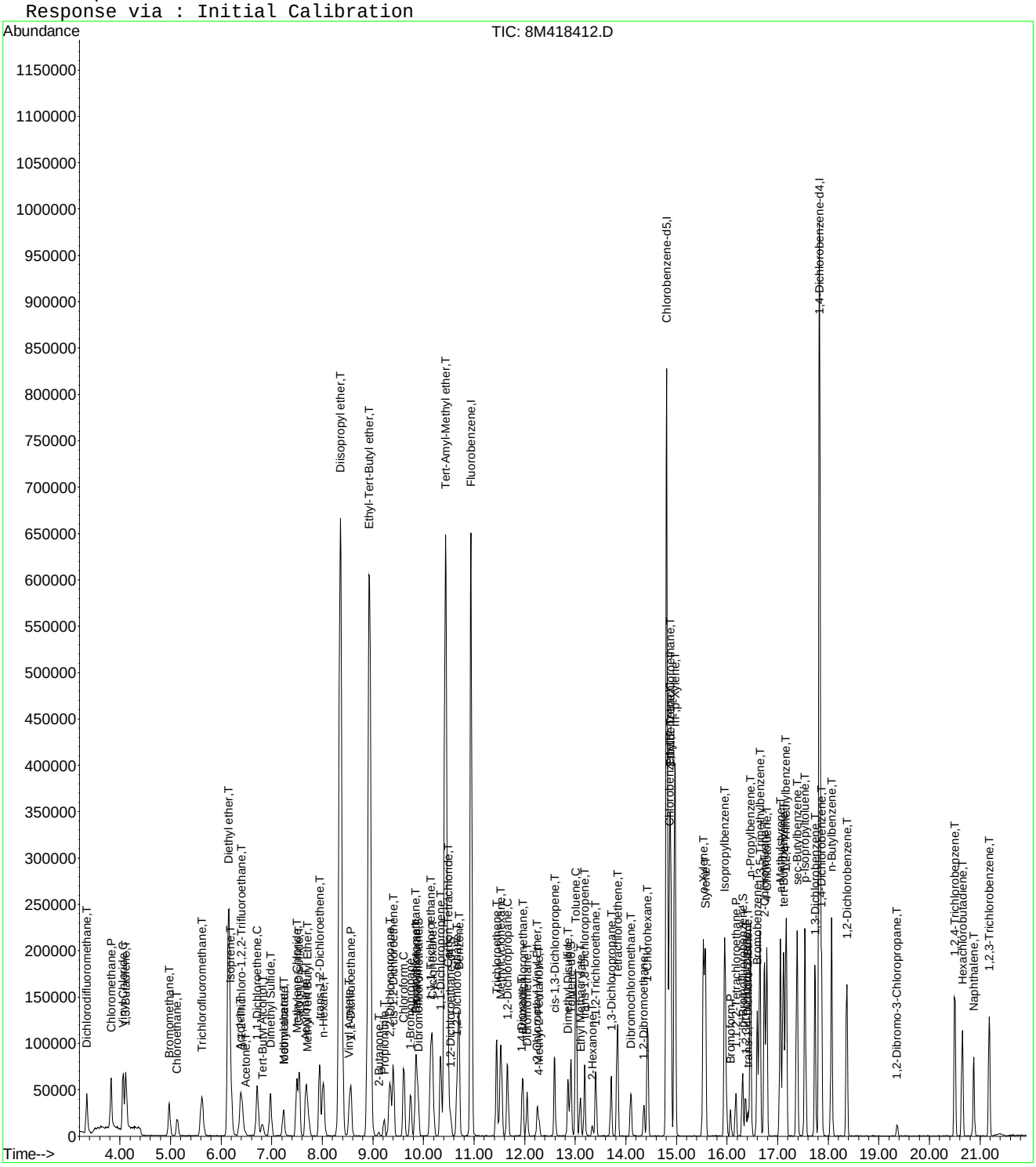
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.66	62	46572	4.7897	ug/L		98
46)	Benzene	10.70	78	177629	5.0634	ug/L		98
47)	Trichloroethene	11.45	130	45447	4.8449	ug/L		98
48)	Methylcyclohexane	11.53	83	69686	4.9440	ug/L		100
49)	1,2-Dichloropropane	11.66	63	39996	4.9586	ug/L		98
50)	Bromodichloromethane	11.96	83	53542	4.6955	ug/L		98
51)	1,4-Dioxane	11.94	88	3437	88.6741	ug/L		97
52)	Dibromomethane	12.05	93	21357	4.9409	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.24	63	17523	4.7776	ug/L		98
54)	4-Methyl-2-Pentanone	12.28	58	6871	4.3772	ug/L		97
55)	cis-1,3-Dichloropropene	12.60	75	63284	4.7814	ug/L		100
56)	Dimethyl Disulfide	12.85	79	25856	5.9282	ug/L		98
59)	Toluene	13.01	91	185488	5.0655	ug/L		99
60)	Ethyl Methacrylate	13.10	69	32628	4.6082	ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	51141	4.7349	ug/L		99
63)	1,1,2-Trichloroethane	13.40	97	28565	4.9523	ug/L		99
64)	2-Hexanone	13.34	58	5536	4.0035	ug/L	#	28
65)	1,3-Dichloropropane	13.71	76	49887	4.8302	ug/L		100
66)	Tetrachloroethene	13.84	164	38803	4.8906	ug/L		100
67)	Dibromochloromethane	14.09	129	33422	4.6625	ug/L		98
68)	1,2-Dibromoethane	14.35	107	28526	4.8200	ug/L		99
69)	1-Chlorohexane	14.43	91	61333	4.9148	ug/L		100
70)	Chlorobenzene	14.86	112	122717	4.7617	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.88	131	40183	4.4589	ug/L		99
72)	Ethylbenzene	14.88	106	68410	4.7831	ug/L		91
73)	m-,p-Xylene	14.97	106	165390	9.6416	ug/L		91
74)	o-Xylene	15.53	106	79805	4.6916	ug/L		95
75)	Styrene	15.57	104	133331	4.8554	ug/L		99
76)	Bromoform	16.07	173	17246	4.3386	ug/L		95
77)	Isopropylbenzene	15.96	105	207808	5.0495	ug/L		98
79)	1,1,2,2-Tetrachloroethane	16.17	83	32166	5.0454	ug/L		97
81)	1,2,3-Trichloropropane	16.37	110	8855	4.8787	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.41	53	7680	5.1357	ug/L		94
83)	n-Propylbenzene	16.46	91	255678	5.3068	ug/L		97
84)	Bromobenzene	16.60	156	51241	4.8055	ug/L		97
85)	1,3,5-Trimethylbenzene	16.65	105	175753	5.0506	ug/L		99
86)	2-Chlorotoluene	16.74	91	164765	5.0877	ug/L		98
87)	4-Chlorotoluene	16.78	91	140714	4.9736	ug/L		97
88)	a-Methylstyrene	17.05	118	89621	4.6071	ug/L		99
89)	tert-Butylbenzene	17.11	134	36401	4.7366	ug/L		94
90)	1,2,4-Trimethylbenzene	17.17	105	183680	5.0772	ug/L		98
91)	sec-Butylbenzene	17.38	105	226755	5.2498	ug/L		97
92)	p-Isopropyltoluene	17.54	119	179958	5.0863	ug/L		98
93)	1,3-Dichlorobenzene	17.74	146	104685	4.9251	ug/L		97
94)	1,4-Dichlorobenzene	17.87	146	102822	4.8029	ug/L		93
95)	n-Butylbenzene	18.06	91	177005	5.1563	ug/L		98
96)	1,2-Dichlorobenzene	18.36	146	90038	4.8615	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	4350	4.3476	ug/L		93
98)	1,2,4-Trichlorobenzene	20.50	180	65218	4.7079	ug/L		100
99)	Hexachlorobutadiene	20.65	225	32260	4.7632	ug/L		97
100)	Naphthalene	20.88	128	87714	4.7941	ug/L		98
101)	1,2,3-Trichlorobenzene	21.18	180	52406	4.5747	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418412.D 8260WTR.M Thu Mar 23 10:19:24 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5152	9.7	100	0.00
3	P	Chloromethane	5.0000	5.0536	-1.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.0724	-1.4	100	0.01
5	T	1,3-Butadiene	5.0000	5.8119	-16.2	100	0.01
6	T	Bromomethane	5.0000	4.7768	4.5	100	0.00
7	T	Chloroethane	5.0000	4.8823	2.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.8355	3.3	100	0.00
9	T	Diethyl ether	50.0000	48.5872	2.8	100	0.00
10	T	Isoprene	5.0000	4.7714	4.6	100	0.00
11	T	Acrolein	25.0000	23.7235	5.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0307	-0.6	100	0.00
13	T	Acetone	5.0000	4.7441	5.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.8863	2.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	95.2859	4.7	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7315	5.4	100	0.00
17	T	Iodomethane	5.0000	4.3883	12.2	100	0.00
18	T	Methyl acetate	5.0000	4.8600	2.8	100	0.00
19	T	Methylene Chloride	5.0000	4.7762	4.5	100	0.00
20	T	Carbon Disulfide	5.0000	4.9906	0.2	100	0.00
21	T	Acrylonitrile	25.0000	23.6530	5.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7595	4.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8304	3.4	100	0.00
24	T	n-Hexane	5.0000	5.2654	-5.3	100	0.00
25	T	Diisopropyl ether	50.0000	50.4609	-0.9	100	0.00
26	T	Vinyl Acetate	5.0000	5.3902	-7.8	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9487	1.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.7855	0.4	100	0.00
29	T	2-Butanone	5.0000	4.9261	1.5	100	0.01
30	T	Propionitrile	50.0000	48.7062	2.6	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0277	-0.6	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8834	2.3	100	0.01
33	C	Chloroform	5.0000	4.6437	7.1	100	0.00
34		1-Bromopropane	5.0000	4.9603	0.8	100	0.00
35	T	Bromochloromethane	5.0000	4.7979	4.0	100	0.00
36	T	Tetrahydrofuran	50.0000	46.6019	6.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4228	3.1	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9346	1.3	100	0.00
39	T	Cyclohexane	5.0000	4.8861	2.3	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9074	1.9	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.6198	0.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8682	2.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3799	4.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	5.0000	4.7897	4.2	100	0.00
46	T	Benzene	5.0000	5.0634	-1.3	100	0.00
47	T	Trichloroethene	5.0000	4.8449	3.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.9440	1.1	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9586	0.8	100	0.01
50	T	Bromodichloromethane	5.0000	4.6955	6.1	100	0.00
51	T	1,4-Dioxane	100.0000	88.6741	11.3	100	0.00
52	T	Dibromomethane	5.0000	4.9409	1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.7776	4.4	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3772	12.5	100	0.01

(#) = Out of Range
8M418412.D 8260WTR.M Thu Mar 23 10:22:11 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418412.D Vial: 7
Acq On : 21 Mar 2017 18:10 Operator: TMB
Sample : WG607066-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7814	4.4	100	0.00
56	T	Dimethyl Disulfide	5.0000	5.9282	-18.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.5219	-0.9	100	0.00
59	C	Toluene	5.0000	5.0655	-1.3	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6082	7.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	5.0000	4.7349	5.3	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9523	1.0	100	0.00
64	T	2-Hexanone	5.0000	4.0035	19.9	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8302	3.4	100	0.00
66	T	Tetrachloroethene	5.0000	4.8906	2.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.6625	6.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8200	3.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.9148	1.7	100	0.00
70	P	Chlorobenzene	5.0000	4.7617	4.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.4589	10.8	100	0.00
72	C	Ethylbenzene	5.0000	4.7831	4.3	100	0.00
73	T	m-,p-Xylene	10.0000	9.6416	3.6	100	0.00
74	T	o-Xylene	5.0000	4.6916	6.2	100	0.00
75	T	Styrene	5.0000	4.8554	2.9	100	0.00
76	P	Bromoform	5.0000	4.3386	13.2	100	0.00
77	T	Isopropylbenzene	5.0000	5.0496	-1.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0454	-0.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4516	1.9	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	4.8787	2.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	5.1357	-2.7	100	0.00
83	T	n-Propylbenzene	5.0000	5.3068	-6.1	100	0.00
84	T	Bromobenzene	5.0000	4.8055	3.9	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.0506	-1.0	100	0.00
86	T	2-Chlorotoluene	5.0000	5.0877	-1.8	100	0.00
87	T	4-Chlorotoluene	5.0000	4.9736	0.5	100	0.00
88	T	a-Methylstyrene	5.0000	4.6071	7.9	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7366	5.3	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0772	-1.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2498	-5.0	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0863	-1.7	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9251	1.5	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8029	3.9	100	0.00
95	T	n-Butylbenzene	5.0000	5.1563	-3.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8614	2.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.3476	13.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7079	5.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.7632	4.7	100	0.00
100	T	Naphthalene	5.0000	4.7941	4.1	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.5747	8.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M418412.D 8260WTR.M Thu Mar 23 10:22:11 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418413.D Vial: 8
Acq On : 21 Mar 2017 18:41 Operator: TMB
Sample : WG607066-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:25 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	821672	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	625798	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	337574	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	91435	9.8118	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.24%#			
43) 1,2-Dichloroethane-d4	10.54	65	80586	9.9788	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 39.92%#			
58) Toluene-d8	12.92	98	315631	10.0266	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.12%#			
80) p-Bromofluorobenzene	16.31	95	124358	9.7351	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.96%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	267112	20.7520	ug/L	100
3) Chloromethane	3.83	50	306801	19.6689	ug/L	100
4) Vinyl Chloride	4.05	62	289525	19.8509	ug/L	99
5) 1,3-Butadiene	4.12	54	154484	29.8378	ug/L	99
6) Bromomethane	4.98	94	139620	18.8988	ug/L	100
7) Chloroethane	5.13	64	119263	20.1604	ug/L	98
8) Trichlorofluoromethane	5.63	101	307979	19.5132	ug/L	99
9) Diethyl ether	6.14	59	402822	78.9142	ug/L	100
10) Isoprene	6.18	67	230105	18.8691	ug/L	100
11) Acrolein	6.38	56	26074	39.9486	ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	165526	19.4975	ug/L	100
13) Acetone	6.48	43	20120	20.4758	ug/L	95
14) 1,1-Dichloroethene	6.71	61	229545	19.3768	ug/L	100
15) Tert-Butyl Alcohol	6.82	59	51093	163.3666	ug/L	99
16) Dimethyl Sulfide	6.98	62	161581	19.1886	ug/L	100
17) Iodomethane	7.23	142	171474	17.7339	ug/L	99
18) Methyl acetate	7.24	43	53968	19.2063	ug/L	97
19) Methylene Chloride	7.50	84	175217	19.4242	ug/L	99
20) Carbon Disulfide	7.54	76	534567	19.8121	ug/L	100
21) Acrylonitrile	7.67	53	54994	40.0133	ug/L	98
22) Methyl Tert Butyl Ether	7.70	73	350631	20.1938	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	222172	19.3426	ug/L	100
24) n-Hexane	8.02	57	183626	18.8729	ug/L	100
25) Diisopropyl ether	8.36	45	1757668	80.1144	ug/L	100
26) Vinyl Acetate	8.53	43	171984	19.9188	ug/L	99
27) 1,1-Dichloroethane	8.56	63	293490	19.5918	ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	1705294	81.1794	ug/L	100
29) 2-Butanone	9.11	43	31385	19.8239	ug/L	97
30) Propionitrile	9.22	54	38828	82.8463	ug/L	99
31) 2,2-Dichloropropane	9.34	77	253094	18.9387	ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	192736	19.7700	ug/L	99
33) Chloroform	9.61	83	317903	18.3097	ug/L	99
34) 1-Bromopropane	9.75	122	36849	19.7847	ug/L	96
35) Bromochloromethane	9.85	130	103131	19.6934	ug/L	99
36) Tetrahydrofuran	9.87	42	78080	77.4941	ug/L	99
38) 1,1,1-Trichloroethane	10.14	97	277573	19.4366	ug/L	100
39) Cyclohexane	10.18	56	236003	19.1226	ug/L	99
40) 1,1-Dichloropropene	10.34	75	238442	19.4415	ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	1584333	80.8183	ug/L	100
42) Carbon Tetrachloride	10.49	117	250269	19.5864	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418413.D 8260WTR.M Thu Mar 23 10:19:28 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418413.D Vial: 8
Acq On : 21 Mar 2017 18:41 Operator: TMB
Sample : WG607066-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:25 2017 Quant Results File: 8260WTR.RES

