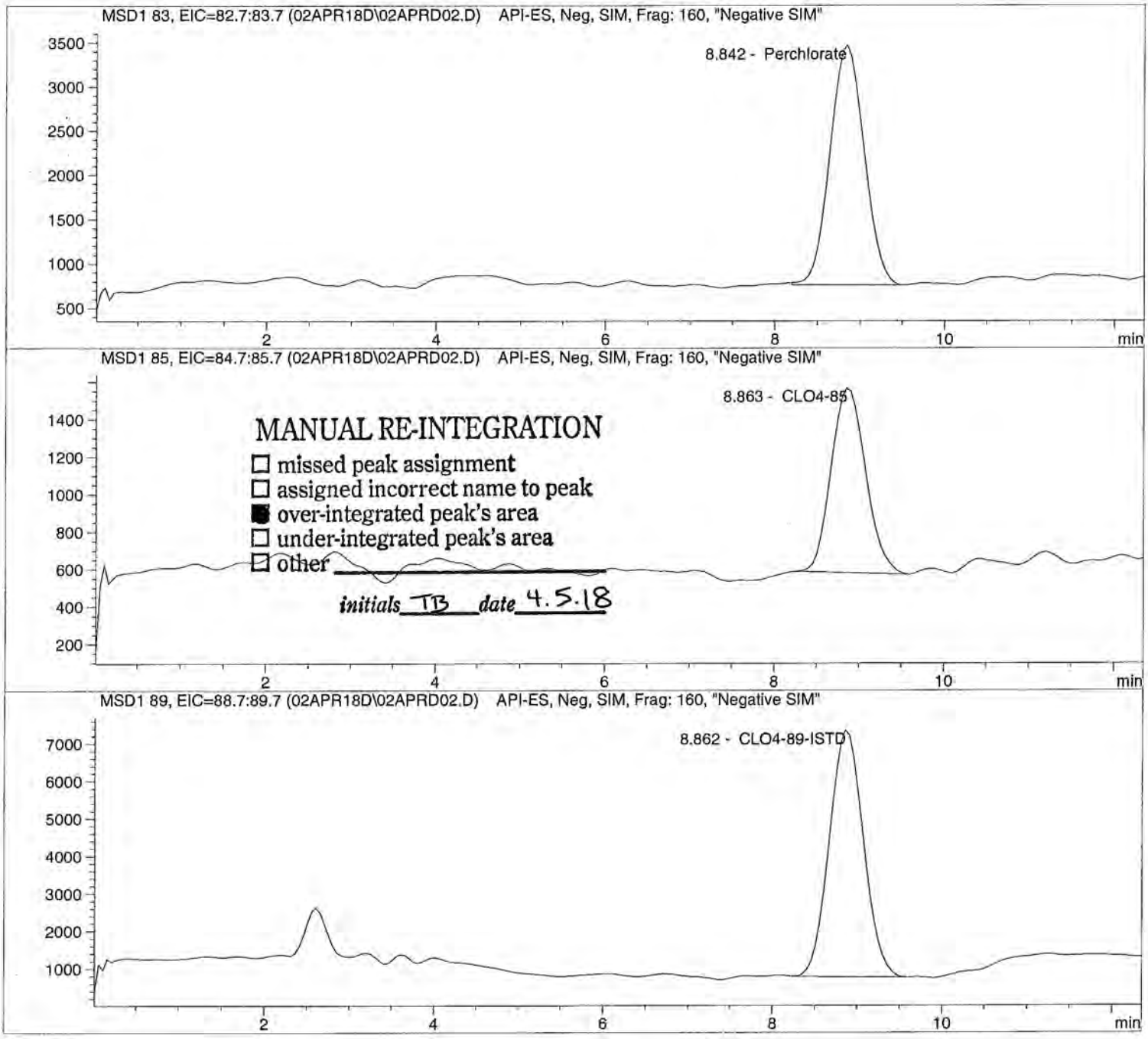
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.842	BBA	75767.3	1.8858	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.863	MM	27891.4	2.0567	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.862	BBA	183981.5	5.0000	CLO4-89-ISTD

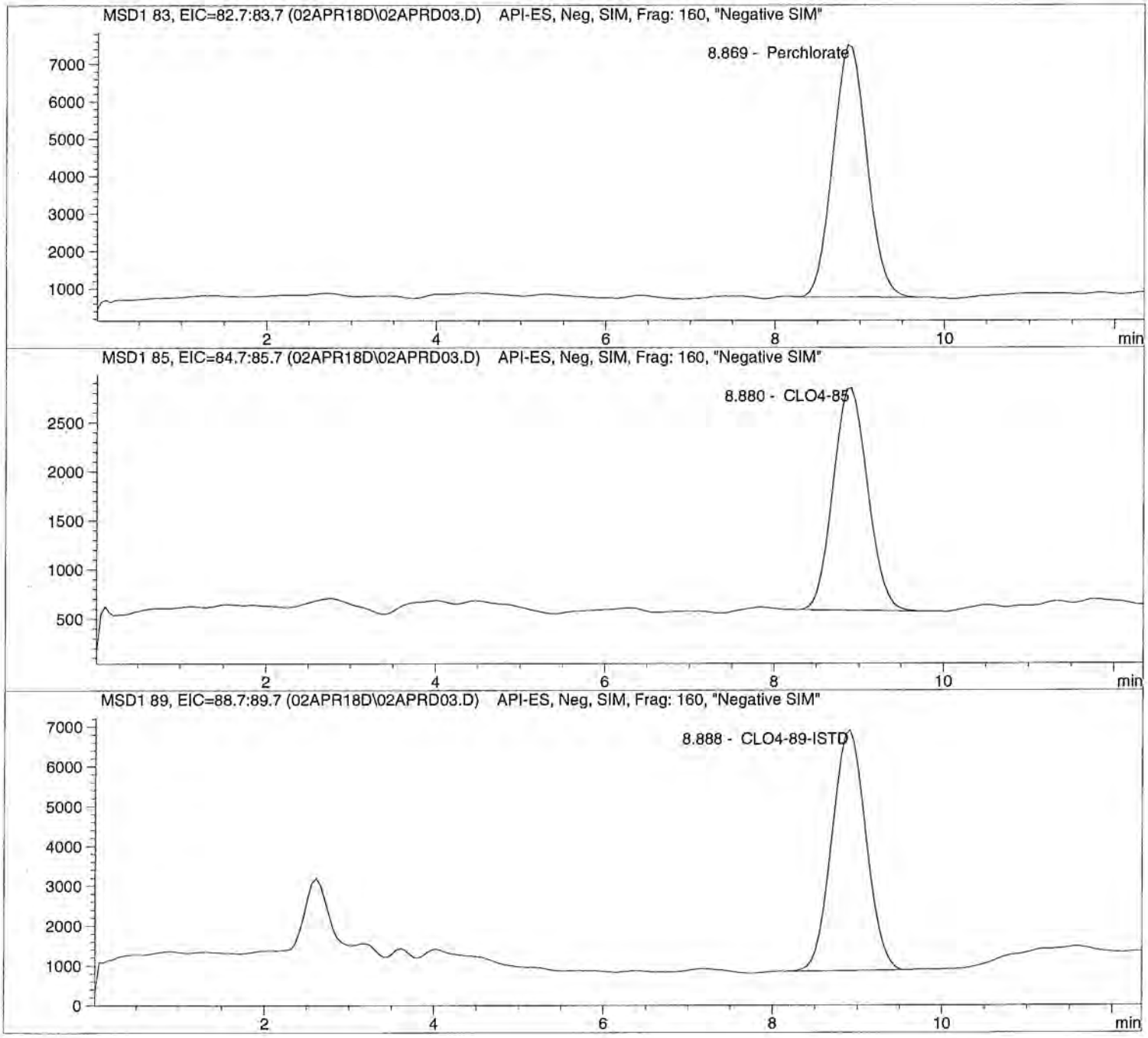
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD03.D Sample Name: ICAL3@ 5.0ug/L

Injection Date:	4/02/2018 09:36:38	Seq Line:	3
Sample Name:	ICAL3@ 5.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD03.D Sample Name: ICAL3@ 5.0ug/L

Injection Date:	4/02/2018 09:36:38	Seq Line:	3
Sample Name:	ICAL3@ 5.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.869	BBA	187507.2	5.0668	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.880	PBA	64046.6	5.3204	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.888	BBA	168695.0	5.0000	CLO4-89-ISTD

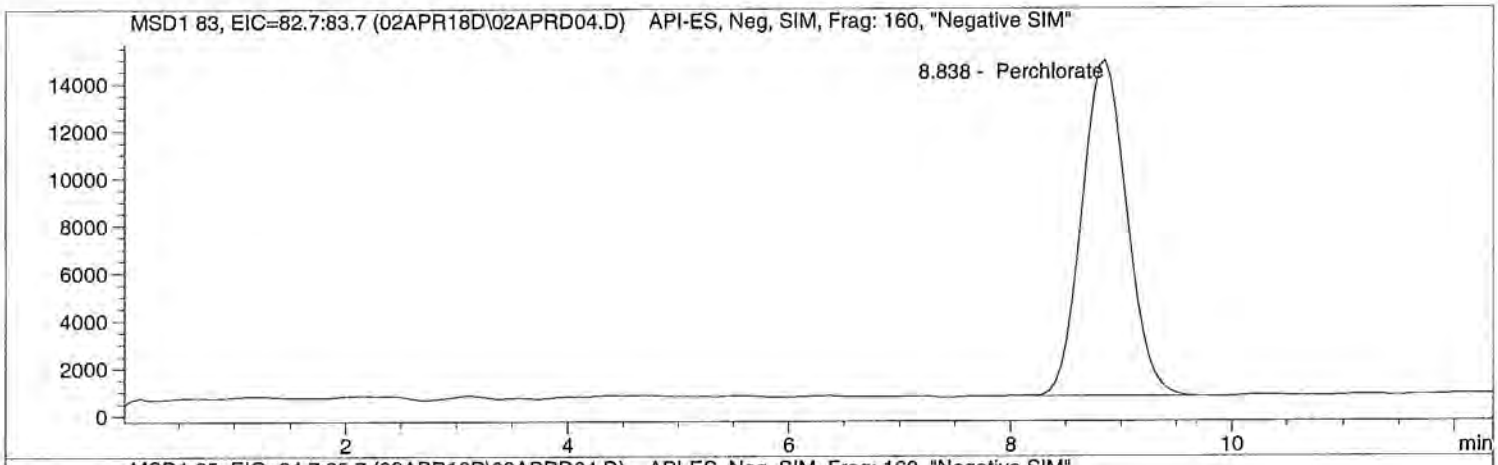
*** End of Report ***

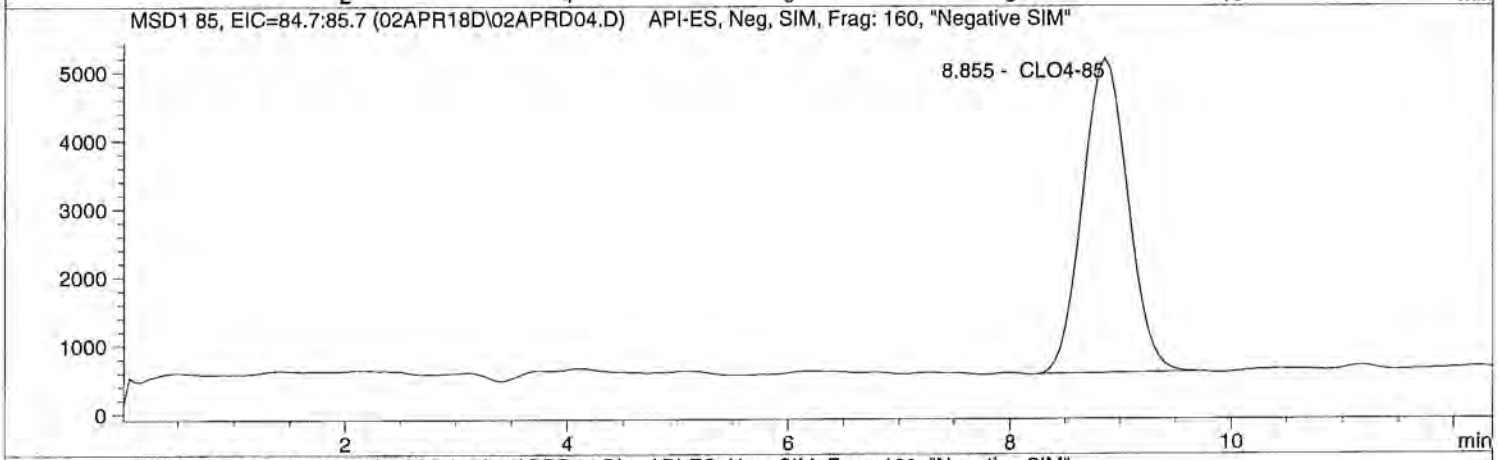
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD04.D Sample Name: ICAL4@ 10.ug/L

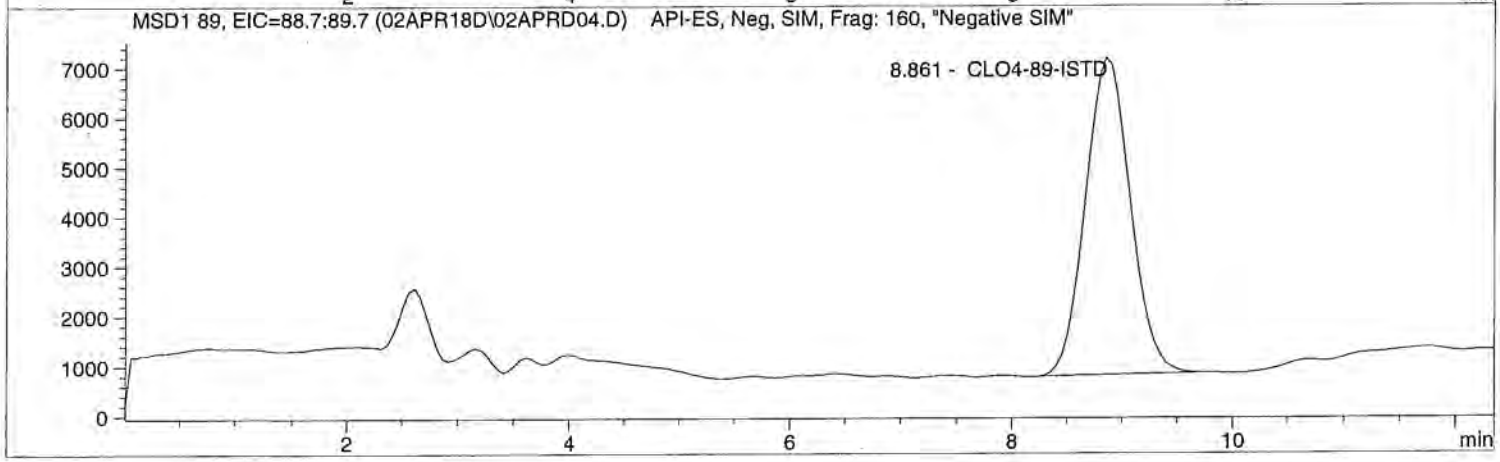
Injection Date:	4/02/2018 09:50:54	Seq Line:	4
Sample Name:	ICAL4@ 10.ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD04.D Sample Name: ICAL4@ 10.ug/L

Injection Date:	4/02/2018 09:50:54	Seq Line:	4
Sample Name:	ICAL4@ 10.ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.838	BBA	400349.0	9.8969	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.855	PBA	132002.1	10.2040	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.861	PBA	179911.2	5.0000	CLO4-89-ISTD

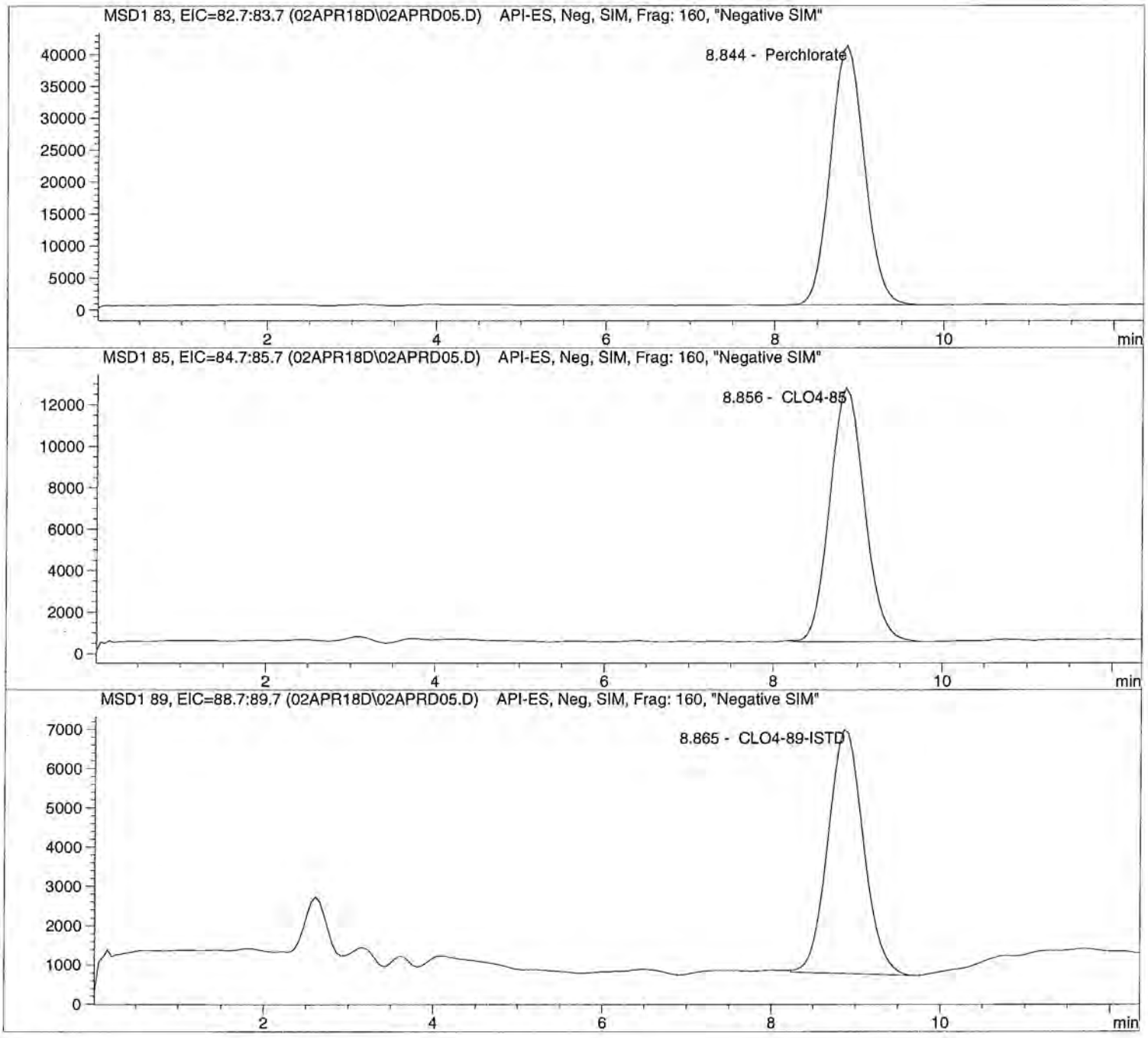
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD05.D Sample Name: ICAL5@ 25.ug/L

Injection Date:	4/02/2018 10:05:03	Seq Line:	5
Sample Name:	ICAL5@ 25.ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD05.D Sample Name: ICAL5@ 25.ug/L

Injection Date:	4/02/2018 10:05:03	Seq Line:	5
Sample Name:	ICAL5@ 25.ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.844	BBA	1133393.5	25.4448	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.856	BBA	349808.1	25.2734	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.865	BBA	181916.8	5.0000	CLO4-89-ISTD

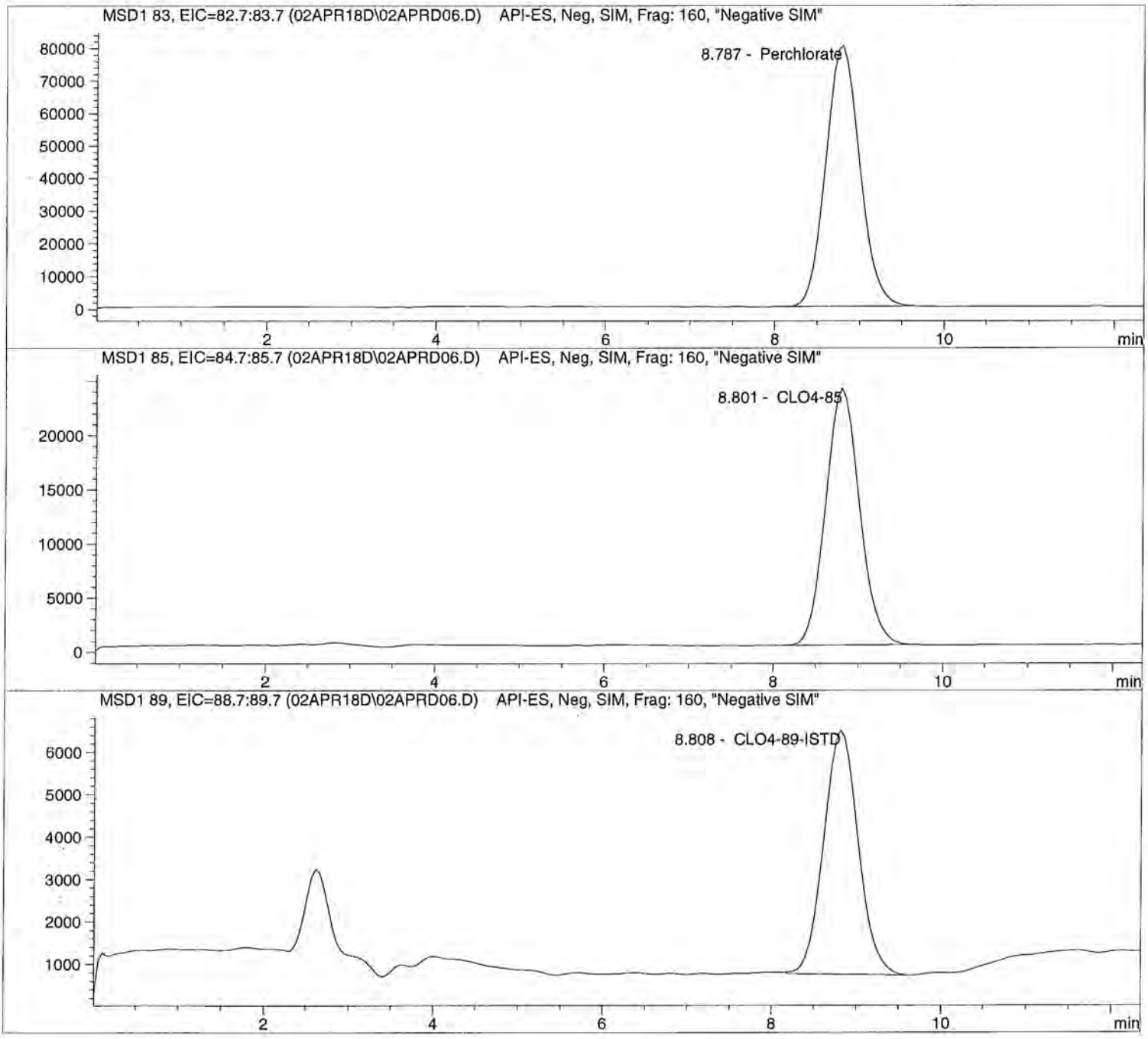
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD06.D Sample Name: ICAL6@ 50.ug/L

Injection Date:	4/02/2018 10:19:12	Seq Line:	6
Sample Name:	ICAL6@ 50.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD06.D Sample Name: ICAL6@ 50.ug/L

Injection Date:	4/02/2018 10:19:12	Seq Line:	6
Sample Name:	ICAL6@ 50.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.787	BBA	2223467.0	49.4714	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.801	BBA	658628.2	48.6037	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.808	BBA	162537.8	5.0000	CLO4-89-ISTD

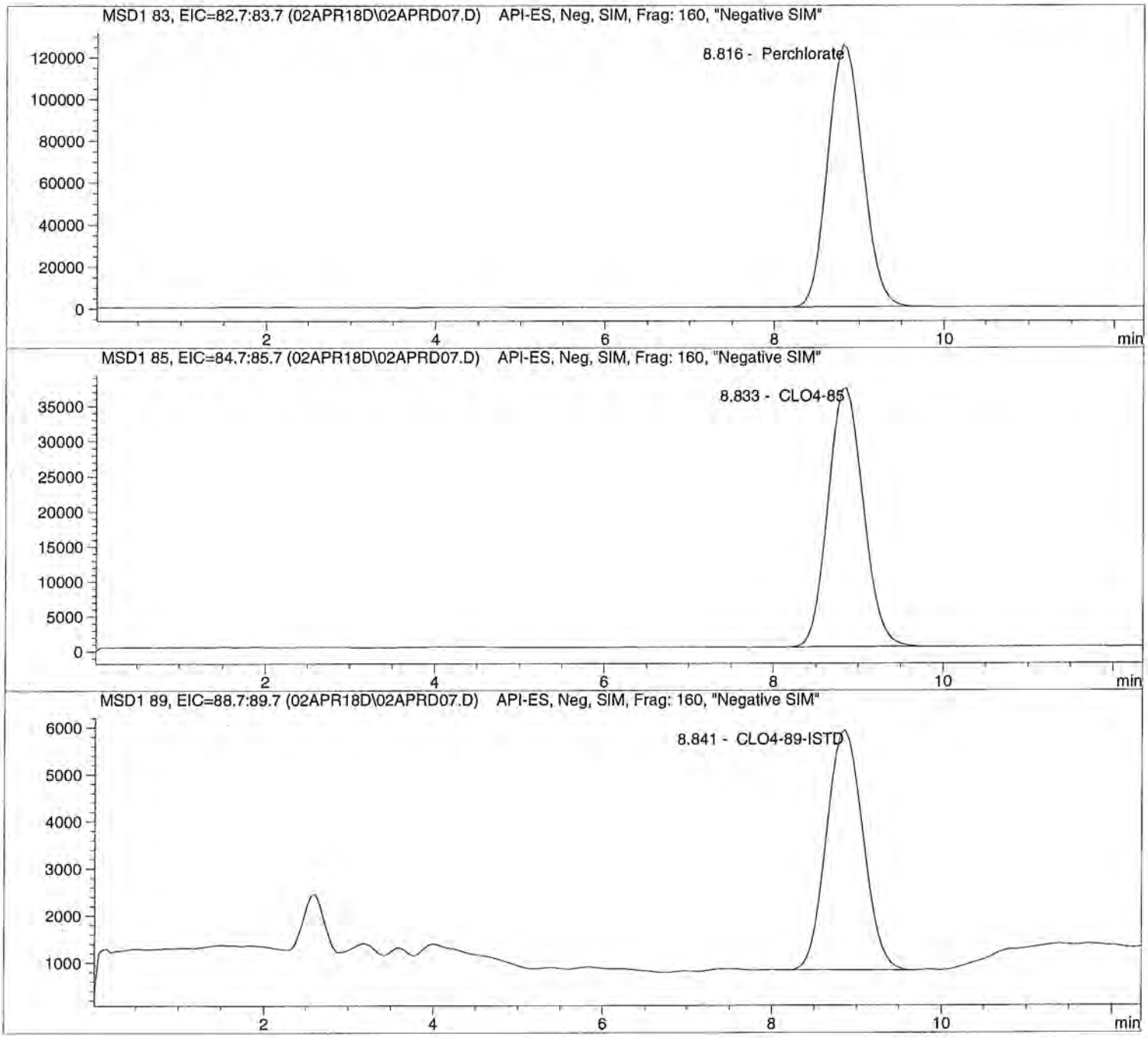
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD07.D Sample Name: ICAL7@ 75.ug/L

Injection Date:	4/02/2018 10:33:24	Seq Line:	7
Sample Name:	ICAL7@ 75.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD07.D Sample Name: ICAL7@ 75.ug/L

Injection Date:	4/02/2018 10:33:24	Seq Line:	7
Sample Name:	ICAL7@ 75.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By: Signal
Calib. Data Modified: Mon, 2. Apr. 2018, 11:32:41 am
Multiplier: 1.000000
Dilution: 1.000000
Sample Amount: 75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.816	PBA	3564322.2	75.2010	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.833	BBA	1062944.2	75.7001	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.841	PBA	152621.4	5.0000	CLO4-89-ISTD

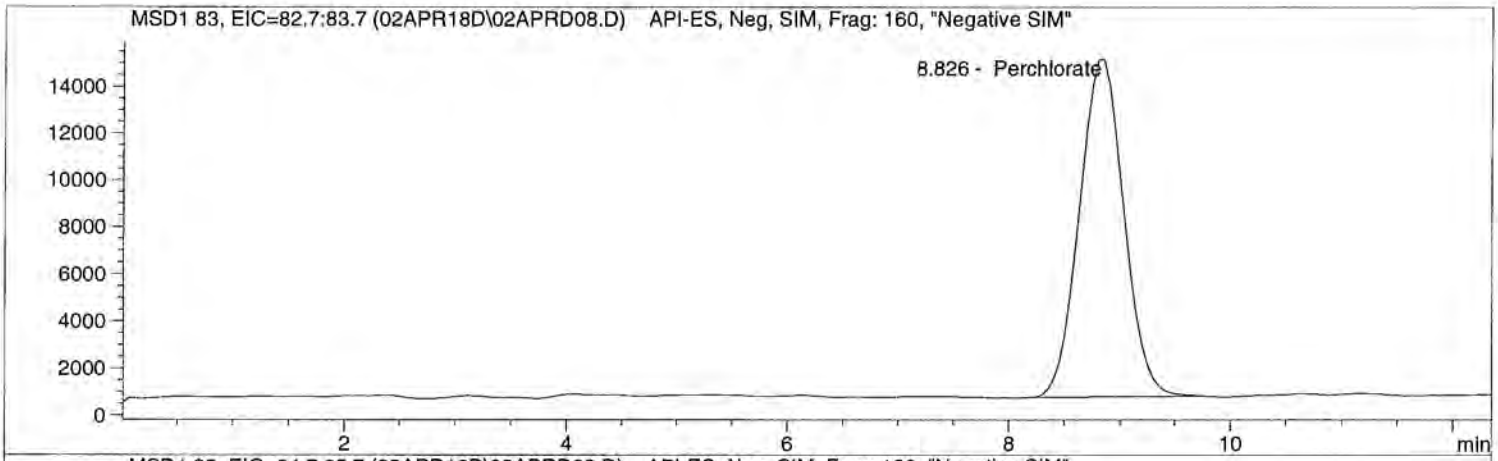
*** End of Report ***

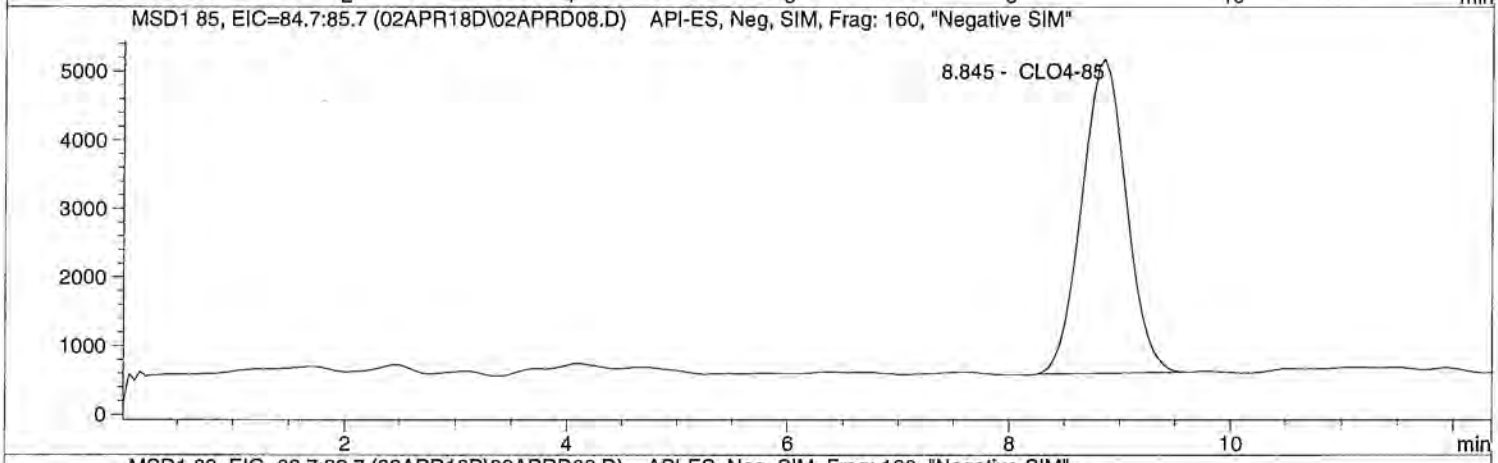
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD08.D Sample Name: ICAL Verf@10ug/L