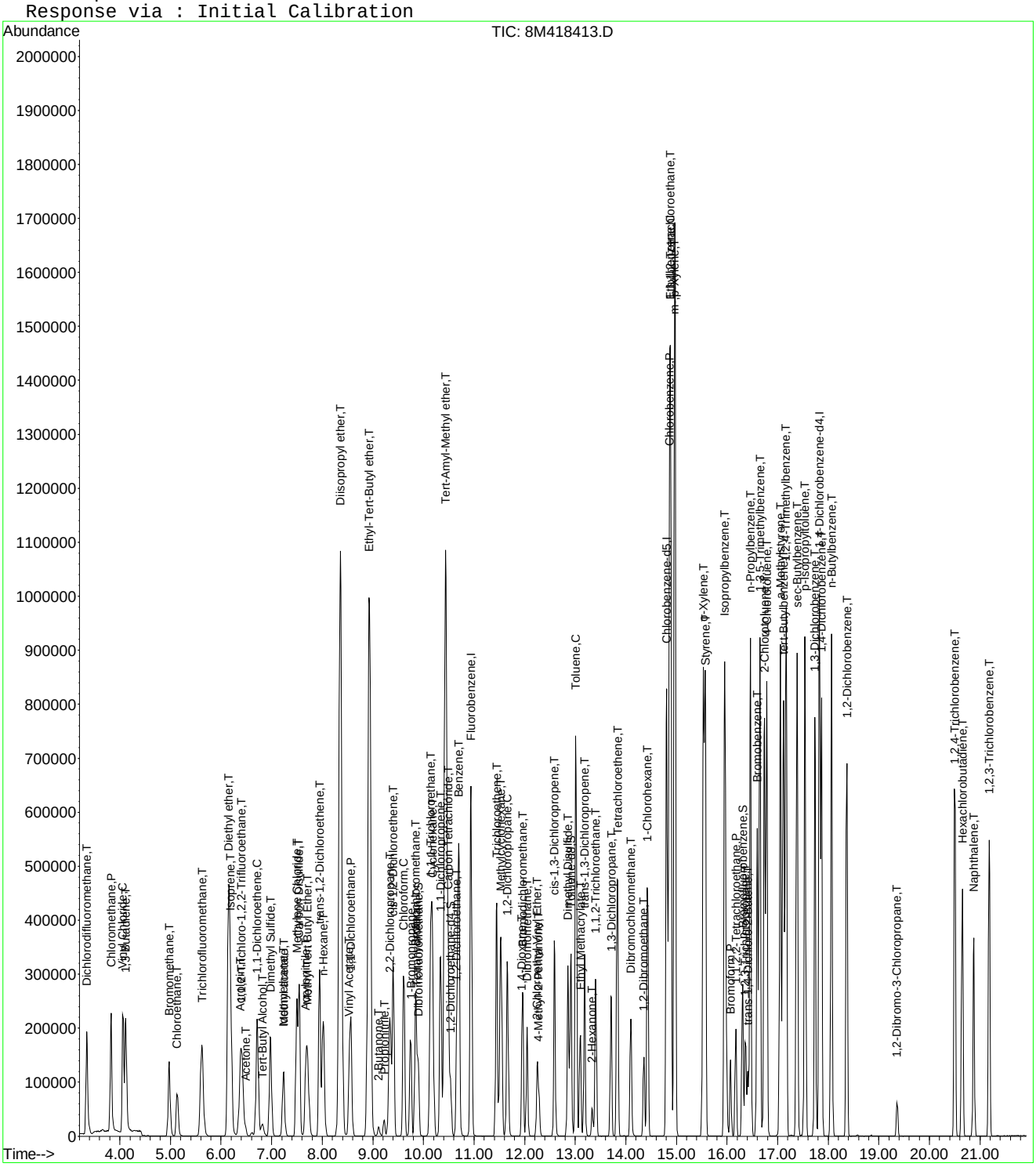
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	193166	19.7059	ug/L	99
46)	Benzene	10.69	78	700569	19.8088	ug/L	99
47)	Trichloroethene	11.45	130	185531	19.6190	ug/L	99
48)	Methylcyclohexane	11.53	83	268976	18.9287	ug/L	99
49)	1,2-Dichloropropane	11.65	63	162712	20.0097	ug/L	100
50)	Bromodichloromethane	11.95	83	228854	19.9076	ug/L	99
51)	1,4-Dioxane	11.94	88	6022	154.1117	ug/L	94
52)	Dibromomethane	12.05	93	90005	20.6543	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	71072	19.2210	ug/L	98
54)	4-Methyl-2-Pentanone	12.27	58	30339	19.1714	ug/L	98
55)	cis-1,3-Dichloropropene	12.59	75	265979	19.9337	ug/L	99
56)	Dimethyl Disulfide	12.85	79	128604	18.2156	ug/L	97
59)	Toluene	13.01	91	743388	19.9724	ug/L	98
60)	Ethyl Methacrylate	13.10	69	149186	20.7286	ug/L	98
62)	trans-1,3-Dichloropropene	13.18	75	220503	20.0843	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	118566	20.2227	ug/L	100
64)	2-Hexanone	13.33	58	27656	19.6759	ug/L	99
65)	1,3-Dichloropropane	13.71	76	210564	20.0570	ug/L	99
66)	Tetrachloroethene	13.84	164	151933	18.8389	ug/L	99
67)	Dibromochloromethane	14.09	129	148062	19.3718	ug/L	100
68)	1,2-Dibromoethane	14.35	107	122091	20.2951	ug/L	98
69)	1-Chlorohexane	14.43	91	239557	18.8853	ug/L	99
70)	Chlorobenzene	14.86	112	498962	19.0471	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	181926	18.6479	ug/L	100
72)	Ethylbenzene	14.88	106	280076	19.2650	ug/L	94
73)	m-,p-Xylene	14.96	106	683565	39.2036	ug/L	93
74)	o-Xylene	15.53	106	329733	19.0703	ug/L	99
75)	Styrene	15.57	104	559745	20.0535	ug/L	99
76)	Bromoform	16.07	173	86579	19.2358	ug/L	100
77)	Isopropylbenzene	15.96	105	836820	20.0045	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.17	83	133568	20.3011	ug/L	99
81)	1,2,3-Trichloropropane	16.36	110	37383	19.9577	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	16.41	53	31257	20.2539	ug/L	95
83)	n-Propylbenzene	16.46	91	1013480	20.3834	ug/L	98
84)	Bromobenzene	16.60	156	213250	19.3788	ug/L	98
85)	1,3,5-Trimethylbenzene	16.65	105	719028	20.0222	ug/L	99
86)	2-Chlorotoluene	16.74	91	676467	20.2408	ug/L	96
87)	4-Chlorotoluene	16.78	91	569123	19.4922	ug/L	98
88)	a-Methylstyrene	17.05	118	379902	18.9239	ug/L	100
89)	tert-Butylbenzene	17.11	134	148294	18.6981	ug/L	96
90)	1,2,4-Trimethylbenzene	17.17	105	757423	20.2873	ug/L	98
91)	sec-Butylbenzene	17.38	105	899287	20.1745	ug/L	98
92)	p-Isopropyltoluene	17.54	119	733704	20.0943	ug/L	99
93)	1,3-Dichlorobenzene	17.73	146	425958	19.4188	ug/L	100
94)	1,4-Dichlorobenzene	17.87	146	421228	19.0658	ug/L	100
95)	n-Butylbenzene	18.06	91	706936	19.9553	ug/L	99
96)	1,2-Dichlorobenzene	18.36	146	372725	19.5007	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	20816	20.1597	ug/L	99
98)	1,2,4-Trichlorobenzene	20.51	180	271888	19.0185	ug/L	99
99)	Hexachlorobutadiene	20.65	225	126611	18.1144	ug/L	100
100)	Naphthalene	20.88	128	379245	20.0854	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	226688	19.1747	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418413.D 8260WTR.M Thu Mar 23 10:19:28 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418413.D Vial: 8
Acq On : 21 Mar 2017 18:41 Operator: TMB
Sample : WG607066-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418414.D Vial: 9
Acq On : 21 Mar 2017 19:11 Operator: TMB
Sample : WG607066-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:30 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	821515	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	635449	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	345493	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	227256	24.3913	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.56%			
43) 1,2-Dichloroethane-d4	10.54	65	199083	24.6568	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.64%			
58) Toluene-d8	12.92	98	778520	24.3556	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%			
80) p-Bromofluorobenzene	16.31	95	310492	23.7490	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	711345	55.2750	ug/L	100
3) Chloromethane	3.83	50	763262	48.9417	ug/L	100
4) Vinyl Chloride	4.05	62	698218	47.8815	ug/L	100
5) 1,3-Butadiene	4.11	54	285922	60.6615	ug/L	100
6) Bromomethane	4.97	94	369809	50.0666	ug/L	100
7) Chloroethane	5.13	64	305358	51.6280	ug/L	100
8) Trichlorofluoromethane	5.62	101	807170	51.1512	ug/L	100
9) Diethyl ether	6.14	59	522978	102.4728	ug/L	100
10) Isoprene	6.18	67	604725	49.5983	ug/L	100
11) Acrolein	6.39	56	33661	51.5827	ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	441268	51.9873	ug/L	100
13) Acetone	6.48	43	50200	51.0974	ug/L	100
14) 1,1-Dichloroethene	6.71	61	601562	50.7899	ug/L	100
15) Tert-Butyl Alcohol	6.81	59	66306	212.0497	ug/L	100
16) Dimethyl Sulfide	6.98	62	419461	49.8226	ug/L	100
17) Iodomethane	7.24	142	489213	49.6697	ug/L	100
18) Methyl acetate	7.24	43	138467	49.2874	ug/L	100
19) Methylene Chloride	7.50	84	452948	50.2224	ug/L	100
20) Carbon Disulfide	7.54	76	1373384	50.9099	ug/L	100
21) Acrylonitrile	7.67	53	75054	54.6193	ug/L	100
22) Methyl Tert Butyl Ether	7.70	73	913126	52.5996	ug/L	100
23) trans-1,2-Dichloroethene	7.94	61	570982	49.7200	ug/L	100
24) n-Hexane	8.02	57	481335	49.4807	ug/L	100
25) Diisopropyl ether	8.36	45	2245729	102.3798	ug/L	100
26) Vinyl Acetate	8.53	43	417757	48.3930	ug/L	100
27) 1,1-Dichloroethane	8.56	63	762261	50.8941	ug/L	100
28) Ethyl-Tert-Butyl ether	8.93	59	2190954	104.3189	ug/L	100
29) 2-Butanone	9.11	43	79673	50.3339	ug/L	100
30) Propionitrile	9.22	54	48849	104.2478	ug/L	100
31) 2,2-Dichloropropane	9.34	77	653825	48.9342	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	496971	50.9868	ug/L	100
33) Chloroform	9.61	83	821445	47.3204	ug/L	100
34) 1-Bromopropane	9.75	122	93829	50.3875	ug/L	100
35) Bromochloromethane	9.84	130	273070	52.1540	ug/L	100
36) Tetrahydrofuran	9.86	42	103949	103.1887	ug/L	100
38) 1,1,1-Trichloroethane	10.14	97	739127	51.7661	ug/L	100
39) Cyclohexane	10.18	56	620901	50.3193	ug/L	100
40) 1,1-Dichloropropene	10.34	75	617108	50.3259	ug/L	100
41) Tert-Amyl-Methyl ether	10.43	73	2062326	105.2213	ug/L	100
42) Carbon Tetrachloride	10.49	117	674327	52.7838	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418414.D 8260WTR.M Thu Mar 23 10:19:32 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418414.D Vial: 9
Acq On : 21 Mar 2017 19:11 Operator: TMB
Sample : WG607066-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:30 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