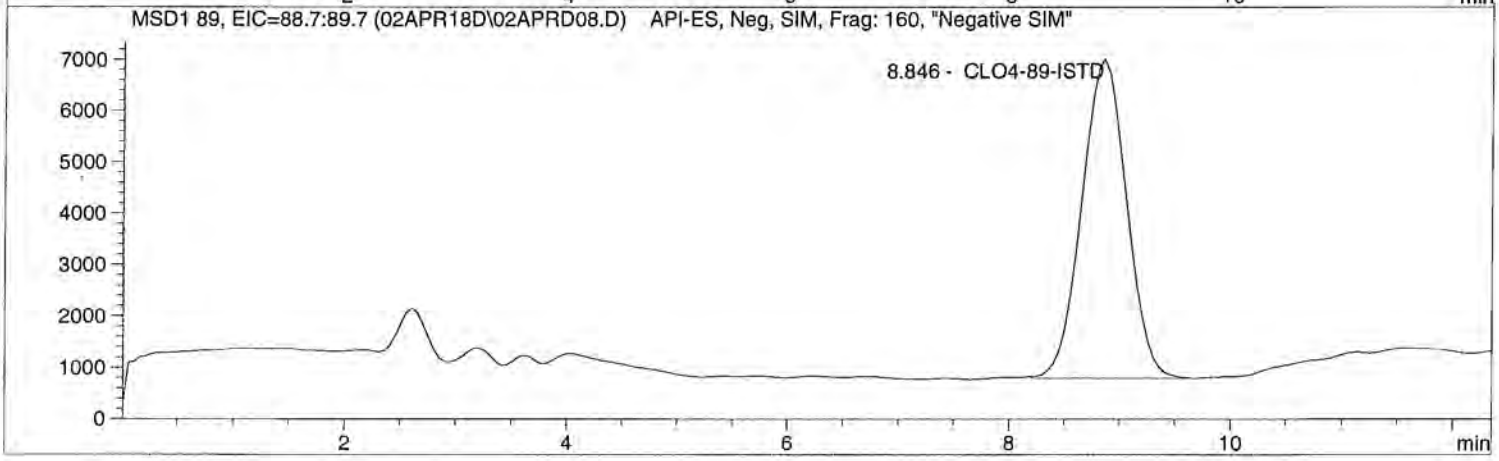
Injection Date:	4/02/2018 10:47:33	Seq Line:	8
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD08.D Sample Name: ICAL Verf@10ug/L

Injection Date:	4/02/2018 10:47:33	Seq Line:	8
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.826	BBA	399587.8	10.1698	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.845	PBA	127530.4	10.1657	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.846	BBA	174490.2	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

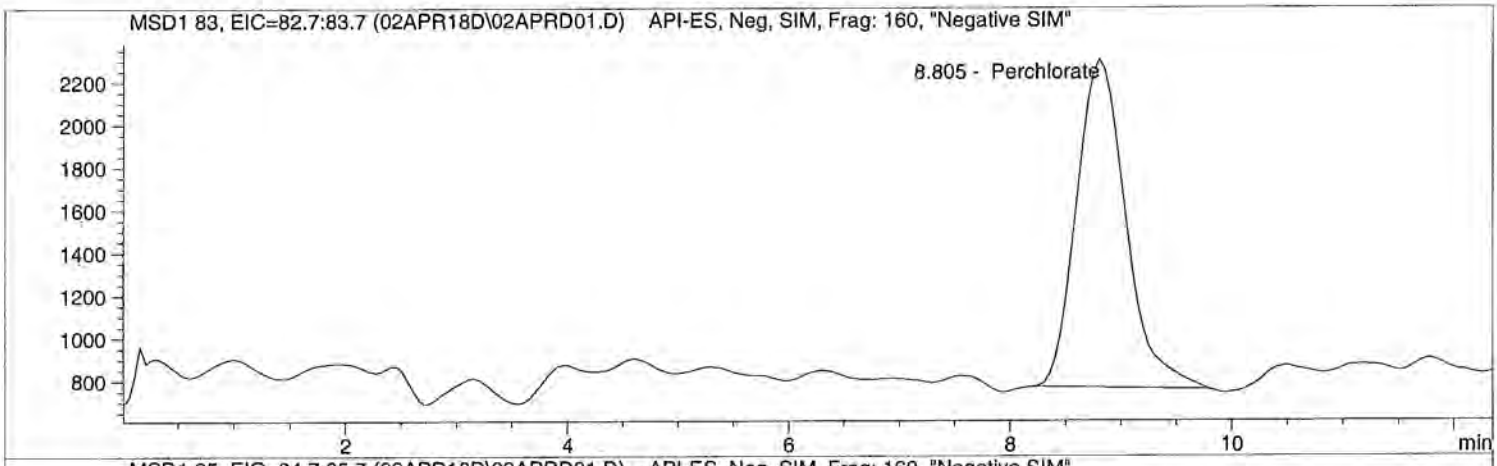
Unmodified

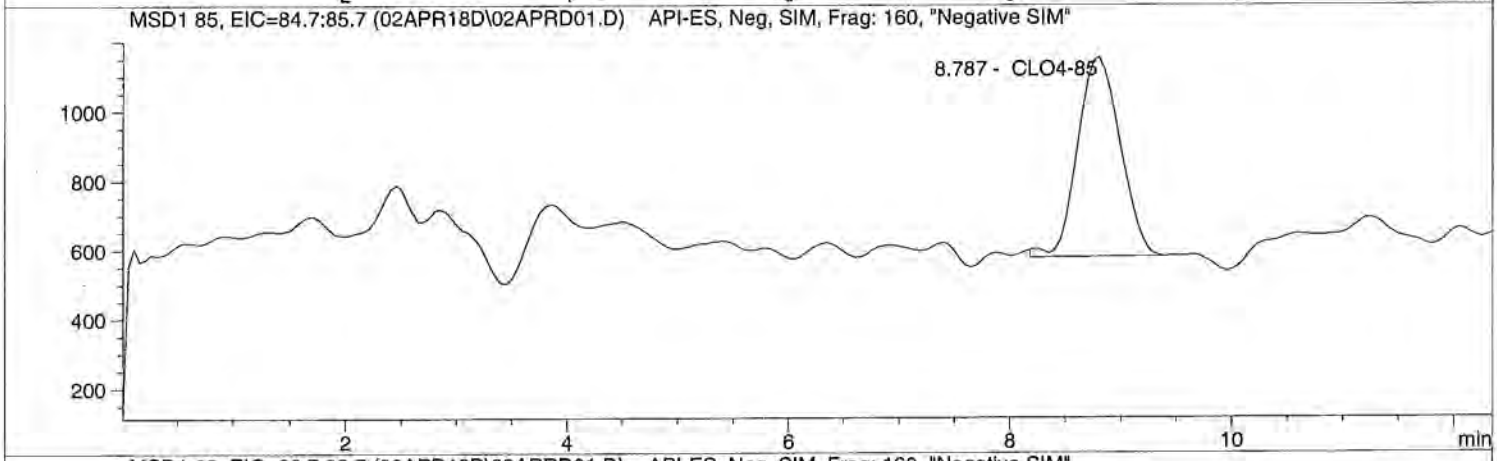
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD01.D Sample Name: ICAL1@ 1.0ug/L

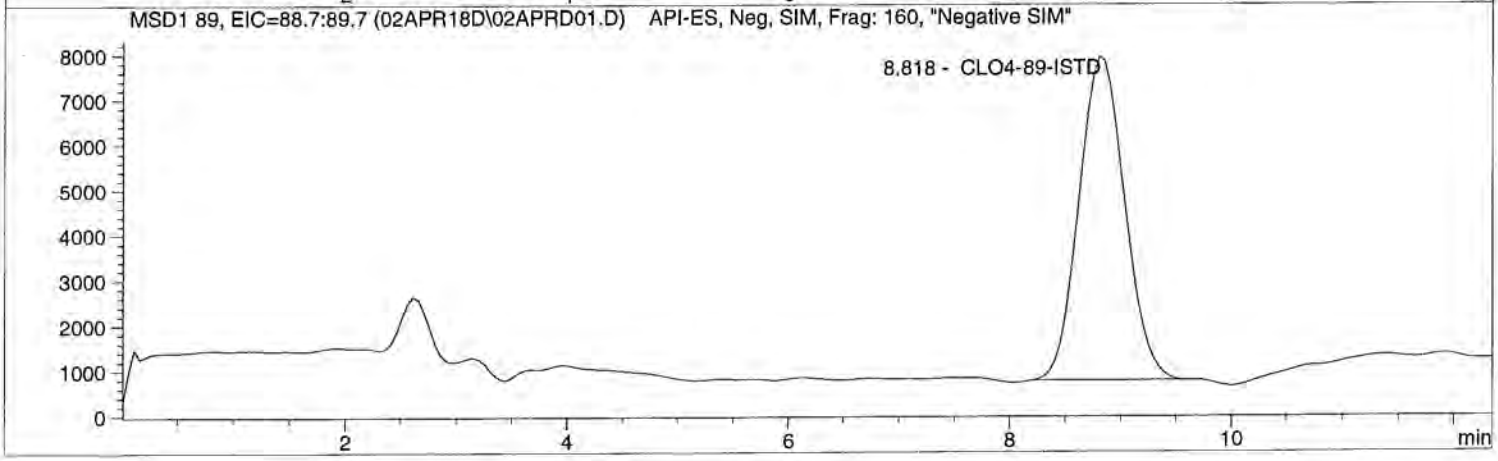
Injection Date:	4/02/2018 09:08:19	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD01.D Sample Name: ICAL1@ 1.0ug/L

Injection Date:	4/02/2018 09:08:19	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By: Signal
Calib. Data Modified: Mon, 2. Apr. 2018, 11:32:41 am
Multiplier: 1.000000
Dilution: 1.000000
Sample Amount: 1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.805	PBA	47521.7	1.0438	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.787	BBA	15364.8	0.9338	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.818	PBA	205633.2	5.0000	CLO4-89-ISTD

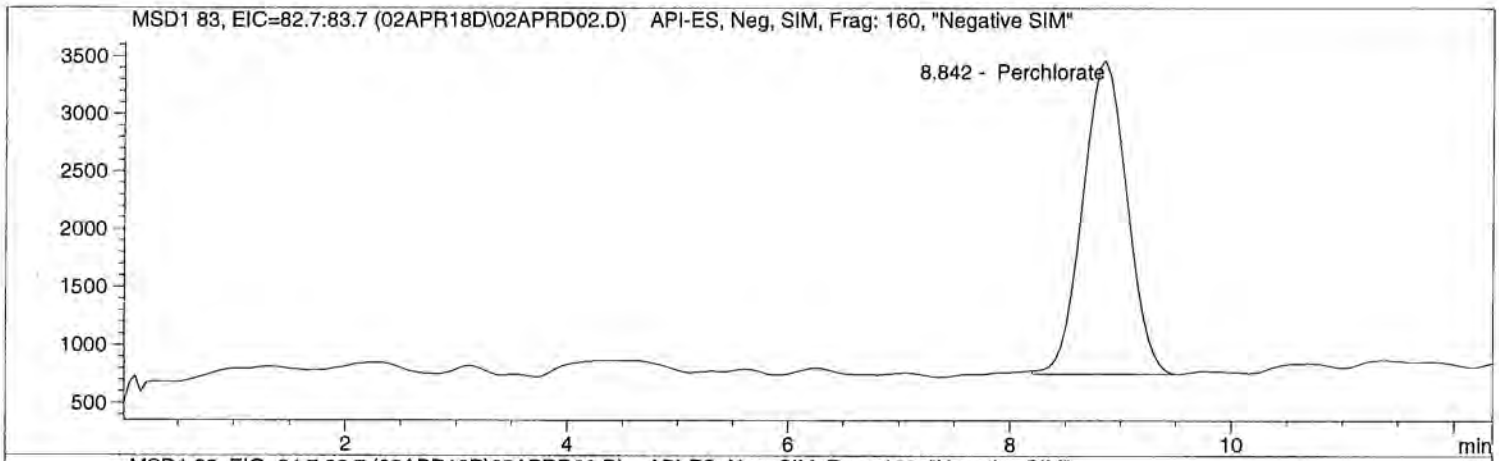
*** End of Report ***

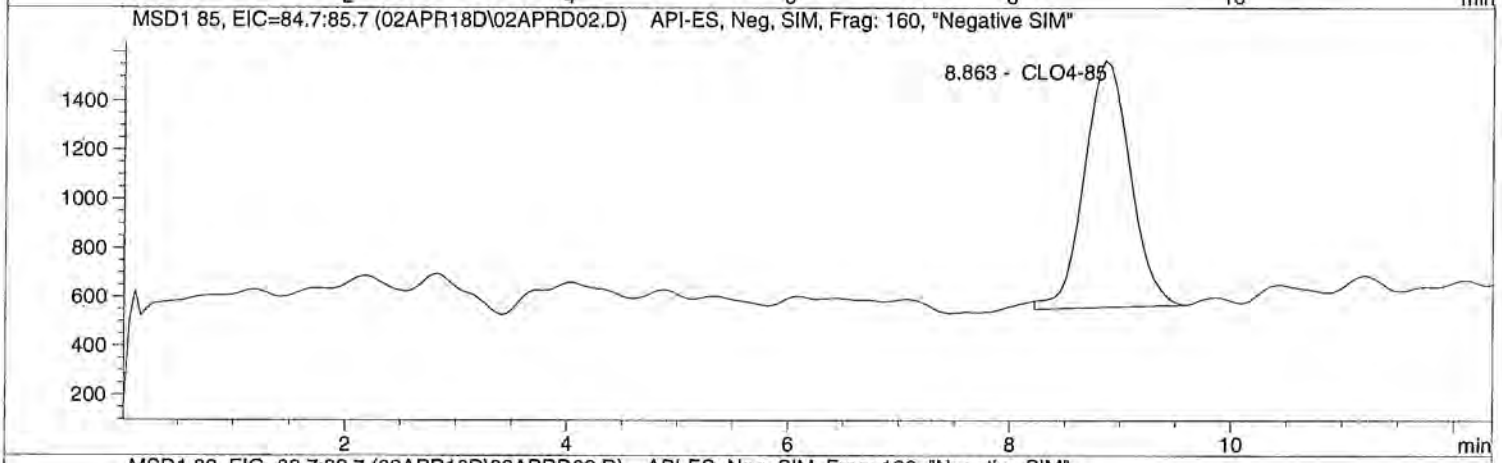
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

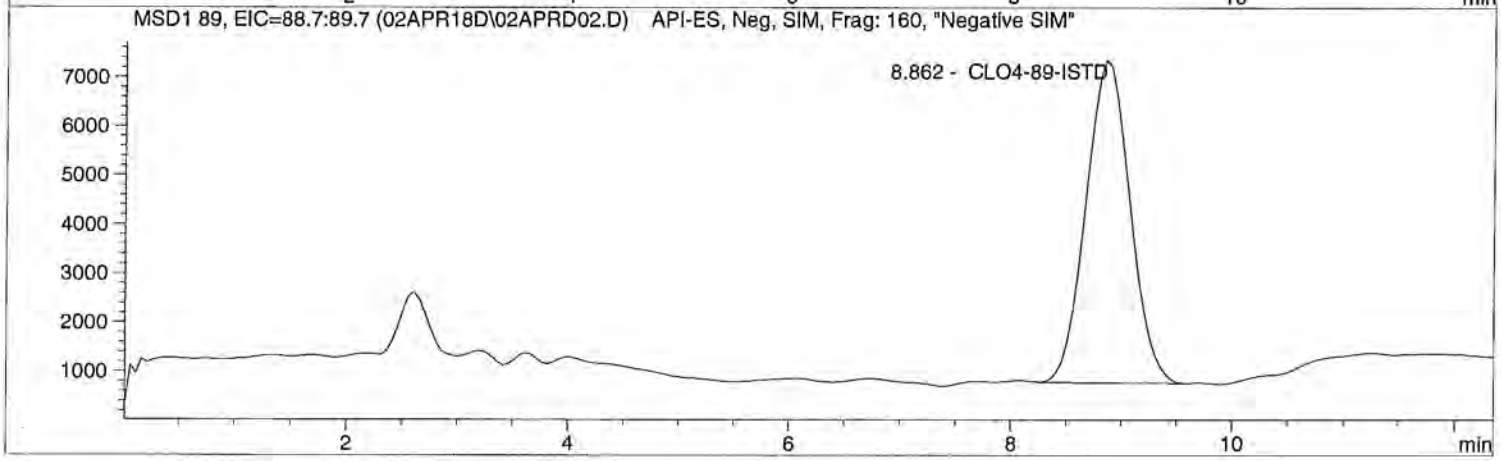
Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.842	BBA	75767.3	1.8858	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.863	BBA	29265.6	2.1651	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.862	BBA	183981.5	5.0000	CLO4-89-ISTD

*** End of Report ***

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WorkOrder: HS18040991

Longhorn GW Treatment Plant

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

29-May-2018

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

April 30, 2018

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS18040991**

Laboratory Results for: **Longhorn GW Treatment Plant**

Dear Marcia,

ALS Environmental received 2 sample(s) on Apr 19, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: DAYNA.FISHER
RJ Modashia
Project Manager

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Work Order: HS18040991

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18040991-01	LH18/24-SP650_041818	Water		18-Apr-2018 14:00	19-Apr-2018 10:00	☐
HS18040991-02	Trip Blank	Water	ALS-012618-38	18-Apr-2018 00:00	19-Apr-2018 10:00	☐

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Work Order: HS18040991

CASE NARRATIVE

GCMS Volatiles by Method SW8260

Batch ID: R314853

Sample ID: HS18040701-07

- MS and MSD are for an unrelated sample

WetChemistry by Method SW9056

Batch ID: R315347

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: LH18/24-SP650_041818
Collection Date: 18-Apr-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18040991
Lab ID:HS18040991-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	22-Apr-2018 13:52
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	22-Apr-2018 13:52
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	22-Apr-2018 13:52
Acetone	**3.0**		**0.40**	**1.0**	**2.0**	**ug/L**	1	22-Apr-2018 13:52
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	22-Apr-2018 13:52
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: LH18/24-SP650_041818
Collection Date: 18-Apr-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18040991
Lab ID:HS18040991-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C		**Method:SW8260**						Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
cis-1,2-Dichloroethene	**3.5**		**0.20**	**0.50**	**1.0**	**ug/L**	1	22-Apr-2018 13:52
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	22-Apr-2018 13:52
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	22-Apr-2018 13:52
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:52
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Trichloroethene	**4.6**		**0.20**	**0.50**	**1.0**	**ug/L**	1	22-Apr-2018 13:52
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:52
Surr: 1,2-Dichloroethane-d4	*94.9*			**0**	*81-118*	*%REC*	*1*	*22-Apr-2018 13:52*
Surr: 4-Bromofluorobenzene	*96.9*			**0**	*85-114*	*%REC*	*1*	*22-Apr-2018 13:52*
Surr: Dibromofluoromethane	*102*			**0**	*80-119*	*%REC*	*1*	*22-Apr-2018 13:52*
Surr: Toluene-d8	*99.2*			**0**	*89-112*	*%REC*	*1*	*22-Apr-2018 13:52*
ANIONS BY SW9056A		**Method:SW9056**						Analyst: KMU
Chloride	**387**		**2.00**	**2.50**	**5.00**	**mg/L**	10	27-Apr-2018 21:50
Sulfate	**151**		**2.00**	**2.50**	**5.00**	**mg/L**	10	27-Apr-2018 21:50

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: Trip Blank
Collection Date: 18-Apr-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18040991
Lab ID:HS18040991-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	22-Apr-2018 13:03
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	22-Apr-2018 13:03
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	22-Apr-2018 13:03
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	22-Apr-2018 13:03
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	22-Apr-2018 13:03
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: Trip Blank
Collection Date: 18-Apr-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18040991
Lab ID:HS18040991-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: PC
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	22-Apr-2018 13:03
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	22-Apr-2018 13:03
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	22-Apr-2018 13:03
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	22-Apr-2018 13:03
Surr: 1,2-Dichloroethane-d4	*95.7*			**0**	*81-118*	*%REC*	*1*	*22-Apr-2018 13:03*
Surr: 4-Bromofluorobenzene	*95.9*			**0**	*85-114*	*%REC*	*1*	*22-Apr-2018 13:03*
Surr: Dibromofluoromethane	*103*			**0**	*80-119*	*%REC*	*1*	*22-Apr-2018 13:03*
Surr: Toluene-d8	*99.3*			**0**	*89-112*	*%REC*	*1*	*22-Apr-2018 13:03*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R314853	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C			**Matrix:** Water		
HS18040991-01	LH18/24-SP650_041818	18 Apr 2018 14:00			22 Apr 2018 13:52	1
HS18040991-02	Trip Blank	18 Apr 2018 00:00			22 Apr 2018 13:03	1
Batch ID R315347	**Test Name :** ANIONS BY SW9056A			**Matrix:** Water		
HS18040991-01	LH18/24-SP650_041818	18 Apr 2018 14:00			27 Apr 2018 21:50	10

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument:** VOA6 **Method:** SW8260

MBLK Sample ID: **VBLKW-180422** Units: **ug/L** Analysis Date: **22-Apr-2018 11:49**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529975** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument:** VOA6 **Method:** SW8260

MBLK Sample ID: **VBLKW-180422** Units: **ug/L** Analysis Date: **22-Apr-2018 11:49**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529975** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*46.41*	*1.0*	*50*	*0*	*92.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.16*	*1.0*	*50*	*0*	*94.3*	*85 - 114*				
Surr: Dibromofluoromethane	*50.76*	*1.0*	*50*	*0*	*102*	*80 - 119*				
Surr: Toluene-d8	*48.85*	*1.0*	*50*	*0*	*97.7*	*89 - 112*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument: VOA6** **Method: SW8260**

LCS Sample ID: **VLCSW-180422** Units: **ug/L** Analysis Date: **22-Apr-2018 10:36**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529974** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	52.94	1.0	50	0	106	78 - 124				
1,1,1-Trichloroethane	54.28	1.0	50	0	109	74 - 131				
1,1,2,2-Tetrachloroethane	50.14	1.0	50	0	100	71 - 121				
1,1,2-Trichloroethane	51.43	1.0	50	0	103	80 - 119				
1,1-Dichloroethane	60.53	1.0	50	0	121	77 - 125				
1,1-Dichloroethene	55.75	1.0	50	0	111	71 - 131				
1,1-Dichloropropene	52.08	1.0	50	0	104	78 - 125				
1,2,3-Trichlorobenzene	53.2	1.0	50	0	106	69 - 129				
1,2,3-Trichloropropane	48.55	1.0	50	0	97.1	73 - 122				
1,2,4-Trichlorobenzene	57.06	1.0	50	0	114	69 - 130				
1,2,4-Trimethylbenzene	51.72	1.0	50	0	103	76 - 124				
1,2-Dibromo-3-chloropropane	51.24	1.0	50	0	102	62 - 128				
1,2-Dibromoethane	52.83	1.0	50	0	106	77 - 121				
1,2-Dichlorobenzene	48.84	1.0	50	0	97.7	80 - 119				
1,2-Dichloroethane	54.53	1.0	50	0	109	73 - 128				
1,2-Dichloropropane	58.19	1.0	50	0	116	78 - 122				
1,3,5-Trimethylbenzene	53.3	1.0	50	0	107	75 - 124				
1,3-Dichlorobenzene	51.45	1.0	50	0	103	80 - 119				
1,3-Dichloropropane	51.23	1.0	50	0	102	80 - 119				
1,4-Dichlorobenzene	50.5	1.0	50	0	101	79 - 118				
2,2-Dichloropropane	56.74	1.0	50	0	113	60 - 139				
2-Butanone	112.7	2.0	100	0	113	56 - 143				
2-Chlorotoluene	52.61	1.0	50	0	105	79 - 122				
2-Hexanone	101.6	2.0	100	0	102	57 - 139				
4-Chlorotoluene	52.96	1.0	50	0	106	78 - 122				
4-Isopropyltoluene	48.05	1.0	50	0	96.1	77 - 127				
4-Methyl-2-pentanone	102.7	2.0	100	0	103	67 - 130				
Acetone	103.2	2.0	100	0	103	39 - 160				
Benzene	53.36	1.0	50	0	107	79 - 120				
Bromobenzene	51.09	1.0	50	0	102	80 - 120				
Bromochloromethane	61.45	1.0	50	0	123	78 - 123				
Bromodichloromethane	55.74	1.0	50	0	111	79 - 125				
Bromoform	51.04	1.0	50	0	102	66 - 130				
Bromomethane	44.19	1.0	50	0	88.4	53 - 141				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument:** VOA6 **Method:** SW8260

LCS Sample ID: **VLCSW-180422** Units: **ug/L** Analysis Date: **22-Apr-2018 10:36**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529974** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	112.8	2.0	100	0	113	64 - 133				
Carbon tetrachloride	51.18	1.0	50	0	102	72 - 136				
Chlorobenzene	55.14	1.0	50	0	110	82 - 118				
Chloroethane	53.75	1.0	50	0	107	60 - 138				
Chloroform	58.59	1.0	50	0	117	79 - 124				
Chloromethane	48.58	1.0	50	0	97.2	50 - 139				
cis-1,2-Dichloroethene	59.81	1.0	50	0	120	78 - 123				
cis-1,3-Dichloropropene	56.47	1.0	50	0	113	75 - 124				
Dibromochloromethane	53.26	1.0	50	0	107	74 - 126				
Dibromomethane	55.83	1.0	50	0	112	79 - 123				
Dichlorodifluoromethane	55.74	1.0	50	0	111	32 - 152				
Ethylbenzene	56.48	1.0	50	0	113	79 - 121				
Hexachlorobutadiene	49.38	1.0	50	0	98.8	66 - 134				
Isopropylbenzene	50.6	1.0	50	0	101	72 - 131				
m,p-Xylene	111.9	2.0	100	0	112	80 - 121				
Methylene chloride	54.53	2.0	50	0	109	74 - 124				
Naphthalene	60.07	1.0	50	0	120	61 - 128				
n-Butylbenzene	49.2	1.0	50	0	98.4	75 - 128				
n-Propylbenzene	48.27	1.0	50	0	96.5	76 - 126				
o-Xylene	55.75	1.0	50	0	112	78 - 122				
sec-Butylbenzene	48.02	1.0	50	0	96.0	78 - 123				
Styrene	54.55	1.0	50	0	109	78 - 128				
tert-Butylbenzene	48.05	1.0	50	0	96.1	78 - 124				
Tetrachloroethene	51.03	1.0	50	0	102	74 - 129				
Toluene	56.37	1.0	50	0	113	80 - 121				
trans-1,2-Dichloroethene	55.3	1.0	50	0	111	75 - 124				
trans-1,3-Dichloropropene	55.49	1.0	50	0	111	73 - 127				
Trichloroethene	53.85	1.0	50	0	108	79 - 123				
Trichlorofluoromethane	53.03	1.0	50	0	106	65 - 141				
Vinyl chloride	54.32	1.0	50	0	109	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.43*	*1.0*	*50*	*0*	*92.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*48.23*	*1.0*	*50*	*0*	*96.5*	*85 - 114*				
Surr: Dibromofluoromethane	*51.27*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*48.89*	*1.0*	*50*	*0*	*97.8*	*89 - 112*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument: VOA6** **Method: SW8260**

MS Sample ID: **HS18040701-07MS** Units: **ug/L** Analysis Date: **22-Apr-2018 14:17**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529981** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	54.57	1.0	50	0	109	78 - 124				
1,1,1-Trichloroethane	53.55	1.0	50	0	107	74 - 131				
1,1,2,2-Tetrachloroethane	53.48	1.0	50	0	107	71 - 121				
1,1,2-Trichloroethane	54.33	1.0	50	0	109	80 - 119				
1,1-Dichloroethane	60.99	1.0	50	0	122	77 - 125				
1,1-Dichloroethene	51.84	1.0	50	3.558	96.6	71 - 131				
1,1-Dichloropropene	50.64	1.0	50	0	101	78 - 125				
1,2,3-Trichlorobenzene	49	1.0	50	0	98.0	69 - 129				
1,2,3-Trichloropropane	49.7	1.0	50	0	99.4	73 - 122				
1,2,4-Trichlorobenzene	54.56	1.0	50	0	109	69 - 130				
1,2,4-Trimethylbenzene	50.92	1.0	50	0	102	76 - 124				
1,2-Dibromo-3-chloropropane	49.75	1.0	50	0	99.5	62 - 128				
1,2-Dibromoethane	54.46	1.0	50	0	109	77 - 121				
1,2-Dichlorobenzene	49.15	1.0	50	0	98.3	80 - 119				
1,2-Dichloroethane	57.02	1.0	50	0	114	73 - 128				
1,2-Dichloropropane	59.24	1.0	50	0	118	78 - 122				
1,3,5-Trimethylbenzene	51.94	1.0	50	0	104	75 - 124				
1,3-Dichlorobenzene	51.15	1.0	50	0	102	80 - 119				
1,3-Dichloropropane	54.23	1.0	50	0	108	80 - 119				
1,4-Dichlorobenzene	50.72	1.0	50	0	101	79 - 118				
2,2-Dichloropropane	54.67	1.0	50	0	109	60 - 139				
2-Butanone	119.4	2.0	100	0	119	56 - 143				
2-Chlorotoluene	52.54	1.0	50	0	105	79 - 122				
2-Hexanone	107.8	2.0	100	0	108	57 - 139				
4-Chlorotoluene	52.28	1.0	50	0	105	78 - 122				
4-Isopropyltoluene	47.3	1.0	50	0	94.6	77 - 127				
4-Methyl-2-pentanone	110.3	2.0	100	0	110	67 - 130				
Acetone	102.5	2.0	100	3.248	99.2	39 - 160				
Benzene	53.01	1.0	50	0	106	79 - 120				
Bromobenzene	53	1.0	50	0	106	80 - 120				
Bromochloromethane	64.34	1.0	50	0	129	78 - 123				S
Bromodichloromethane	57.75	1.0	50	0	115	79 - 125				
Bromoform	52.94	1.0	50	0	106	66 - 130				
Bromomethane	22.18	1.0	50	0	44.4	53 - 141				S

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument: VOA6** **Method: SW8260**

MS Sample ID: **HS18040701-07MS** Units: **ug/L** Analysis Date: **22-Apr-2018 14:17**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529981** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	112.9	2.0	100	0	113	64 - 133				
Carbon tetrachloride	49.59	1.0	50	0	99.2	72 - 136				
Chlorobenzene	55.71	1.0	50	0	111	82 - 118				
Chloroethane	62.15	1.0	50	0	124	60 - 138				
Chloroform	60.24	1.0	50	0	120	79 - 124				
Chloromethane	41.92	1.0	50	0	83.8	50 - 139				
cis-1,2-Dichloroethene	61.62	1.0	50	0	123	78 - 123				S
cis-1,3-Dichloropropene	59	1.0	50	0	118	75 - 124				
Dibromochloromethane	55.73	1.0	50	0	111	74 - 126				
Dibromomethane	57.75	1.0	50	0	115	79 - 123				
Dichlorodifluoromethane	48.69	1.0	50	0	97.4	32 - 152				
Ethylbenzene	55.73	1.0	50	0	111	79 - 121				
Hexachlorobutadiene	45.87	1.0	50	0	91.7	66 - 134				
Isopropylbenzene	48.87	1.0	50	0	97.7	72 - 131				
m,p-Xylene	109.8	2.0	100	0	110	80 - 121				
Methylene chloride	56.41	2.0	50	0	113	74 - 124				
Naphthalene	54.39	1.0	50	0	109	61 - 128				
n-Butylbenzene	48.31	1.0	50	0	96.6	75 - 128				
n-Propylbenzene	47.65	1.0	50	0	95.3	76 - 126				
o-Xylene	55.12	1.0	50	0	110	78 - 122				
sec-Butylbenzene	46.69	1.0	50	0	93.4	78 - 123				
Styrene	55.14	1.0	50	0	110	78 - 128				
tert-Butylbenzene	47.3	1.0	50	0	94.6	78 - 124				
Tetrachloroethene	49.47	1.0	50	0	98.9	74 - 129				
Toluene	56.42	1.0	50	0	113	80 - 121				
trans-1,2-Dichloroethene	55.15	1.0	50	0	110	75 - 124				
trans-1,3-Dichloropropene	56.79	1.0	50	0	114	73 - 127				
Trichloroethene	52.8	1.0	50	0	106	79 - 123				
Trichlorofluoromethane	51.37	1.0	50	0	103	65 - 141				
Vinyl chloride	51.75	1.0	50	0	103	58 - 137				
Surr: 1,2-Dichloroethane-d4	*46.27*	*1.0*	*50*	*0*	*92.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*47.59*	*1.0*	*50*	*0*	*95.2*	*85 - 114*				
Surr: Dibromofluoromethane	*51.27*	*1.0*	*50*	*0*	*103*	*80 - 119*				
Surr: Toluene-d8	*48.44*	*1.0*	*50*	*0*	*96.9*	*89 - 112*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument: VOA6** **Method: SW8260**

MSD Sample ID: **HS18040701-07MSD** Units: **ug/L** Analysis Date: **22-Apr-2018 14:41**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529982** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	53.19	1.0	50	0	106	78 - 124	54.57	2.55	20	
1,1,1-Trichloroethane	53.24	1.0	50	0	106	74 - 131	53.55	0.595	20	
1,1,2,2-Tetrachloroethane	49.75	1.0	50	0	99.5	71 - 121	53.48	7.22	20	
1,1,2-Trichloroethane	52.26	1.0	50	0	105	80 - 119	54.33	3.89	20	
1,1-Dichloroethane	61.34	1.0	50	0	123	77 - 125	60.99	0.573	20	
1,1-Dichloroethene	52.31	1.0	50	3.558	97.5	71 - 131	51.84	0.889	20	
1,1-Dichloropropene	49.41	1.0	50	0	98.8	78 - 125	50.64	2.47	20	
1,2,3-Trichlorobenzene	49.75	1.0	50	0	99.5	69 - 129	49	1.53	20	
1,2,3-Trichloropropane	46.01	1.0	50	0	92.0	73 - 122	49.7	7.7	20	
1,2,4-Trichlorobenzene	54.84	1.0	50	0	110	69 - 130	54.56	0.499	20	
1,2,4-Trimethylbenzene	49.56	1.0	50	0	99.1	76 - 124	50.92	2.72	20	
1,2-Dibromo-3-chloropropane	48.65	1.0	50	0	97.3	62 - 128	49.75	2.25	20	
1,2-Dibromoethane	53.11	1.0	50	0	106	77 - 121	54.46	2.52	20	
1,2-Dichlorobenzene	47.28	1.0	50	0	94.6	80 - 119	49.15	3.89	20	
1,2-Dichloroethane	54.59	1.0	50	0	109	73 - 128	57.02	4.36	20	
1,2-Dichloropropane	57.84	1.0	50	0	116	78 - 122	59.24	2.39	20	
1,3,5-Trimethylbenzene	50.71	1.0	50	0	101	75 - 124	51.94	2.41	20	
1,3-Dichlorobenzene	48.82	1.0	50	0	97.6	80 - 119	51.15	4.68	20	
1,3-Dichloropropane	51.56	1.0	50	0	103	80 - 119	54.23	5.06	20	
1,4-Dichlorobenzene	48.26	1.0	50	0	96.5	79 - 118	50.72	4.97	20	
2,2-Dichloropropane	54.03	1.0	50	0	108	60 - 139	54.67	1.17	20	
2-Butanone	109.7	2.0	100	0	110	56 - 143	119.4	8.47	20	
2-Chlorotoluene	50.39	1.0	50	0	101	79 - 122	52.54	4.18	20	
2-Hexanone	102	2.0	100	0	102	57 - 139	107.8	5.48	20	
4-Chlorotoluene	50.52	1.0	50	0	101	78 - 122	52.28	3.43	20	
4-Isopropyltoluene	46.85	1.0	50	0	93.7	77 - 127	47.3	0.959	20	
4-Methyl-2-pentanone	103.4	2.0	100	0	103	67 - 130	110.3	6.39	20	
Acetone	94.31	2.0	100	3.248	91.1	39 - 160	102.5	8.32	20	
Benzene	51.43	1.0	50	0	103	79 - 120	53.01	3.04	20	
Bromobenzene	49.5	1.0	50	0	99.0	80 - 120	53	6.83	20	
Bromochloromethane	62.59	1.0	50	0	125	78 - 123	64.34	2.75	20	S
Bromodichloromethane	54.84	1.0	50	0	110	79 - 125	57.75	5.16	20	
Bromoform	51.4	1.0	50	0	103	66 - 130	52.94	2.96	20	
Bromomethane	30.08	1.0	50	0	60.2	53 - 141	22.18	30.2	20	R

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R314853 **Instrument: VOA6** **Method: SW8260**

MSD Sample ID: **HS18040701-07MSD** Units: **ug/L** Analysis Date: **22-Apr-2018 14:41**
Client ID: Run ID: **VOA6_314853** SeqNo: **4529982** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	111.4	2.0	100	0	111	64 - 133	112.9	1.29	20	
Carbon tetrachloride	49.97	1.0	50	0	99.9	72 - 136	49.59	0.758	20	
Chlorobenzene	53.82	1.0	50	0	108	82 - 118	55.71	3.44	20	
Chloroethane	57.4	1.0	50	0	115	60 - 138	62.15	7.95	20	
Chloroform	58.41	1.0	50	0	117	79 - 124	60.24	3.09	20	
Chloromethane	39.37	1.0	50	0	78.7	50 - 139	41.92	6.29	20	
cis-1,2-Dichloroethene	59.63	1.0	50	0	119	78 - 123	61.62	3.29	20	
cis-1,3-Dichloropropene	56.45	1.0	50	0	113	75 - 124	59	4.42	20	
Dibromochloromethane	52.44	1.0	50	0	105	74 - 126	55.73	6.08	20	
Dibromomethane	56.03	1.0	50	0	112	79 - 123	57.75	3.02	20	
Dichlorodifluoromethane	48.74	1.0	50	0	97.5	32 - 152	48.69	0.0918	20	
Ethylbenzene	54.81	1.0	50	0	110	79 - 121	55.73	1.67	20	
Hexachlorobutadiene	43.76	1.0	50	0	87.5	66 - 134	45.87	4.7	20	
Isopropylbenzene	49.34	1.0	50	0	98.7	72 - 131	48.87	0.956	20	
m,p-Xylene	109	2.0	100	0	109	80 - 121	109.8	0.753	20	
Methylene chloride	54.19	2.0	50	0	108	74 - 124	56.41	4	20	
Naphthalene	56.49	1.0	50	0	113	61 - 128	54.39	3.78	20	
n-Butylbenzene	47.9	1.0	50	0	95.8	75 - 128	48.31	0.846	20	
n-Propylbenzene	46.8	1.0	50	0	93.6	76 - 126	47.65	1.81	20	
o-Xylene	54.37	1.0	50	0	109	78 - 122	55.12	1.38	20	
sec-Butylbenzene	46.69	1.0	50	0	93.4	78 - 123	46.69	0.00389	20	
Styrene	53.74	1.0	50	0	107	78 - 128	55.14	2.57	20	
tert-Butylbenzene	46.85	1.0	50	0	93.7	78 - 124	47.3	0.959	20	
Tetrachloroethene	49.19	1.0	50	0	98.4	74 - 129	49.47	0.573	20	
Toluene	54.69	1.0	50	0	109	80 - 121	56.42	3.11	20	
trans-1,2-Dichloroethene	53.82	1.0	50	0	108	75 - 124	55.15	2.45	20	
trans-1,3-Dichloropropene	54.86	1.0	50	0	110	73 - 127	56.79	3.47	20	
Trichloroethene	50.93	1.0	50	0	102	79 - 123	52.8	3.6	20	
Trichlorofluoromethane	50.43	1.0	50	0	101	65 - 141	51.37	1.84	20	
Vinyl chloride	51.03	1.0	50	0	102	58 - 137	51.75	1.4	20	
Surr: 1,2-Dichloroethane-d4	*46.81*	*1.0*	*50*	*0*	*93.6*	*81 - 118*	*46.27*	*1.15*	*20*	
Surr: 4-Bromofluorobenzene	*47.96*	*1.0*	*50*	*0*	*95.9*	*85 - 114*	*47.59*	*0.781*	*20*	
Surr: Dibromofluoromethane	*51.12*	*1.0*	*50*	*0*	*102*	*80 - 119*	*51.27*	*0.29*	*20*	
Surr: Toluene-d8	*48.88*	*1.0*	*50*	*0*	*97.8*	*89 - 112*	*48.44*	*0.894*	*20*	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant
WorkOrder:	HS18040991

QC BATCH REPORT

Batch ID:	**R314853**	**Instrument:**	**VOA6**	**Method:**	**SW8260**

The following samples were analyzed in this batch:	HS18040991-01	HS18040991-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QC BATCH REPORT

Batch ID: R315347 **Instrument: ICS2100** **Method: SW9056**

MBLK Sample ID: **WBLKW1-042718** Units: **mg/L** Analysis Date: **27-Apr-2018 20:04**
Client ID: Run ID: **ICS2100_315347** SeqNo: **4541095** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	0.250	0.500								U
Sulfate	0.250	0.500								U

LCS Sample ID: **WLCSW1-042718** Units: **mg/L** Analysis Date: **27-Apr-2018 21:21**
Client ID: Run ID: **ICS2100_315347** SeqNo: **4541096** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	19.79	0.500	20	0	99.0	80 - 120				
Sulfate	19.76	0.500	20	0	98.8	80 - 120				

LCSD Sample ID: **WLCSDW1-042718** Units: **mg/L** Analysis Date: **27-Apr-2018 21:35**
Client ID: Run ID: **ICS2100_315347** SeqNo: **4541097** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	20.93	0.500	20	0	105	80 - 120	19.79	5.57	20	
Sulfate	20.93	0.500	20	0	105	80 - 120	19.76	5.77	20	

MS Sample ID: **HS18041033-01MS** Units: **mg/L** Analysis Date: **27-Apr-2018 22:19**
Client ID: Run ID: **ICS2100_315347** SeqNo: **4541100** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	32.19	0.500	10	22.3	98.9	80 - 120				
Sulfate	19.44	0.500	10	11.03	84.2	80 - 120				

MSD Sample ID: **HS18041033-01MSD** Units: **mg/L** Analysis Date: **27-Apr-2018 22:33**
Client ID: Run ID: **ICS2100_315347** SeqNo: **4541101** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	32.52	0.500	10	22.3	102	80 - 120	32.19	1.04	20	
Sulfate	19.64	0.500	10	11.03	86.2	80 - 120	19.44	1.02	20	

The following samples were analyzed in this batch: HS18040991-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 30-Apr-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18040991

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Unit Reported	Description
mg/L	Milligrams per Liter

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919 2016-2018	31-Jul-2018
Illinois	004112	09-May-2018
Oklahoma	2017-088	31-Aug-2018
North Carolina	624-2018	31-Dec-2018
Louisiana	03087 2017-2018	30-Jun-2018
Arkansas	88-0356	27-Mar-2019

Date: 30-Apr-18

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS18040991
Date/Time Received: **19-Apr-2018 10:00**
Received by: **NDD**

Checklist completed by: *Pablo Marinez* eSignature — 19-Apr-2018 Date
Reviewed by: *RJ Modashia* eSignature — 20-Apr-2018 Date

Matrices: **WATER**
Carrier name: **UPS**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.7C/3.3C UC/C	IR # 30	
Cooler(s)/Kit(s):	3365		
Date/Time sample(s) sent to storage:	4/19/2018 17:00		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

HS18040991

Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210, Houston, Tx. 77099 ATTN: SONIA WEST

Project: BHATE LONGHORN ARMY AMMN. PLANT (LHAAP) GROUNDWATER TREATMENT PLANT (GWTP) KARNACK, TEXAS	Project No. NWO1312.0150.0 16.0001
Job: **GROUNDWATER TREATMENT PLANT BI-WEEKLY SAMPLES**	
Prepared By: Scott Beesinger	P.O Number

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	Analyses: VOC	Analyses: CHLORIDE, SULFATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_041818	Water	04/18/18 / 14:00		3	3		HCL	
LH18/24-SP650_041818	Water	04/18/18 / 14:00		1		1	NONE	
Trip Blank	Water	04/18/18		2	2		HCL	

Additional Remarks: **STANDARD TAT ON ALL PARAMETERS.**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/18/18	14:30	Pablo	04/19/18	9:45						

9For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition
Pablo	04/19/18	9:45		Nelson	04/19	10:00	3.7 u/c	I	R30 -0.4

Remarks

3.7 u/c 3365 IR30

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

3365

CUSTODY SEAL

Date: 4/18/18 Time: 1430
Name: Scott Beesinger
Company: BHATS

Seal Broken By: SM
Date: 04/19/18

3365

APR 19 2018

UPS Next Day Air®
UPS Worldwide Express®
Shipping Document

3365

WEIGHT | LTR | PAK | WEIGHT | DIMENSIONAL WEIGHT (if applicable) | LARGE PACKAGE | SHIPPER RELEASE

1
1

☐ EXPRESS (INT'L)
☐ DOCUMENTS ONLY

SATURDAY DELIVERY ☐

SHIPMENT FROM

UPS ACCOUNT NO.

REFERENCE NUMBER

TELEPHONE

J461 687 976 0

J461 687 976 0

DELIVERY TO

TELEPHONE

UPS Next Day Air® 1

J461 687 976 0

J461 687 976 0

DELIVERY

DATE OF SHIPMENT

/ /

010191120 6/14 RRD United Parcel Service, Louisville, KY

Volatile Organics Raw Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT PLANT
ALS WO# HS18040991

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

	CLIENT SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER #	TOT OUT
01	VLCSW-180422	102	93	98	96	0
02	VBLKW-180422	102	93	98	94	0
03	HS18040991-02	103	96	99	96	0
04	HS18040991-01	102	95	99	97	0
05	HS18040701-07	102	92	97	95	0
06	HS18040701-07	102	94	98	96	0
07						
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		QC LIMITS
SMC1	= Dibromofluoromethane	(71-125)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-125)
SMC3 (TOL)	= Toluene-d8	(75-125)
OTHER	= 4-Bromofluorobenzene	(72-125)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Matrix Spike - Sample No.: VSDT-ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Xylenes (total)	150.00	165.04	110	80-120
1,2-Dichloroethylene (t	100.00	103.61	104	80-120
Dichlorodifluoromethane	50.00	47.14	94	80-120
Chloromethane	50.00	49.94	100	80-120
Vinyl Chloride	50.00	47.81	96	80-120
Bromomethane	50.00	54.04	108	80-120
Chloroethane	50.00	49.32	99	80-120
Trichlorofluoromethane	50.00	47.38	95	80-120
Acrolein	100.00	97.48	97	80-120
Acetone	100.00	101.38	101	80-120
1,1-Dichloroethene	50.00	46.99	94	80-120
Acrylonitrile	100.00	109.68	110	80-120
Methylene Chloride	50.00	50.60	101	80-120
Methyl tert-butyl ether	50.00	53.52	107	80-120
Carbon Disulfide	100.00	96.93	97	80-120
trans-1,2-Dichloroethen	50.00	49.38	99	80-120
1,1-Dichloroethane	50.00	55.60	111	80-120
2-Butanone	100.00	102.25	102	80-120
2,2-Dichloropropane	50.00	47.40	95	80-120
cis-1,2-Dichloroethene	50.00	54.22	108	80-120
Chloroform	50.00	53.87	108	80-120
Bromochloromethane	50.00	55.96	112	80-120
1,1,1-Trichloroethane	50.00	49.39	99	80-120
1,1-Dichloropropene	50.00	48.04	96	80-120
1,2-Dichloroethane	50.00	52.48	105	80-120
Carbon Tetrachloride	50.00	47.72	95	80-120
Benzene	50.00	49.03	98	80-120
Trichloroethene	50.00	48.34	97	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM III VOA

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Matrix Spike - Sample No.: VSDT-ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
Bromodichloromethane	50.00	53.36	107	80-120
1,2-Dichloropropane	50.00	54.30	109	80-120
Dibromomethane	50.00	51.80	104	80-120
4-Methyl-2-Pentanone	100.00	102.81	103	80-120
cis-1,3-Dichloropropene	50.00	53.22	106	80-120
Toluene	50.00	54.81	110	80-120
trans-1,3-Dichloroprope	50.00	51.70	103	80-120
2-Hexanone	100.00	101.55	102	80-120
1,1,2-Trichloroethane	50.00	51.74	103	80-120
1,3-Dichloropropane	50.00	52.50	105	80-120
Dibromochloromethane	50.00	53.08	106	80-120
Tetrachloroethene	50.00	49.48	99	80-120
1,2-Dibromoethane	50.00	52.72	105	80-120
Chlorobenzene	50.00	54.25	108	80-120
1,1,1,2-Tetrachloroetha	50.00	53.54	107	80-120
Ethylbenzene	50.00	55.66	111	80-120
m,p-Xylenes	100.00	110.40	110	80-120
o-Xylene	50.00	54.63	109	80-120
Styrene	50.00	54.04	108	80-120
Bromoform	50.00	51.13	102	80-120
Isopropylbenzene	50.00	50.14	100	80-120
1,1,2,2-Tetrachloroetha	50.00	50.43	101	80-120
1,2,3-Trichloropropane	50.00	48.83	98	80-120
n-Propylbenzene	50.00	48.62	97	80-120
Bromobenzene	50.00	51.59	103	80-120
1,3,5-Trimethylbenzene	50.00	53.93	108	80-120
2-Chlorotoluene	50.00	53.36	107	80-120
4-Chlorotoluene	50.00	53.53	107	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM III VOA

FORM 3
WATER VOLATILE METHOD SPIKE RECOVERY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Matrix Spike - Sample No.: VSDT-ICV

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE AMOUNT ()	% REC #	QC. LIMITS REC.
tert-Butylbenzene	50.00	49.49	99	80-120
1,2,4-Trimethylbenzene	50.00	52.35	105	80-120
sec-Butylbenzene	50.00	49.18	98	80-120
p-Isopropyltoluene	50.00	49.49	99	80-120
1,3-Dichlorobenzene	50.00	51.31	103	80-120
1,4-Dichlorobenzene	50.00	50.77	102	80-120
n-Butylbenzene	50.00	50.38	101	80-120
1,2-Dichlorobenzene	50.00	49.52	99	80-120
1,2-Dibromo-3-Chloropro	50.00	47.40	95	80-120
1,2,4-Trichlorobenzene	50.00	56.50	113	80-120
Hexachlorobutadiene	50.00	50.26	100	80-120
Naphthalene	50.00	52.43	105	80-120
1,2,3-Trichlorobenzene	50.00	51.26	102	80-120
1-Chlorohexane	50.00	48.62	97	80-120
1,4-Dioxane	1000.00	914.52	91	80-120
Cyclohexane	50.00	48.51	97	80-120
Freon TF	50.00	49.16	98	80-120
Methylcyclohexane	50.00	50.26	100	80-120
Methyl Acetate	50.00	53.07	106	80-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM III VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Lab File ID: X041101 BFB Injection Date: 04/11/18

Instrument ID: VOA6 BFB Injection Time: 1219

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.5
75	30.0 - 60.0% of mass 95	43.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.6 (0.7)1
174	Greater than 50.0% of mass 95	90.9
175	5.0 - 9.0% of mass 174	6.4 (7.1)1
176	95.0 - 101.0% of mass 174	88.2 (97.0)1
177	5.0 - 9.0% of mass 176	5.8 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD00.5	VSTD00.5	X041103	04/11/18	1323
02	VSTD001	VSTD001	X041104	04/11/18	1348
03	VSTD002	VSTD002	X041105	04/11/18	1413
04	VSTD005	VSTD005	X041106	04/11/18	1437
05	VSTD020	VSTD020	X041107	04/11/18	1502
06	VSTD050	VSTD050	X041108	04/11/18	1527
07	VSTD100	VSTD100	X041109	04/11/18	1551
08	VSTD150	VSTD150	X041110	04/11/18	1616
09	VSTD200	VSTD200	X041111	04/11/18	1640
10	VSDT-ICV	VSTD-ICV	X041114	04/11/18	1754
11					
12					
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14					
15					
16					
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18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

LAB FILE ID: RF0.25: X041102 RF0.5: X041103 RF1: X041104
RF2: X041105 RF5: X041106 RF20: X041107

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Dichlorodifluoromethane		1429	1627	4688	8481	46180
Chloromethane		2505	3028	7228	12990	61113
Vinyl Chloride		2151	2928	6345	11627	59996
Bromomethane		1358	2222	4403	8808	39153
Chloroethane		1510	1878	3996	7429	36345
Trichlorofluoromethane		2034	2458	6157	11141	61144
Acrolein		0.060	0.049	0.043	0.045	0.042
Acetone		2981	3613	5356	10482	41130
1,1-Dichloroethene		1573	2019	4548	8551	43443
Iodomethane		4203	6024	12143	24791	122490
Acrylonitrile		0.225	0.178	0.144	0.158	0.186
Methylene Chloride		4113	5665	8337	16479	66994
Methyl tert-butyl ether		1.533	1.255	1.242	1.217	1.354
Carbon Disulfide		10804	14228	32565	62436	302928
trans-1,2-Dichloroethene		1922	2716	5973	11879	56142
Vinyl Acetate		1234	1772	4287	7602	35261
1,1-Dichloroethane		0.863	0.666	0.707	0.618	0.718
2-Butanone		1665	2997	4565	13103	58741
2,2-Dichloropropane		2899	3431	7692	15414	71063
cis-1,2-Dichloroethene		0.563	0.448	0.465	0.385	0.447
Chloroform		0.891	0.694	0.708	0.605	0.687
Bromochloromethane		0.283	0.237	0.226	0.216	0.236
1,1,1-Trichloroethane		2466	3241	7465	15819	74056
1,1-Dichloropropene		2751	3548	7762	14917	72168
1,2-Dichloroethane		0.407	0.380	0.324	0.306	0.346
Carbon Tetrachloride		2913	3627	7509	12785	62076
Benzene		7332	11613	22918	50702	231067
Trichloroethene		1793	2794	5845	12554	58107
Bromodichloromethane		0.459	0.384	0.370	0.332	0.368
2-Chloroethylvinyl ether		0.264	0.237	0.222	0.206	0.221
1,2-Dichloropropane		0.363	0.276	0.294	0.260	0.299
Dibromomethane		0.218	0.199	0.190	0.174	0.193
4-Methyl-2-Pentanone		5542	8161	12596	31384	134372
cis-1,3-Dichloropropene		0.598	0.504	0.492	0.451	0.499
Toluene		1.512	1.133	1.142	0.981	1.118
trans-1,3-Dichloropropene		0.537	0.441	0.412	0.381	0.417
2-Hexanone		4301	5338	8557	21192	89959
1,1,2-Trichloroethane		0.332	0.246	0.260	0.236	0.246
1,3-Dichloropropane		0.640	0.557	0.513	0.486	0.517
Dibromochloromethane		0.382	0.388	0.332	0.308	0.345
Tetrachloroethene		1453	2054	4357	9280	43164
1,2-Dibromoethane		0.372	0.336	0.291	0.281	0.305
Chlorobenzene		1.010	0.804	0.774	0.695	0.770
1,1,1,2-Tetrachloroethane		0.357	0.308	0.289	0.257	0.288

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

LAB FILE ID: RF0.25: X041102 RF0.5: X041103 RF1: X041104
RF2: X041105 RF5: X041106 RF20: X041107

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Ethylbenzene		0.483	0.382	0.378	0.325	0.375
m,p-Xylenes		0.596	0.475	0.472	0.407	0.462
o-Xylene		0.626	0.468	0.478	0.420	0.480
Styrene		1.073	0.905	0.800	0.760	0.850
Bromoform		0.335	0.285	0.250	0.238	0.252
Isopropylbenzene		7133	11155	22013	49083	225531
Allyl Chloride		1.387	1.134	1.058	1.086	1.263
1,1,2,2-Tetrachloroethane		3807	4863	8254	20662	84331
Methacrylonitrile		0.593	0.506	0.436	0.414	0.461
1,2,3-Trichloropropane		4107	5912	10422	24725	101138
Isobutyl Alcohol		0.080	0.066	0.058	0.057	0.064
n-Propylbenzene		9146	13098	28328	60865	279208
Bromobenzene		0.970	0.692	0.683	0.639	0.694
1,3,5-Trimethylbenzene		2.488	1.894	1.861	1.597	1.826
2-Chlorotoluene		2.208	1.635	1.639	1.428	1.631
4-Chlorotoluene		2.544	1.889	1.907	1.656	1.915
Propionitrile		0.072	0.067	0.068	0.063	0.070
tert-Butylbenzene		5231	7765	16593	35955	161184
1,2,4-Trimethylbenzene		2.710	2.086	1.937	1.746	1.928
sec-Butylbenzene		7379	10557	21455	47304	214472
p-Isopropyltoluene		5231	7765	16593	35955	161184
Methyl Methacrylate		2320	3425	5425	14564	66350
1,3-Dichlorobenzene		1.652	1.263	1.190	1.048	1.172
1,4-Dichlorobenzene		1.746	1.337	1.252	1.076	1.210
2-Nitropropane		1149	1885	2486	6596	29059
Ethyl Methacrylate		0.597	0.494	0.422	0.428	0.444
n-Butylbenzene		5831	8194	16437	35996	157741
1,2-Dichlorobenzene		4928	7035	12580	29424	129012
1,2-Dibromo-3-Chloropropane		669	749	1269	3121	11721
1,2,4-Trichlorobenzene	2548	3502	4257	7919	18281	73493
Hexachlorobutadiene		1171	1323	2508	5253	23132
Naphthalene		9003	10468	16356	38350	155852
1,2,3-Trichlorobenzene		3518	4094	6539	15893	62278
Benzyl Chloride		6292	8188	14289	32687	143114
1-Chlorohexane		2162	2978	5152	10533	49401
trans-1,4-Dichloro-2-butene		1191	1386	2491	5540	24232
Chloroprene		1498	1857	3442	6352	29941
n-Butanol		1618	1861	3328	7374	32065
Cyclohexanone	560	1583	2508	4503	10418	43427
1,4-Dioxane	303	867	1033	1777	3769	14669
n-Hexane		2066	2433	5746	11776	53391
Diethyl ether		0.465	0.398	0.349	0.340	0.379
1,3-Butadiene		1703	1679	4187	7993	43500
Cyclohexane		5920	5782	6151	7305	81580

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

LAB FILE ID: RF0.25: X041102 RF0.5: X041103 RF1: X041104
RF2: X041105 RF5: X041106 RF20: X041107

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF5	RF20
Freon TF		1209	1410	3825	6963	37743
Methylcyclohexane		1988	1913	3554	7390	31557
Methyl Acetate		0.517	0.666	0.557	0.536	0.589
Tert-Butyl alcohol		6836	7906	12265	28804	114620
Allyl alcohol		2065	2433	5745	10990	55507
Isopropyl Alcohol		9225	9578	13152	23853	80481
4-Methyl-2-pentanol		0.065	0.059	0.058	0.054	0.060
Diisopropyl ether		1.866	1.325	1.345	1.365	1.501
Butyl acrylate		0.920	0.738	0.670	0.670	0.745
Ethanol		802	1112	1529	3072	12468
tert-Butyl formate		5921	6437	10331	23027	92374
3,3-Dimethyl-1-butanol		3815	5456	11429	27830	113048
tert-Amyl methyl ether		1.883	1.476	1.384	1.318	1.459
tert-Butyl ethyl ether		1.858	1.413	1.284	1.296	1.450
tert-Amyl alcohol		5921	6437	10367	22932	93131
2-Furfural		0.009	0.009	0.008	0.008	0.010
Isoprene		988	1419	2785	5074	23051
Acetaldehyde	1895	2075	3102	4597	7365	22899
Dibromofluoromethane		0.581	0.496	0.482	0.437	0.480
1,2-Dichloroethane-d4		0.700	0.627	0.534	0.479	0.511
Toluene-d8		1.524	1.335	1.222	1.115	1.178
4-Bromofluorobenzene			0.566	0.507	0.434	0.444

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

LAB FILE ID: RF50: X041108 RF100: X041109 RF150: X041110
RF200: X041111

COMPOUND	RF50	RF100	RF150	RF200
Dichlorodifluoromethane	152864	332122	545917	712363
Chloromethane	176053	369278	608678	814923
Vinyl Chloride	191875	409862	671783	866176
Bromomethane	104334	234102	412280	557249
Chloroethane	107507	224868	358265	472870
Trichlorofluoromethane	204892	445066	713497	927822
Acrolein	0.042	0.043	0.047	0.046
Acetone	94971	192091	303821	368573
1,1-Dichloroethene	133451	291171	469714	605421
Iodomethane	389151	853759		
Acrylonitrile	0.188	0.191	0.202	0.192
Methylene Chloride	172661	355383	555205	713815
Methyl tert-butyl ether	1.344	1.381	1.466	1.401
Carbon Disulfide	970334	2050081	3265953	4237659
trans-1,2-Dichloroethene	159815	337889	531900	678674
Vinyl Acetate	124906	260216	409965	525344
1,1-Dichloroethane	0.795	0.843	0.902	0.876
2-Butanone	133166	257439	403024	514555
2,2-Dichloropropane	203364	427020	674155	860908
cis-1,2-Dichloroethene	0.503	0.534	0.572	0.544
Chloroform	0.768	0.797	0.846	0.809
Bromochloromethane	0.247	0.248	0.240	0.228
1,1,1-Trichloroethane	221714	464105	726816	939311
1,1-Dichloropropene	214089	448804	707774	919511
1,2-Dichloroethane	0.360	0.379	0.409	0.387
Carbon Tetrachloride	199056	415812	653054	849669
Benzene	641202	1326821	2091934	2689274
Trichloroethene	167697	350953	562023	725656
Bromodichloromethane	0.393	0.417	0.450	0.433
2-Chloroethylvinyl ether	0.221	0.225	0.245	0.236
1,2-Dichloropropane	0.319	0.338	0.364	0.348
Dibromomethane	0.192	0.204	0.220	0.212
4-Methyl-2-Pentanone	300344	617014	963057	1221789
cis-1,3-Dichloropropene	0.533	0.560	0.608	0.587
Toluene	1.280	1.359	1.460	1.375
trans-1,3-Dichloropropene	0.439	0.464	0.501	0.482
2-Hexanone	196505	404952	644035	828684
1,1,2-Trichloroethane	0.245	0.258	0.275	0.259
1,3-Dichloropropane	0.516	0.540	0.581	0.545
Dibromochloromethane	0.346	0.363	0.396	0.373
Tetrachloroethene	128594	269448	433221	558156
1,2-Dibromoethane	0.303	0.318	0.340	0.324
Chlorobenzene	0.837	0.894	0.974	0.932
1,1,1,2-Tetrachloroethane	0.305	0.330	0.359	0.339

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

LAB FILE ID: RF50: X041108 RF100: X041109 RF150: X041110
RF200: X041111

COMPOUND	RF50	RF100	RF150	RF200
Ethylbenzene	0.437	0.468	0.512	0.481
m,p-Xylenes	0.529	0.568	0.620	0.586
o-Xylene	0.525	0.561	0.609	0.574
Styrene	0.913	0.968	1.061	0.988
Bromoform	0.248	0.260	0.287	0.274
Isopropylbenzene	648558	1327235	2104371	2725551
Allyl Chloride	1.317	1.368	1.459	1.371
1,1,2,2-Tetrachloroethane	190897	386060	608927	778010
Methacrylonitrile	0.449	0.437	0.469	0.442
1,2,3-Trichloropropane	232049	473929	753856	967759
Isobutyl Alcohol	0.058	0.060	0.062	0.061
n-Propylbenzene	806027	1630889	2595018	3344811
Bromobenzene	0.715	0.794	0.879	0.820
1,3,5-Trimethylbenzene	2.029	2.203	2.422	2.326
2-Chlorotoluene	1.744	1.894	2.109	
4-Chlorotoluene	2.018	2.165	2.385	
Propionitrile	0.065	0.067	0.072	0.068
tert-Butylbenzene	462958	955699	1500896	1949190
1,2,4-Trimethylbenzene	2.094	2.275	2.514	2.383
sec-Butylbenzene	649111	1327731	2105946	2742019
p-Isopropyltoluene	462958	955699	1500896	1949190
Methyl Methacrylate	153011	306139	465818	596764
1,3-Dichlorobenzene	1.221	1.349	1.500	1.414
1,4-Dichlorobenzene	1.253	1.368	1.519	1.431
2-Nitropropane	65853	130012	204264	260546
Ethyl Methacrylate	0.457	0.487	0.534	0.514
n-Butylbenzene	465564	932054	1478458	1935893
1,2-Dichlorobenzene	318489	645854	1020061	1312824
1,2-Dibromo-3-Chloropropane	28932	58141	95873	124506
1,2,4-Trichlorobenzene	196043	411409	660407	
Hexachlorobutadiene	80499	166296	269294	353366
Naphthalene	382975	789837	1321694	1792401
1,2,3-Trichlorobenzene	166167	338991	549337	739420
Benzyl Chloride	338385	710313	1133992	1453413
1-Chlorohexane	141675	287178	457010	576606
trans-1,4-Dichloro-2-butene	54983	112705	179105	225186
Chloroprene	104363	225216	360630	464196
n-Butanol	77101	156767	254312	324726
Cyclohexanone	99821	194376	310949	394001
1,4-Dioxane	34022	68575	111918	141608
n-Hexane	190791	403445	640625	828425
Diethyl ether	0.385	0.400	0.436	0.413
1,3-Butadiene	145391	312953	485376	624220
Cyclohexane	268819	557670	878533	1142315