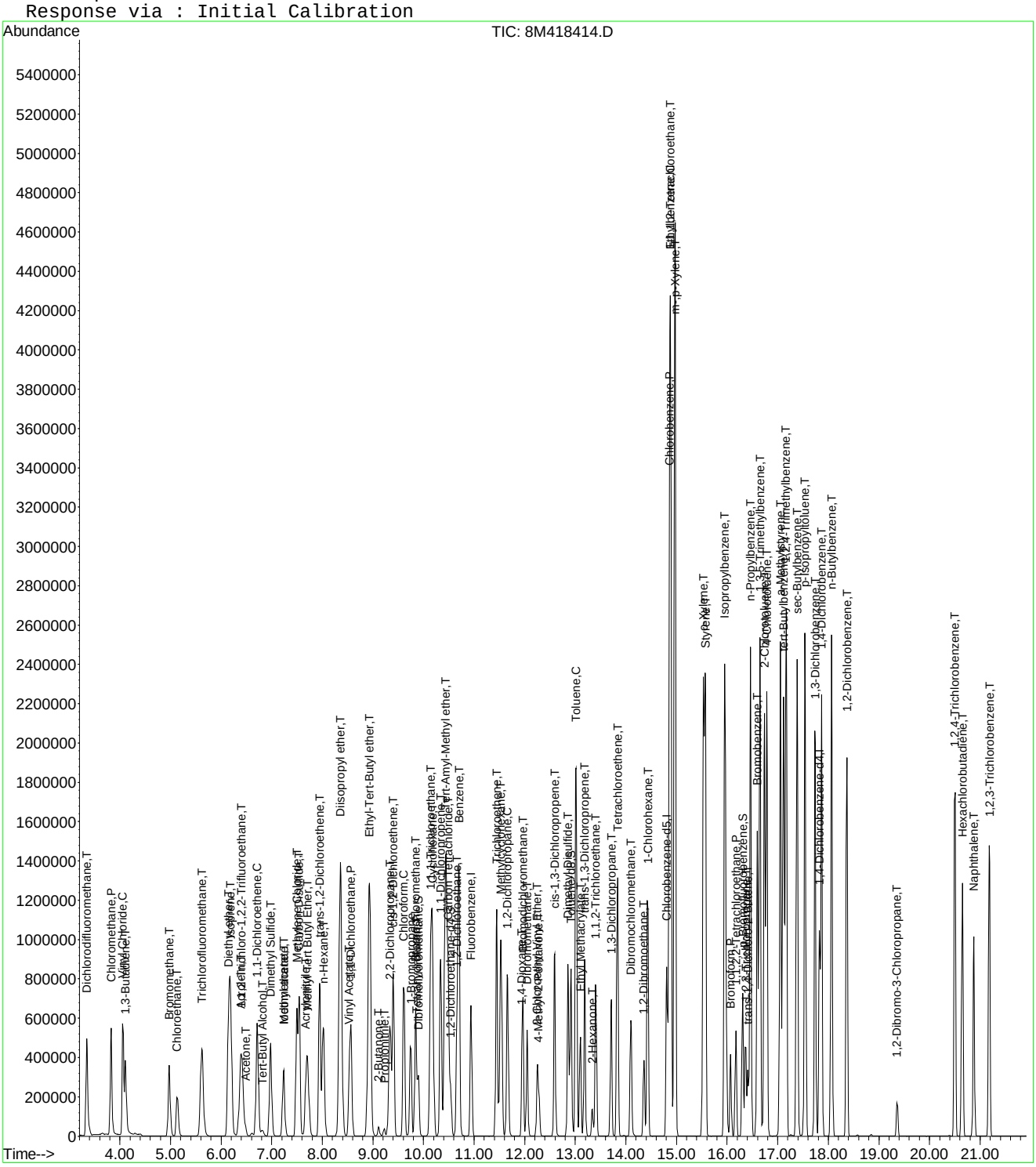
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.66	62	501055	51.1250	ug/L	100
46)	Benzene	10.70	78	1790432	50.6347	ug/L	100
47)	Trichloroethene	11.45	130	488370	51.6527	ug/L	100
48)	Methylcyclohexane	11.53	83	698948	49.1967	ug/L	100
49)	1,2-Dichloropropane	11.65	63	416176	51.1896	ug/L	100
50)	Bromodichloromethane	11.96	83	609341	53.0157	ug/L	100
51)	1,4-Dioxane	11.94	88	9021	230.9046	ug/L	100
52)	Dibromomethane	12.05	93	236195	54.2122	ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.24	63	183414	49.6127	ug/L	100
54)	4-Methyl-2-Pentanone	12.27	58	80365	50.7929	ug/L	100
55)	cis-1,3-Dichloropropene	12.59	75	698063	52.3260	ug/L	100
56)	Dimethyl Disulfide	12.85	79	361297	46.1084	ug/L	100
59)	Toluene	13.02	91	1927822	51.0075	ug/L	100
60)	Ethyl Methacrylate	13.10	69	386095	52.8311	ug/L	100
62)	trans-1,3-Dichloropropene	13.18	75	588220	52.7638	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	309196	51.9358	ug/L	100
64)	2-Hexanone	13.34	58	73718	51.6504	ug/L	100
65)	1,3-Dichloropropane	13.71	76	543270	50.9625	ug/L	100
66)	Tetrachloroethene	13.84	164	407543	49.7657	ug/L	100
67)	Dibromochloromethane	14.09	129	410127	50.8448	ug/L	100
68)	1,2-Dibromoethane	14.35	107	319221	52.2580	ug/L	100
69)	1-Chlorohexane	14.43	91	621898	48.2822	ug/L	100
70)	Chlorobenzene	14.86	112	1364943	51.3131	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	525452	49.4524	ug/L	100
72)	Ethylbenzene	14.88	106	797976	54.0551	ug/L	100
73)	m-,p-Xylene	14.97	106	1881723	106.2810	ug/L	100
74)	o-Xylene	15.53	106	886598	50.4983	ug/L	100
75)	Styrene	15.57	104	1519235	53.6017	ug/L	100
76)	Bromoform	16.07	173	249977	51.3122	ug/L	100
77)	Isopropylbenzene	15.95	105	2232698	52.5628	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.17	83	348801	51.7995	ug/L	100
81)	1,2,3-Trichloropropane	16.37	110	101098	52.7363	ug/L	100
82)	trans-1,4-Dichloro-2-Buten	16.41	53	86606	54.8326	ug/L	100
83)	n-Propylbenzene	16.46	91	2625785	51.6001	ug/L	100
84)	Bromobenzene	16.60	156	578228	51.3414	ug/L	100
85)	1,3,5-Trimethylbenzene	16.65	105	1935141	52.6512	ug/L	100
86)	2-Chlorotoluene	16.74	91	1754686	51.2992	ug/L	95
87)	4-Chlorotoluene	16.78	91	1548177	51.8089	ug/L	100
88)	a-Methylstyrene	17.05	118	1031651	50.2113	ug/L	100
89)	tert-Butylbenzene	17.11	134	411067	50.6427	ug/L	100
90)	1,2,4-Trimethylbenzene	17.16	105	2017757	52.8063	ug/L	100
91)	sec-Butylbenzene	17.38	105	2394949	52.4965	ug/L	100
92)	p-Isopropyltoluene	17.54	119	1983917	53.0891	ug/L	100
93)	1,3-Dichlorobenzene	17.74	146	1154353	51.4190	ug/L	100
94)	1,4-Dichlorobenzene	17.87	146	1141058	50.4632	ug/L	100
95)	n-Butylbenzene	18.06	91	1889430	52.1122	ug/L	100
96)	1,2-Dichlorobenzene	18.36	146	1014031	51.8374	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.36	75	56970	53.9093	ug/L	100
98)	1,2,4-Trichlorobenzene	20.50	180	737197	50.3847	ug/L	100
99)	Hexachlorobutadiene	20.65	225	347382	48.5613	ug/L	100
100)	Naphthalene	20.88	128	1036443	53.6334	ug/L	100
101)	1,2,3-Trichlorobenzene	21.19	180	615291	50.8522	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418414.D 8260WTR.M Thu Mar 23 10:19:32 2017 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418414.D Vial: 9
Acq On : 21 Mar 2017 19:11 Operator: TMB
Sample : WG607066-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



8M418414.D 8260WTR.M Thu Mar 23 10:19:33 2017 Page 3

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418415.D Vial: 10
Acq On : 21 Mar 2017 19:42 Operator: TMB
Sample : WG607066-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:34 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.94	96	832390	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.81	117	638020	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	354988	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.90	111	481200	50.9722 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.88%#		
43) 1,2-Dichloroethane-d4	10.54	65	409278	50.0275 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 200.12%#		
58) Toluene-d8	12.92	98	1661154	51.7589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 207.04%#		
80) p-Bromofluorobenzene	16.31	95	668613	49.7732 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.08%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.34	85	1438401	110.3106 ug/L	99
3) Chloromethane	3.82	50	1493609	94.5216 ug/L	100
4) Vinyl Chloride	4.06	62	1327339	89.8354 ug/L	100
5) 1,3-Butadiene	4.10	54	368240	80.7190 ug/L	99
6) Bromomethane	4.98	94	790524	105.6268 ug/L	100
7) Chloroethane	5.13	64	638148	106.4844 ug/L	100
8) Trichlorofluoromethane	5.62	101	1655417	103.5349 ug/L	100
9) Diethyl ether	6.14	59	1033643	199.8868 ug/L	100
10) Isoprene	6.19	67	1271534	102.9262 ug/L	100
11) Acrolein	6.38	56	65234	98.6597 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	904035	105.1160 ug/L	99
13) Acetone	6.49	43	94542	94.9748 ug/L	95
14) 1,1-Dichloroethene	6.71	61	1249890	104.1496 ug/L	100
15) Tert-Butyl Alcohol	6.82	59	119878	378.3668 ug/L	98
16) Dimethyl Sulfide	6.98	62	859884	100.8007 ug/L	100
17) Iodomethane	7.23	142	1058142	105.4571 ug/L	100
18) Methyl acetate	7.23	43	279053	98.0313 ug/L	100
19) Methylene Chloride	7.50	84	936574	102.4897 ug/L	99
20) Carbon Disulfide	7.54	76	2823847	103.3095 ug/L	99
21) Acrylonitrile	7.67	53	149222	107.1750 ug/L	96
22) Methyl Tert Butyl Ether	7.71	73	1784580	101.4557 ug/L	99
23) trans-1,2-Dichloroethene	7.94	61	1199201	103.0598 ug/L	100
24) n-Hexane	8.02	57	988698	100.3091 ug/L	100
25) Diisopropyl ether	8.36	45	4460377	200.6860 ug/L	99
26) Vinyl Acetate	8.53	43	818543	93.5812 ug/L	100
27) 1,1-Dichloroethane	8.56	63	1584158	104.3880 ug/L	99
28) Ethyl-Tert-Butyl ether	8.93	59	4294780	201.8178 ug/L	98
29) 2-Butanone	9.11	43	156066	97.3075 ug/L	98
30) Propionitrile	9.23	54	95879	201.9404 ug/L	98
31) 2,2-Dichloropropane	9.34	77	1350638	99.7652 ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	1044402	105.7506 ug/L	99
33) Chloroform	9.61	83	1686208	95.8671 ug/L	99
34) 1-Bromopropane	9.75	122	198630	105.2735 ug/L	100
35) Bromochloromethane	9.85	130	553621	104.3553 ug/L	100
36) Tetrahydrofuran	9.87	42	195050	191.0937 ug/L	99
38) 1,1,1-Trichloroethane	10.15	97	1562658	108.0137 ug/L	100
39) Cyclohexane	10.18	56	1289341	103.1261 ug/L	99
40) 1,1-Dichloropropene	10.33	75	1293628	104.1186 ug/L	100
41) Tert-Amyl-Methyl ether	10.44	73	4043547	203.6092 ug/L	99
42) Carbon Tetrachloride	10.49	117	1455182	112.4180 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M418415.D 8260WTR.M Thu Mar 23 10:19:36 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418415.D Vial: 10
Acq On : 21 Mar 2017 19:42 Operator: TMB
Sample : WG607066-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:34 2017 Quant Results File: 8260WTR.RES

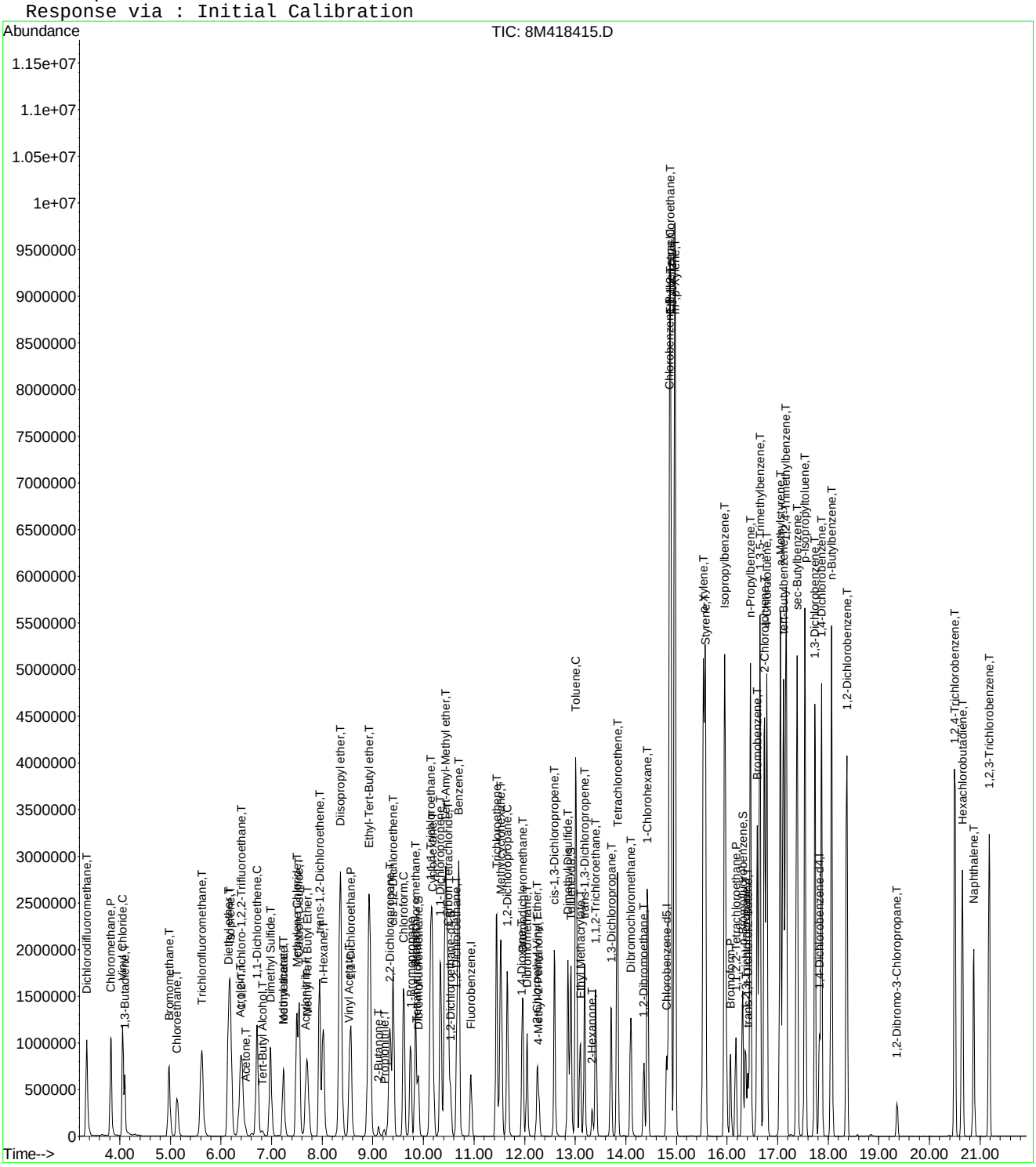
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.65	62	1024462	103.1650 ug/L		100
46)	Benzene	10.69	78	3657733	102.0919 ug/L		99
47)	Trichloroethene	11.45	130	1032071	107.7314 ug/L		99
48)	Methylcyclohexane	11.53	83	1456841	101.2027 ug/L		100
49)	1,2-Dichloropropane	11.66	63	869234	105.5188 ug/L		99
50)	Bromodichloromethane	11.96	83	1265209	108.6413 ug/L		100
51)	1,4-Dioxane	11.94	88	16295	411.6432 ug/L		97
52)	Dibromomethane	12.05	93	477573	108.1820 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.24	63	379879	101.4131 ug/L		100
54)	4-Methyl-2-Pentanone	12.28	58	157212	98.0641 ug/L		97
55)	cis-1,3-Dichloropropene	12.59	75	1437589	106.3521 ug/L		99
56)	Dimethyl Disulfide	12.85	79	767570	93.6011 ug/L		100
59)	Toluene	13.01	91	3952448	104.1549 ug/L		97
60)	Ethyl Methacrylate	13.10	69	771683	105.1673 ug/L		99
62)	trans-1,3-Dichloropropene	13.19	75	1197950	107.0240 ug/L		98
63)	1,1,2-Trichloroethane	13.40	97	622377	104.1196 ug/L		100
64)	2-Hexanone	13.33	58	143458	100.1085 ug/L		99
65)	1,3-Dichloropropane	13.71	76	1090473	101.8817 ug/L		100
66)	Tetrachloroethene	13.84	164	886718	107.8422 ug/L		100
67)	Dibromochloromethane	14.10	129	856887	100.5484 ug/L		99
68)	1,2-Dibromoethane	14.35	107	635116	103.5526 ug/L		100
69)	1-Chlorohexane	14.43	91	1326608	102.5786 ug/L		100
70)	Chlorobenzene	14.86	112	2992950	112.0624 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.88	131	1225221	103.4096 ug/L		99
72)	Ethylbenzene	14.88	106	1841497	124.2407 ug/L		86
73)	m-,p-Xylene	14.97	106	4083197	229.6924 ug/L		83
74)	o-Xylene	15.53	106	1947638	110.4853 ug/L		94
75)	Styrene	15.57	104	3248166	114.1402 ug/L		98
76)	Bromoform	16.07	173	528122	100.1789 ug/L		99
77)	Isopropylbenzene	15.96	105	4533231	106.2925 ug/L		95
79)	1,1,2,2-Tetrachloroethane	16.17	83	685787	99.1203 ug/L		99
81)	1,2,3-Trichloropropane	16.37	110	199174	101.1173 ug/L	#	27
82)	trans-1,4-Dichloro-2-Buten	16.41	53	176944	109.0316 ug/L	#	21
83)	n-Propylbenzene	16.46	91	5143376	98.3706 ug/L		94
84)	Bromobenzene	16.60	156	1242819	107.3995 ug/L		99
85)	1,3,5-Trimethylbenzene	16.65	105	4017731	106.3903 ug/L		96
86)	2-Chlorotoluene	16.74	91	3681380	104.7484 ug/L		92
87)	4-Chlorotoluene	16.78	91	3153568	102.7097 ug/L		97
88)	a-Methylstyrene	17.05	118	2249454	106.5543 ug/L		98
89)	tert-Butylbenzene	17.11	134	917437	110.0035 ug/L		95
90)	1,2,4-Trimethylbenzene	17.17	105	4159162	105.9371 ug/L		94
91)	sec-Butylbenzene	17.38	105	4827054	102.9774 ug/L		96
92)	p-Isopropyltoluene	17.54	119	4125265	107.4383 ug/L		96
93)	1,3-Dichlorobenzene	17.73	146	2461540	106.7129 ug/L		98
94)	1,4-Dichlorobenzene	17.87	146	2417995	104.0753 ug/L		98
95)	n-Butylbenzene	18.07	91	3860674	103.6328 ug/L		96
96)	1,2-Dichlorobenzene	18.37	146	2124165	105.6832 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.36	75	112849	103.9299 ug/L		97
98)	1,2,4-Trichlorobenzene	20.51	180	1602855	106.6190 ug/L		100
99)	Hexachlorobutadiene	20.65	225	772520	105.1038 ug/L		99
100)	Naphthalene	20.88	128	2026731	102.0733 ug/L		99
101)	1,2,3-Trichlorobenzene	21.18	180	1292463	103.9616 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418415.D 8260WTR.M Thu Mar 23 10:19:36 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418415.D Vial: 10
Acq On : 21 Mar 2017 19:42 Operator: TMB
Sample : WG607066-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418416.D Vial: 11
Acq On : 21 Mar 2017 20:12 Operator: TMB
Sample : WG607066-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:38 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Fluorobenzene	10.94	96	835227	25.00	ug/L		0.00
57) Chlorobenzene-d5	14.80	117	656093	25.00	ug/L		0.00
78) 1,4-Dichlorobenzene-d4	17.82	152	375170	25.00	ug/L		0.00
System Monitoring Compounds							
37) Dibromofluoromethane	9.89	111	981585	103.6234	ug/L		0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 414.48%#				
43) 1,2-Dichloroethane-d4	10.53	65	842777	102.6658	ug/L		0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 410.68%#				
58) Toluene-d8	12.91	98	3365801	101.9841	ug/L		0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 407.92%#				
80) p-Bromofluorobenzene	16.30	95	1434304	101.0294	ug/L		0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.12%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.34	85	2757052	210.7194	ug/L		97
3) Chloromethane	3.82	50	2806488	177.0026	ug/L		98
4) Vinyl Chloride	4.05	62	2403355	162.1085	ug/L		98
5) 1,3-Butadiene	4.09	54	611042	157.2872	ug/L		98
6) Bromomethane	4.97	94	1694257	225.6112	ug/L		99
7) Chloroethane	5.13	64	1297095	215.7043	ug/L		100
8) Trichlorofluoromethane	5.61	101	3318936	206.8715	ug/L		99
10) Isoprene	6.18	67	2499442	201.6338	ug/L		100
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	1766595	204.7119	ug/L		99
13) Acetone	6.48	43	216138	216.3900	ug/L		98
14) 1,1-Dichloroethene	6.71	61	2505821	208.0933	ug/L		98
15) Tert-Butyl Alcohol	6.82	59	3327	10.4652	ug/L	#	68
16) Dimethyl Sulfide	6.98	62	1788428	208.9380	ug/L		100
17) Iodomethane	7.24	142	2121411	210.2036	ug/L		100
18) Methyl acetate	7.24	43	603988	211.4603	ug/L		99
19) Methylene Chloride	7.49	84	1965657	214.3721	ug/L		97
20) Carbon Disulfide	7.55	76	5542579	202.0846	ug/L		97
21) Acrylonitrile	7.70	53	33221	23.7791	ug/L	#	32
22) Methyl Tert Butyl Ether	7.70	73	3787888	214.6149	ug/L		99
23) trans-1,2-Dichloroethene	7.94	61	2435593	208.6049	ug/L		99
24) n-Hexane	8.02	57	1927946	194.9369	ug/L		100
26) Vinyl Acetate	8.53	43	1867991	212.8355	ug/L		98
27) 1,1-Dichloroethane	8.56	63	3184705	209.1432	ug/L		98
29) 2-Butanone	9.11	43	335050	208.1948	ug/L		98
31) 2,2-Dichloropropane	9.34	77	2692388	198.1983	ug/L		98
32) cis-1,2-Dichloroethene	9.41	96	2145970	216.5515	ug/L		98
33) Chloroform	9.61	83	3366279	190.7353	ug/L		97
34) 1-Bromopropane	9.75	122	404263	213.5309	ug/L		100
35) Bromochloromethane	9.84	130	1139795	214.1170	ug/L		98
36) Tetrahydrofuran	9.86	42	1357	1.3250	ug/L	#	24
38) 1,1,1-Trichloroethane	10.14	97	3258039	224.4366	ug/L		99
39) Cyclohexane	10.17	56	2619353	208.7937	ug/L		98
40) 1,1-Dichloropropene	10.34	75	2622304	210.3412	ug/L		98
42) Carbon Tetrachloride	10.48	117	2879058	221.6619	ug/L		100
45) 1,2-Dichloroethane	10.66	62	2165891	217.3680	ug/L		99
46) Benzene	10.70	78	6827744	189.9236	ug/L		94
47) Trichloroethene	11.44	130	2165800	225.3064	ug/L		99
48) Methylcyclohexane	11.53	83	2890589	200.1191	ug/L		99
49) 1,2-Dichloropropane	11.66	63	1802764	218.0994	ug/L		97
50) Bromodichloromethane	11.96	83	2638686	225.8098	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M418416.D 8260WTR.M Thu Mar 23 10:19:40 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418416.D Vial: 11
Acq On : 21 Mar 2017 20:12 Operator: TMB
Sample : WG607066-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:38 2017 Quant Results File: 8260WTR.RES