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

LAB FILE ID: RF50: X041108 RF100: X041109 RF150: X041110
RF200: X041111

COMPOUND	RF50	RF100	RF150	RF200
Freon TF	132462	282458	460320	594993
Methylcyclohexane	240839	498498	796373	1052508
Methyl Acetate	0.555	0.582	0.629	0.576
Tert-Butyl alcohol	262371	535331	856064	
Allyl alcohol	190618	392446	639189	830539
Isopropyl Alcohol	182667	362584	578706	723351
4-Methyl-2-pentanol	0.058	0.065	0.075	0.074
Diisopropyl ether	1.589	1.622	1.702	1.606
Butyl acrylate	0.743	0.793	0.876	0.838
Ethanol	29205	59127	91928	119950
tert-Butyl formate	211146	416335	692618	878089
3,3-Dimethyl-1-butanol	262778	564588		
tert-Amyl methyl ether	1.417	1.488		
tert-Butyl ethyl ether	1.476	1.483	1.578	1.506
tert-Amyl alcohol	206014	424397	681614	878589
2-Furfural	0.010	0.010	0.011	0.010
Isoprene	68764	144059	243241	309311
Acetaldehyde	58405	111879	172772	216266
Dibromofluoromethane	0.450	0.466	0.492	0.442
1,2-Dichloroethane-d4	0.484	0.490	0.513	0.465
Toluene-d8	1.138	1.201	1.282	1.128
4-Bromofluorobenzene	0.411	0.422	0.457	0.409

FORM VI VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	LINR	7.528e-002	1.90149536		0.9965738	0.9900000
Chloromethane	LINR	6.542e-002	1.68610090		0.9967576	0.9900000
Vinyl Chloride	LINR	6.518e-002	1.55930278		0.9968364	0.9900000
Bromomethane	2ORDR	3.363e-002	3.14920653	-0.4581698	0.9971932	0.9900000
Chloroethane	LINR	5.263e-002	2.88711215		0.9981553	0.9900000
Trichlorofluoromethane	LINR	6.737e-002	1.45678431		0.9973498	0.9900000
Acrolein	AVRG		4.646e-002		12.474	15.000
Acetone	LINR	-1.47e-002	7.23389250		0.9962322	0.9900000
1,1-Dichloroethene	LINR	6.147e-002	2.22957174		0.9971770	0.9900000
Iodomethane	2ORDR	3.696e-002	2.03809571	-0.1702684	0.9986250	0.9900000
Acrylonitrile	AVRG		0.18495995		12.812	15.000
Methylene Chloride	LINR	1.922e-002	1.90383625		0.9986449	0.9900000
Methyl tert-butyl ether	AVRG		1.35490476		7.780	15.000
Carbon Disulfide	LINR	0.11140315	0.63879697		0.9978631	0.9900000
trans-1,2-Dichloroethene	LINR	3.983e-002	1.98533851		0.9980575	0.9900000
Vinyl Acetate	LINR	0.10368013	5.11961391		0.9977613	0.9900000
1,1-Dichloroethane	AVRG		0.77654957		13.178	15.000
2-Butanone	LINR	4.61e-003	5.28283480		0.9988186	0.9900000
2,2-Dichloropropane	LINR	3.929e-002	1.56641653		0.9980626	0.9900000
cis-1,2-Dichloroethene	AVRG		0.49556000		12.749	15.000
Chloroform	AVRG		0.75614782		11.901	15.000
Bromochloromethane	AVRG		0.23997648		7.938	15.000
1,1,1-Trichloroethane	LINR	4.357e-002	1.44016970		0.9984308	0.9900000
1,1-Dichloropropene	LINR	5.384e-002	2.19533701		0.9978804	0.9900000
1,2-Dichloroethane	AVRG		0.36648337		9.708	15.000
Carbon Tetrachloride	LINR	5.589e-002	2.37447803		0.9978336	0.9900000
Benzene	LINR	4.414e-002	0.74900385		0.9980238	0.9900000
Trichloroethene	LINR	5.521e-002	2.77796748		0.9974593	0.9900000
Bromodichloromethane	AVRG		0.40066120		10.518	15.000
2-Chloroethylvinyl ether	AVRG		0.23095728		7.358	15.000
1,2-Dichloropropane	AVRG		0.31777879		11.968	15.000
Dibromomethane	AVRG		0.20031660		7.472	15.000
4-Methyl-2-Pentanone	LINR	2.11e-002	3.16523387		0.9977442	0.9900000
cis-1,3-Dichloropropene	AVRG		0.53689334		10.189	15.000
Toluene	AVRG		1.26222925		14.145	15.000
trans-1,3-Dichloropropene	AVRG		0.45273559		10.734	15.000
2-Hexanone	LINR	3.674e-002	4.69978135		0.9977531	0.9900000
1,1,2-Trichloroethane	AVRG		0.26179484		10.991	15.000
1,3-Dichloropropane	AVRG		0.54406380		8.368	15.000
Dibromochloromethane	AVRG		0.35929855		7.981	15.000
Tetrachloroethene	LINR	5.263e-002	3.46064824		0.9971164	0.9900000
1,2-Dibromoethane	AVRG		0.31895233		8.775	15.000
Chlorobenzene	AVRG		0.85464820		12.266	15.000
1,1,1,2-Tetrachloroethane	AVRG		0.31474284		10.869	15.000

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
Ethylbenzene	AVRG		0.42681528		14.951	15.000
m,p-Xylenes	AVRG		0.52408820		13.967	15.000
o-Xylene	AVRG		0.52670028		13.329	15.000
Styrene	AVRG		0.92427144		11.805	15.000
Bromoform	AVRG		0.26994100		11.063	15.000
Isopropylbenzene	LINR	4.28e-002	0.71102807		0.9978943	0.9900000
Allyl Chloride	AVRG		1.27143666		11.427	15.000
1,1,2,2-Tetrachloroethane	LINR	2.099e-002	1.24397360		0.9973562	0.9900000
Methacrylonitrile	AVRG		0.46743952		11.461	15.000
1,2,3-Trichloropropane	LINR	2.828e-002	1.00138709		0.9971469	0.9900000
Isobutyl Alcohol	AVRG		6.287e-002		11.072	15.000
n-Propylbenzene	LINR	4.863e-002	0.28845295		0.9972064	0.9900000
Bromobenzene	AVRG		0.76504535		14.212	15.000
1,3,5-Trimethylbenzene	AVRG		2.07180037		14.703	15.000
2-Chlorotoluene	AVRG		1.78603875		14.857	15.000
4-Chlorotoluene	AVRG		2.05987795		14.088	15.000
Propionitrile	AVRG		6.792e-002		4.207	15.000
tert-Butylbenzene	LINR	4.932e-002	0.49599895		0.9975117	0.9900000
1,2,4-Trimethylbenzene	AVRG		2.18586875		14.186	15.000
sec-Butylbenzene	LINR	5.507e-002	0.35276715		0.9972842	0.9900000
p-Isopropyltoluene	LINR	4.932e-002	0.49599895		0.9975117	0.9900000
Methyl Methacrylate	LINR	2.097e-003	2.27414643		0.9991296	0.9900000
1,3-Dichlorobenzene	AVRG		1.31202389		14.191	15.000
1,4-Dichlorobenzene	AVRG		1.35469960		14.443	15.000
2-Nitropropane	LINR	4.994e-003	5.21610813		0.9986920	0.9900000
Ethyl Methacrylate	AVRG		0.48634838		11.622	15.000
n-Butylbenzene	LINR	5.001e-002	0.50158575		0.9976035	0.9900000
1,2-Dichlorobenzene	LINR	3.323e-002	0.73720724		0.9975067	0.9900000
1,2-Dibromo-3-Chloropropane	LINR	4.347e-002	7.82169539		0.9961135	0.9900000
1,2,4-Trichlorobenzene	2ORDR	4.397e-004	1.45318534	-0.1308854	0.9998754	0.9900000
Hexachlorobutadiene	LINR	7.2e-002	2.74002825		0.9962111	0.9900000
Naphthalene	2ORDR	1.38e-002	0.67180283	-1.81e-002	0.9979312	0.9900000
1,2,3-Trichlorobenzene	LINR	5.736e-002	1.33044383		0.9965373	0.9900000
Benzyl Chloride	LINR	3.016e-002	1.33374026		0.9974046	0.9900000
1-Chlorohexane	LINR	3.981e-002	3.46991488		0.9974644	0.9900000
trans-1,4-Dichloro-2-butene	LINR	1.476e-002	8.55898324		0.9970564	0.9900000
Chloroprene	LINR	6.221e-002	2.90206374		0.9971550	0.9900000
n-Butanol	LINR	0.52293683	83.6319763		0.9978168	0.9900000
Cyclohexanone	LINR	0.29813444	49.0800433		0.9972250	0.9900000
1,4-Dioxane	LINR	0.26640268	191.856498		0.9976077	0.9900000
n-Hexane	LINR	5.991e-002	1.62836694		0.9976320	0.9900000
Diethyl ether	AVRG		0.39629768		9.908	15.000
1,3-Butadiene	LINR	5.313e-002	2.15380275		0.9979992	0.9900000
Cyclohexane	LINR	5.541e-002	1.18378096		0.9981598	0.9900000

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date(s): 04/11/18 04/11/18

Column: DB624 ID: 0.18 (mm) Calibration Time(s): 1234 1640

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2	MAX %RSD OR R^2
Freon TF	2ORDR	5.158e-002	2.46891439	-0.1283332	0.9974375	0.9900000
Methylcyclohexane	LINR	9.941e-002	1.90658142		0.9954150	0.9900000
Methyl Acetate	AVRG		0.57874508		7.951	15.000
Tert-Butyl alcohol	LINR	0.43055576	24.4991997		0.9967697	0.9900000
Allyl alcohol	LINR	1.26253041	32.6127827		0.9973383	0.9900000
Isopropyl Alcohol	LINR	-0.2856504	37.5418397		0.9976225	0.9900000
4-Methyl-2-pentanol	AVRG		6.308e-002		11.716	15.000
Diisopropyl ether	AVRG		1.54672279		11.701	15.000
Butyl acrylate	AVRG		0.77699048		11.227	15.000
Ethanol	LINR	0.17351375	228.661090		0.9991125	0.9900000
tert-Butyl formate	LINR	3.656e-002	3.09758772		0.9970204	0.9900000
3,3-Dimethyl-1-butanol	LINR	0.29794794	35.8505683		0.9975608	0.9900000
tert-Amyl methyl ether	AVRG		1.48943143		12.299	15.000
tert-Butyl ethyl ether	AVRG		1.48255807		11.465	15.000
tert-Amyl alcohol	LINR	0.34053638	31.1028664		0.9980802	0.9900000
2-Furfural	AVRG		9.511e-003		11.811	15.000
Isoprene	LINR	6.042e-002	4.35907415		0.9958176	0.9900000
Acetaldehyde	LINR	-0.1001596	25.0752218		0.9983139	0.9900000
Dibromofluoromethane	AVRG		0.48079769		8.982	15.000
1,2-Dichloroethane-d4	AVRG		0.53365881		14.722	15.000
Toluene-d8	AVRG		1.23595749		10.532	15.000
4-Bromofluorobenzene	AVRG		0.45648702		11.927	15.000

FORM VI VOA

MSVOA06 -Logbook

Batch: 31548
Date: 04-11-2018
Method: 8260
Comments:

Analyst: Diana Nguyen
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	BFB	TUNE	04-11-2018 12:19 pm	1.00	50 mL	50 mL	X041101.D	Liquid	Y	NA
	Purged, auto find									
2	VSTD00.25	ICAL 1	04-11-2018 12:34 pm	1.00	50 mL	50 mL	X041102.D	Liquid	Y	NA
	0.1 µL cal STD/100 mL DI									
3	VSTD00.5	ICAL 2	04-11-2018 01:23 pm	1.00	50 mL	50 mL	X041103.D	Liquid	Y	NA
	0.1 µL cal STD/100 mL DI									
4	VSTD001	ICAL 3	04-11-2018 01:48 pm	1.00	50 mL	50 mL	X041104.D	Liquid	Y	NA
	0.2 µL cal STD/50 mL DI									
5	VSTD002	ICAL 4	04-11-2018 02:13 pm	1.00	50 mL	50 mL	X041105.D	Liquid	Y	NA
	0.4 µL cal STD/50 mL DI									
6	VSTD005	ICAL 5	04-11-2018 02:37 pm	1.00	50 mL	50 mL	X041106.D	Liquid	Y	NA
	1.0 µL cal STD/50 mL DI									
7	VSTD020	ICAL 6	04-11-2018 03:02 pm	1.00	50 mL	50 mL	X041107.D	Liquid	Y	NA
	4 µL cal STD/50 mL DI									
8	VSTD050	ICAL 7	04-11-2018 03:27 pm	1.00	50 mL	50 mL	X041108.D	Liquid	Y	NA
	10 µL cal STD/50 mL DI									
9	VSTD100	ICAL 8	04-11-2018 03:51 pm	1.00	50 mL	50 mL	X041109.D	Liquid	Y	NA
	20 µL cal STD/50 mL DI									
10	VSTD150	ICAL 9	04-11-2018 04:16 pm	1.00	50 mL	50 mL	X041110.D	Liquid	Y	NA
	30 µL cal STD/50 mL DI									
11	VSTD200	ICAL 10	04-11-2018 04:40 pm	1.00	50 mL	50 mL	X041111.D	Liquid	Y	NA
	40 µL cal STD/50 mL DI									
12	BLK	SAMP	04-11-2018 05:05 pm	1.00	50 mL	50 mL	X041112.D	Liquid	Y	NA
	Clean up blank									
13	BLK	SAMP	04-11-2018 05:29 pm	1.00	50 mL	50 mL	X041113.D	Liquid	Y	NA
	Clean up blank									
14	VSTD-ICV	METHSPIKI	04-11-2018 05:54 pm	1.00	50 mL	50 mL	X041114.D	Liquid	Y	NA
	10 µL cal STD/50 mL DI									
15	VLCSW1-180411	LCS	04-11-2018 06:48 pm	1.00	50 mL	50 mL	X041115.D	Liquid	Y	NA
	10 µL cal STD/50 mL DI									
16	CBLK	SAMP	04-11-2018 07:13 pm	1.00	50 mL	50 mL	X041116.D	Liquid	Y	NA
	Clean up blank									
17	VBLKW1-180411	MBLK	04-11-2018 07:38 pm	1.00	50 mL	50 mL	X041117.D	Liquid	Y	<2
18	HS18031432-04	SAMP	04-11-2018 08:02 pm	1.00	50 mL	50 mL	X041118.D	Liquid	Y	<2
19	HS18031432-02	SAMP	04-11-2018 08:27 pm	1.00	50 mL	50 mL	X041119.D	Liquid	Y	<2
20	HS18031432-03	SAMP	04-11-2018 08:51 pm	1.00	50 mL	50 mL	X041120.D	Liquid	Y	<2
21	HS18031432-01	SAMP	04-11-2018 09:16 pm	1.00	50 mL	50 mL	X041121.D	Liquid	Y	<2
22	HS18031432-05	SAMP	04-11-2018 09:40 pm	1.00	50 mL	50 mL	X041122.D	Liquid	Y	<2
23	HS18031311-01	SAMP	04-11-2018 10:05 pm	100.0(	500 µL	50 mL	X041123.D	Liquid	Y	<2
24	HS18031335-34	SAMP	04-11-2018 10:30 pm	5.00	10 mL	50 mL	X041124.D	Liquid	Y	<2
25	HS18031432-01MS	MS	04-11-2018 10:54 pm	1.00	50 mL	50 mL	X041125.D	Liquid	Y	NA
	5 µL cal STD/25 mL DI									
26	HS18031432-01MSD	MSD	04-11-2018 11:19 pm	1.00	50 mL	50 mL	X041126.D	Liquid	Y	NA
	5 µL cal STD/25 mL DI									
27	VTD050-END	CCV	04-11-2018 11:43 pm	1.00	50 mL	50 mL	X041127.D	Liquid	Y	NA
28	VCSTD050	CCV	04-12-2018 12:08 am	1.00	50 mL	50 mL	X041128.D	Liquid	Y	NA
	10 µL cal STD/50 mL DI									

MSVOA06 -Logbook

Chemical	Value
SURR SPK ID	30502-18-03
IS ID	30502-18-04
ICV STD ID	30502-20-02
LCS/MS ID	30502-20-01
CAL STD ID	30502-20-01
BFB ID	30603-12-05
pH Paper	634-37-03

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041101.D

Date : 11-APR-2018 12:19

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

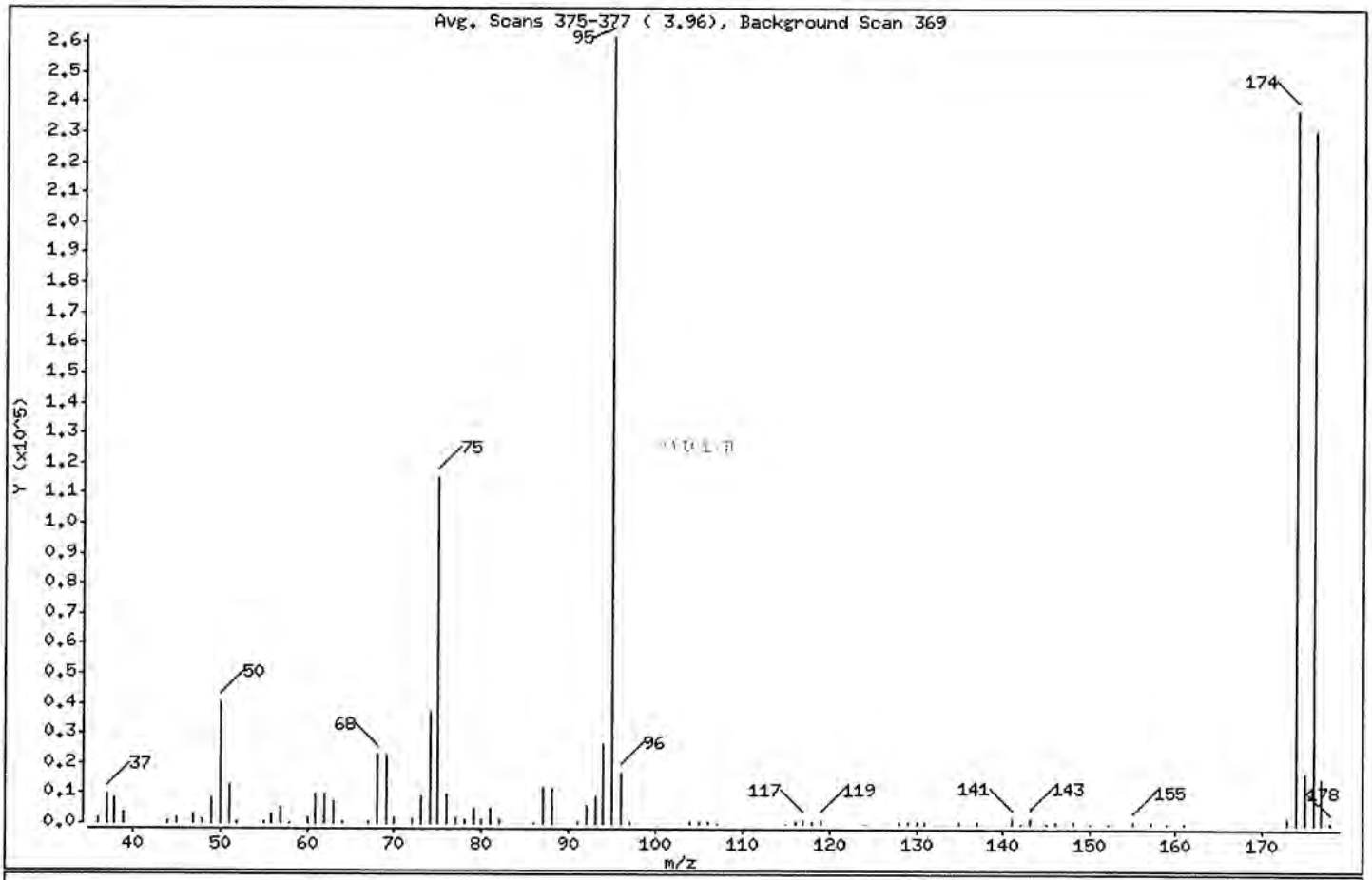
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.48
75	30.00 - 60.00% of mass 95	43.92
96	5.00 - 9.00% of mass 95	6.35
173	Less than 2.00% of mass 174	0.59 (0.65)
174	Greater than 50.00% of mass 95	90.91
175	5.00 - 9.00% of mass 174	6.44 (7.08)
176	95.00 - 101.00% of mass 174	88.17 (96.99)
177	5.00 - 9.00% of mass 176	5.78 (6.55)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041101.D

Date : 11-APR-2018 12:19

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X041101.D

Spectrum: Avg. Scans 375-377 (3.96), Background Scan 369

Location of Maximum: 95.00

Number of points: 80

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1689	67.00	510	94.00	26536	142.00	294
37.00	9611	68.00	22696	95.00	261952	143.00	1982
38.00	8495	69.00	22544	96.00	16624	145.00	80
39.00	3413	70.00	1628	97.00	493	146.00	381
44.00	774	72.00	1130	104.00	851	148.00	559
45.00	1758	73.00	9256	105.00	319	150.00	181
47.00	3205	74.00	36600	106.00	882	152.00	68
48.00	1239	75.00	115056	107.00	167	155.00	698
49.00	8471	76.00	9672	115.00	93	157.00	477
50.00	40544	77.00	1543	116.00	716	159.00	176
51.00	12763	78.00	1113	117.00	1401	161.00	274
52.00	556	79.00	4866	118.00	717	173.00	1552
55.00	495	80.00	1393	119.00	970	174.00	238144
56.00	2973	81.00	4876	124.00	67	175.00	16864
57.00	5379	82.00	928	128.00	873	176.00	230976
58.00	82	86.00	223	129.00	357	177.00	15136
60.00	1847	87.00	12084	130.00	866	178.00	464
61.00	9626	88.00	11567	131.00	371		
62.00	9453	91.00	816	135.00	324		
63.00	6939	92.00	6012	137.00	374		
64.00	649	93.00	9124	141.00	1978		

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041101.D Page 1

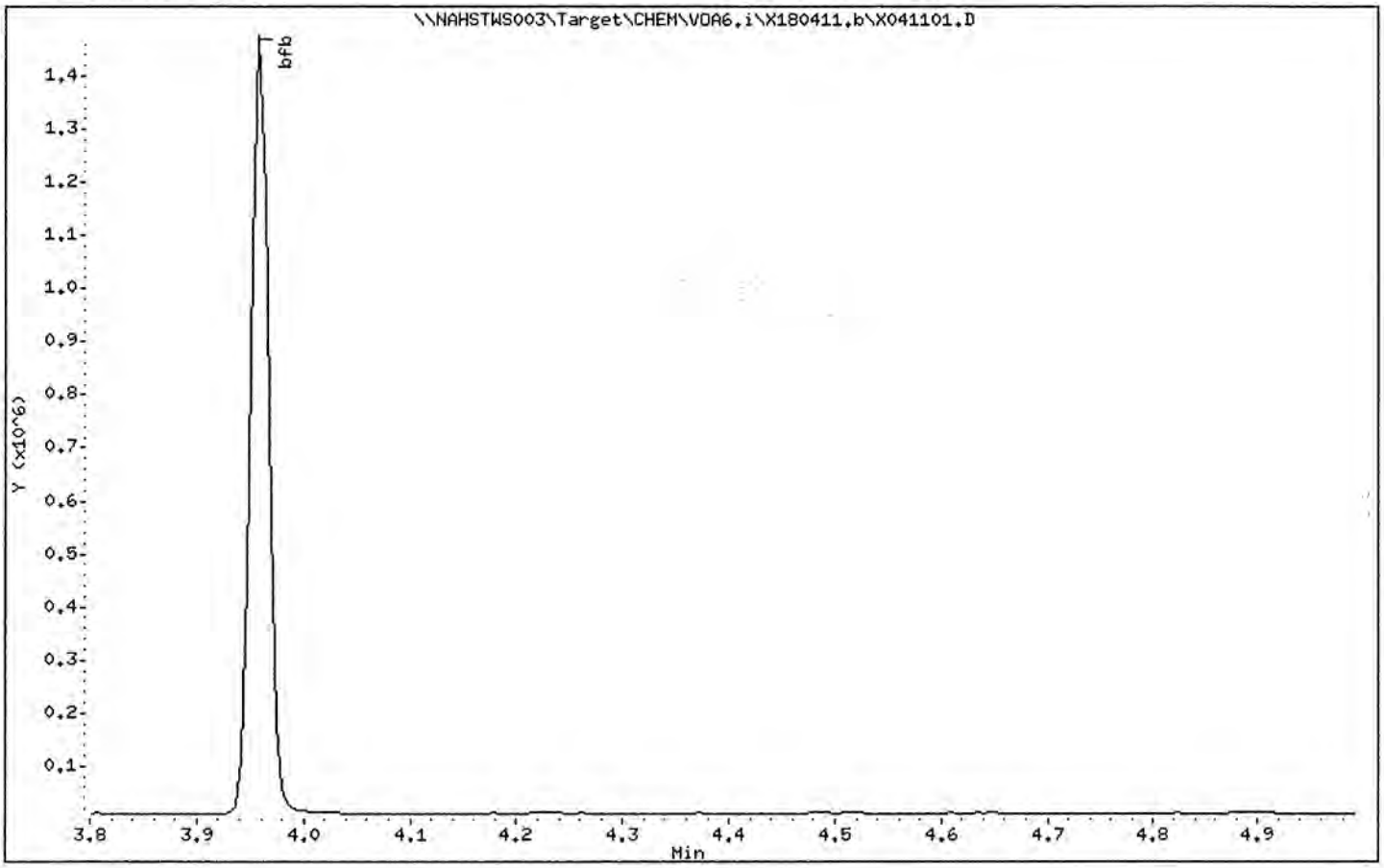
Date : 11-APR-2018 12:19

Client ID: BFB Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0 Operator: PC

Column phase: DB624 Column diameter: 0.25



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041102.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041102.D
Lab Smp Id: VSTD00.25 Client Smp ID: VSTD00.25
Inj Date : 11-APR-2018 12:34
Operator : PC Inst ID: voa6.i
Smp Info : VSTD00.25;VSTD00.25;1;1;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 16:40 Cal File: X041111.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

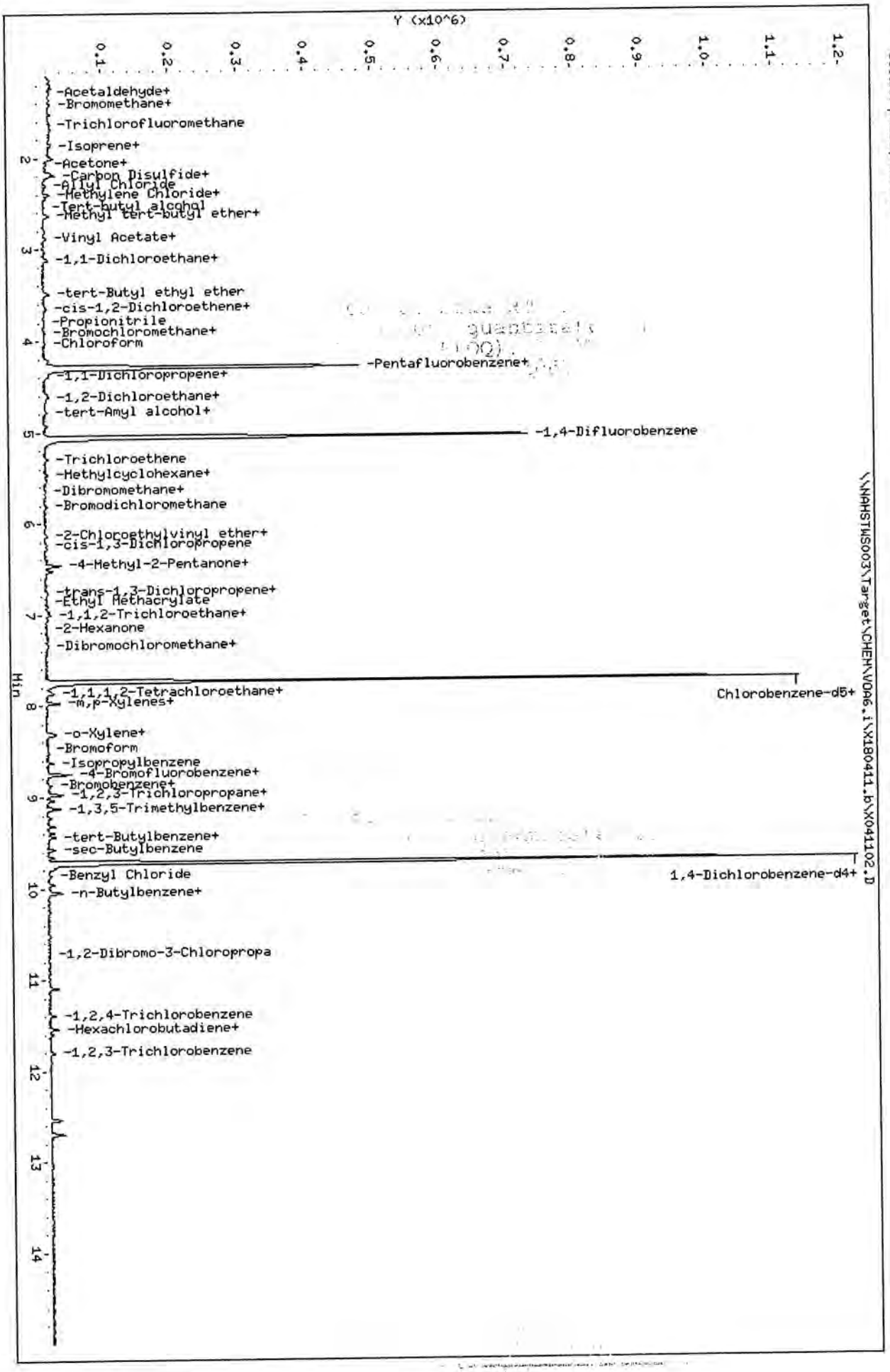
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.297	4.297	(1.000)	380553	50.0000	
173	3,3-Dimethyl-1-butanol	57	7.348	7.348	(0.950)	1072	5.00000	18.32(M)
23	Chloroprene	53	1.854	1.854	(0.432)	827	0.25000	3.42(aM)
43	2-Nitropropane	43	6.037	6.037	(1.405)	609	0.25000	0.66(aM)
132	n-Butanol	56	5.386	5.386	(1.253)	569	5.00000	32.39(aM)
176	tert-Amyl alcohol	59	4.727	4.727	(1.100)	1133	5.00000	21.65(M)
172	tert-Butyl formate	59	4.727	4.727	(1.100)	1077	0.50000	2.26(aM)
72	trans-1,4-Dichloro-2-butene	53	8.946	8.946	(1.156)	513	0.25000	1.12(M)
86	Benzyl Chloride	91	9.863	9.863	(1.275)	2496	0.25000	1.80(aM)
185	Isoprene	39	1.861	1.861	(0.433)	566	0.25000	3.34(aM)
136	n-Hexane	57	2.871	2.871	(0.668)	2436	0.25000	3.51(aM)
194	Acetaldehyde	44	1.281	1.281	(0.298)	1895	1.00000	1.23(aM)
140	1,3-Butadiene	54	1.231	1.231	(0.287)	1405	0.25000	3.05(aM)
134	Cyclohexanone	55	8.709	8.709	(0.994)	560	5.00000	19.87(aM)
2	Dichlorodifluoromethane	85	1.031	1.031	(0.240)	1157	0.25000	4.05(aM)
3	Chloromethane	50	1.138	1.138	(0.265)	2689	0.25000	3.86(a)
5	Vinyl Chloride	62	1.210	1.210	(0.282)	2288	0.25000	3.72(a)
6	Bromomethane	94	1.410	1.410	(0.328)	1719	0.25000	2.39(a)
7	Chloroethane	64	1.475	1.475	(0.343)	974	0.25000	3.00(a)
8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	1644	0.25000	3.68(a)
10	Acetone	43	2.062	2.062	(0.480)	3895	0.50000	2.96(a)
11	1,1-Dichloroethene	96	2.005	2.005	(0.467)	1375	0.25000	3.47(a)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041102.D
Report Date: 15-May-2018 16:12

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	15	Iodomethane	142	2.119	2.119	(0.493)	3976	0.50000	2.91(a)
	17	Methylene Chloride	84	2.406	2.406	(0.560)	2711	0.25000	1.63(a)
	19	Carbon Disulfide	76	2.162	2.162	(0.503)	12220	0.50000	6.59
	20	trans-1,2-Dichloroethene	96	2.635	2.635	(0.613)	1682	0.25000	2.43(a)
	21	Vinyl Acetate	43	2.871	2.871	(0.668)	1450	0.50000	6.15(M)
	22	1,1-Dichloroethane	63	3.029	3.029	(0.705)	2576	0.25000	0.43(Ta)
	26	2,2-Dichloropropane	77	3.624	3.624	(0.843)	2249	0.25000	2.42(aM)
$	30	Dibromofluoromethane	113	4.211	4.211	(0.980)	3648	0.25000	0.99(a)
	31	1,1,1-Trichloroethane	97	4.211	4.211	(0.980)	1884	0.25000	2.53(a)
	32	1,1-Dichloropropene	75	4.397	4.397	(0.868)	2399	0.25000	3.13(a)
	34	Carbon Tetrachloride	117	4.368	4.368	(0.863)	1878	0.25000	3.17(a)
$	35	1,2-Dichloroethane-d4	65	4.576	4.576	(1.065)	4984	0.25000	1.22(a)
*	36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	590583	50.0000	
	37	Benzene	78	4.619	4.619	(0.912)	6217	0.25000	2.60(a)
	38	Trichloroethene	130	5.300	5.300	(1.047)	1599	0.25000	3.13(a)
	45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	1796	0.50000	1.56(a)
*	47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	559948	50.0000	
$	48	Toluene-d8	98	6.460	6.460	(0.835)	14048	0.25000	1.01(a)
	52	2-Hexanone	43	7.155	7.155	(0.925)	1702	0.50000	2.55(a)
	56	Tetrachloroethene	164	6.997	6.997	(0.905)	1368	0.25000	3.05(a)
	58	1-Chlorohexane	55	7.742	7.742	(1.529)	2756	0.25000	2.80(aM)
	59	Chlorobenzene	112	7.757	7.757	(1.003)	4072	0.25000	0.42(a)
	60	1,1,1,2-Tetrachloroethane	131	7.835	7.835	(1.013)	1222	0.25000	0.34(a)
	62	m,p-Xylenes	106	7.964	7.964	(1.030)	5260	0.50000	0.89(a)
	67	Isopropylbenzene	105	8.623	8.623	(1.115)	5689	0.25000	2.50(a)
	68	1,1,2,2-Tetrachloroethane	83	8.896	8.896	(0.915)	1312	0.25000	1.34(aM)
$	69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	10356	0.25000	2.02(a)
*	70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	276811	50.0000	
	71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	1858	0.25000	1.75(a)
	73	n-Propylbenzene	91	8.974	8.974	(0.923)	7596	0.25000	2.82(a)
	78	tert-Butylbenzene	119	9.397	9.397	(0.967)	4265	0.25000	2.84(a)
	81	sec-Butylbenzene	105	9.576	9.576	(0.985)	6482	0.25000	3.16(a)
	82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	4265	0.25000	2.84(a)
	87	n-Butylbenzene	91	10.049	10.049	(1.034)	5746	0.25000	3.02(a)
	88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	3076	0.25000	2.07(a)
	89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	173	0.25000	2.41(aM)
	90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	2548	0.25000	0.69(a)
	92	Naphthalene	128	11.603	11.603	(1.194)	3984	0.25000	1.17(a)
	93	1,2,3-Trichlorobenzene	180	11.797	11.797	(1.214)	2553	0.25000	3.48(a)
M	94	1,2-Dichloroethylene (total)	96				3243	0.50000	(a)
	141	Cyclohexane	56	4.290	4.290	(0.998)	6023	0.25000	3.70(a)
	138	Freon TF	101	2.005	2.005	(0.467)	1100	0.25000	2.93(a)
	147	Methylcyclohexane	83	5.464	5.464	(1.079)	1649	0.25000	5.23
	148	Tert-Butyl alcohol	59	2.528	2.528	(0.588)	1771	5.00000	27.22(aM)
	149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	21227	5.00000	90.42

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.