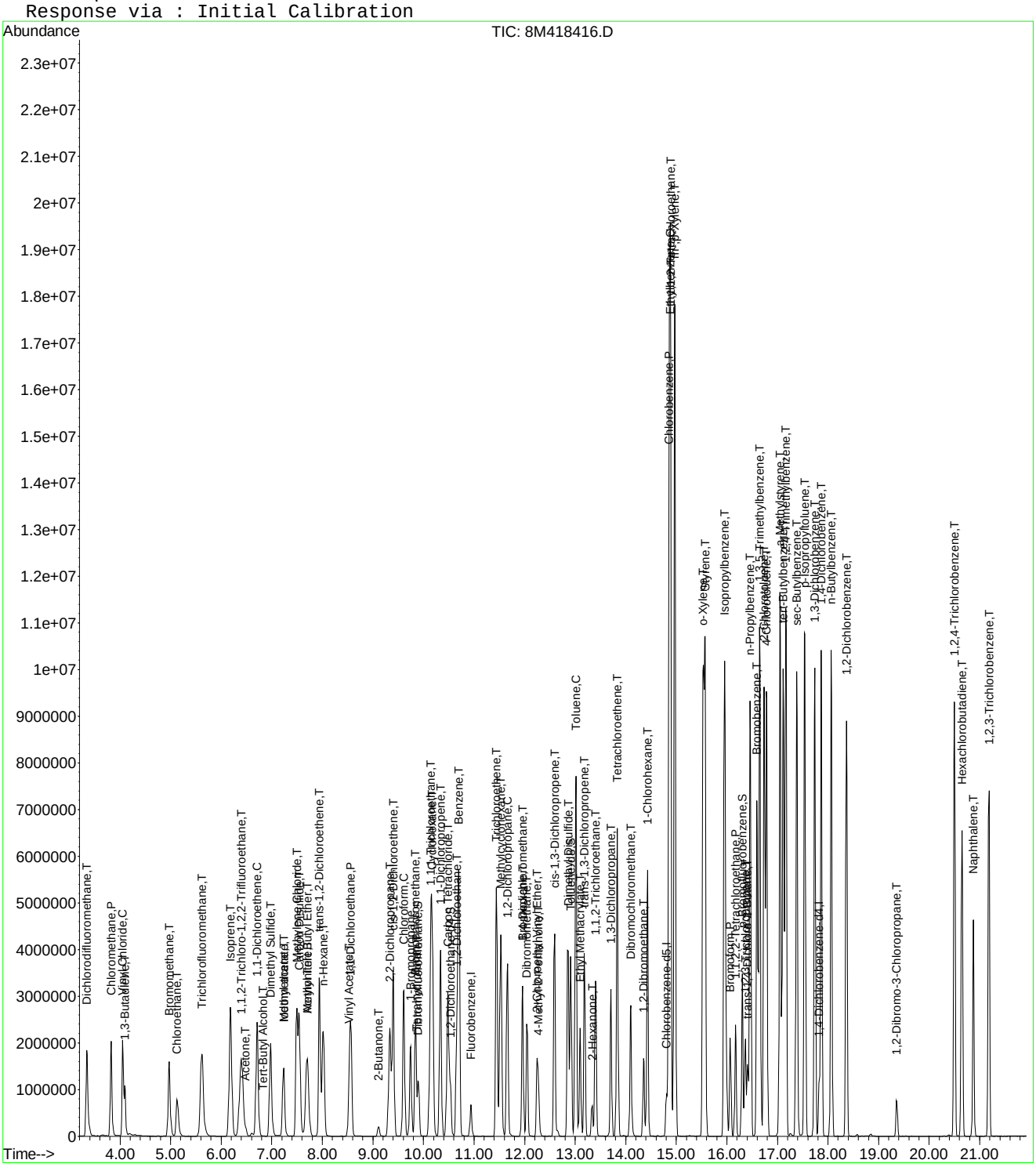
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
51)	1,4-Dioxane	11.96	88	5894	148.3881 ug/L	#	56
52)	Dibromomethane	12.04	93	1034705	233.5899 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.25	63	824539	219.3725 ug/L		99
54)	4-Methyl-2-Pentanone	12.27	58	353091	219.4995 ug/L		97
55)	cis-1,3-Dichloropropene	12.59	75	2990134	220.4572 ug/L		98
56)	Dimethyl Disulfide	12.86	79	1714692	204.9480 ug/L		97
59)	Toluene	13.02	91	7066077	181.0760 ug/L		87
60)	Ethyl Methacrylate	13.10	69	1696639	224.8538 ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	2565952	222.9256 ug/L		97
63)	1,1,2-Trichloroethane	13.40	97	1370694	222.9916 ug/L		99
64)	2-Hexanone	13.34	58	326430	221.5160 ug/L		98
65)	1,3-Dichloropropane	13.71	76	2327428	211.4592 ug/L		99
66)	Tetrachloroethene	13.83	164	1952203	230.8857 ug/L		99
67)	Dibromochloromethane	14.10	129	1918537	199.6557 ug/L		99
68)	1,2-Dibromoethane	14.35	107	1401426	222.2016 ug/L		100
69)	1-Chlorohexane	14.43	91	2769087	208.2186 ug/L		99
70)	Chlorobenzene	14.86	112	6010850	218.8594 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.89	131	2844669	198.8633 ug/L		98
72)	Ethylbenzene	14.88	106	4070062	267.0317 ug/L		54
73)	m-,p-Xylene	14.97	106	7393699	404.4612 ug/L		64
74)	o-Xylene	15.53	106	4210098	232.2508 ug/L		76
75)	Styrene	15.57	104	6305974	215.4872 ug/L		89
76)	Bromoform	16.07	173	1236171	199.7557 ug/L		99
77)	Isopropylbenzene	15.95	105	7963074	181.5702 ug/L		80
79)	1,1,2,2-Tetrachloroethane	16.17	83	1541888	210.8685 ug/L		99
81)	1,2,3-Trichloropropane	16.37	110	447062	214.7564 ug/L	#	27
82)	trans-1,4-Dichloro-2-Buten	16.41	53	356888	208.0817 ug/L	#	27
83)	n-Propylbenzene	16.46	91	8459955	153.0984 ug/L	#	75
84)	Bromobenzene	16.59	156	2759165	225.6095 ug/L		93
85)	1,3,5-Trimethylbenzene	16.65	105	7254610	181.7693 ug/L		82
86)	2-Chlorotoluene	16.74	91	6466926	174.1086 ug/L		80
87)	4-Chlorotoluene	16.78	91	6057890	186.6879 ug/L		82
88)	a-Methylstyrene	17.05	118	4659021	208.8210 ug/L		95
89)	tert-Butylbenzene	17.11	134	2083296	236.3561 ug/L	#	57
90)	1,2,4-Trimethylbenzene	17.16	105	7391093	178.1297 ug/L		77
91)	sec-Butylbenzene	17.38	105	8237032	166.2708 ug/L	#	80
92)	p-Isopropyltoluene	17.54	119	7367846	181.5655 ug/L		81
93)	1,3-Dichlorobenzene	17.74	146	5011738	205.5815 ug/L		91
94)	1,4-Dichlorobenzene	17.87	146	4942655	201.2974 ug/L		91
95)	n-Butylbenzene	18.06	91	6793595	172.5518 ug/L	#	83
96)	1,2-Dichlorobenzene	18.36	146	4482617	211.0254 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.35	75	255085	222.2866 ug/L		95
98)	1,2,4-Trichlorobenzene	20.50	180	3571512	224.7906 ug/L		98
99)	Hexachlorobutadiene	20.65	225	1747005	224.8995 ug/L		98
100)	Naphthalene	20.87	128	4341381	206.8852 ug/L		96
101)	1,2,3-Trichlorobenzene	21.18	180	2943616	224.0379 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M418416.D 8260WTR.M Thu Mar 23 10:19:40 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418416.D Vial: 11
Acq On : 21 Mar 2017 20:12 Operator: TMB
Sample : WG607066-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418417.D Vial: 12
Acq On : 21 Mar 2017 20:43 Operator: TMB
Sample : WG607066-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:42 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	854626	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	660685	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	353320	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	1512153	156.0106	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 624.04%#			
43) 1,2-Dichloroethane-d4	10.54	65	1276620	151.9858	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 607.96%#			
58) Toluene-d8	12.91	98	5029150	151.3246	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 605.28%#			
80) p-Bromofluorobenzene	16.31	95	2183654	163.3241	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 653.28%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	3041	0.2271	ug/L	83
3) Chloromethane	3.82	50	63366	3.9057	ug/L	100
4) Vinyl Chloride	4.05	62	2778	0.1831	ug/L	95
5) 1,3-Butadiene	4.09	54	906476	Below Cal		99
6) Bromomethane	4.96	94	161588	21.0290	ug/L	100
8) Trichlorofluoromethane	5.61	101	2263	0.1379	ug/L #	90
9) Diethyl ether	6.14	59	1714293	322.8862	ug/L	99
10) Isoprene	6.18	67	4082432	321.8604	ug/L	99
11) Acrolein	6.38	56	100475	148.0044	ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.38	101	2544	0.2881	ug/L	94
13) Acetone	6.48	43	298562	292.1251	ug/L	99
14) 1,1-Dichloroethene	6.71	61	1663	0.1350	ug/L	76
15) Tert-Butyl Alcohol	6.82	59	206454	634.6694	ug/L	97
16) Dimethyl Sulfide	6.98	62	2746064	313.5344	ug/L	100
17) Iodomethane	7.23	142	2970232	287.4443	ug/L	100
18) Methyl acetate	7.24	43	915640	313.2951	ug/L	98
19) Methylene Chloride	7.49	84	2632	0.2805	ug/L	89
20) Carbon Disulfide	7.54	76	7835015	279.1833	ug/L	93
21) Acrylonitrile	7.67	53	209981	146.8897	ug/L	95
22) Methyl Tert Butyl Ether	7.70	73	2842	0.1574	ug/L #	58
23) trans-1,2-Dichloroethene	7.94	61	3557	0.2977	ug/L	98
24) n-Hexane	8.01	57	3144914	310.7680	ug/L	100
25) Diisopropyl ether	8.35	45	6705988	293.8725	ug/L	96
26) Vinyl Acetate	8.53	43	2581492	287.4541	ug/L	99
28) Ethyl-Tert-Butyl ether	8.93	59	6597567	301.9625	ug/L	96
29) 2-Butanone	9.11	43	495417	300.8567	ug/L	99
30) Propionitrile	9.22	54	155427	318.8431	ug/L	100
32) cis-1,2-Dichloroethene	9.40	96	1359	0.1340	ug/L	96
33) Chloroform	9.61	83	3175	0.1758	ug/L	92
34) 1-Bromopropane	9.75	122	656770	339.0302	ug/L	99
35) Bromochloromethane	9.85	130	717	0.1316	ug/L #	46
36) Tetrahydrofuran	9.86	42	312299	298.0038	ug/L	98
39) Cyclohexane	10.17	56	4064272	316.6172	ug/L	99
40) 1,1-Dichloropropene	10.34	75	2189	0.1716	ug/L #	73
41) Tert-Amyl-Methyl ether	10.43	73	6168941	302.5493	ug/L	98
45) 1,2-Dichloroethane	10.65	62	1377	0.1351	ug/L #	42
46) Benzene	10.69	78	5861	0.1593	ug/L #	84
47) Trichloroethene	11.45	130	1789	0.1819	ug/L	85
48) Methylcyclohexane	11.53	83	4736401	320.4638	ug/L	98
51) 1,4-Dioxane	11.94	88	23567	579.8580	ug/L	92

(#) = qualifier out of range (m) = manual integration
8M418417.D 8260WTR.M Thu Mar 23 10:19:44 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418417.D Vial: 12
Acq On : 21 Mar 2017 20:43 Operator: TMB
Sample : WG607066-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:42 2017 Quant Results File: 8260WTR.RES

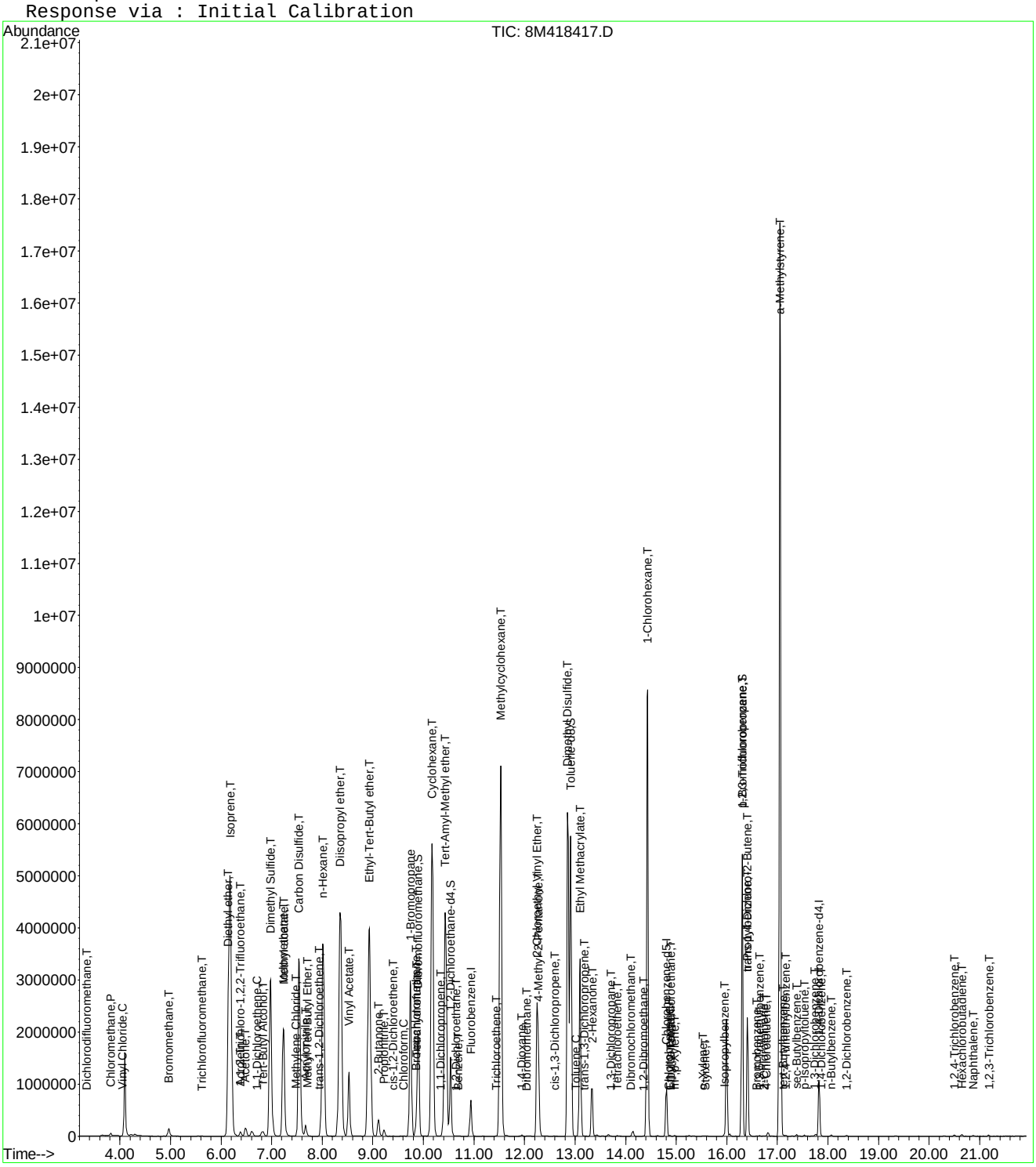
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

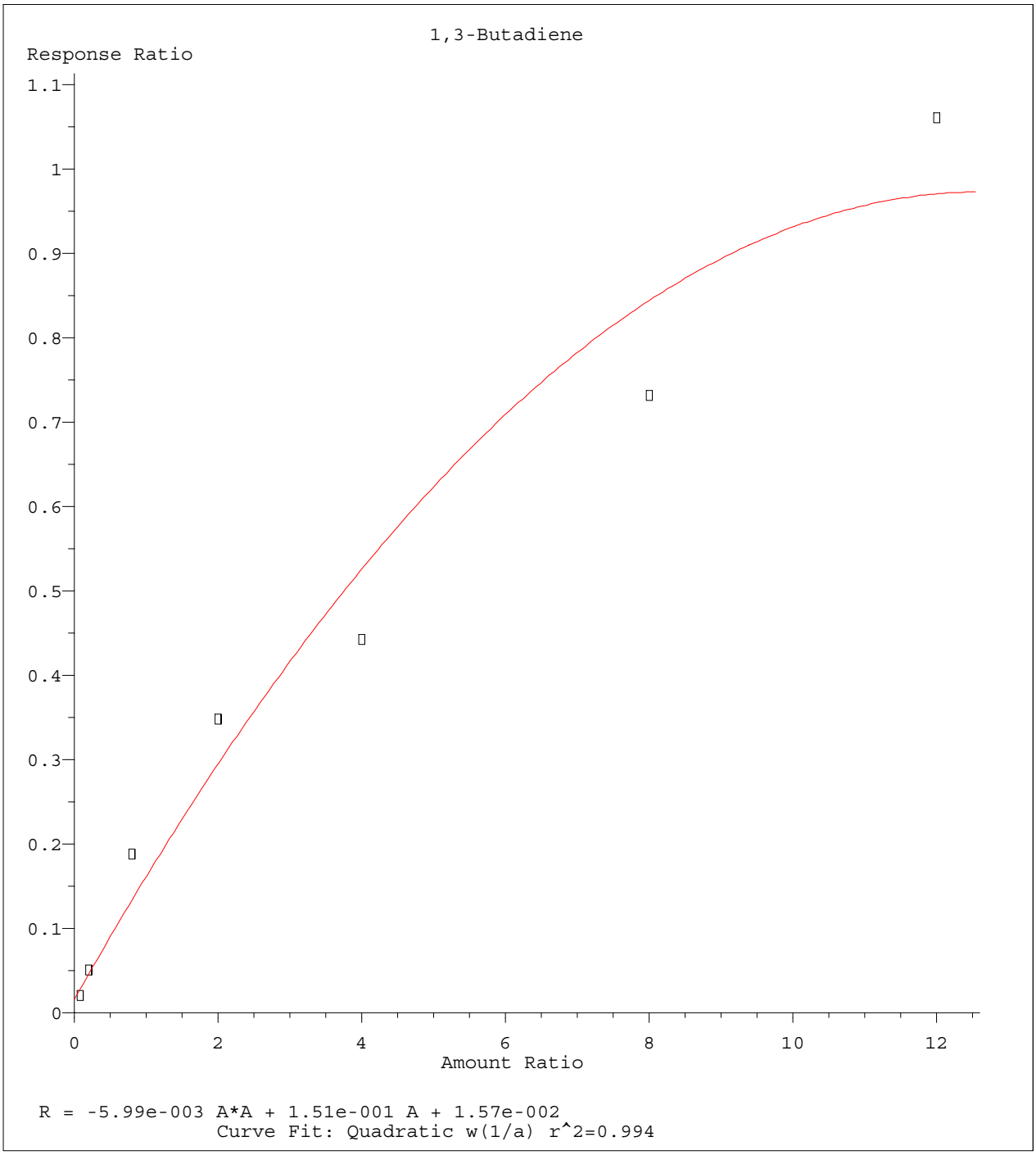
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
52)	Dibromomethane	12.05	93	756	0.1668	ug/L	#	58
53)	2-Chloroethyl Vinyl Ether	12.25	63	1248752	324.6950	ug/L		98
54)	4-Methyl-2-Pentanone	12.27	58	529345	321.5986	ug/L		95
55)	cis-1,3-Dichloropropene	12.59	75	1919	0.1383	ug/L		99
56)	Dimethyl Disulfide	12.85	79	2633329	306.1987	ug/L		95
59)	Toluene	13.02	91	8233	0.2095	ug/L		94
60)	Ethyl Methacrylate	13.10	69	2538669	334.1087	ug/L		99
62)	trans-1,3-Dichloropropene	13.18	75	2586	0.2231	ug/L		90
64)	2-Hexanone	13.34	58	478049	322.1502	ug/L		97
65)	1,3-Dichloropropane	13.71	76	1415	0.1277	ug/L	#	1
66)	Tetrachloroethene	13.83	164	2216	0.2603	ug/L		96
67)	Dibromochloromethane	14.10	129	712	0.2824	ug/L		81
68)	1,2-Dibromoethane	14.35	107	991	0.1560	ug/L		96
69)	1-Chlorohexane	14.43	91	4277378	319.3976	ug/L		98
70)	Chlorobenzene	14.86	112	4861	0.1758	ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.89	131	496	0.2331	ug/L		95
72)	Ethylbenzene	14.88	106	2477	0.1614	ug/L		79
73)	m-,p-Xylene	14.97	106	6515	0.3539	ug/L		87
74)	o-Xylene	15.53	106	2539	0.1391	ug/L		89
75)	Styrene	15.57	104	4497	0.1526	ug/L		99
77)	Isopropylbenzene	15.95	105	29050	0.6578	ug/L		94
81)	1,2,3-Trichloropropane	16.31	110	1108	0.5652	ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.41	53	495562	306.8032	ug/L	#	1
83)	n-Propylbenzene	16.41	91	145385	2.7937	ug/L	#	62
84)	Bromobenzene	16.60	156	1961	0.1703	ug/L		82
85)	1,3,5-Trimethylbenzene	16.65	105	9752	0.2595	ug/L		100
86)	2-Chlorotoluene	16.74	91	7859	0.2247	ug/L		97
87)	4-Chlorotoluene	16.78	91	8039	0.2631	ug/L		98
88)	a-Methylstyrene	17.05	118	6420210	305.5545	ug/L		87
89)	tert-Butylbenzene	17.11	134	3601	0.4338	ug/L	#	1
90)	1,2,4-Trimethylbenzene	17.16	105	11113	0.2844	ug/L		88
91)	sec-Butylbenzene	17.38	105	34899	0.7480	ug/L		94
92)	p-Isopropyltoluene	17.54	119	17616	0.4610	ug/L		95
93)	1,3-Dichlorobenzene	17.74	146	6996	0.3047	ug/L		99
94)	1,4-Dichlorobenzene	17.87	146	7409	0.3204	ug/L	#	1
95)	n-Butylbenzene	18.06	91	21425	0.5778	ug/L		96
96)	1,2-Dichlorobenzene	18.36	146	4970	0.2484	ug/L		90
98)	1,2,4-Trichlorobenzene	20.50	180	10325	0.6900	ug/L		96
99)	Hexachlorobutadiene	20.65	225	9984	1.3648	ug/L		97
100)	Naphthalene	20.88	128	13994	0.7081	ug/L		91
101)	1,2,3-Trichlorobenzene	21.19	180	9502	0.7679	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M418417.D 8260WTR.M Thu Mar 23 10:19:44 2017 Page 2

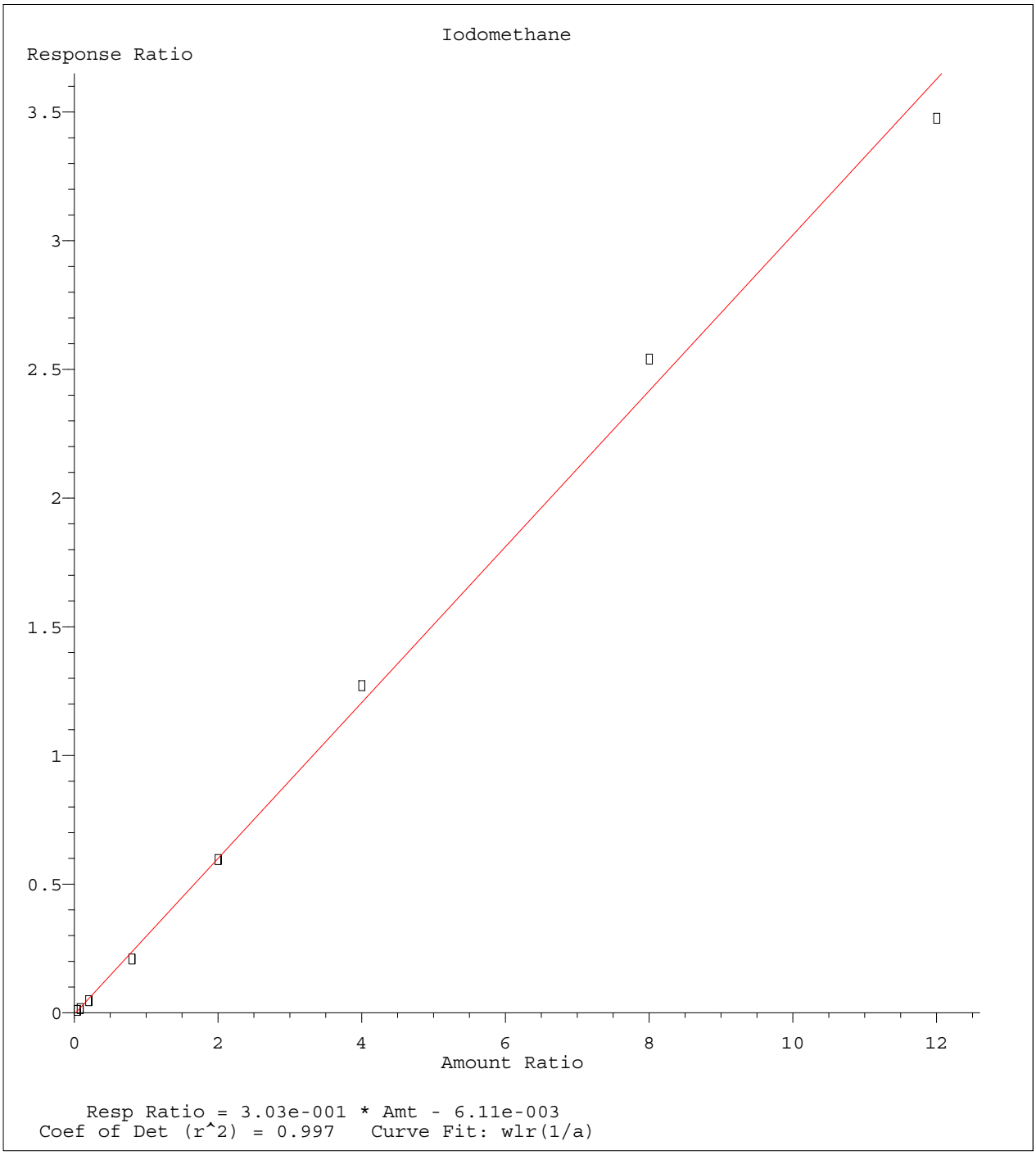
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418417.D Vial: 12
Acq On : 21 Mar 2017 20:43 Operator: TMB
Sample : WG607066-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD81040 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration

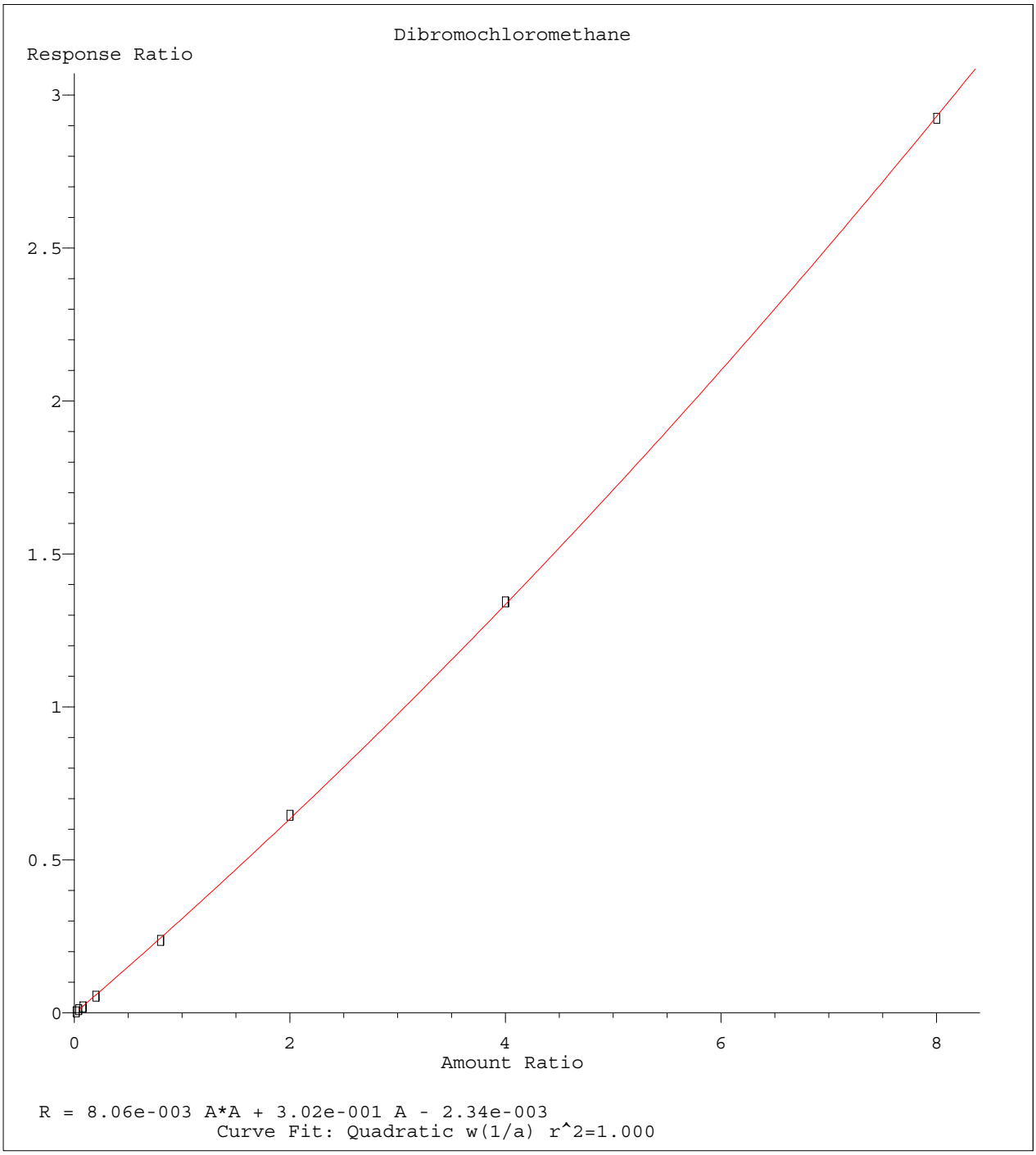




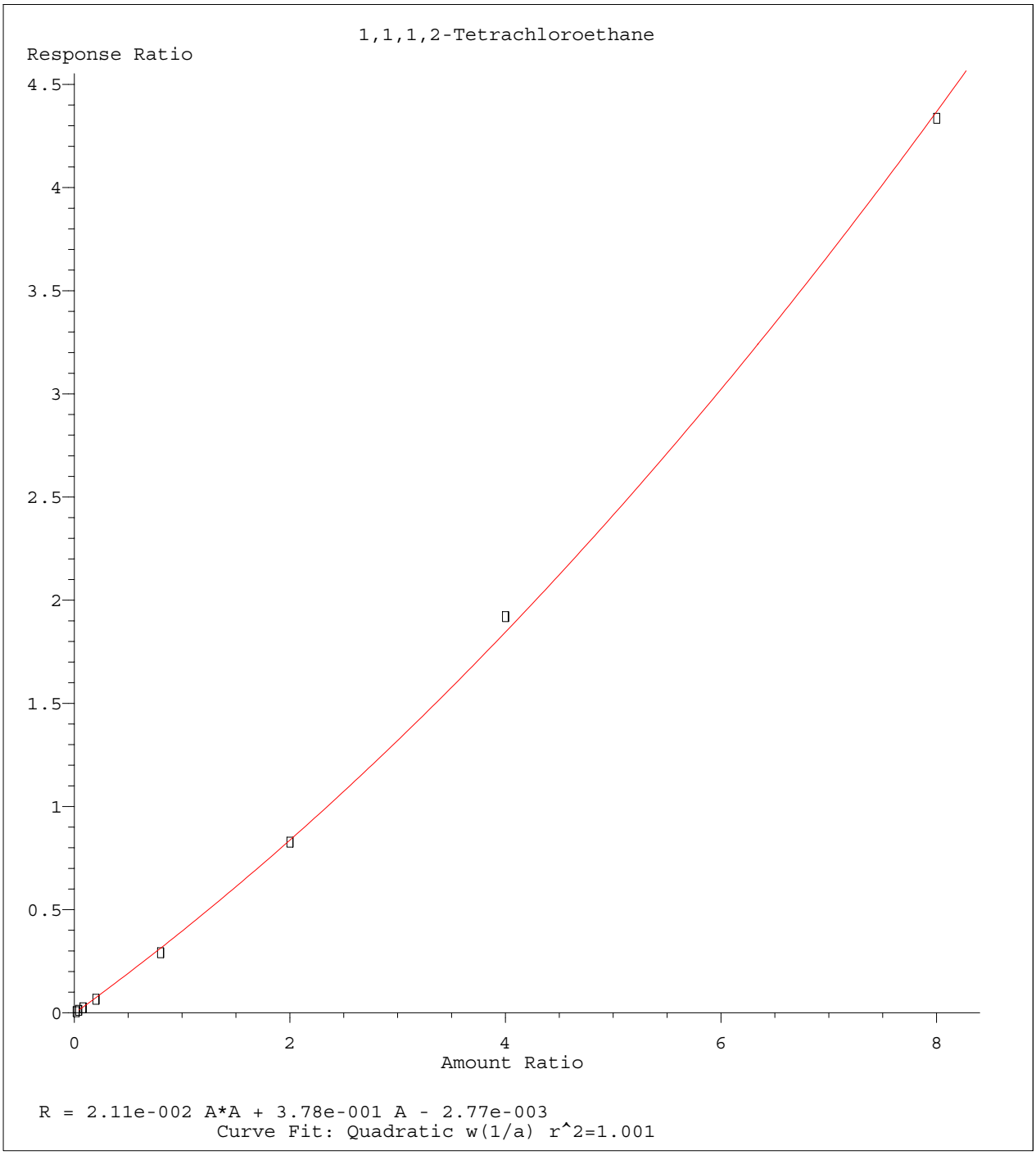
Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