Y (x10^6)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
Min
2
3
4
5
6
7
8
9
10
11
12
13
14
-Acetaldehyde+
-Bromomethane+
-Trichlorofluoromethane
-Isoprene+
-Acetone+
-Carbon Disulfide+
-Allyl Chloride
-Methylene Chloride+
-Tert-butyl alcohol
-Methyl tert-butyl ether+
-Vinyl Acetate+
-1,1-Dichloroethane+
-tert-Butyl ethyl ether
-cis-1,2-Dichloroethene+
-Propionitrile
-Bromochloromethane+
-Chloroform
-Pentafluorobenzene+
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-tert-Amyl alcohol+
-1,4-Difluorobenzene
-Trichloroethene
-Methylcyclohexane+
-Dibromomethane+
-Bromodichloromethane
-2-Chloroethylvinyl ether+
-cis-1,3-Dichloropropene
-4-Methyl-2-Pentanone+
-trans-1,3-Dichloropropene+
-Ethyl Methacrylate
-1,1,2-Trichloroethane+
-2-Hexanone
-Dibromochloromethane+
Chlorobenzene-d5+
-1,1,1,2-Tetrachloroethane+
-m,p-Xylenes+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-Bromobenzene+
-1,2,3-Trichloropropane+
-1,3,5-Trimethylbenzene+
-tert-Butylbenzene+
-sec-Butylbenzene
1,4-Dichlorobenzene-d4+
-Benzyl Chloride
-n-Butylbenzene+
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene+
-1,2,3-Trichlorobenzene
Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041102.D
Date : 11-APR-2018 12:34
Client ID: VSTD00.25
Sample Info: VSTD00.25;VSTD00.25;1;1;
Purge Volume: 5.0
Column phase: DB624
\\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041102.D
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041103.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041103.D
Lab Smp Id: VSTD00.5 Client Smp ID: VSTD00.5
Inj Date : 11-APR-2018 13:23
Operator : PC Inst ID: voa6.i
Smp Info : VSTD00.5;VSTD00.5;1;2;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 12:34 Cal File: X041102.D
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1* CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.297	4.297	(1.000)	367361	50.0000	
173	3,3-Dimethyl-1-butanol	57	7.355	7.355	(0.951)	3815	10.0000	27.70(M)
23	Chloroprene	53	1.854	1.854	(0.432)	1498	0.50000	3.70(aM)
43	2-Nitropropane	43	6.045	6.045	(1.407)	1149	0.50000	1.06(aM)
139	Diethyl ether	59	1.840	1.840	(0.428)	1707	0.50000	0.58(aM)
49	Ethyl Methacrylate	69	6.854	6.854	(1.354)	3372	0.50000	0.61(aM)
12	Isobutyl Alcohol	43	4.777	4.777	(1.112)	5854	10.0000	12.67(aM)
25	Methacrylonitrile	41	3.939	3.939	(0.917)	2177	0.50000	0.63(aM)
40	Methyl Methacrylate	41	5.694	5.694	(1.325)	2320	0.50000	0.82(aM)
4	Propionitrile	54	3.788	3.788	(0.882)	2627	5.00000	5.26(aM)
156	Diisopropyl ether	45	3.108	3.108	(0.723)	6957	0.50000	0.60(aM)
167	Ethanol	45	1.783	1.783	(0.415)	802	10.0000	33.63(M)
132	n-Butanol	56	5.357	5.357	(1.247)	1618	10.0000	44.56(aM)
176	tert-Amyl alcohol	59	4.719	4.719	(1.098)	5921	10.0000	42.09(M)
174	tert-Amyl methyl ether	73	4.770	4.770	(1.110)	6916	0.50000	0.63(aM)
175	tert-Butyl ethyl ether	59	3.495	3.495	(0.813)	6827	0.50000	0.62(aM)
172	tert-Butyl formate	59	4.719	4.719	(1.098)	5921	1.00000	4.32(aM)
72	trans-1,4-Dichloro-2-butene	53	8.946	8.946	(1.156)	1191	0.50000	1.69(M)
86	Benzyl Chloride	91	9.870	9.870	(1.276)	6292	0.50000	2.29(aM)
162	Butyl acrylate	55	8.315	8.315	(1.075)	4912	0.50000	0.59(aM)
185	Isoprene	39	1.854	1.854	(0.432)	988	0.50000	3.60(aM)
136	n-Hexane	57	2.886	2.886	(0.672)	2066	0.50000	3.45(aM)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041103.D
Report Date: 15-May-2018 16:12

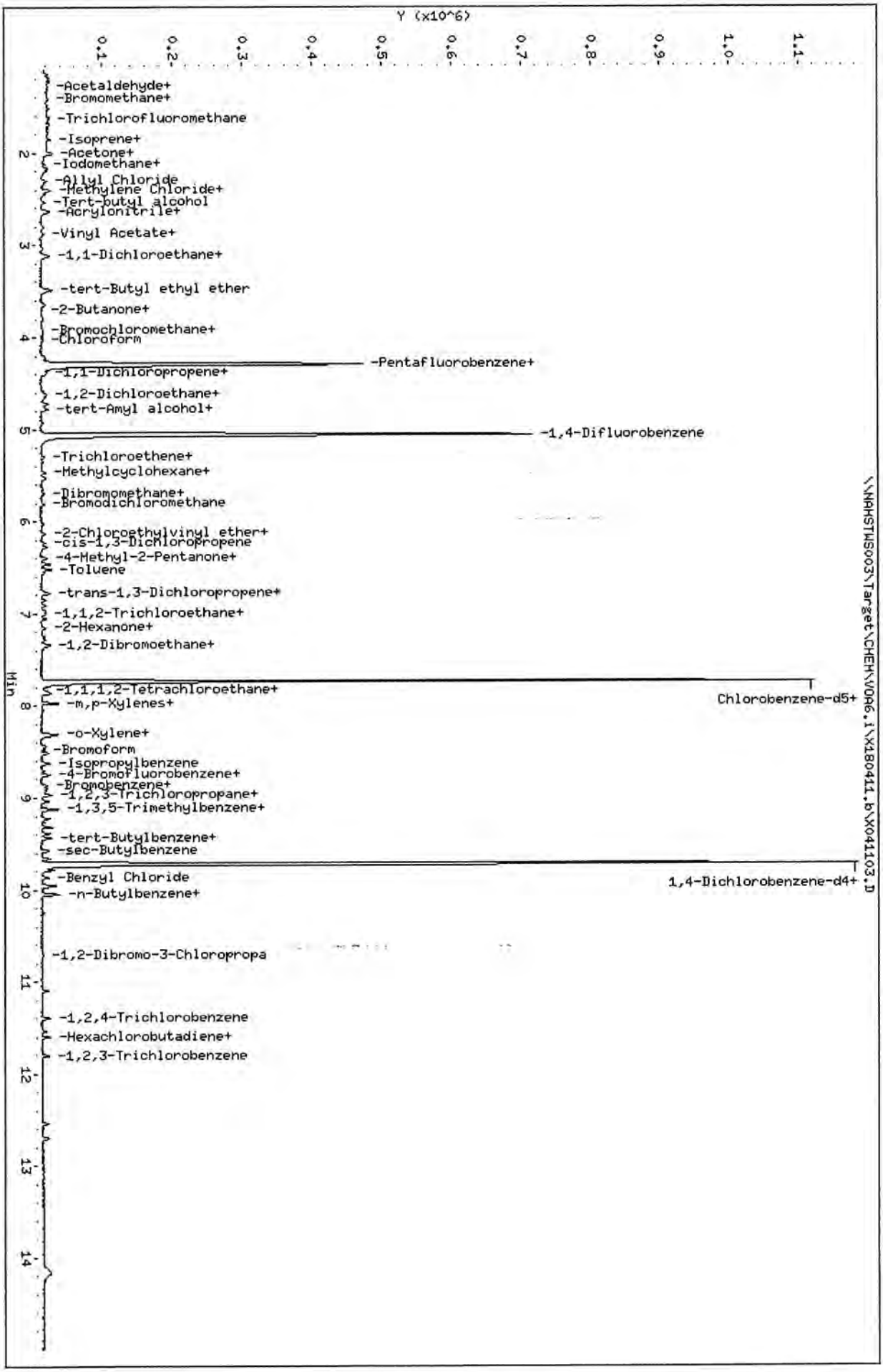
			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	14	Allyl Chloride	41	2.298	2.298	(0.535)	5096	0.50000	0.54(aM)
	194	Acetaldehyde	44	1.281	1.281	(0.298)	2075	2.00000	2.07(aM)
	140	1,3-Butadiene	54	1.231	1.231	(0.287)	1703	0.50000	3.15(aM)
	134	Cyclohexanone	55	8.709	8.709	(0.896)	1583	10.0000	29.27(aM)
	2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	1429	0.50000	4.13(aM)
	3	Chloromethane	50	1.138	1.138	(0.265)	2505	0.50000	3.84(a)
	5	Vinyl Chloride	62	1.209	1.209	(0.282)	2151	0.50000	3.71(a)
	6	Bromomethane	94	1.410	1.410	(0.328)	1358	0.50000	2.26(a)
	7	Chloroethane	64	1.475	1.475	(0.343)	1510	0.50000	3.22(a)
	8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	2034	0.50000	3.77(a)
	10	Acetone	43	2.069	2.069	(0.482)	2981	1.00000	2.20(a)
	11	1,1-Dichloroethene	96	2.005	2.005	(0.467)	1573	0.50000	3.55(a)
	15	Iodomethane	142	2.119	2.119	(0.493)	4203	1.00000	3.01(a)
	17	Methylene Chloride	84	2.399	2.399	(0.558)	4113	0.50000	2.02(a)
	19	Carbon Disulfide	76	2.162	2.162	(0.503)	10804	1.00000	6.50
	20	trans-1,2-Dichloroethene	96	2.635	2.635	(0.613)	1922	0.50000	2.51(a)
	21	Vinyl Acetate	43	2.878	2.878	(0.670)	1234	1.00000	6.04(M)
	22	1,1-Dichloroethane	63	3.036	3.036	(0.707)	3171	0.50000	0.55(Ta)
	24	2-Butanone	43	3.702	3.702	(0.862)	1665	1.00000	1.42(a)
	26	2,2-Dichloropropane	77	3.623	3.623	(0.843)	2899	0.50000	2.58(aM)
	29	Bromochloromethane	128	3.924	3.924	(0.913)	1039	0.50000	0.58(a)
$	30	Dibromofluoromethane	113	4.225	4.225	(0.983)	2134	0.50000	0.60(a)
	31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	2466	0.50000	2.66(a)
	32	1,1-Dichloropropene	75	4.390	4.390	(0.867)	2751	0.50000	3.22(a)
	33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	2300	0.50000	0.55(a)
	34	Carbon Tetrachloride	117	4.383	4.383	(0.866)	2913	0.50000	3.40(a)
$	35	1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	2572	0.50000	0.65(Ta)
*	36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	565040	50.0000	
	37	Benzene	78	4.619	4.619	(0.912)	7332	0.50000	2.69(a)
	38	Trichloroethene	130	5.300	5.300	(1.047)	1793	0.50000	3.20(a)
	45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	5542	1.00000	2.69(a)
*	47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	533980	50.0000	
$	48	Toluene-d8	98	6.460	6.460	(0.835)	8139	0.50000	0.61(a)
	50	Toluene	91	6.524	6.524	(0.844)	8076	0.50000	0.59(a)
	52	2-Hexanone	43	7.155	7.155	(0.925)	4301	1.00000	3.72(a)
	53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	1773	0.50000	0.63(a)
	54	1,3-Dichloropropane	76	7.055	7.055	(0.912)	3417	0.50000	0.58(a)
	55	Dibromochloromethane	129	7.241	7.241	(0.936)	2043	0.50000	0.53(a)
	56	Tetrachloroethene	164	7.004	7.004	(0.906)	1453	0.50000	3.10(a)
	57	1,2-Dibromoethane	107	7.334	7.334	(0.948)	1987	0.50000	0.58(a)
	58	1-Chlorohexane	55	7.749	7.749	(1.530)	2162	0.50000	2.65(aM)
	59	Chlorobenzene	112	7.764	7.764	(1.004)	5394	0.50000	0.59(a)
	60	1,1,1,2-Tetrachloroethane	131	7.835	7.835	(1.013)	1908	0.50000	0.56(a)
	61	Ethylbenzene	106	7.864	7.864	(1.017)	2581	0.50000	0.56(a)
	62	m,p-Xylenes	106	7.971	7.971	(1.031)	6371	1.00000	1.13(a)
	63	o-Xylene	106	8.301	8.301	(1.073)	3341	0.50000	0.59(a)
	64	Styrene	104	8.322	8.322	(1.076)	5730	0.50000	0.58(a)
	66	Bromoform	173	8.480	8.480	(1.096)	1791	0.50000	0.62(Ta)
	67	Isopropylbenzene	105	8.623	8.623	(1.115)	7133	0.50000	2.61(a)
	68	1,1,2,2-Tetrachloroethane	83	8.903	8.903	(0.916)	3807	0.50000	1.92(aM)
$	69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	3916	0.50000	0.80(a)
*	70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	270395	50.0000	
	71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	4107	0.50000	2.17(a)
	73	n-Propylbenzene	91	8.967	8.967	(0.923)	9146	0.50000	2.91(a)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041103.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
	74 Bromobenzene	156	8.867	8.867	(0.912)	2622	0.50000	0.63 (a)
	75 1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	6729	0.50000	0.60 (a)
	76 2-Chlorotoluene	91	9.032	9.032	(0.929)	5970	0.50000	0.61 (a)
	77 4-Chlorotoluene	91	9.132	9.132	(0.940)	6878	0.50000	0.61 (a)
	78 tert-Butylbenzene	119	9.390	9.390	(0.966)	5231	0.50000	2.94 (a)
	79 1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	7327	0.50000	0.61 (a)
	81 sec-Butylbenzene	105	9.576	9.576	(0.985)	7379	0.50000	3.23 (a)
	82 p-Isopropyltoluene	119	9.390	9.390	(0.966)	5231	0.50000	2.94 (a)
	83 1,3-Dichlorobenzene	146	9.669	9.669	(0.995)	4467	0.50000	0.62 (a)
	84 1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	4721	0.50000	0.64 (a)
	87 n-Butylbenzene	91	10.049	10.049	(1.034)	5831	0.50000	3.04 (a)
	88 1,2-Dichlorobenzene	146	10.056	10.056	(1.035)	4928	0.50000	2.33 (a)
	89 1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	669	0.50000	3.14 (a)
	90 1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	3502	0.50000	0.96 (a)
	92 Naphthalene	128	11.603	11.603	(1.194)	9003	0.50000	1.80 (a)
	93 1,2,3-Trichlorobenzene	180	11.804	11.804	(1.214)	3518	0.50000	3.73 (a)
M	94 1,2-Dichloroethylene (total)	96				3991	1.00000	(a)
	141 Cyclohexane	56	4.297	4.297	(1.000)	5920	0.50000	3.72 (a)
	138 Freon TF	101	2.005	2.005	(0.467)	1209	0.50000	2.98 (a)
	147 Methylcyclohexane	83	5.464	5.464	(1.079)	1988	0.50000	5.30
	148 Tert-Butyl alcohol	59	2.535	2.535	(0.590)	6836	10.0000	44.32 (a)
	149 Isopropyl Alcohol	45	2.191	2.191	(0.510)	9225	10.0000	32.85 (T)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041103.D
Date : 11-APR-2018 13:23
Client ID: VSTD00.5
Sample Info: VSTD00.5;VSTD00.5;1;2;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041104.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041104.D
Lab Smp Id: VSTD001 Client Smp ID: VSTD001
Inj Date : 11-APR-2018 13:48
Operator : PC Inst ID: voa6.i
Smp Info : VSTD001;VSTD001;1;3;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 13:23 Cal File: X041103.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	367135	50.0000	
181 2-Furfural	96	8.043	8.043	(1.040)	3809	40.0000	37.63 (M)
173 3,3-Dimethyl-1-butanol	57	7.355	7.355	(0.951)	5456	20.0000	33.27 (M)
23 Chloroprene	53	1.854	1.854	(0.432)	1857	1.00000	3.84 (aM)
43 2-Nitropropane	43	6.044	6.044	(1.407)	1885	1.00000	1.58 (aM)
139 Diethyl ether	59	1.840	1.840	(0.428)	2925	1.00000	1.00 (aM)
49 Ethyl Methacrylate	69	6.861	6.861	(1.355)	5601	1.00000	1.01 (aM)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	9686	20.0000	20.98 (M)
25 Methacrylonitrile	41	3.946	3.946	(0.918)	3717	1.00000	1.08 (aM)
40 Methyl Methacrylate	41	5.693	5.693	(1.325)	3425	1.00000	1.16 (M)
4 Propionitrile	54	3.781	3.781	(0.880)	4915	10.0000	9.85 (aM)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	9728	1.00000	0.85 (aM)
167 Ethanol	45	1.790	1.790	(0.417)	1112	20.0000	43.30 (M)
132 n-Butanol	56	5.350	5.350	(1.245)	1861	20.0000	47.34 (aM)
176 tert-Amyl alcohol	59	4.719	4.719	(1.098)	6437	20.0000	44.29 (M)
174 tert-Amyl methyl ether	73	4.769	4.769	(1.110)	10841	1.00000	0.99 (aM)
175 tert-Butyl ethyl ether	59	3.487	3.487	(0.812)	10374	1.00000	0.95 (aM)
172 tert-Butyl formate	59	4.719	4.719	(1.098)	6437	2.00000	4.54 (aM)
72 trans-1,4-Dichloro-2-butene	53	8.945	8.945	(1.156)	1386	1.00000	1.85 (M)
86 Benzyl Chloride	91	9.870	9.870	(1.276)	8188	1.00000	2.53 (aM)
162 Butyl acrylate	55	8.308	8.308	(1.074)	7849	1.00000	0.94 (aM)
185 Isoprene	39	1.854	1.854	(0.432)	1419	1.00000	3.86 (aM)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041104.D
Report Date: 15-May-2018 16:12

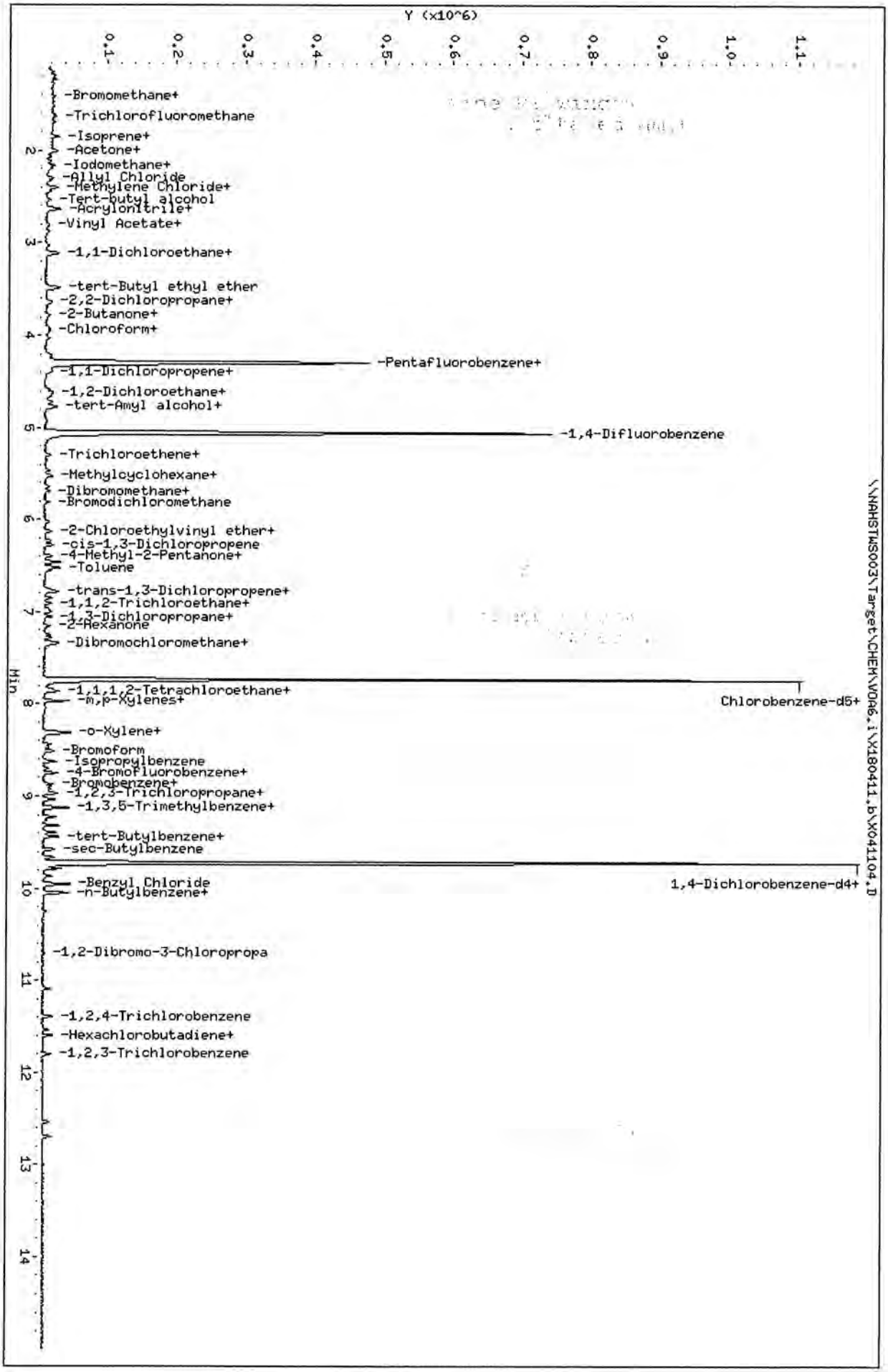
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
136	n-Hexane	57	2.878	2.878	(0.670)	2433	1.00000	3.53 (aM)
14	Allyl Chloride	41	2.298	2.298	(0.535)	8323	1.00000	0.89 (aM)
194	Acetaldehyde	44	1.274	1.274	(0.297)	3102	4.00000	5.58 (M)
140	1,3-Butadiene	54	1.231	1.231	(0.287)	1679	1.00000	3.14 (aM)
134	Cyclohexanone	55	8.709	8.709	(0.896)	2508	20.0000	37.59 (aM)
2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	1627	1.00000	4.18 (aM)
3	Chloromethane	50	1.145	1.145	(0.267)	3028	1.00000	3.96 (a)
5	Vinyl Chloride	62	1.209	1.209	(0.282)	2928	1.00000	3.88 (a)
6	Bromomethane	94	1.410	1.410	(0.328)	2222	1.00000	2.63 (a)
7	Chloroethane	64	1.474	1.474	(0.343)	1878	1.00000	3.36 (aM)
8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	2458	1.00000	3.85 (a)
10	Acetone	43	2.069	2.069	(0.482)	3613	2.00000	2.82 (a)
11	1,1-Dichloroethene	96	2.004	2.004	(0.467)	2019	1.00000	3.68 (a)
15	Iodomethane	142	2.119	2.119	(0.493)	6024	2.00000	3.51 (a)
17	Methylene Chloride	84	2.406	2.406	(0.560)	5665	1.00000	2.42 (a)
18	Methyl tert-butyl ether	73	2.635	2.635	(0.613)	9214	1.00000	0.92 (a)
19	Carbon Disulfide	76	2.162	2.162	(0.503)	14228	2.00000	6.80
20	trans-1,2-Dichloroethene	96	2.635	2.635	(0.613)	2716	1.00000	2.72 (a)
21	Vinyl Acetate	43	2.878	2.878	(0.670)	1772	2.00000	6.41
22	1,1-Dichloroethane	63	3.036	3.036	(0.707)	4887	1.00000	0.85 (a)
24	2-Butanone	43	3.702	3.702	(0.862)	2997	2.00000	2.38 (a)
26	2,2-Dichloropropane	77	3.630	3.630	(0.845)	3431	1.00000	2.69 (a)
27	cis-1,2-Dichloroethene	96	3.652	3.652	(0.850)	3287	1.00000	0.90 (a)
28	Chloroform	83	4.024	4.024	(0.937)	5095	1.00000	0.91 (a)
29	Bromochloromethane	128	3.917	3.917	(0.912)	1739	1.00000	0.98 (a)
$ 30	Dibromofluoromethane	113	4.218	4.218	(0.982)	3644	1.00000	1.03 (a)
31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	3241	1.00000	2.81 (a)
32	1,1-Dichloropropene	75	4.397	4.397	(0.868)	3548	1.00000	3.37 (a)
33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	4311	1.00000	1.03 (a)
34	Carbon Tetrachloride	117	4.383	4.383	(0.866)	3627	1.00000	3.55 (a)
$ 35	1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	4602	1.00000	1.17 (a)
* 36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	567058	50.0000	
37	Benzene	78	4.619	4.619	(0.912)	11613	1.00000	2.97 (a)
38	Trichloroethene	130	5.299	5.299	(1.047)	2794	1.00000	3.44 (a)
39	Bromodichloromethane	83	5.815	5.815	(1.149)	4352	1.00000	0.95 (aM)
42	1,2-Dichloropropane	63	5.522	5.522	(1.091)	3129	1.00000	0.86 (aM)
44	Dibromomethane	93	5.643	5.643	(1.115)	2253	1.00000	0.99 (a)
45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	8161	2.00000	3.48 (a)
46	cis-1,3-Dichloropropene	75	6.238	6.238	(1.232)	5711	1.00000	0.93 (a)
* 47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	532098	50.0000	
$ 48	Toluene-d8	98	6.460	6.460	(0.835)	14209	1.00000	1.08 (a)
50	Toluene	91	6.524	6.524	(0.844)	12057	1.00000	0.89 (a)
51	trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	5005	1.00000	0.97 (a)
52	2-Hexanone	43	7.155	7.155	(0.925)	5338	2.00000	4.19 (a)
53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	2613	1.00000	0.93 (a)
54	1,3-Dichloropropane	76	7.054	7.054	(0.912)	5932	1.00000	1.02 (a)
55	Dibromochloromethane	129	7.248	7.248	(0.937)	4124	1.00000	1.07 (a)
56	Tetrachloroethene	164	7.004	7.004	(0.906)	2054	1.00000	3.29 (a)
57	1,2-Dibromoethane	107	7.334	7.334	(0.948)	3580	1.00000	1.05 (a)
58	1-Chlorohexane	55	7.764	7.764	(1.533)	2978	1.00000	2.90 (aM)
59	Chlorobenzene	112	7.764	7.764	(1.004)	8560	1.00000	0.94 (a)
60	1,1,1,2-Tetrachloroethane	131	7.842	7.842	(1.014)	3284	1.00000	0.98 (a)
61	Ethylbenzene	106	7.864	7.864	(1.017)	4064	1.00000	0.89 (a)
62	m,p-Xylenes	106	7.971	7.971	(1.031)	10116	2.00000	1.81 (a)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041104.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
63	o-Xylene	106	8.301	8.301	(1.073)	4983	1.00000	0.88 (a)
64	Styrene	104	8.322	8.322	(1.076)	9635	1.00000	0.97 (a)
66	Bromoform	173	8.473	8.473	(1.095)	3032	1.00000	1.05 (Ta)
67	Isopropylbenzene	105	8.623	8.623	(1.115)	11155	1.00000	2.88 (a)
68	1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	4863	1.00000	2.16 (aM)
$ 69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	6028	1.00000	1.24 (a)
* 70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	271213	50.0000	
71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	5912	1.00000	2.50 (a)
73	n-Propylbenzene	91	8.974	8.974	(0.923)	13098	1.00000	3.12 (a)
74	Bromobenzene	156	8.867	8.867	(0.912)	3751	1.00000	0.90 (a)
75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	10273	1.00000	0.91 (a)
76	2-Chlorotoluene	91	9.031	9.031	(0.929)	8868	1.00000	0.91 (a)
77	4-Chlorotoluene	91	9.132	9.132	(0.940)	10246	1.00000	0.91 (a)
78	tert-Butylbenzene	119	9.397	9.397	(0.967)	7765	1.00000	3.17 (a)
79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	11314	1.00000	0.95 (a)
81	sec-Butylbenzene	105	9.583	9.583	(0.986)	10557	1.00000	3.44 (a)
82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	7765	1.00000	3.17 (a)
83	1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	6851	1.00000	0.96 (a)
84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	7252	1.00000	0.98 (a)
87	n-Butylbenzene	91	10.049	10.049	(1.034)	8194	1.00000	3.25 (a)
88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	7035	1.00000	2.61 (a)
89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	749	1.00000	3.25 (a)
90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	4257	1.00000	1.16 (a)
92	Naphthalene	128	11.603	11.603	(1.194)	10468	1.00000	1.98 (a)
93	1,2,3-Trichlorobenzene	180	11.796	11.796	(1.214)	4094	1.00000	3.87 (a)
M 94	1,2-Dichloroethylene (total)	96				6003	2.00000	(a)
141	Cyclohexane	56	4.297	4.297	(1.000)	5782	1.00000	3.70 (a)
138	Freon TF	101	1.997	1.997	(0.465)	1410	1.00000	3.05 (a)
147	Methylcyclohexane	83	5.464	5.464	(1.079)	1913	1.00000	5.29
146	Methyl Acetate	43	2.327	2.327	(0.542)	4891	1.00000	1.15 (a)
148	Tert-Butyl alcohol	59	2.527	2.527	(0.588)	7906	20.0000	47.90 (a)
149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	9578	20.0000	34.68

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041104.D
Date : 11-APR-2018 13:48
Client ID: VSTD001
Sample Info: VSTD01;VSTD001;1;3;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041105.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041105.D
Lab Smp Id: VSTD002 Client Smp ID: VSTD002
Inj Date : 11-APR-2018 14:13
Operator : PC Inst ID: voa6.i
Smp Info : VSTD002;VSTD002;1;4;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 13:48 Cal File: X041104.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	369695	50.0000	
181 2-Furfural	96	8.043	8.043	(1.040)	6896	80.0000	68.09 (M)
173 3,3-Dimethyl-1-butanol	57	7.355	7.355	(0.951)	11429	40.0000	53.37 (M)
23 Chloroprene	53	1.854	1.854	(0.432)	3442	2.00000	4.46 (aM)
43 2-Nitropropane	43	6.052	6.052	(1.408)	2486	2.00000	2.00 (aM)
139 Diethyl ether	59	1.840	1.840	(0.428)	5163	2.00000	1.76 (aM)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	9651	2.00000	1.73 (aM)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	17007	40.0000	36.58 (M)
25 Methacrylonitrile	41	3.953	3.953	(0.920)	6443	2.00000	1.86 (aM)
40 Methyl Methacrylate	41	5.694	5.694	(1.325)	5425	2.00000	1.77 (M)
4 Propionitrile	54	3.781	3.781	(0.880)	10030	20.0000	19.97 (aM)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	19891	2.00000	1.73 (aM)
167 Ethanol	45	1.790	1.790	(0.417)	1529	40.0000	55.96 (M)
132 n-Butanol	56	5.350	5.350	(1.245)	3328	40.0000	63.78 (aM)
176 tert-Amyl alcohol	59	4.719	4.719	(1.098)	10367	40.0000	60.63 (M)
174 tert-Amyl methyl ether	73	4.770	4.770	(1.110)	20475	2.00000	1.85 (aM)
175 tert-Butyl ethyl ether	59	3.487	3.487	(0.812)	18989	2.00000	1.73 (aM)
172 tert-Butyl formate	59	4.719	4.719	(1.098)	10331	4.00000	6.15 (M)
72 trans-1,4-Dichloro-2-butene	53	8.953	8.953	(1.157)	2491	2.00000	2.73 (M)
86 Benzyl Chloride	91	9.870	9.870	(1.276)	14289	2.00000	3.29 (aM)
162 Butyl acrylate	55	8.308	8.308	(1.074)	14260	2.00000	1.72 (aM)
185 Isoprene	39	1.854	1.854	(0.432)	2785	2.00000	4.66 (aM)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041105.D
Report Date: 15-May-2018 16:12

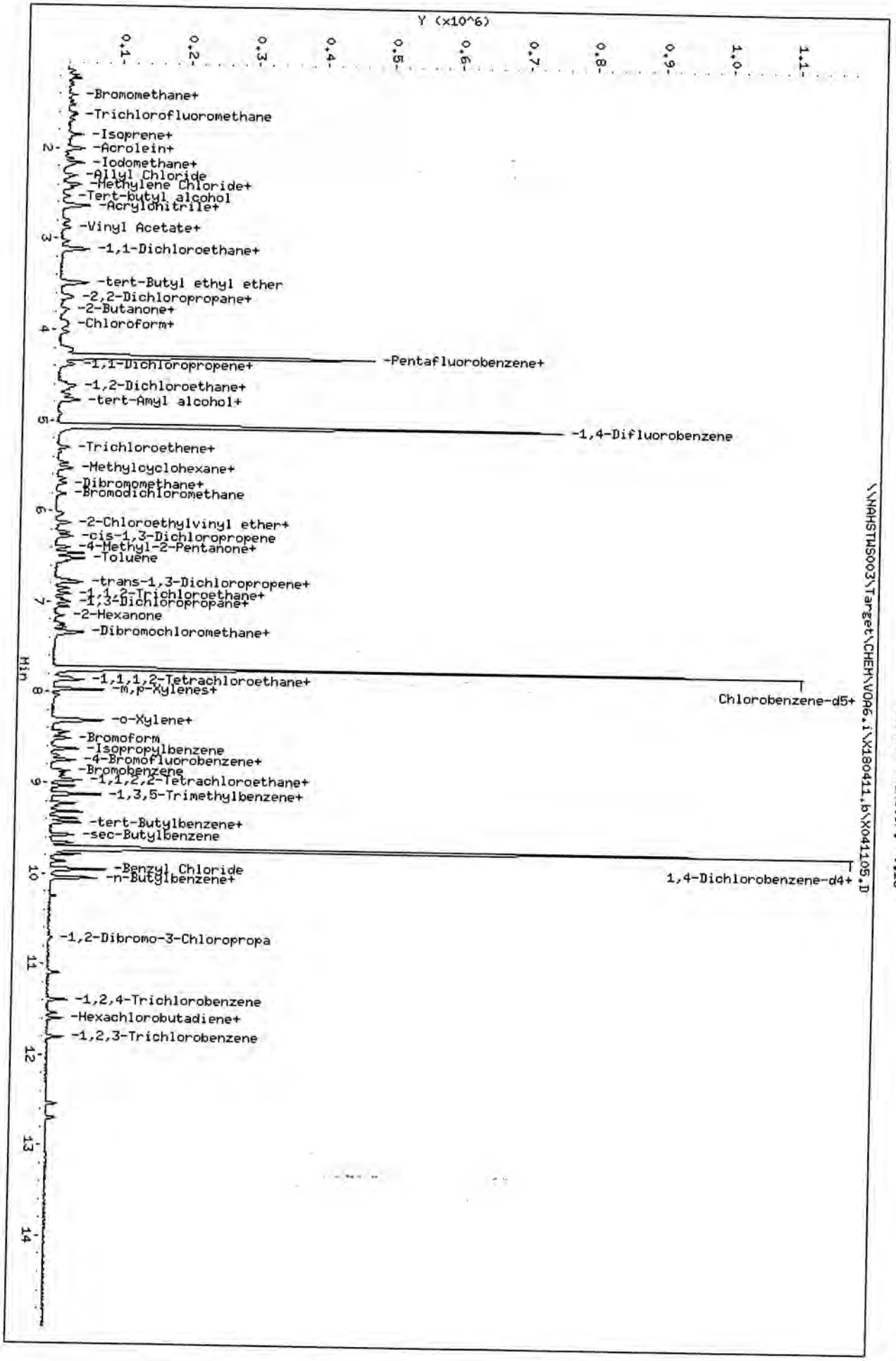
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
136	n-Hexane	57	2.879	2.879	(0.670)	5746	2.00000	4.26 (aM)
14	Allyl Chloride	41	2.298	2.298	(0.535)	15652	2.00000	1.66 (M)
194	Acetaldehyde	44	1.274	1.274	(0.297)	4597	8.00000	10.58 (M)
140	1,3-Butadiene	54	1.231	1.231	(0.287)	4187	2.00000	3.87 (aM)
134	Cyclohexanone	55	8.709	8.709	(0.896)	4503	40.0000	56.22 (aM)
2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	4688	2.00000	4.96 (a)
3	Chloromethane	50	1.138	1.138	(0.265)	7228	2.00000	4.91 (a)
5	Vinyl Chloride	62	1.210	1.210	(0.282)	6345	2.00000	4.59 (a)
6	Bromomethane	94	1.410	1.410	(0.328)	4403	2.00000	3.55 (a)
7	Chloroethane	64	1.475	1.475	(0.343)	3996	2.00000	4.19 (a)
8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	6157	2.00000	4.58 (a)
10	Acetone	43	2.062	2.062	(0.480)	5356	4.00000	4.50 (a)
11	1,1-Dichloroethene	96	2.005	2.005	(0.467)	4548	2.00000	4.44 (a)
15	Iodomethane	142	2.119	2.119	(0.493)	12143	4.00000	5.18
17	Methylene Chloride	84	2.406	2.406	(0.560)	8337	2.00000	3.10 (a)
18	Methyl tert-butyl ether	73	2.635	2.635	(0.613)	18365	2.00000	1.83 (a)
19	Carbon Disulfide	76	2.162	2.162	(0.503)	32565	4.00000	8.38
20	trans-1,2-Dichloroethene	96	2.635	2.635	(0.613)	5973	2.00000	3.59 (a)
21	Vinyl Acetate	43	2.879	2.879	(0.670)	4287	4.00000	8.15
22	1,1-Dichloroethane	63	3.029	3.029	(0.705)	10450	2.00000	1.82 (a)
24	2-Butanone	43	3.709	3.709	(0.863)	4565	4.00000	3.49 (a)
26	2,2-Dichloropropane	77	3.623	3.623	(0.843)	7692	2.00000	3.59 (a)
27	cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	6871	2.00000	1.87 (a)
28	Chloroform	83	4.032	4.032	(0.938)	10467	2.00000	1.87 (a)
29	Bromochloromethane	128	3.917	3.917	(0.912)	3344	2.00000	1.88 (a)
$ 30	Dibromofluoromethane	113	4.218	4.218	(0.982)	7124	2.00000	2.00 (a)
31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	7465	2.00000	3.63 (a)
32	1,1-Dichloropropene	75	4.390	4.390	(0.867)	7762	2.00000	4.18 (a)
33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	7423	2.00000	1.76 (a)
34	Carbon Tetrachloride	117	4.376	4.376	(0.864)	7509	2.00000	4.35 (a)
$ 35	1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	7897	2.00000	2.00 (a)
* 36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	572275	50.0000	
37	Benzene	78	4.619	4.619	(0.912)	22918	2.00000	3.70 (a)
38	Trichloroethene	130	5.300	5.300	(1.047)	5845	2.00000	4.17 (a)
39	Bromodichloromethane	83	5.808	5.808	(1.147)	8464	2.00000	1.84 (a)
42	1,2-Dichloropropane	63	5.522	5.522	(1.091)	6720	2.00000	1.84 (aM)
44	Dibromomethane	93	5.643	5.643	(1.115)	4358	2.00000	1.90 (a)
45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	12596	4.00000	4.79 (a)
46	cis-1,3-Dichloropropene	75	6.238	6.238	(1.232)	11255	2.00000	1.83 (a)
* 47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	532444	50.0000	
$ 48	Toluene-d8	98	6.460	6.460	(0.835)	26031	2.00000	1.97 (a)
50	Toluene	91	6.525	6.525	(0.844)	24324	2.00000	1.80 (a)
51	trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	9431	2.00000	1.82 (a)
52	2-Hexanone	43	7.155	7.155	(0.925)	8557	4.00000	5.61
53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	5533	2.00000	1.98 (a)
54	1,3-Dichloropropane	76	7.055	7.055	(0.912)	10931	2.00000	1.88 (a)
55	Dibromochloromethane	129	7.248	7.248	(0.937)	7075	2.00000	1.84 (a)
56	Tetrachloroethene	164	7.004	7.004	(0.906)	4357	2.00000	4.04 (a)
57	1,2-Dibromoethane	107	7.334	7.334	(0.948)	6201	2.00000	1.82 (a)
58	1-Chlorohexane	55	7.757	7.757	(1.532)	5152	2.00000	3.55 (aM)
59	Chlorobenzene	112	7.764	7.764	(1.004)	16486	2.00000	1.81 (a)
60	1,1,1,2-Tetrachloroethane	131	7.843	7.843	(1.014)	6162	2.00000	1.83 (a)
61	Ethylbenzene	106	7.864	7.864	(1.017)	8049	2.00000	1.77 (a)
62	m,p-Xylenes	106	7.971	7.971	(1.031)	20096	4.00000	3.60 (a)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041105.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
63	o-Xylene	106	8.301	8.301	(1.073)	10181	2.00000	1.81(a)
64	Styrene	104	8.322	8.322	(1.076)	17046	2.00000	1.73(a)
66	Bromoform	173	8.473	8.473	(1.095)	5319	2.00000	1.85(Ta)
67	Isopropylbenzene	105	8.623	8.623	(1.115)	22013	2.00000	3.60(a)
68	1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	8254	2.00000	2.96(a)
$ 69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	10804	2.00000	2.22(a)
* 70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	267428	50.0000	
71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	10422	2.00000	3.36(a)
73	n-Propylbenzene	91	8.974	8.974	(0.923)	28328	2.00000	3.95(a)
74	Bromobenzene	156	8.867	8.867	(0.912)	7305	2.00000	1.78(a)
75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	19907	2.00000	1.79(a)
76	2-Chlorotoluene	91	9.032	9.032	(0.929)	17534	2.00000	1.83(a)
77	4-Chlorotoluene	91	9.132	9.132	(0.940)	20397	2.00000	1.85(a)
78	tert-Butylbenzene	119	9.397	9.397	(0.967)	16593	2.00000	4.00(a)
79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	20719	2.00000	1.77(a)
81	sec-Butylbenzene	105	9.576	9.576	(0.985)	21455	2.00000	4.16(a)
82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	16593	2.00000	4.00(a)
83	1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	12728	2.00000	1.81(a)
84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	13388	2.00000	1.84(a)
87	n-Butylbenzene	91	10.049	10.049	(1.034)	16437	2.00000	4.04(a)
88	1,2-Dichlorobenzene	146	10.056	10.056	(1.035)	12580	2.00000	3.39(a)
89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	1269	2.00000	4.02(a)
90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	7919	2.00000	2.16(a)
92	Naphthalene	128	11.596	11.596	(1.193)	16356	2.00000	2.74(a)
93	1,2,3-Trichlorobenzene	180	11.797	11.797	(1.214)	6539	2.00000	4.49(a)
M 94	1,2-Dichloroethylene (total)	96				12844	4.00000	(a)
135	1,4-Dioxane	88	5.686	5.686	(1.323)	1777	40.0000	59.42(a)
141	Cyclohexane	56	4.297	4.297	(1.000)	6151	2.00000	3.75(a)
138	Freon TF	101	2.005	2.005	(0.467)	3825	2.00000	3.85(a)
147	Methylcyclohexane	83	5.464	5.464	(1.079)	3554	2.00000	5.56
146	Methyl Acetate	43	2.327	2.327	(0.542)	8240	2.00000	1.92(a)
148	Tert-Butyl alcohol	59	2.535	2.535	(0.590)	12265	40.0000	62.16
149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	13152	40.0000	52.49(T)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041105.D
Date : 11-APR-2018 14:13
Client ID: VSTD002
Sample Info: VSTD002;VSTD002;1;4;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041106.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041106.D
Lab Smp Id: VSTD005 Client Smp ID: VSTD005
Inj Date : 11-APR-2018 14:37
Operator : PC Inst ID: voa6.i
Smp Info : VSTD005;VSTD005;1;5;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 14:13 Cal File: X041105.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	375954	50.0000	
181 2-Furfural	96	8.029	8.029	(1.033)	17344	200.000	167.88(M)
173 3,3-Dimethyl-1-butanol	57	7.348	7.348	(0.950)	27830	100.000	106.74(M)
23 Chloroprene	53	1.854	1.854	(0.432)	6352	5.00000	5.56(M)
43 2-Nitropropane	43	6.045	6.045	(1.407)	6596	5.00000	4.82(aM)
139 Diethyl ether	59	1.840	1.840	(0.428)	12797	5.00000	4.29(aM)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	24859	5.00000	4.40(aM)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	43174	100.000	91.33(M)
25 Methacrylonitrile	41	3.946	3.946	(0.918)	15570	5.00000	4.42(M)
40 Methyl Methacrylate	41	5.686	5.686	(1.323)	14564	5.00000	4.50(M)
4 Propionitrile	54	3.774	3.774	(0.878)	23571	50.0000	46.15(aM)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	51328	5.00000	4.41(aM)
167 Ethanol	45	1.790	1.790	(0.417)	3072	100.000	102.09(M)
132 n-Butanol	56	5.343	5.343	(1.243)	7374	100.000	108.16(aM)
176 tert-Amyl alcohol	59	4.719	4.719	(1.098)	22932	100.000	111.88(M)
174 tert-Amyl methyl ether	73	4.770	4.770	(1.110)	49543	5.00000	4.42(aM)
175 tert-Butyl ethyl ether	59	3.487	3.487	(0.812)	48708	5.00000	4.36(aM)
172 tert-Butyl formate	59	4.719	4.719	(1.098)	23027	10.0000	11.31(M)
72 trans-1,4-Dichloro-2-butene	53	8.946	8.946	(1.156)	5540	5.00000	5.10(M)
86 Benzyl Chloride	91	9.870	9.870	(1.276)	32687	5.00000	5.52(M)
150 Allyl alcohol	57	2.879	2.879	(0.670)	10990	100.000	110.79(M)
162 Butyl acrylate	55	8.308	8.308	(1.074)	36416	5.00000	4.31(aM)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041106.D
Report Date: 15-May-2018 16:12

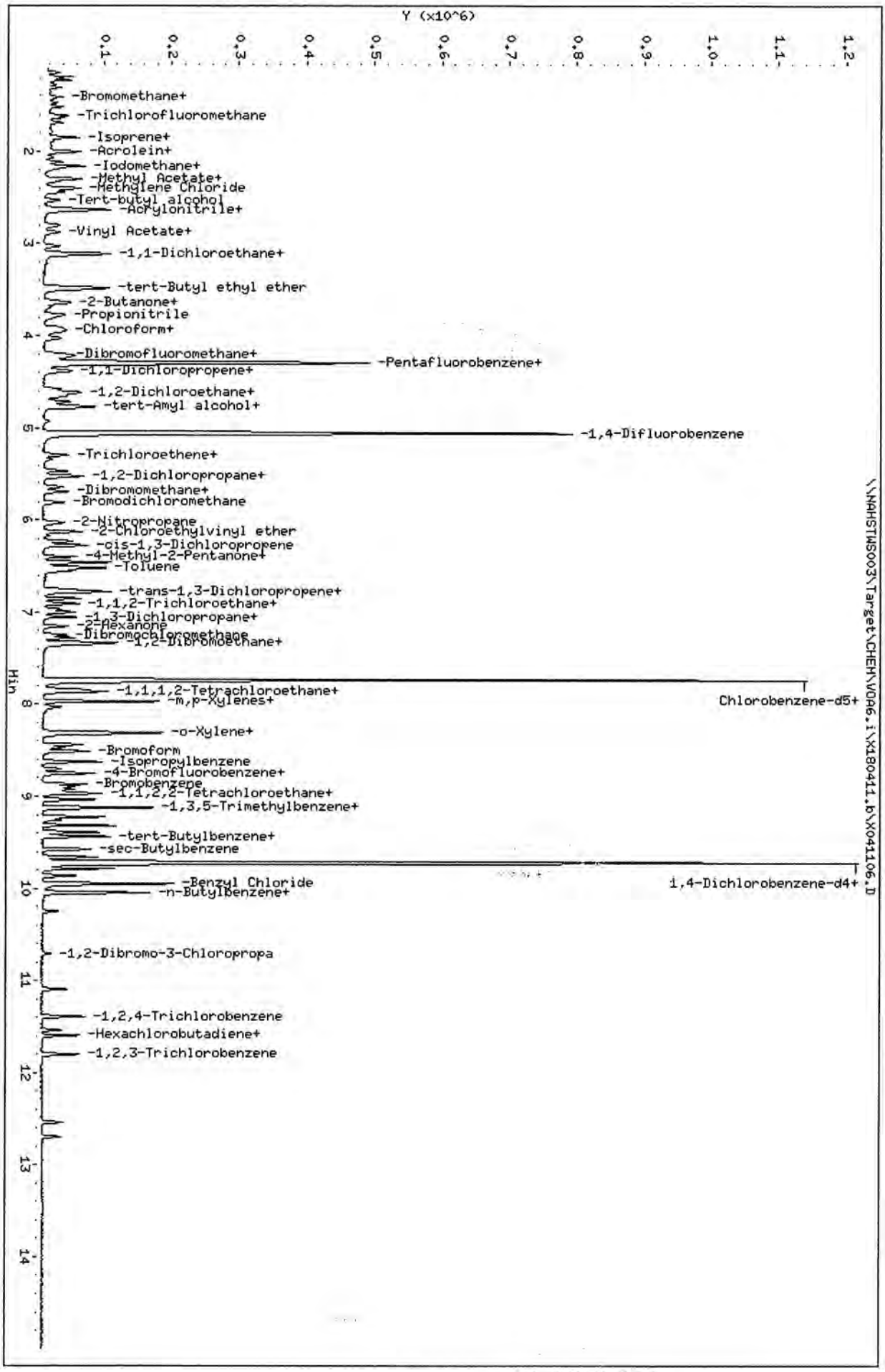
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	185 Isoprene	39	1.854	1.854	(0.432)	5074	5.00000	5.96(M)
	136 n-Hexane	57	2.879	2.879	(0.670)	11776	5.00000	5.54(M)
	14 Allyl Chloride	41	2.298	2.298	(0.535)	40821	5.00000	4.26(M)
	194 Acetaldehyde	44	1.274	1.274	(0.297)	7365	20.0000	19.55(M)
	140 1,3-Butadiene	54	1.231	1.231	(0.287)	7993	5.00000	4.94(aM)
	134 Cyclohexanone	55	8.702	8.702	(0.895)	10418	100.000	107.18(aM)
	2 Dichlorodifluoromethane	85	1.030	1.030	(0.240)	8481	5.00000	5.90
	3 Chloromethane	50	1.138	1.138	(0.265)	12990	5.00000	6.18
	5 Vinyl Chloride	62	1.210	1.210	(0.282)	11627	5.00000	5.67
	6 Bromomethane	94	1.410	1.410	(0.328)	8808	5.00000	5.35
	7 Chloroethane	64	1.475	1.475	(0.343)	7429	5.00000	5.48
	8 Trichlorofluoromethane	101	1.639	1.639	(0.382)	11141	5.00000	5.52
	9 Acrolein	56	1.940	1.940	(0.452)	3395	10.0000	9.71(a)
	10 Acetone	43	2.062	2.062	(0.480)	10482	10.0000	9.34
	11 1,1-Dichloroethene	96	2.005	2.005	(0.467)	8551	5.00000	5.60
	15 Iodomethane	142	2.119	2.119	(0.493)	24791	10.0000	8.53
	16 Acrylonitrile	53	2.635	2.635	(0.613)	11855	10.0000	8.52(a)
	17 Methylene Chloride	84	2.399	2.399	(0.558)	16479	5.00000	5.13
	18 Methyl tert-butyl ether	73	2.635	2.635	(0.613)	45749	5.00000	4.49(a)
	19 Carbon Disulfide	76	2.162	2.162	(0.503)	62436	10.0000	10.87
	20 trans-1,2-Dichloroethene	96	2.635	2.635	(0.613)	11879	5.00000	5.12
	21 Vinyl Acetate	43	2.879	2.879	(0.670)	7602	10.0000	10.36
	22 1,1-Dichloroethane	63	3.029	3.029	(0.705)	23240	5.00000	3.98(a)
	24 2-Butanone	43	3.695	3.695	(0.860)	13103	10.0000	9.43
	26 2,2-Dichloropropane	77	3.623	3.623	(0.843)	15414	5.00000	5.17
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	14491	5.00000	3.88(a)
	28 Chloroform	83	4.032	4.032	(0.938)	22754	5.00000	4.00(a)
	29 Bromochloromethane	128	3.917	3.917	(0.912)	8116	5.00000	4.49(a)
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	16429	5.00000	4.54(a)
	31 1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	15819	5.00000	5.20
	32 1,1-Dichloropropene	75	4.390	4.390	(0.867)	14917	5.00000	5.51
	33 1,2-Dichloroethane	62	4.662	4.662	(0.921)	17752	5.00000	4.17(a)
	34 Carbon Tetrachloride	117	4.383	4.383	(0.866)	12785	5.00000	5.40
$	35 1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	18009	5.00000	4.48(a)
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	580644	50.0000	
	37 Benzene	78	4.619	4.619	(0.912)	50702	5.00000	5.47
	38 Trichloroethene	130	5.300	5.300	(1.047)	12554	5.00000	5.76
	39 Bromodichloromethane	83	5.808	5.808	(1.147)	19276	5.00000	4.14(a)
	42 1,2-Dichloropropane	63	5.529	5.529	(1.092)	15079	5.00000	4.08(a)
	44 Dibromomethane	93	5.643	5.643	(1.115)	10079	5.00000	4.33(a)
	45 4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	31384	10.0000	10.19
	46 cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	26180	5.00000	4.19(a)
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	543141	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	60586	5.00000	4.51(a)
	50 Toluene	91	6.525	6.525	(0.844)	53298	5.00000	3.88(a)
	51 trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	22117	5.00000	4.20(a)
	52 2-Hexanone	43	7.155	7.155	(0.925)	21192	10.0000	11.00
	53 1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	12802	5.00000	4.50(a)
	54 1,3-Dichloropropane	76	7.055	7.055	(0.912)	26390	5.00000	4.46(a)
	55 Dibromochloromethane	129	7.248	7.248	(0.937)	16757	5.00000	4.29(a)
	56 Tetrachloroethene	164	6.997	6.997	(0.905)	9280	5.00000	5.58
	57 1,2-Dibromoethane	107	7.334	7.334	(0.948)	15255	5.00000	4.40(a)
	58 1-Chlorohexane	55	7.764	7.764	(1.533)	10533	5.00000	5.13(M)
	59 Chlorobenzene	112	7.757	7.757	(1.003)	37758	5.00000	4.06(a)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041106.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	60 1,1,1,2-Tetrachloroethane	131	7.843	7.843	(1.014)	13969	5.00000	4.08 (a)
	61 Ethylbenzene	106	7.864	7.864	(1.017)	17659	5.00000	3.80 (a)
	62 m,p-Xylenes	106	7.964	7.964	(1.030)	44249	10.0000	7.77 (a)
	63 o-Xylene	106	8.301	8.301	(1.073)	22797	5.00000	3.98 (a)
	64 Styrene	104	8.322	8.322	(1.076)	41273	5.00000	4.11 (a)
	66 Bromoform	173	8.473	8.473	(1.095)	12949	5.00000	4.41 (a)
	67 Isopropylbenzene	105	8.623	8.623	(1.115)	49083	5.00000	5.35
	68 1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	20662	5.00000	5.68
$	69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	23583	5.00000	4.75 (a)
*	70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	277043	50.0000	
	71 1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	24725	5.00000	5.88
	73 n-Propylbenzene	91	8.974	8.974	(0.923)	60865	5.00000	5.60
	74 Bromobenzene	156	8.867	8.867	(0.912)	17695	5.00000	4.17 (a)
	75 1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	44242	5.00000	3.85 (a)
	76 2-Chlorotoluene	91	9.032	9.032	(0.929)	39549	5.00000	3.99 (a)
	77 4-Chlorotoluene	91	9.132	9.132	(0.940)	45868	5.00000	4.01 (a)
	78 tert-Butylbenzene	119	9.397	9.397	(0.967)	35955	5.00000	5.68
	79 1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	48383	5.00000	3.99 (a)
	81 sec-Butylbenzene	105	9.583	9.583	(0.986)	47304	5.00000	5.76
	82 p-Isopropyltoluene	119	9.397	9.397	(0.967)	35955	5.00000	5.68
	83 1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	29049	5.00000	3.99 (a)
	84 1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	29804	5.00000	3.97 (a)
	87 n-Butylbenzene	91	10.049	10.049	(1.034)	35996	5.00000	5.75
	88 1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	29424	5.00000	5.57
	89 1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	3121	5.00000	6.57
	90 1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	18281	5.00000	4.78 (a)
	91 Hexachlorobutadiene	225	11.539	11.539	(1.187)	5253	5.00000	6.19
	92 Naphthalene	128	11.596	11.596	(1.193)	38350	5.00000	5.32
	93 1,2,3-Trichlorobenzene	180	11.797	11.797	(1.214)	15893	5.00000	6.68
M	94 1,2-Dichloroethylene (total)	96				26370	10.0000	(a)
	135 1,4-Dioxane	88	5.686	5.686	(1.323)	3769	100.000	109.48
	141 Cyclohexane	56	4.297	4.297	(1.000)	7305	5.00000	3.92 (a)
	138 Freon TF	101	2.005	2.005	(0.467)	6963	5.00000	4.86 (a)
	147 Methylcyclohexane	83	5.464	5.464	(1.079)	7390	5.00000	6.18
	146 Methyl Acetate	43	2.327	2.327	(0.542)	20159	5.00000	4.63 (a)
	148 Tert-Butyl alcohol	59	2.528	2.528	(0.588)	28804	100.000	115.37
	149 Isopropyl Alcohol	45	2.191	2.191	(0.510)	23853	100.000	104.81 (T)

QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041106.D
Date : 11-APR-2018 14:37
Client ID: VSTD005
Sample Info: VSTD005;VSTD005;1;5;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041101.D

Date : 11-APR-2018 12:19

Client ID: BFB

Instrument: voa6.i

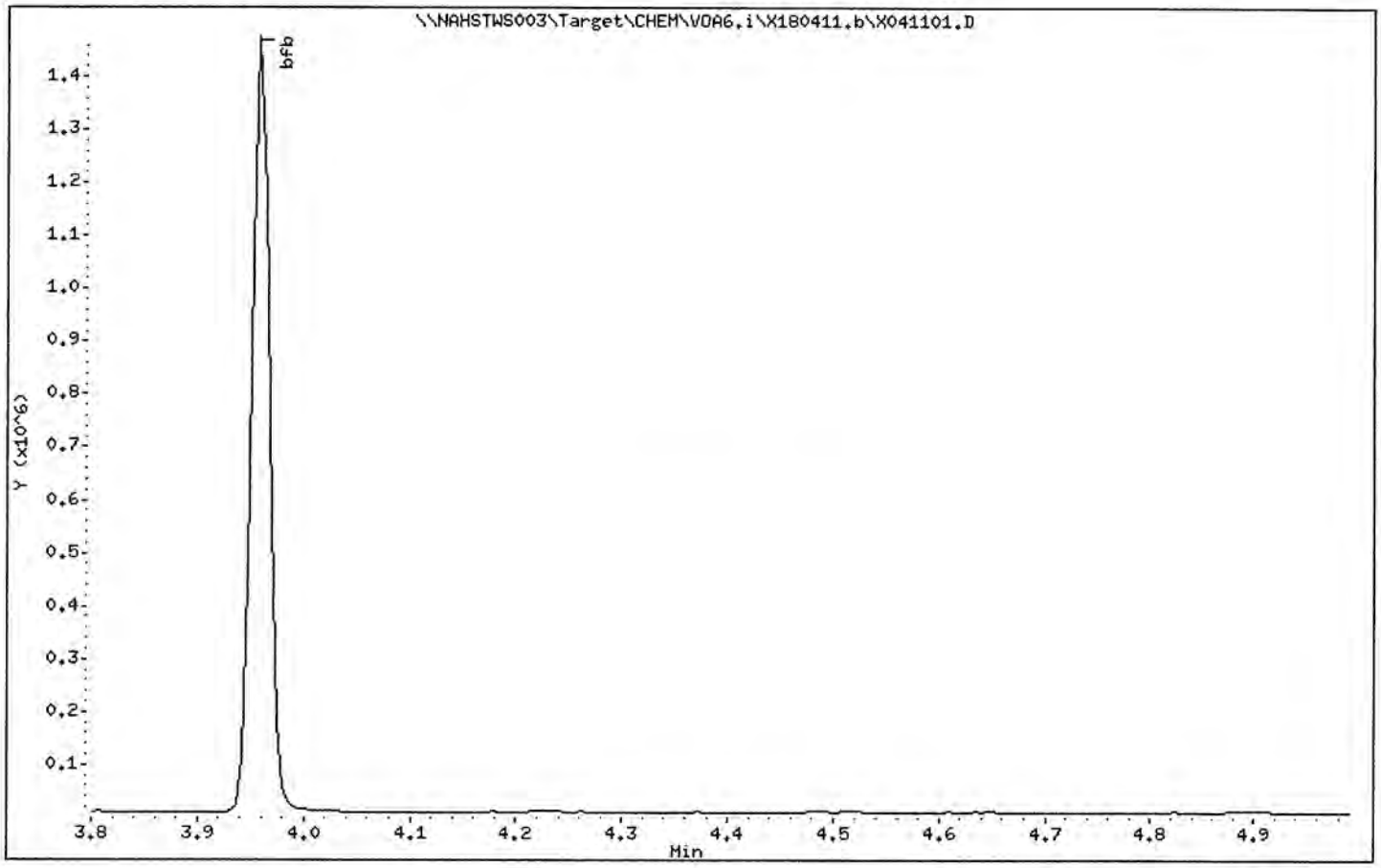
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041101.D