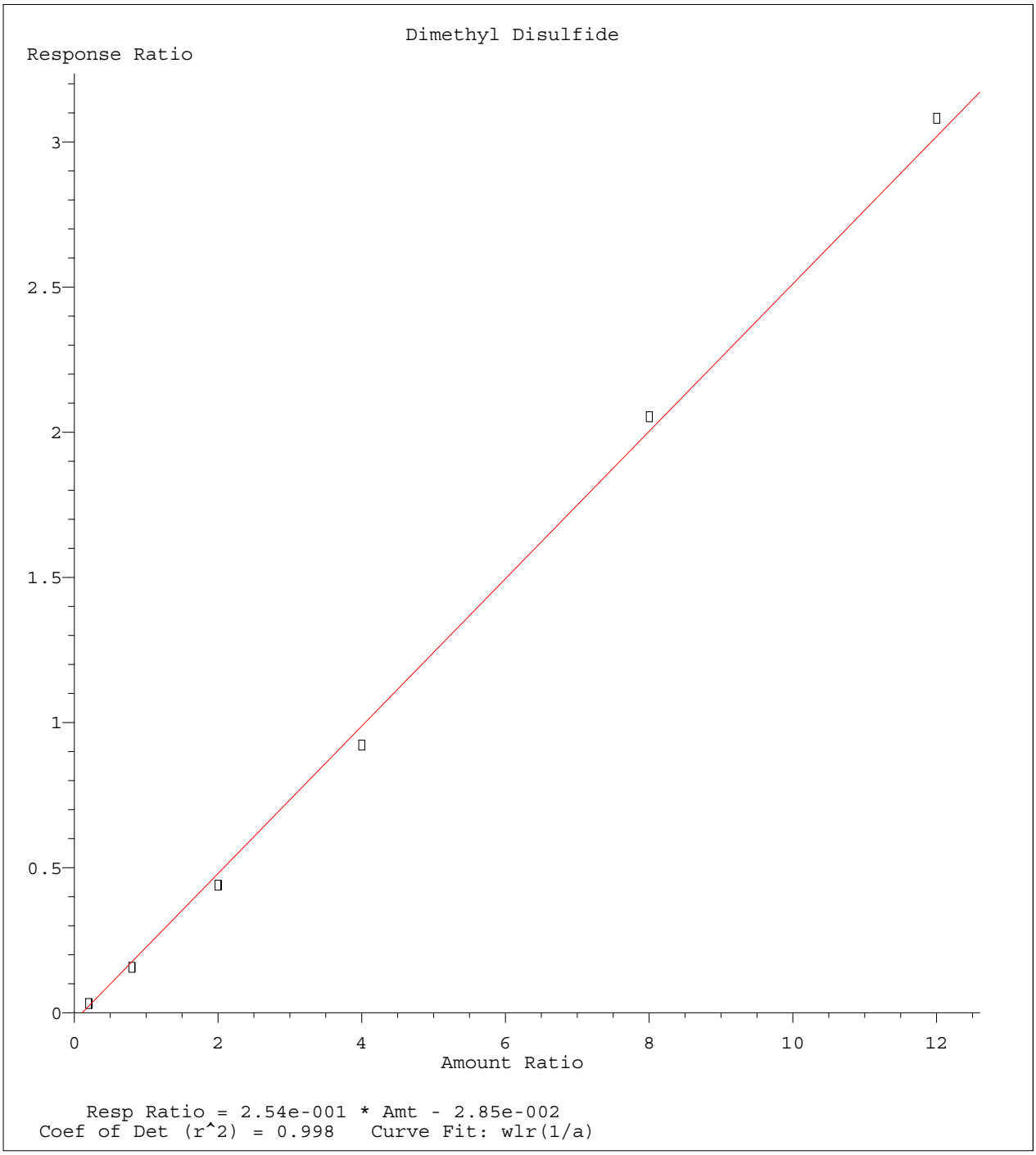
Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



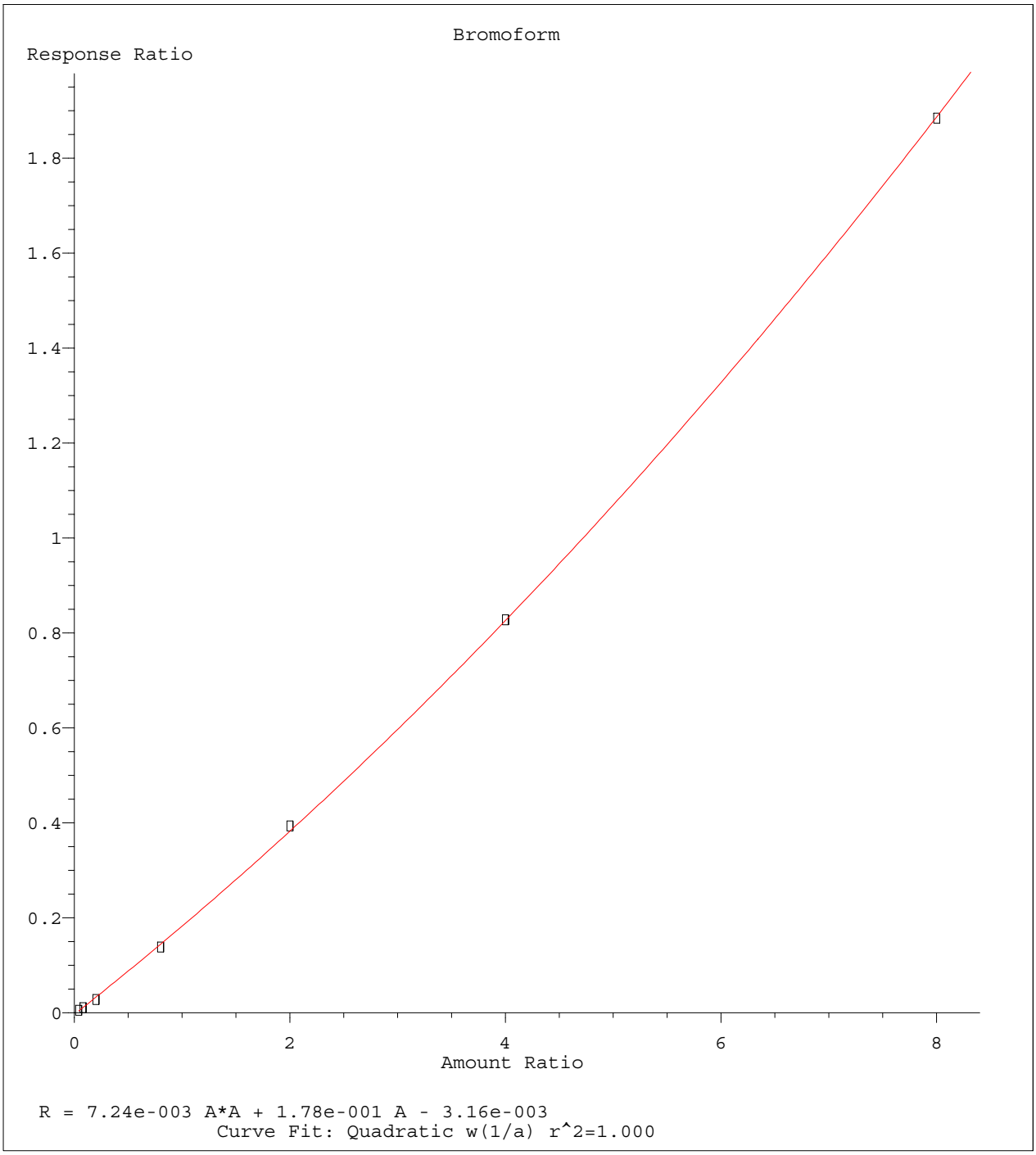
Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017



Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Mar 23 10:18:22 2017

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:53 2017 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.94	96	801802	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.81	117	627951	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.83	152	347482	25.00	ug/L	0.00
System Monitoring Compounds						
37) Dibromofluoromethane	9.90	111	212466	23.3645	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.44%			
43) 1,2-Dichloroethane-d4	10.54	65	184451	23.4062	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.64%			
58) Toluene-d8	12.92	98	737309	23.3417	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.36%			
80) p-Bromofluorobenzene	16.31	95	296744	22.5675	ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.34	85	653232	52.0073	ug/L	100
3) Chloromethane	3.82	50	703462	46.2162	ug/L	99
4) Vinyl Chloride	4.05	62	607302	42.6707	ug/L	99
5) 1,3-Butadiene	4.10	54	226310	47.5605	ug/L	99
6) Bromomethane	4.96	94	275374	38.1981	ug/L	99
7) Chloroethane	5.13	64	299125	51.8176	ug/L	100
8) Trichlorofluoromethane	5.62	101	754061	48.9605	ug/L	100
9) Diethyl ether	6.14	59	468990	94.1536	ug/L	99
10) Isoprene	6.18	67	627437	52.7263	ug/L	100
11) Acrolein	6.38	56	42345	66.4856	ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.40	101	442568	53.4224	ug/L	99
13) Acetone	6.48	43	45473	47.4239	ug/L	99
14) 1,1-Dichloroethene	6.71	61	560269	48.4665	ug/L	100
15) Tert-Butyl Alcohol	6.83	59	58214	190.7483	ug/L	99
16) Dimethyl Sulfide	6.97	62	422983	51.4762	ug/L	99
17) Iodomethane	7.23	142	833211	86.2998	ug/L	99
18) Methyl acetate	7.24	43	147060	53.6330	ug/L	99
19) Methylene Chloride	7.50	84	430498	48.9068	ug/L	98
20) Carbon Disulfide	7.54	76	1154395	43.8443	ug/L	100
21) Acrylonitrile	7.67	53	69546	51.8552	ug/L	98
22) Methyl Tert Butyl Ether	7.70	73	832099	49.1106	ug/L	98
23) trans-1,2-Dichloroethene	7.94	61	541199	48.2852	ug/L	100
24) n-Hexane	8.01	57	470751	49.5824	ug/L	99
25) Diisopropyl ether	8.36	45	2105023	98.3246	ug/L	100
26) Vinyl Acetate	8.53	43	357461	42.4263	ug/L	100
27) 1,1-Dichloroethane	8.56	63	707513	48.4001	ug/L	99
28) Ethyl-Tert-Butyl ether	8.92	59	1928091	94.0602	ug/L	100
29) 2-Butanone	9.11	43	70687	45.7549	ug/L	98
30) Propionitrile	9.22	54	47069	102.9187	ug/L	100
31) 2,2-Dichloropropane	9.34	77	597247	45.7988	ug/L	99
32) cis-1,2-Dichloroethene	9.40	96	470265	49.4331	ug/L	98
33) Chloroform	9.61	83	784684	46.3141	ug/L	100
34) 1-Bromopropane	9.75	122	118573	65.2409	ug/L	99
35) Bromochloromethane	9.84	130	252702	49.4505	ug/L	99
36) Tetrahydrofuran	9.87	42	94102	95.7104	ug/L	98
38) 1,1,1-Trichloroethane	10.14	97	720111	51.6743	ug/L	100
39) Cyclohexane	10.18	56	539887	44.8295	ug/L	99
40) 1,1-Dichloropropene	10.34	75	585530	48.9247	ug/L	99
41) Tert-Amyl-Methyl ether	10.43	73	1896188	99.1233	ug/L	100
42) Carbon Tetrachloride	10.49	117	656573	52.6576	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M418420.D 8260WTR.M Thu Mar 23 10:19:56 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19:53 2017 Quant Results File: 8260WTR.RES