Date : 11-APR-2018 12:19

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

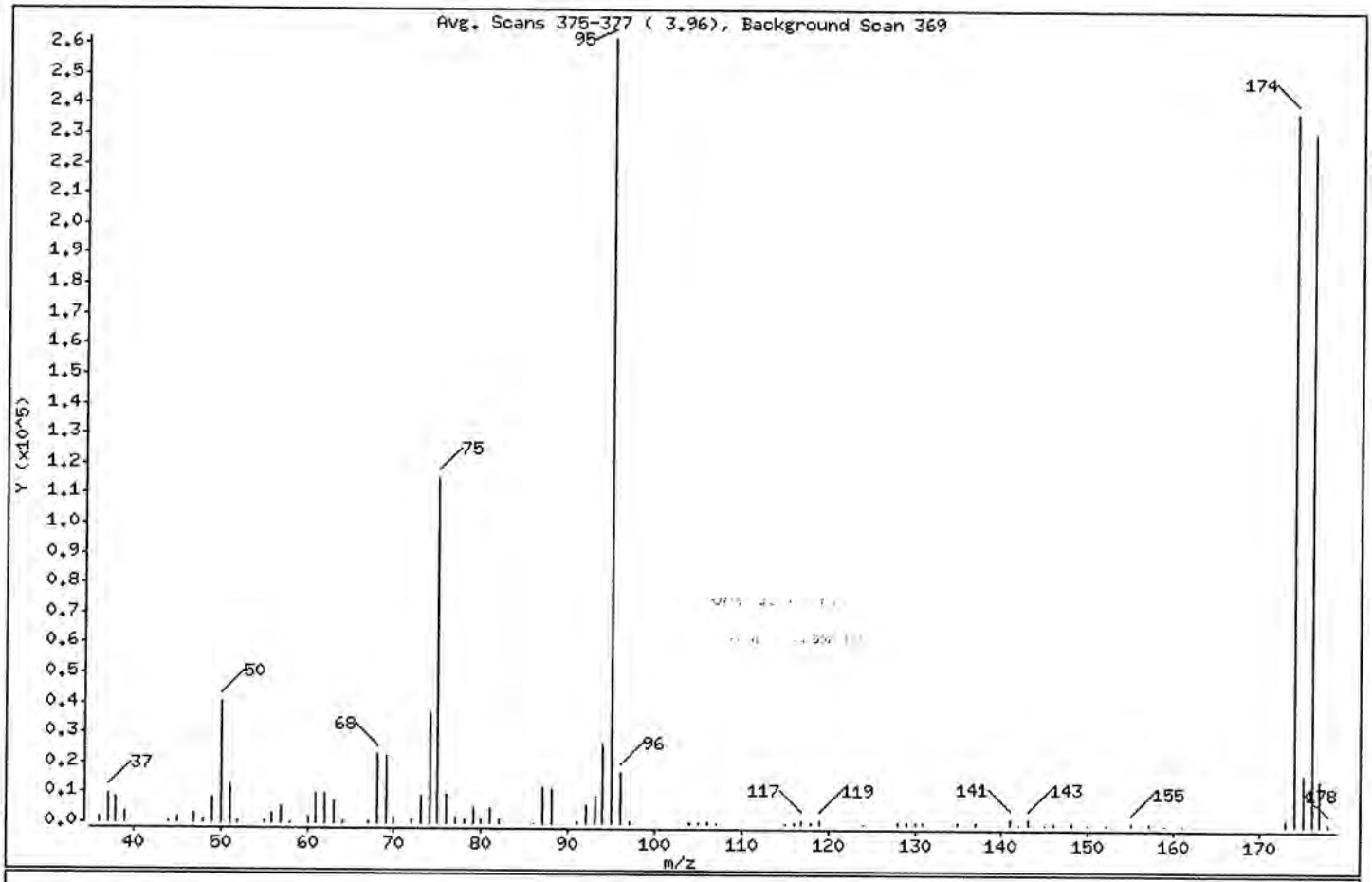
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	15.48
75	30.00 - 60.00% of mass 95	43.92
96	5.00 - 9.00% of mass 95	6.35
173	Less than 2.00% of mass 174	0.59 (0.65)
174	Greater than 50.00% of mass 95	90.91
175	5.00 - 9.00% of mass 174	6.44 (7.08)
176	95.00 - 101.00% of mass 174	88.17 (96.99)
177	5.00 - 9.00% of mass 176	5.78 (6.55)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041101.D

Date : 11-APR-2018 12:19

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X041101.D

Spectrum: Avg. Scans 375-377 (3.96), Background Scan 369

Location of Maximum: 95.00

Number of points: 80

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1689	67.00	510	94.00	26536	142.00	294
37.00	9611	68.00	22696	95.00	261952	143.00	1982
38.00	8495	69.00	22544	96.00	16624	145.00	80
39.00	3413	70.00	1628	97.00	493	146.00	381
44.00	774	72.00	1130	104.00	851	148.00	559
45.00	1758	73.00	9256	105.00	319	150.00	181
47.00	3205	74.00	36600	106.00	882	152.00	68
48.00	1239	75.00	115056	107.00	167	155.00	698
49.00	8471	76.00	9672	115.00	93	157.00	477
50.00	40544	77.00	1543	116.00	716	159.00	176
51.00	12763	78.00	1113	117.00	1401	161.00	274
52.00	556	79.00	4866	118.00	717	173.00	1552
55.00	495	80.00	1393	119.00	970	174.00	238144
56.00	2973	81.00	4876	124.00	67	175.00	16864
57.00	5379	82.00	928	128.00	873	176.00	230976
58.00	82	86.00	223	129.00	357	177.00	15136
60.00	1847	87.00	12084	130.00	866	178.00	464
61.00	9626	88.00	11567	131.00	371		
62.00	9453	91.00	816	135.00	324		
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64.00	649	93.00	9124	141.00	1978		

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041107.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041107.D
Lab Smp Id: VSTD020 Client Smp ID: VSTD020
Inj Date : 11-APR-2018 15:02
Operator : PC Inst ID: voa6.i
Smp Info : VSTD020;VSTD020;1;6;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 14:37 Cal File: X041106.D
Als bottle: 7 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	370766	50.0000	
181 2-Furfural	96	8.029	8.029	(1.038)	84359	800.000	823.23(M)
173 3,3-Dimethyl-1-butanol	57	7.348	7.348	(0.950)	113048	400.000	391.04(M)
23 Chloroprene	53	1.854	1.854	(0.432)	29941	20.0000	14.82(M)
43 2-Nitropropane	43	6.045	6.045	(1.407)	29059	20.0000	20.69(M)
139 Diethyl ether	59	1.840	1.840	(0.428)	56274	20.0000	19.14(M)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	102441	20.0000	18.25(M)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	189130	400.000	405.71(M)
25 Methacrylonitrile	41	3.939	3.939	(0.917)	68393	20.0000	19.73(M)
40 Methyl Methacrylate	41	5.686	5.686	(1.323)	66350	20.0000	20.45(M)
4 Propionitrile	54	3.774	3.774	(0.878)	103544	200.000	205.58(aM)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	222604	20.0000	19.40(M)
167 Ethanol	45	1.783	1.783	(0.415)	12468	400.000	393.14(M)
132 n-Butanol	56	5.335	5.335	(1.242)	32065	400.000	387.78(aM)
176 tert-Amyl alcohol	59	4.719	4.719	(1.098)	93131	400.000	407.65(M)
174 tert-Amyl methyl ether	73	4.770	4.770	(1.110)	216368	20.0000	19.59(M)
175 tert-Butyl ethyl ether	59	3.495	3.495	(0.813)	215075	20.0000	19.56(M)
172 tert-Butyl formate	59	4.719	4.719	(1.098)	92374	40.0000	40.41(M)
72 trans-1,4-Dichloro-2-butene	53	8.946	8.946	(1.156)	24232	20.0000	19.98(M)
86 Benzyl Chloride	91	9.862	9.862	(1.275)	143114	20.0000	19.22(M)
150 Allyl alcohol	57	2.879	2.879	(0.670)	55507	400.000	307.24(M)
151 4-Methyl-2-pentanol	45	6.775	6.775	(1.338)	274723	400.000	377.45(M)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041107.D
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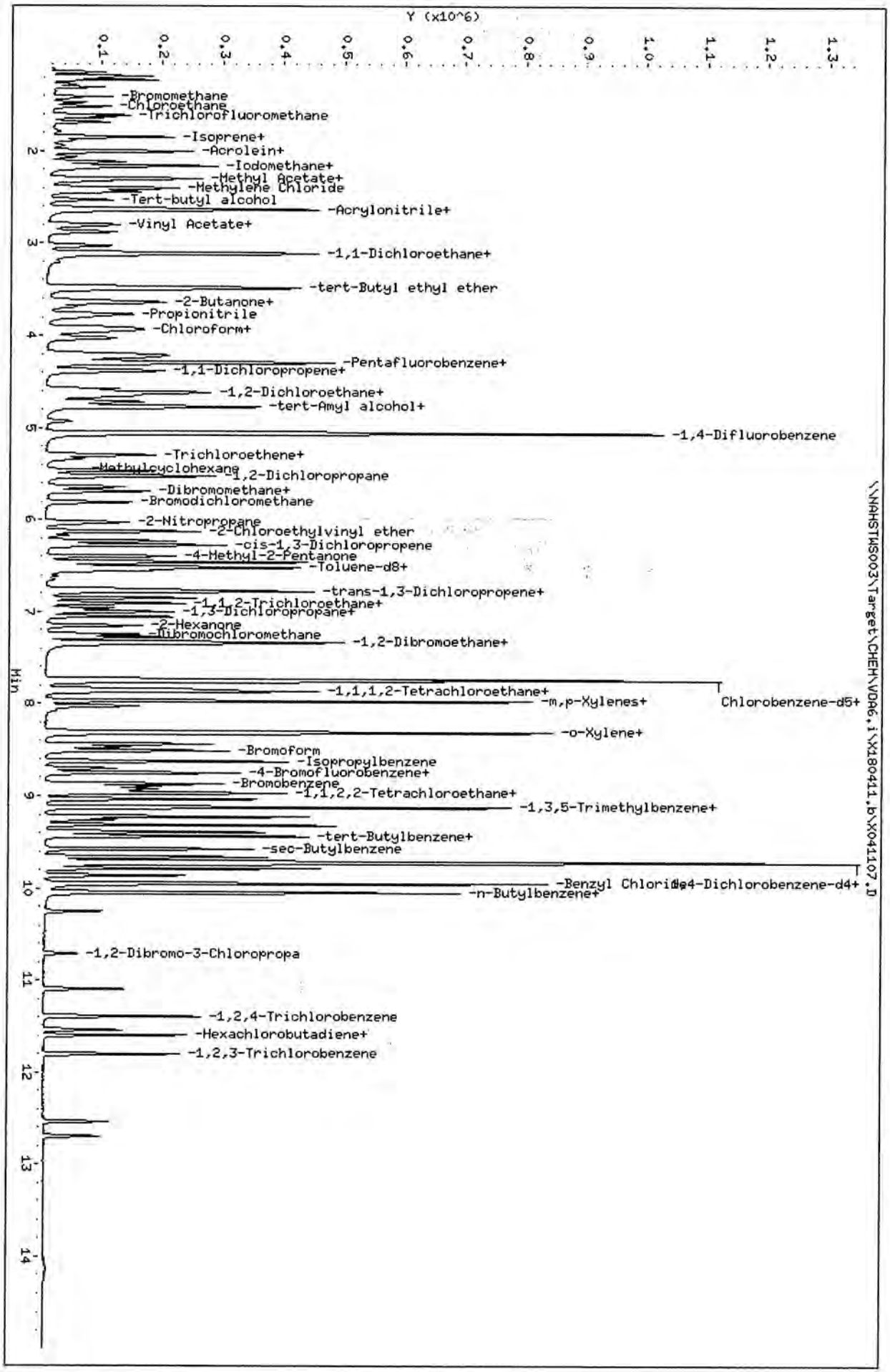
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	162 Butyl acrylate	55	8.308	8.308	(1.074)	160556	20.0000	19.17(M)
	185 Isoprene	39	1.854	1.854	(0.432)	23051	20.0000	16.57(M)
	136 n-Hexane	57	2.879	2.879	(0.670)	53391	20.0000	14.71(M)
	14 Allyl Chloride	41	2.291	2.291	(0.533)	187264	20.0000	19.86(M)
	194 Acetaldehyde	44	1.274	1.274	(0.297)	22899	80.0000	72.42(M)
	140 1,3-Butadiene	54	1.231	1.231	(0.287)	43500	20.0000	15.29(M)
	134 Cyclohexanone	55	8.702	8.702	(0.895)	43427	400.000	404.14(aM)
	2 Dichlorodifluoromethane	85	1.030	1.030	(0.240)	46180	20.0000	15.60
	3 Chloromethane	50	1.138	1.138	(0.265)	61113	20.0000	17.16
	5 Vinyl Chloride	62	1.210	1.210	(0.282)	59996	20.0000	15.87
	6 Bromomethane	94	1.410	1.410	(0.328)	39153	20.0000	18.05
	7 Chloroethane	64	1.475	1.475	(0.343)	36345	20.0000	16.78
	8 Trichlorofluoromethane	101	1.639	1.639	(0.382)	61144	20.0000	15.38
	9 Acrolein	56	1.940	1.940	(0.452)	12612	40.0000	36.60
	10 Acetone	43	2.062	2.062	(0.480)	41130	40.0000	39.38
	11 1,1-Dichloroethene	96	2.005	2.005	(0.467)	43443	20.0000	16.13
	15 Iodomethane	142	2.119	2.119	(0.493)	122490	40.0000	34.58
	16 Acrylonitrile	53	2.635	2.635	(0.613)	55149	40.0000	40.20
	17 Methylene Chloride	84	2.406	2.406	(0.560)	66994	20.0000	18.16
	18 Methyl tert-butyl ether	73	2.635	2.635	(0.613)	200874	20.0000	19.99
	19 Carbon Disulfide	76	2.162	2.162	(0.503)	302928	40.0000	31.66
	20 trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	56142	20.0000	17.02
	21 Vinyl Acetate	43	2.879	2.879	(0.670)	35261	40.0000	29.52
	22 1,1-Dichloroethane	63	3.029	3.029	(0.705)	106544	20.0000	18.50
	24 2-Butanone	43	3.695	3.695	(0.860)	58741	40.0000	42.07
	26 2,2-Dichloropropane	77	3.631	3.631	(0.845)	71063	20.0000	16.97
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	66316	20.0000	18.04
	28 Chloroform	83	4.032	4.032	(0.938)	101872	20.0000	18.16
	29 Bromochloromethane	128	3.917	3.917	(0.912)	34976	20.0000	19.65
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	71275	20.0000	19.99
	31 1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	74056	20.0000	16.56
	32 1,1-Dichloropropene	75	4.397	4.397	(0.868)	72168	20.0000	16.42
	33 1,2-Dichloroethane	62	4.662	4.662	(0.921)	79895	20.0000	18.89
	34 Carbon Tetrachloride	117	4.383	4.383	(0.866)	62076	20.0000	15.56
$	35 1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	75838	20.0000	19.16
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	576916	50.0000	
	37 Benzene	78	4.619	4.619	(0.912)	231067	20.0000	17.20
	38 Trichloroethene	130	5.300	5.300	(1.047)	58107	20.0000	16.75
	39 Bromodichloromethane	83	5.808	5.808	(1.147)	85025	20.0000	18.39
	41 2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	102088	40.0000	38.30
	42 1,2-Dichloropropane	63	5.529	5.529	(1.092)	68960	20.0000	18.80
	44 Dibromomethane	93	5.643	5.643	(1.115)	44602	20.0000	19.29
	45 4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	134372	40.0000	40.52
	46 cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	115226	20.0000	18.60
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	538728	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	253927	20.0000	19.06
	50 Toluene	91	6.525	6.525	(0.844)	240833	20.0000	17.70
	51 trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	96292	20.0000	18.43
	52 2-Hexanone	43	7.155	7.155	(0.925)	89959	40.0000	41.07
	53 1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	52984	20.0000	18.78
	54 1,3-Dichloropropane	76	7.055	7.055	(0.912)	111509	20.0000	19.02
	55 Dibromochloromethane	129	7.248	7.248	(0.937)	74353	20.0000	19.20
	56 Tetrachloroethene	164	6.997	6.997	(0.905)	43164	20.0000	16.49
	57 1,2-Dibromoethane	107	7.334	7.334	(0.948)	65646	20.0000	19.10

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041107.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	
58	1-Chlorohexane	55	7.757	7.757	(1.532)	49401	20.0000	16.84	
59	Chlorobenzene	112	7.757	7.757	(1.003)	166000	20.0000	18.02	
60	1,1,1,2-Tetrachloroethane	131	7.843	7.843	(1.014)	62090	20.0000	18.30	
61	Ethylbenzene	106	7.864	7.864	(1.017)	80858	20.0000	17.58	
62	m,p-Xylenes	106	7.964	7.964	(1.030)	199183	40.0000	35.27	
63	o-Xylene	106	8.301	8.301	(1.073)	103357	20.0000	18.21	
64	Styrene	104	8.322	8.322	(1.076)	183120	20.0000	18.38	
66	Bromoform	173	8.473	8.473	(1.095)	54317	20.0000	18.67	
67	Isopropylbenzene	105	8.623	8.623	(1.115)	225531	20.0000	17.02	
68	1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	84331	20.0000	20.20	
$ 69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	95695	20.0000	19.45	
* 70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	273793	50.0000		
71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	101138	20.0000	19.90	
73	n-Propylbenzene	91	8.974	8.974	(0.923)	279208	20.0000	17.13	
74	Bromobenzene	156	8.867	8.867	(0.912)	75981	20.0000	18.13	
75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	199942	20.0000	17.62	
76	2-Chlorotoluene	91	9.032	9.032	(0.929)	178646	20.0000	18.26	
77	4-Chlorotoluene	91	9.132	9.132	(0.940)	209773	20.0000	18.59	
78	tert-Butylbenzene	119	9.397	9.397	(0.967)	161184	20.0000	17.06	
79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	211111	20.0000	17.63	
81	sec-Butylbenzene	105	9.576	9.576	(0.985)	214472	20.0000	16.57	
82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	161184	20.0000	17.06	
83	1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	128310	20.0000	17.85	
84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	132568	20.0000	17.87	
87	n-Butylbenzene	91	10.049	10.049	(1.034)	157741	20.0000	16.94	
88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	129012	20.0000	19.03	
89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	11721	20.0000	18.91	
90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	73493	20.0000	19.05	
91	Hexachlorobutadiene	225	11.539	11.539	(1.187)	23132	20.0000	15.17	
92	Naphthalene	128	11.596	11.596	(1.193)	155852	20.0000	19.51	
93	1,2,3-Trichlorobenzene	180	11.797	11.797	(1.214)	62278	20.0000	17.99	
M 94	1,2-Dichloroethylene (total)	96				122458	40.0000		(a)
135	1,4-Dioxane	88	5.679	5.679	(1.322)	14669	400.000	392.85	
141	Cyclohexane	56	4.239	4.239	(0.987)	81580	20.0000	15.79	
138	Freon TF	101	2.005	2.005	(0.467)	37743	20.0000	15.07	
147	Methylcyclohexane	83	5.464	5.464	(1.079)	31557	20.0000	10.18	
146	Methyl Acetate	43	2.327	2.327	(0.542)	87396	20.0000	20.36	
148	Tert-Butyl alcohol	59	2.528	2.528	(0.588)	114620	400.000	400.21	
149	Isopropyl Alcohol	45	2.184	2.184	(0.508)	80481	400.000	393.17	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.


Y (x10^6)
0.1
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14
-Bromomethane
-Chloroethane
-Trichlorofluoromethane
-Isoprene+
-Acrolein+
-Iodomethane+
-Methyl Acetate+
-Methylene Chloride
-Tert-butyl alcohol
-Acrylonitrile+
-Vinyl Acetate+
-1,1-Dichloroethane+
-tert-Butyl ethyl ether
-2-Butanone+
-Propionitrile
-Chloroform+
-Pentafluorobenzene+
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-tert-Amyl alcohol+
-1,4-Difluorobenzene
-Trichloroethene+
-Methylcyclohexane
-1,2-Dichloropropane
-Dibromomethane+
-Bromodichloromethane
-2-Nitropropane
-2-Chloroethylvinyl ether
-cis-1,3-Dichloropropene
-4-Methyl-2-Pentanone
-Toluene-d8+
-trans-1,3-Dichloropropene+
-1,1,2-Trichloroethane+
-1,3-Dichloropropane+
-2-Hexanone
-Dibromochloromethane
-1,2-Dibromoethane+
-1,1,1,2-Tetrachloroethane+
-m,p-Xylenes+
Chlorobenzene-d5+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-Bromobenzene
-1,1,2,2-Tetrachloroethane+
-1,3,5-Trimethylbenzene+
-tert-Butylbenzene+
-sec-Butylbenzene
-Benzyl Chloride
1,4-Dichlorobenzene-d4+
-n-Butylbenzene+
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene+
-1,2,3-Trichlorobenzene
\\NAHSTWS003\Target\CHEM\VOA6,i\X180411,b\X041107.D
Data File: \\NAHSTWS003\Target\CHEM\VOA6,i\X180411,b\X041107.D
Date : 11-APR-2018 15:02
Client ID: VSTD020
Sample Info: VSTD020;VSTD020;16;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041108.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041108.D
Lab Smp Id: VSTD050 Client Smp ID: VSTD050
Inj Date : 11-APR-2018 15:27
Operator : PC Inst ID: voa6.i
Smp Info : VSTD050;VSTD050;1;7;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:02 Cal File: X041107.D
Als bottle: 8 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	357914	50.0000	
181 2-Furfural	96	8.021	8.021	(1.037)	207998	2000.00	2105.72(M)
173 3,3-Dimethyl-1-butanol	57	7.348	7.348	(0.950)	262778	1000.00	921.95(M)
23 Chloroprene	53	1.854	1.854	(0.432)	104363	50.0000	45.42(M)
43 2-Nitropropane	43	6.044	6.044	(1.407)	65853	50.0000	48.23(M)
139 Diethyl ether	59	1.840	1.840	(0.428)	137801	50.0000	48.57(M)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	250137	50.0000	47.01(M)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	416151	1000.00	924.76(M)
25 Methacrylonitrile	41	3.939	3.939	(0.917)	160607	50.0000	47.99(M)
40 Methyl Methacrylate	41	5.686	5.686	(1.323)	153011	50.0000	48.71(M)
4 Propionitrile	54	3.767	3.767	(0.877)	234353	500.000	482.00(M)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	568717	50.0000	51.36(M)
167 Ethanol	45	1.790	1.790	(0.417)	29205	1000.00	941.58(M)
132 n-Butanol	56	5.335	5.335	(1.242)	77101	1000.00	926.93(M)
176 tert-Amyl alcohol	59	4.719	4.719	(1.098)	206014	1000.00	912.16(M)
174 tert-Amyl methyl ether	73	4.769	4.769	(1.110)	507259	50.0000	47.57(M)
175 tert-Butyl ethyl ether	59	3.494	3.494	(0.813)	528127	50.0000	49.76(M)
172 tert-Butyl formate	59	4.719	4.719	(1.099)	211146	100.000	93.19(M)
72 trans-1,4-Dichloro-2-butene	53	8.945	8.945	(1.156)	54983	50.0000	46.04(M)
86 Benzyl Chloride	91	9.869	9.869	(1.276)	338385	50.0000	44.96(M)
150 Allyl alcohol	57	2.878	2.878	(0.670)	190618	1000.00	931.57(M)
151 4-Methyl-2-pentanol	45	6.775	6.775	(1.338)	630526	1000.00	913.69(M)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041108.D
Report Date: 15-May-2018 16:12

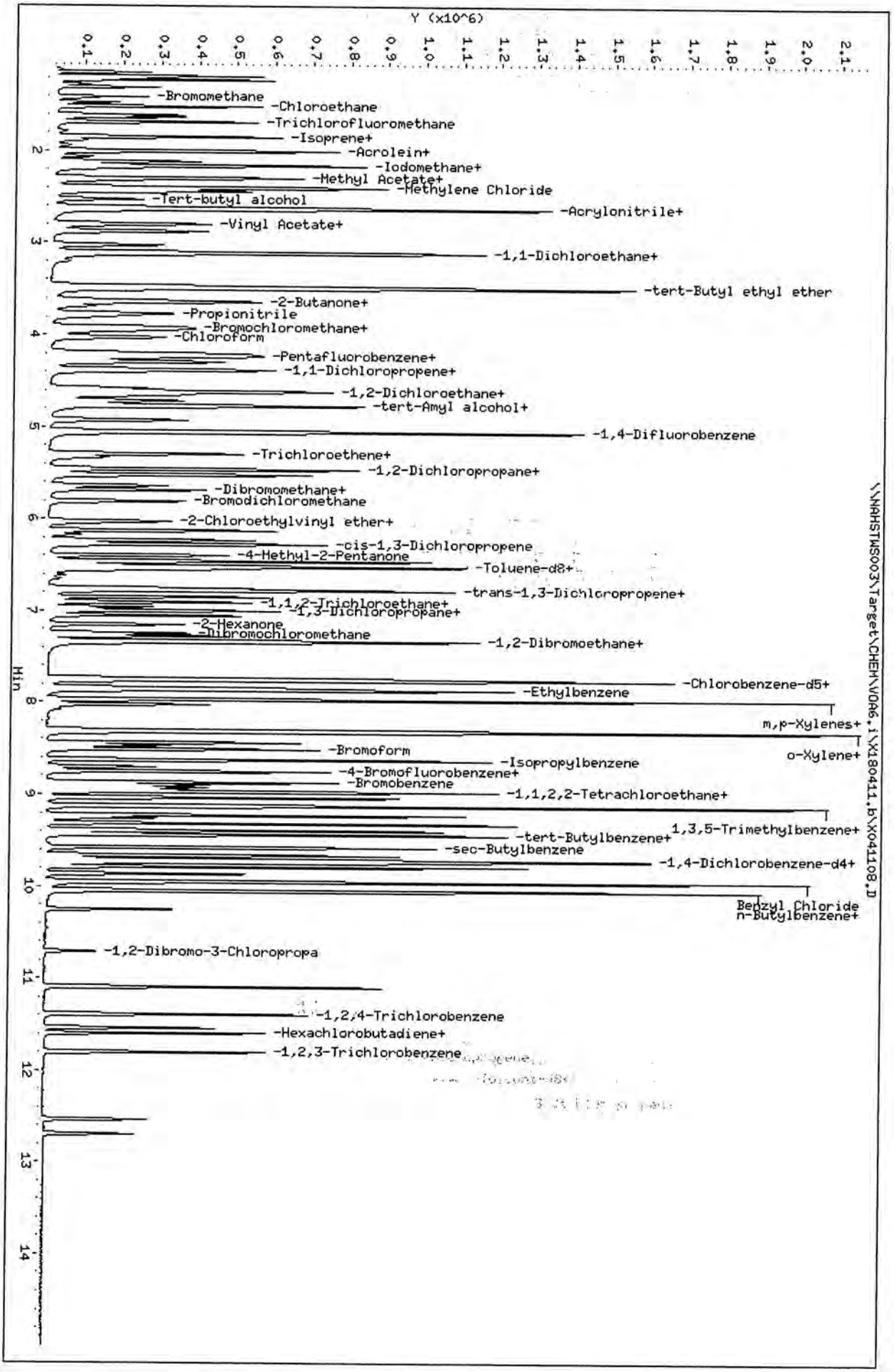
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	162 Butyl acrylate	55	8.308	8.308	(1.074)	385829	50.0000	47.81 (M)
	185 Isoprene	39	1.854	1.854	(0.432)	68764	50.0000	44.89 (M)
	136 n-Hexane	57	2.878	2.878	(0.670)	190791	50.0000	46.39 (M)
	14 Allyl Chloride	41	2.291	2.291	(0.533)	471486	50.0000	51.80 (M)
	194 Acetaldehyde	44	1.274	1.274	(0.297)	58405	200.000	199.58 (M)
	140 1,3-Butadiene	54	1.231	1.231	(0.287)	145391	50.0000	46.40 (M)
	134 Cyclohexanone	55	8.702	8.702	(0.895)	99821	1000.00	920.74 (M)
	2 Dichlorodifluoromethane	85	1.030	1.030	(0.240)	152864	50.0000	44.37
	3 Chloromethane	50	1.138	1.138	(0.265)	176053	50.0000	44.73
	5 Vinyl Chloride	62	1.209	1.209	(0.282)	191875	50.0000	45.05
	6 Bromomethane	94	1.410	1.410	(0.328)	104334	50.0000	45.63
	7 Chloroethane	64	1.474	1.474	(0.343)	107507	50.0000	45.99
	8 Trichlorofluoromethane	101	1.639	1.639	(0.382)	204892	50.0000	45.06
	9 Acrolein	56	1.940	1.940	(0.452)	29732	100.000	89.40
	10 Acetone	43	2.062	2.062	(0.480)	94971	100.000	95.23
	11 1,1-Dichloroethene	96	2.004	2.004	(0.467)	133451	50.0000	44.63
	15 Iodomethane	142	2.119	2.119	(0.493)	389151	100.000	102.58
	16 Acrylonitrile	53	2.635	2.635	(0.613)	134826	100.000	101.83
	17 Methylene Chloride	84	2.406	2.406	(0.560)	172661	50.0000	46.88
	18 Methyl tert-butyl ether	73	2.635	2.635	(0.613)	481104	50.0000	49.60
	19 Carbon Disulfide	76	2.162	2.162	(0.503)	970334	100.000	92.16
	20 trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	159815	50.0000	46.31
	21 Vinyl Acetate	43	2.878	2.878	(0.670)	124906	100.000	94.51
	22 1,1-Dichloroethane	63	3.029	3.029	(0.705)	284551	50.0000	51.18
	24 2-Butanone	43	3.688	3.688	(0.858)	133166	100.000	98.50
	26 2,2-Dichloropropane	77	3.630	3.630	(0.845)	203364	50.0000	46.46
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	179913	50.0000	50.71
	28 Chloroform	83	4.032	4.032	(0.938)	274797	50.0000	50.76
	29 Bromochloromethane	128	3.917	3.917	(0.912)	88318	50.0000	51.41
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	161231	50.0000	46.84
	31 1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	221714	50.0000	46.78
	32 1,1-Dichloropropene	75	4.390	4.390	(0.867)	214089	50.0000	45.65
	33 1,2-Dichloroethane	62	4.662	4.662	(0.921)	197114	50.0000	49.16
	34 Carbon Tetrachloride	117	4.375	4.375	(0.864)	199056	50.0000	45.99
$	35 1,2-Dichloroethane-d4	65	4.576	4.576	(1.065)	173281	50.0000	45.36
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	546992	50.0000	
	37 Benzene	78	4.619	4.619	(0.912)	641202	50.0000	46.10
	38 Trichloroethene	130	5.299	5.299	(1.047)	167697	50.0000	45.34
	39 Bromodichloromethane	83	5.808	5.808	(1.147)	215055	50.0000	49.06
	41 2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	242076	100.000	95.80
	42 1,2-Dichloropropane	63	5.529	5.529	(1.092)	174612	50.0000	50.22
	44 Dibromomethane	93	5.643	5.643	(1.115)	105184	50.0000	47.99
	45 4-Methyl-2-Pentanone	43	6.395	6.395	(0.827)	300344	100.000	92.58
	46 cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	291407	50.0000	49.61
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	519304	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	590851	50.0000	46.02
	50 Toluene	91	6.524	6.524	(0.844)	664552	50.0000	50.69
	51 trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	240048	50.0000	48.46
	52 2-Hexanone	43	7.155	7.155	(0.925)	196505	100.000	90.75
	53 1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	127285	50.0000	46.81
	54 1,3-Dichloropropane	76	7.054	7.054	(0.912)	268026	50.0000	47.43
	55 Dibromochloromethane	129	7.248	7.248	(0.937)	179504	50.0000	48.10
	56 Tetrachloroethene	164	6.997	6.997	(0.905)	128594	50.0000	45.47
	57 1,2-Dibromoethane	107	7.334	7.334	(0.948)	157491	50.0000	47.54