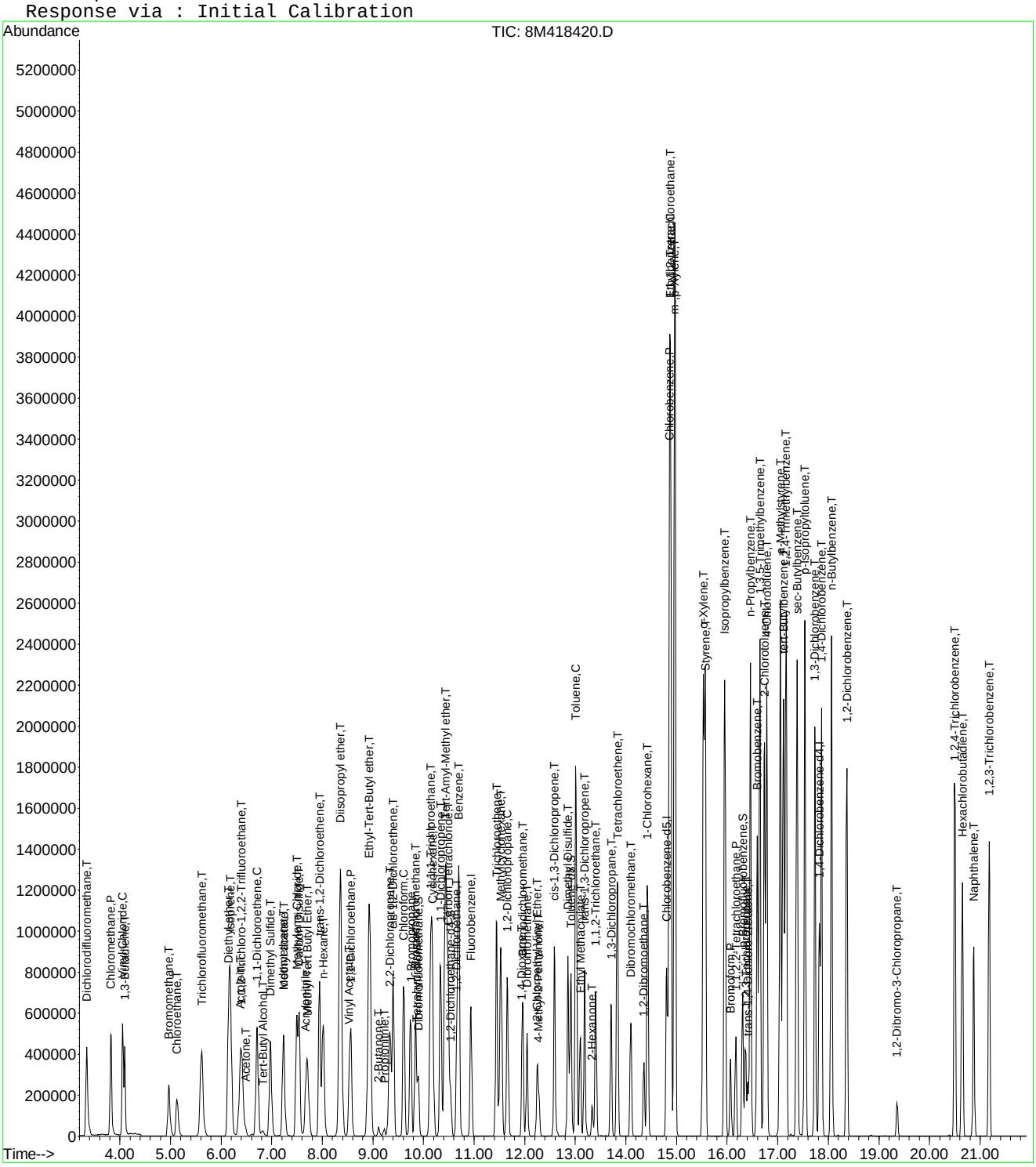
Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.65	62	464175	48.5264	ug/L	100
46)	Benzene	10.69	78	1685447	48.8376	ug/L	100
47)	Trichloroethene	11.45	130	459220	49.7638	ug/L	100
48)	Methylcyclohexane	11.53	83	657678	47.4300	ug/L	99
49)	1,2-Dichloropropane	11.65	63	387925	48.8878	ug/L	100
50)	Bromodichloromethane	11.95	83	556771	49.6328	ug/L	99
51)	1,4-Dioxane	11.94	88	6615	173.4827	ug/L	89
52)	Dibromomethane	12.05	93	222923	52.4239	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.24	63	181816	50.3896	ug/L	99
54)	4-Methyl-2-Pentanone	12.27	58	75335	48.7844	ug/L	97
55)	cis-1,3-Dichloropropene	12.58	75	673080	51.6937	ug/L	99
56)	Dimethyl Disulfide	12.85	79	354985	46.3980	ug/L	98
59)	Toluene	13.01	91	1808929	48.4332	ug/L	100
60)	Ethyl Methacrylate	13.10	69	385866	53.4302	ug/L	98
62)	trans-1,3-Dichloropropene	13.18	75	531028	48.2024	ug/L	100
63)	1,1,2-Trichloroethane	13.40	97	284561	48.3685	ug/L	100
64)	2-Hexanone	13.33	58	69958	49.6012	ug/L	99
65)	1,3-Dichloropropane	13.71	76	516975	49.0749	ug/L	100
66)	Tetrachloroethene	13.84	164	396503	48.9957	ug/L	100
67)	Dibromochloromethane	14.09	129	376425	47.4020	ug/L	99
68)	1,2-Dibromoethane	14.35	107	294235	48.7428	ug/L	98
69)	1-Chlorohexane	14.42	91	625773	49.1631	ug/L	100
70)	Chlorobenzene	14.86	112	1280001	48.6944	ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.88	131	483396	46.3390	ug/L	100
72)	Ethylbenzene	14.88	106	754815	51.7418	ug/L	99
73)	m-,p-Xylene	14.96	106	1798995	102.8217	ug/L	100
74)	o-Xylene	15.53	106	847920	48.8719	ug/L	100
75)	Styrene	15.57	104	1465666	52.3292	ug/L	98
76)	Bromoform	16.07	173	232001	48.4254	ug/L	99
77)	Isopropylbenzene	15.95	105	2098312	49.9889	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.17	83	321369	47.4525	ug/L	99
81)	1,2,3-Trichloropropane	16.37	110	96471	50.0346	ug/L	90
82)	trans-1,4-Dichloro-2-Buten	16.41	53	61346	38.6175	ug/L	58
83)	n-Propylbenzene	16.46	91	2448771	47.8461	ug/L	100
84)	Bromobenzene	16.60	156	551938	48.7266	ug/L	100
85)	1,3,5-Trimethylbenzene	16.65	105	1853525	50.1419	ug/L	100
86)	2-Chlorotoluene	16.74	91	1666013	48.4280	ug/L	95
87)	4-Chlorotoluene	16.78	91	1456305	48.4555	ug/L	100
88)	a-Methylstyrene	17.05	118	1084857	52.4986	ug/L	99
89)	tert-Butylbenzene	17.11	134	395877	48.4922	ug/L	98
90)	1,2,4-Trimethylbenzene	17.16	105	1927292	50.1500	ug/L	100
91)	sec-Butylbenzene	17.38	105	2279854	49.6876	ug/L	100
92)	p-Isopropyltoluene	17.54	119	1923816	51.1861	ug/L	100
93)	1,3-Dichlorobenzene	17.73	146	1091346	48.3341	ug/L	99
94)	1,4-Dichlorobenzene	17.87	146	1091510	47.9956	ug/L	100
95)	n-Butylbenzene	18.06	91	1817919	49.8529	ug/L	100
96)	1,2-Dichlorobenzene	18.36	146	960441	48.8168	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.36	75	52166	49.0808	ug/L	97
98)	1,2,4-Trichlorobenzene	20.50	180	704275	47.8591	ug/L	100
99)	Hexachlorobutadiene	20.65	225	337004	46.8409	ug/L	99
100)	Naphthalene	20.88	128	957287	49.2538	ug/L	100
101)	1,2,3-Trichlorobenzene	21.18	180	585339	48.0998	ug/L	100

(#) = qualifier out of range (m) = manual integration
8M418420.D 8260WTR.M Thu Mar 23 10:19:56 2017 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 10:19 2017 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Initial Calibration



Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	50.0000	52.0073	-4.0	92	0.00
3	P	Chloromethane	50.0000	46.2162	7.6	92	-0.01
4	C	Vinyl Chloride	50.0000	42.6707	14.7	87	0.00
5	T	1,3-Butadiene	50.0000	47.5605	4.9	79	0.00
6	T	Bromomethane	50.0000	38.1981	23.6	74	-0.01
7	T	Chloroethane	50.0000	51.8176	-3.6	98	0.00
8	T	Trichlorofluoromethane	50.0000	48.9605	2.1	93	0.00
9	T	Diethyl ether	100.0000	94.1536	5.8	90	0.00
10	T	Isoprene	50.0000	52.7263	-5.5	104	0.00
11	T	Acrolein	50.0000	66.4856	-33.0#	126	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.4224	-6.8	100	0.00
13	T	Acetone	50.0000	47.4239	5.2	91	0.00
14	C	1,1-Dichloroethene	50.0000	48.4665	3.1	93	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.7483	4.6	88	0.01
16	T	Dimethyl Sulfide	50.0000	51.4762	-3.0	101	-0.01
17	T	Iodomethane	50.0000	86.2998	-72.6#	170	0.00
18	T	Methyl acetate	50.0000	53.6330	-7.3	106	0.00
19	T	Methylene Chloride	50.0000	48.9068	2.2	95	0.00
20	T	Carbon Disulfide	50.0000	43.8443	12.3	84	0.00
21	T	Acrylonitrile	50.0000	51.8552	-3.7	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.1106	1.8	91	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.2852	3.4	95	0.00
24	T	n-Hexane	50.0000	49.5824	0.8	98	-0.01
25	T	Diisopropyl ether	100.0000	98.3246	1.7	94	0.00
26	T	Vinyl Acetate	50.0000	42.4263	15.1	86	0.00
27	P	1,1-Dichloroethane	50.0000	48.4001	3.2	93	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	94.0602	5.9	88	-0.01
29	T	2-Butanone	50.0000	45.7549	8.5	89	0.00
30	T	Propionitrile	100.0000	102.9187	-2.9	96	0.00
31	T	2,2-Dichloropropane	50.0000	45.7988	8.4	91	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.4331	1.1	95	0.00
33	C	Chloroform	50.0000	46.3141	7.4	96	0.00
34		1-Bromopropane	50.0000	65.2409	-30.5#	126	0.00
35	T	Bromochloromethane	50.0000	49.4505	1.1	93	0.00
36	T	Tetrahydrofuran	100.0000	95.7104	4.3	91	0.00
37	S	Dibromofluoromethane	25.0000	23.3645	6.5	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.6743	-3.3	97	0.00
39	T	Cyclohexane	50.0000	44.8295	10.3	87	0.00
40	T	1,1-Dichloropropene	50.0000	48.9247	2.2	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.1233	0.9	92	0.00
42	T	Carbon Tetrachloride	50.0000	52.6576	-5.3	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.4062	6.4	93	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.61#
45	T	1,2-Dichloroethane	50.0000	48.5264	2.9	93	-0.01
46	T	Benzene	50.0000	48.8376	2.3	94	0.00
47	T	Trichloroethene	50.0000	49.7638	0.5	94	0.00
48	T	Methylcyclohexane	50.0000	47.4300	5.1	94	0.00
49	C	1,2-Dichloropropane	50.0000	48.8878	2.2	93	0.00
50	T	Bromodichloromethane	50.0000	49.6328	0.7	91	0.00
51	T	1,4-Dioxane	200.0000	173.4827	13.3	73	0.00
52	T	Dibromomethane	50.0000	52.4239	-4.8	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.3896	-0.8	99	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.7844	2.4	94	0.00

(#) = Out of Range
8M418420.D 8260WTR.M Thu Mar 23 10:23:04 2017 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\032117\8M418420.D Vial: 15
Acq On : 21 Mar 2017 22:14 Operator: TMB
Sample : WG607066-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD81038 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 03-21-17 HPMS8
Last Update : Thu Mar 23 10:18:22 2017
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6937	-3.4	96	0.00
56	T	Dimethyl Disulfide	50.0000	46.3980	7.2	98	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	99	0.00
58	S	Toluene-d8	25.0000	23.3417	6.6	95	0.00
59	C	Toluene	50.0000	48.4333	3.1	94	0.00
60	T	Ethyl Methacrylate	50.0000	53.4302	-6.9	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.40#
62	T	trans-1,3-Dichloropropene	50.0000	48.2024	3.6	90	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.3685	3.3	92	0.00
64	T	2-Hexanone	50.0000	49.6012	0.8	95	-0.01
65	T	1,3-Dichloropropane	50.0000	49.0749	1.9	95	0.00
66	T	Tetrachloroethene	50.0000	48.9957	2.0	97	0.00
67	T	Dibromochloromethane	50.0000	47.4020	5.2	92	0.00
68	T	1,2-Dibromoethane	50.0000	48.7428	2.5	92	0.00
69	T	1-Chlorohexane	50.0000	49.1631	1.7	101	-0.01
70	P	Chlorobenzene	50.0000	48.6944	2.6	94	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	46.3390	7.3	92	0.00
72	C	Ethylbenzene	50.0000	51.7418	-3.5	95	0.00
73	T	m-,p-Xylene	100.0000	102.8217	-2.8	96	0.00
74	T	o-Xylene	50.0000	48.8719	2.3	96	0.00
75	T	Styrene	50.0000	52.3292	-4.7	96	0.00
76	P	Bromoform	50.0000	48.4254	3.1	93	0.00
77	T	Isopropylbenzene	50.0000	49.9889	0.0	94	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.4525	5.1	92	0.00
80	S	p-Bromofluorobenzene	25.0000	22.5675	9.7	96	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0346	-0.1	95	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	38.6175	22.8	71	0.00
83	T	n-Propylbenzene	50.0000	47.8461	4.3	93	0.00
84	T	Bromobenzene	50.0000	48.7266	2.5	95	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1419	-0.3	96	0.00
86	T	2-Chlorotoluene	50.0000	48.4280	3.1	95	0.00
87	T	4-Chlorotoluene	50.0000	48.4555	3.1	94	0.00
88	T	a-Methylstyrene	50.0000	52.4986	-5.0	105	0.00
89	T	tert-Butylbenzene	50.0000	48.4922	3.0	96	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1500	-0.3	96	0.00
91	T	sec-Butylbenzene	50.0000	49.6876	0.6	95	0.00
92	T	p-Isopropyltoluene	50.0000	51.1861	-2.4	97	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.3341	3.3	95	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.9956	4.0	96	0.00
95	T	n-Butylbenzene	50.0000	49.8529	0.3	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.8168	2.4	95	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.0808	1.8	92	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.8591	4.3	96	0.00
99	T	Hexachlorobutadiene	50.0000	46.8409	6.3	97	0.00
100	T	Naphthalene	50.0000	49.2538	1.5	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.0998	3.8	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
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