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041108.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	58 1-Chlorohexane	55	7.764	7.764	(1.533)	141675	50.0000	46.92
	59 Chlorobenzene	112	7.756	7.756	(1.003)	434570	50.0000	48.95
	60 1,1,1,2-Tetrachloroethane	131	7.842	7.842	(1.014)	158298	50.0000	48.42
	61 Ethylbenzene	106	7.864	7.864	(1.017)	226957	50.0000	51.19
	62 m,p-Xylenes	106	7.971	7.971	(1.031)	549769	100.000	101.00
	63 o-Xylene	106	8.301	8.301	(1.073)	272651	50.0000	49.84
	64 Styrene	104	8.322	8.322	(1.076)	474014	50.0000	49.37
	66 Bromoform	173	8.473	8.473	(1.095)	128614	50.0000	45.87
	67 Isopropylbenzene	105	8.623	8.623	(1.115)	648558	50.0000	46.54
	68 1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	190897	50.0000	44.95
$	69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	213693	50.0000	45.07
*	70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	270424	50.0000	
	71 1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	232049	50.0000	44.37
	73 n-Propylbenzene	91	8.974	8.974	(0.923)	806027	50.0000	45.41
	74 Bromobenzene	156	8.867	8.867	(0.912)	193302	50.0000	46.71
	75 1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	548714	50.0000	48.96
	76 2-Chlorotoluene	91	9.031	9.031	(0.929)	471626	50.0000	48.82
	77 4-Chlorotoluene	91	9.132	9.132	(0.940)	545820	50.0000	48.99
	78 tert-Butylbenzene	119	9.397	9.397	(0.967)	462958	50.0000	44.92
	79 1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	566220	50.0000	47.89
	81 sec-Butylbenzene	105	9.583	9.583	(0.986)	649111	50.0000	45.09
	82 p-Isopropyltoluene	119	9.397	9.397	(0.967)	462958	50.0000	44.92
	83 1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	330140	50.0000	46.52
	84 1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	338744	50.0000	46.23
	87 n-Butylbenzene	91	10.049	10.049	(1.034)	465564	50.0000	45.67
	88 1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	318489	50.0000	45.07
	89 1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	28932	50.0000	44.01
	90 1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	196043	50.0000	49.25
	91 Hexachlorobutadiene	225	11.538	11.538	(1.187)	80499	50.0000	44.38
	92 Naphthalene	128	11.596	11.596	(1.193)	382975	50.0000	46.44
	93 1,2,3-Trichlorobenzene	180	11.796	11.796	(1.214)	166167	50.0000	43.74
M	94 1,2-Dichloroethylene (total)	96				339728	100.000	(a)
	135 1,4-Dioxane	88	5.679	5.679	(1.322)	34022	1000.00	925.17
	141 Cyclohexane	56	4.239	4.239	(0.987)	268819	50.0000	47.22
	138 Freon TF	101	2.004	2.004	(0.467)	132462	50.0000	47.38
	147 Methylcyclohexane	83	5.464	5.464	(1.079)	240839	50.0000	46.94
	146 Methyl Acetate	43	2.327	2.327	(0.542)	198757	50.0000	47.97
	148 Tert-Butyl alcohol	59	2.527	2.527	(0.588)	262371	1000.00	919.49
	149 Isopropyl Alcohol	45	2.191	2.191	(0.510)	182667	1000.00	943.72

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



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Sample Info: VSTD050;VSTD050;1;7;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6,i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041109.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041109.D
Lab Smp Id: VSTD100 Client Smp ID: VSTD100
Inj Date : 11-APR-2018 15:51
Operator : PC Inst ID: voa6.i
Smp Info : VSTD100;VSTD100;1;8;
Misc Info : HS16030331;WATER;0;1;
Comment :
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Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 9 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	350434	50.0000	
181 2-Furfural	96	8.022	8.022	(1.037)	393346	4000.00	4129.60(M)
173 3,3-Dimethyl-1-butanol	57	7.348	7.348	(0.950)	564588	2000.00	2035.90(M)
23 Chloroprene	53	1.854	1.854	(0.432)	225216	100.000	96.36(M)
43 2-Nitropropane	43	6.045	6.045	(1.407)	130012	100.000	97.00(M)
139 Diethyl ether	59	1.840	1.840	(0.428)	280647	100.000	101.04(M)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	515192	100.000	100.15(M)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	835076	2000.00	1895.30(M)
25 Methacrylonitrile	41	3.939	3.939	(0.917)	306436	100.000	93.53(M)
40 Methyl Methacrylate	41	5.686	5.686	(1.323)	306139	100.000	99.43(M)
4 Propionitrile	54	3.774	3.774	(0.878)	471433	1000.00	990.31(M)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	1136491	100.000	104.83(M)
167 Ethanol	45	1.790	1.790	(0.417)	59127	2000.00	1937.71(M)
132 n-Butanol	56	5.335	5.335	(1.242)	156767	2000.00	1896.78(M)
176 tert-Amyl alcohol	59	4.719	4.719	(1.098)	424397	2000.00	1900.40(M)
174 tert-Amyl methyl ether	73	4.770	4.770	(1.110)	1043171	100.000	99.93(M)
175 tert-Butyl ethyl ether	59	3.495	3.495	(0.813)	1039269	100.000	100.01(M)
172 tert-Butyl formate	59	4.719	4.719	(1.098)	416335	200.000	185.83(M)
72 trans-1,4-Dichloro-2-butene	53	8.946	8.946	(1.156)	112705	100.000	97.05(M)
86 Benzyl Chloride	91	9.862	9.862	(1.275)	710313	100.000	96.10(M)
150 Allyl alcohol	57	2.879	2.879	(0.670)	392446	2000.00	1889.25(M)
151 4-Methyl-2-pentanol	45	6.775	6.775	(1.338)	1378255	2000.00	2065.74(M)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041109.D
Report Date: 15-May-2018 16:12

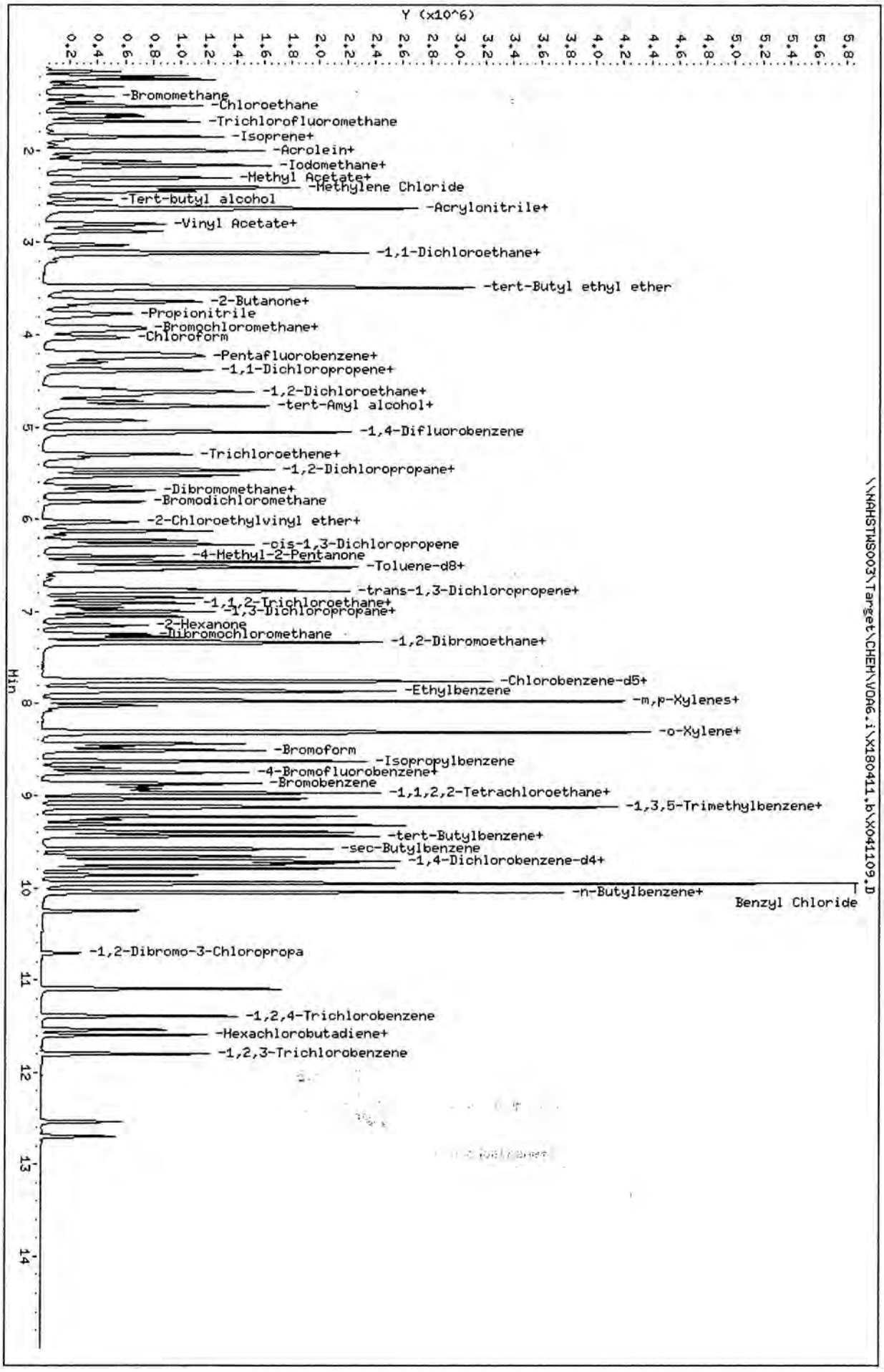
			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	162	Butyl acrylate	55	8.308	8.308	(1.074)	794568	100.000	102.10(M)
	185	Isoprene	39	1.854	1.854	(0.432)	144059	100.000	92.61(M)
	136	n-Hexane	57	2.879	2.879	(0.670)	403445	100.000	96.73(M)
	14	Allyl Chloride	41	2.291	2.291	(0.533)	958914	100.000	107.60(M)
	194	Acetaldehyde	44	1.274	1.274	(0.297)	111879	400.000	395.26(M)
	140	1,3-Butadiene	54	1.231	1.231	(0.287)	312953	100.000	98.82(M)
	134	Cyclohexanone	55	8.702	8.702	(0.895)	194376	2000.00	1901.93(M)
	2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	332122	100.000	93.87
	3	Chloromethane	50	1.138	1.138	(0.265)	369278	100.000	92.10
	5	Vinyl Chloride	62	1.210	1.210	(0.282)	409862	100.000	94.44
	6	Bromomethane	94	1.410	1.410	(0.328)	234102	100.000	96.64
	7	Chloroethane	64	1.475	1.475	(0.343)	224868	100.000	95.26
	8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	445066	100.000	95.87
	9	Acrolein	56	1.947	1.947	(0.453)	60546	200.000	185.94
	10	Acetone	43	2.062	2.062	(0.480)	192091	200.000	197.52
	11	1,1-Dichloroethene	96	2.005	2.005	(0.467)	291171	100.000	95.69
	15	Iodomethane	142	2.119	2.119	(0.493)	853759	200.000	199.58
	16	Acrylonitrile	53	2.635	2.635	(0.613)	268010	200.000	206.74
	17	Methylene Chloride	84	2.399	2.399	(0.558)	355383	100.000	97.49
	18	Methyl tert-butyl ether	73	2.635	2.635	(0.613)	968244	100.000	101.96
	19	Carbon Disulfide	76	2.162	2.162	(0.503)	2050081	200.000	192.42
	20	trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	337889	100.000	97.70
	21	Vinyl Acetate	43	2.879	2.879	(0.670)	260216	200.000	195.26
	22	1,1-Dichloroethane	63	3.029	3.029	(0.705)	590857	100.000	108.56
	24	2-Butanone	43	3.688	3.688	(0.858)	257439	200.000	194.27
	26	2,2-Dichloropropane	77	3.631	3.631	(0.845)	427020	100.000	97.40
	27	cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	374160	100.000	107.72
	28	Chloroform	83	4.032	4.032	(0.938)	558766	100.000	105.43
	29	Bromochloromethane	128	3.917	3.917	(0.912)	174022	100.000	103.46
$	30	Dibromofluoromethane	113	4.218	4.218	(0.982)	326495	100.000	96.88
	31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	464105	100.000	97.54
	32	1,1-Dichloropropene	75	4.390	4.390	(0.867)	448804	100.000	95.84
	33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	400546	100.000	103.33
	34	Carbon Tetrachloride	117	4.383	4.383	(0.866)	415812	100.000	96.14
$	35	1,2-Dichloroethane-d4	65	4.576	4.576	(1.065)	343079	100.000	91.72
*	36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	528846	50.0000	
	37	Benzene	78	4.619	4.619	(0.912)	1326821	100.000	96.16
	38	Trichloroethene	130	5.300	5.300	(1.047)	350953	100.000	94.93
	39	Bromodichloromethane	83	5.808	5.808	(1.147)	440889	100.000	104.03
	41	2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	476226	200.000	194.94
	42	1,2-Dichloropropane	63	5.529	5.529	(1.092)	357136	100.000	106.25
	44	Dibromomethane	93	5.643	5.643	(1.115)	216185	100.000	102.03
	45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	617014	200.000	196.05
	46	cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	592079	100.000	104.26
*	47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	500761	50.0000	
$	48	Toluene-d8	98	6.460	6.460	(0.835)	1202455	100.000	97.14
	50	Toluene	91	6.525	6.525	(0.844)	1361315	100.000	107.68
	51	trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	490507	100.000	102.43
	52	2-Hexanone	43	7.155	7.155	(0.925)	404952	200.000	191.86
	53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	257940	100.000	98.37
	54	1,3-Dichloropropane	76	7.055	7.055	(0.912)	541110	100.000	99.30
	55	Dibromochloromethane	129	7.248	7.248	(0.937)	363690	100.000	101.06
	56	Tetrachloroethene	164	7.004	7.004	(0.906)	269448	100.000	95.73
	57	1,2-Dibromoethane	107	7.327	7.327	(0.947)	318729	100.000	99.77

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041109.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)	
58	1-Chlorohexane	55	7.764	7.764	(1.533)	287178	100.000	96.20	
59	Chlorobenzene	112	7.757	7.757	(1.003)	895896	100.000	104.66	
60	1,1,1,2-Tetrachloroethane	131	7.843	7.843	(1.014)	330210	100.000	104.75	
61	Ethylbenzene	106	7.864	7.864	(1.017)	468325	100.000	109.55	
62	m,p-Xylenes	106	7.971	7.971	(1.031)	1137793	200.000	216.76	
63	o-Xylene	106	8.301	8.301	(1.073)	562146	100.000	106.56	
64	Styrene	104	8.322	8.322	(1.076)	969463	100.000	104.73	
66	Bromoform	173	8.473	8.473	(1.095)	260633	100.000	96.40	
67	Isopropylbenzene	105	8.623	8.623	(1.115)	1327235	100.000	96.36	
68	1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	386060	100.000	96.04	
$ 69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	423113	100.000	92.54	
* 70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	252778	50.0000		
71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	473929	100.000	95.28	
73	n-Propylbenzene	91	8.974	8.974	(0.923)	1630889	100.000	95.48	
74	Bromobenzene	156	8.867	8.867	(0.912)	401707	100.000	103.86	
75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	1113565	100.000	106.31	
76	2-Chlorotoluene	91	9.032	9.032	(0.929)	957649	100.000	106.05	
77	4-Chlorotoluene	91	9.132	9.132	(0.940)	1094636	100.000	105.11	
78	tert-Butylbenzene	119	9.397	9.397	(0.967)	955699	100.000	96.22	
79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	1150357	100.000	104.09	
81	sec-Butylbenzene	105	9.583	9.583	(0.986)	1327731	100.000	95.40	
82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	955699	100.000	96.22	
83	1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	681813	100.000	102.79	
84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	691638	100.000	100.98	
87	n-Butylbenzene	91	10.049	10.049	(1.034)	932054	100.000	94.97	
88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	645854	100.000	95.84	
89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	58141	100.000	92.12	
90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	411409	100.000	100.94	
91	Hexachlorobutadiene	225	11.539	11.539	(1.187)	166296	100.000	93.72	
92	Naphthalene	128	11.596	11.596	(1.193)	789837	100.000	96.80	
93	1,2,3-Trichlorobenzene	180	11.797	11.797	(1.214)	338991	100.000	92.07	
M 94	1,2-Dichloroethylene (total)	96				712049	200.000		(a)
135	1,4-Dioxane	88	5.679	5.679	(1.322)	68575	2000.00	1890.50	
141	Cyclohexane	56	4.240	4.240	(0.987)	557670	100.000	96.96	
138	Freon TF	101	2.005	2.005	(0.467)	282458	100.000	97.91	
147	Methylcyclohexane	83	5.464	5.464	(1.079)	498498	100.000	94.82	
146	Methyl Acetate	43	2.327	2.327	(0.542)	408137	100.000	100.61	
148	Tert-Butyl alcohol	59	2.528	2.528	(0.588)	535331	2000.00	1892.80	
149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	362584	2000.00	1927.89	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



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Sample Info: VSTD100;VSTD100;1;8;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041110.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041110.D
Lab Smp Id: VSTD150 Client Smp ID: VSTD150
Inj Date : 11-APR-2018 16:16
Operator : PC Inst ID: voa6.i
Smp Info : VSTD150;VSTD150;1;9;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:51 Cal File: X041109.D
Als bottle: 10 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	342003	50.0000	
181 2-Furfural	96	8.021	8.021	(1.037)	664259	6000.00	7207.30(M)
173 3,3-Dimethyl-1-butanol	57	7.355	7.355	(0.951)	963387	3000.00	3578.90(M)
23 Chloroprene	53	1.854	1.854	(0.432)	360630	150.000	156.11(M)
43 2-Nitropropane	43	6.044	6.044	(1.407)	204264	150.000	156.01(M)
139 Diethyl ether	59	1.840	1.840	(0.428)	447659	150.000	165.14(M)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	817305	150.000	164.86(M)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	1284487	3000.00	2987.15(M)
25 Methacrylonitrile	41	3.939	3.939	(0.917)	481218	150.000	150.50(M)
40 Methyl Methacrylate	41	5.686	5.686	(1.323)	465818	150.000	154.97(M)
4 Propionitrile	54	3.774	3.774	(0.878)	735470	1500.00	1583.04(M)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	1745923	150.000	165.02(M)
167 Ethanol	45	1.790	1.790	(0.417)	91928	3000.00	3081.80(M)
132 n-Butanol	56	5.335	5.335	(1.242)	254312	3000.00	3135.56(M)
176 tert-Amyl alcohol	59	4.719	4.719	(1.098)	681614	3000.00	3116.43(AM)
174 tert-Amyl methyl ether	73	4.769	4.769	(1.110)	1163163	150.000	114.17(M)
175 tert-Butyl ethyl ether	59	3.494	3.494	(0.813)	1618558	150.000	159.60(M)
172 tert-Butyl formate	59	4.719	4.719	(1.098)	692618	300.000	315.48(AM)
72 trans-1,4-Dichloro-2-butene	53	8.945	8.945	(1.156)	179105	150.000	158.92(M)
86 Benzyl Chloride	91	9.862	9.862	(1.275)	1133992	150.000	157.57(M)
150 Allyl alcohol	57	2.878	2.878	(0.670)	639189	3000.00	3110.72(M)
151 4-Methyl-2-pentanol	45	6.782	6.782	(1.340)	2294813	3000.00	3569.06(M)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041110.D
Report Date: 15-May-2018 16:12

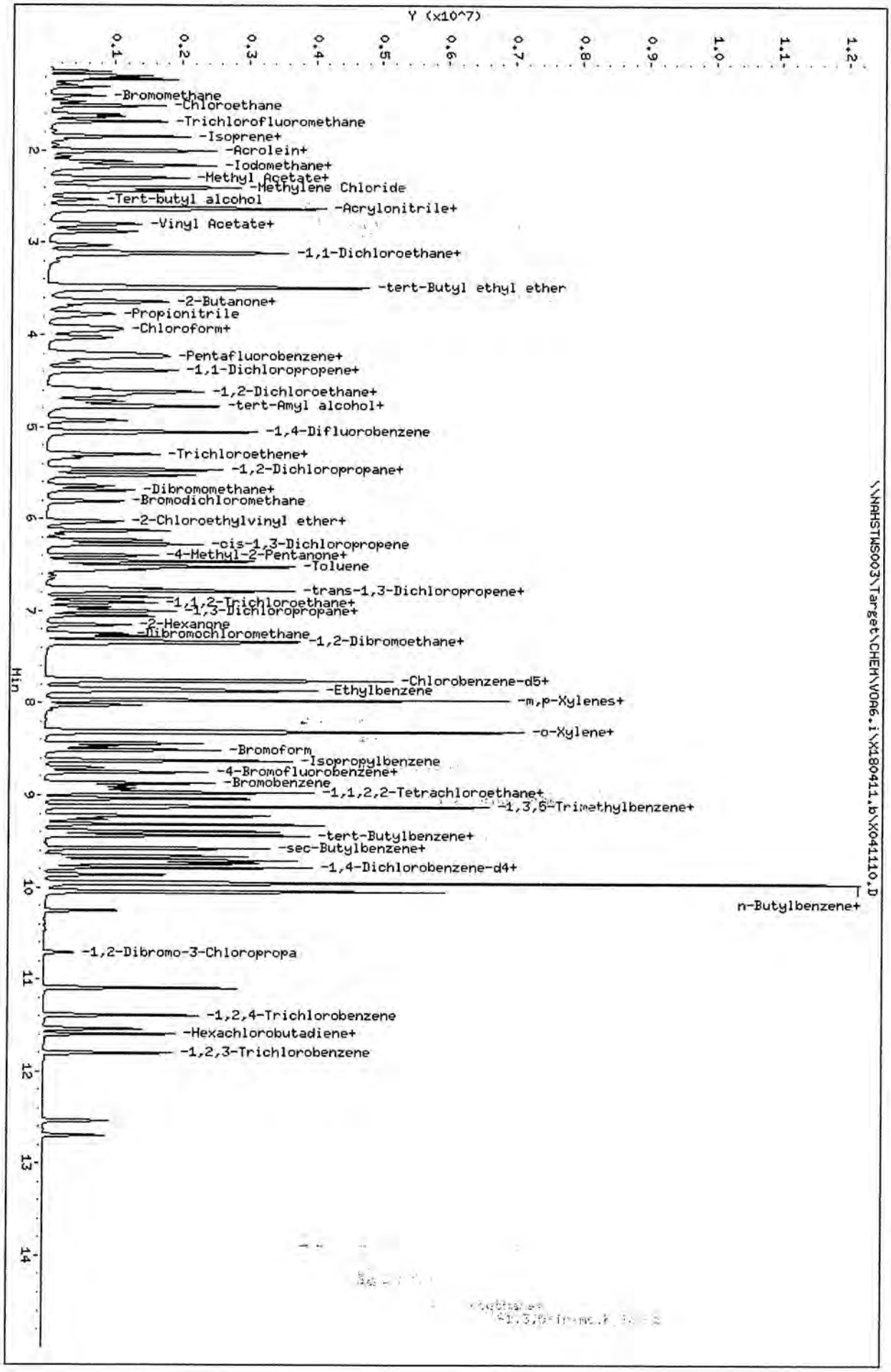
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
162	Butyl acrylate	55	8.308	8.308	(1.074)	1274018	150.000	169.20(M)
185	Isoprene	39	1.854	1.854	(0.432)	243241	150.000	158.03(M)
136	n-Hexane	57	2.878	2.878	(0.670)	640625	150.000	155.50(M)
14	Allyl Chloride	41	2.291	2.291	(0.533)	1497029	150.000	172.13(M)
194	Acetaldehyde	44	1.274	1.274	(0.297)	172772	600.000	628.36(M)
140	1,3-Butadiene	54	1.231	1.231	(0.287)	485376	150.000	155.49(M)
134	Cyclohexanone	55	8.702	8.702	(0.895)	310949	3000.00	3173.01(M)
2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	545917	150.000	155.52
3	Chloromethane	50	1.138	1.138	(0.265)	608678	150.000	153.31
5	Vinyl Chloride	62	1.209	1.209	(0.282)	671783	150.000	156.40
6	Bromomethane	94	1.403	1.403	(0.327)	412280	150.000	158.20
7	Chloroethane	64	1.474	1.474	(0.343)	358265	150.000	153.85
8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	713497	150.000	155.32
9	Acrolein	56	1.940	1.940	(0.452)	97253	300.000	306.04
10	Acetone	43	2.062	2.062	(0.480)	303821	300.000	320.57
11	1,1-Dichloroethene	96	2.005	2.005	(0.467)	469714	150.000	156.18
15	Iodomethane	142	2.119	2.119	(0.493)	1321865	300.000	268.53
16	Acrylonitrile	53	2.635	2.635	(0.613)	414993	300.000	328.02
17	Methylene Chloride	84	2.398	2.398	(0.558)	555205	150.000	155.49
18	Methyl tert-butyl ether	73	2.635	2.635	(0.613)	1504146	150.000	162.30
19	Carbon Disulfide	76	2.162	2.162	(0.503)	3265953	300.000	310.57
20	trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	531900	150.000	156.37
21	Vinyl Acetate	43	2.878	2.878	(0.670)	409965	300.000	312.03
22	1,1-Dichloroethane	63	3.029	3.029	(0.705)	926014	150.000	174.33
24	2-Butanone	43	3.688	3.688	(0.858)	403024	300.000	311.50
26	2,2-Dichloropropane	77	3.631	3.631	(0.845)	674155	150.000	156.35
27	cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	586655	150.000	173.07
28	Chloroform	83	4.032	4.032	(0.938)	868603	150.000	167.94
29	Bromochloromethane	128	3.917	3.917	(0.912)	245829	150.000	149.76
$ 30	Dibromofluoromethane	113	4.218	4.218	(0.982)	504711	150.000	153.46
31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	726816	150.000	155.20
32	1,1-Dichloropropene	75	4.390	4.390	(0.867)	707774	150.000	155.13
33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	625392	150.000	167.41
34	Carbon Tetrachloride	117	4.383	4.383	(0.866)	653054	150.000	154.92
$ 35	1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	526128	150.000	144.13
* 36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	509648	50.0000	
37	Benzene	78	4.619	4.619	(0.912)	2091934	150.000	155.92
38	Trichloroethene	130	5.300	5.300	(1.047)	562023	150.000	155.93
39	Bromodichloromethane	83	5.808	5.808	(1.147)	687699	150.000	168.39
41	2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	750193	300.000	318.66
42	1,2-Dichloropropane	63	5.529	5.529	(1.092)	556703	150.000	171.86
44	Dibromomethane	93	5.636	5.636	(1.113)	336967	150.000	165.03
45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	963057	300.000	315.61
46	cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	930100	150.000	169.95
* 47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	484539	50.0000	
$ 48	Toluene-d8	98	6.460	6.460	(0.835)	1862960	150.000	155.53
50	Toluene	91	6.524	6.524	(0.844)	2121856	150.000	173.46
51	trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	765975	150.000	165.98
52	2-Hexanone	43	7.155	7.155	(0.925)	644035	300.000	314.17
53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	400286	150.000	157.77
54	1,3-Dichloropropane	76	7.054	7.054	(0.912)	844801	150.000	160.23
55	Dibromochloromethane	129	7.248	7.248	(0.937)	575194	150.000	165.19
56	Tetrachloroethene	164	7.004	7.004	(0.906)	433221	150.000	157.33
57	1,2-Dibromoethane	107	7.334	7.334	(0.948)	494002	150.000	159.82

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041110.D
Report Date: 15-May-2018 16:12

			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	58	1-Chlorohexane	56	7.764	7.764	(1.533)	457010	150.000	157.56
	59	Chlorobenzene	112	7.764	7.764	(1.004)	1415639	150.000	170.92
	60	1,1,1,2-Tetrachloroethane	131	7.842	7.842	(1.014)	521701	150.000	171.04
	61	Ethylbenzene	106	7.864	7.864	(1.017)	744051	150.000	179.88
	62	m,p-Xylenes	106	7.971	7.971	(1.031)	1802739	300.000	354.95
	63	o-Xylene	106	8.308	8.308	(1.074)	885420	150.000	173.47
	64	Styrene	104	8.322	8.322	(1.076)	1542232	150.000	172.18
	66	Bromoform	173	8.473	8.473	(1.095)	417449	150.000	159.57
	67	Isopropylbenzene	105	8.623	8.623	(1.115)	2104371	150.000	156.54
	68	1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	608927	150.000	157.80
$	69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	664113	150.000	150.12
*	70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	241622	50.0000	
	71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	753856	150.000	157.62
	73	n-Propylbenzene	91	8.974	8.974	(0.923)	2595018	150.000	157.33
	74	Bromobenzene	156	8.867	8.867	(0.912)	637519	150.000	172.44
	75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	1755770	150.000	175.36
	76	2-Chlorotoluene	91	9.039	9.039	(0.930)	1529026	150.000	177.15
	77	4-Chlorotoluene	91	9.132	9.132	(0.940)	1728792	150.000	173.67
	78	tert-Butylbenzene	119	9.397	9.397	(0.967)	1500896	150.000	156.51
	79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	1822162	150.000	172.50
	81	sec-Butylbenzene	105	9.583	9.583	(0.986)	2105946	150.000	156.48
	82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	1500896	150.000	156.51
	83	1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	1087043	150.000	171.45
	84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	1101414	150.000	168.24
	87	n-Butylbenzene	91	10.049	10.049	(1.034)	1478458	150.000	155.95
	88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	1020061	150.000	157.27
	89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	95873	150.000	157.35
	90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	660407	150.000	149.72
	91	Hexachlorobutadiene	225	11.539	11.539	(1.187)	269294	150.000	156.29
	92	Naphthalene	128	11.596	11.596	(1.193)	1321694	150.000	157.32
	93	1,2,3-Trichlorobenzene	180	11.796	11.796	(1.214)	549337	150.000	154.10
M	94	1,2-Dichloroethylene (total)	96				1118555	300.000	(a)
	135	1,4-Dioxane	88	5.679	5.679	(1.322)	111918	3000.00	3152.50
	141	Cyclohexane	56	4.239	4.239	(0.987)	878533	150.000	154.81
	138	Freon TF	101	2.005	2.005	(0.467)	460320	150.000	157.10
	147	Methylcyclohexane	83	5.464	5.464	(1.079)	796373	150.000	153.93 (A)
	146	Methyl Acetate	43	2.327	2.327	(0.542)	645455	150.000	163.04
	148	Tert-Butyl alcohol	59	2.527	2.527	(0.588)	856064	3000.00	3087.71
	149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	578706	3000.00	3161.95

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.


Y (x10^7)
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14
-Bromomethane
-Chloroethane
-Trichlorofluoromethane
-Isoprene+
-Acrolein+
-Iodomethane+
-Methyl Acetate+
-Methylene Chloride
-Tert-butyl alcohol
-Acrylonitrile+
-Vinyl Acetate+
-1,1-Dichloroethane+
-tert-Butyl ethyl ether
-2-Butanone+
-Propionitrile
-Chloroform+
-Pentafluorobenzene+
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-tert-Amyl alcohol+
-1,4-Difluorobenzene
-Trichloroethene+
-1,2-Dichloropropane+
-Dibromomethane+
-Bromodichloromethane
-2-Chloroethylvinyl ether+
-cis-1,3-Dichloropropene
-4-Methyl-2-Pentanone+
-Toluene
-trans-1,3-Dichloropropene+
-1,1,2-Trichloroethane+
-1,3-Dichloropropane+
-2-Hexanone
-Dibromochloromethane
-1,2-Dibromoethane+
-Chlorobenzene-d5+
-Ethylbenzene
-m,p-Xylenes+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-Bromobenzene
-1,1,2,2-Tetrachloroethane+
-1,3,5-Trimethylbenzene+
-tert-Butylbenzene+
-sec-Butylbenzene+
-1,4-Dichlorobenzene-d4+
n-Butylbenzene+
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene+
-1,2,3-Trichlorobenzene
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Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041110.D
Date : 11-APR-2018 16:16
Client ID: VSTD150
Sample Info: VSTD150;VSTD150;1;9;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041111.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041111.D
Lab Smp Id: VSTD200 Client Smp ID: VSTD200
Inj Date : 11-APR-2018 16:40
Operator : PC Inst ID: voa6.i
Smp Info : VSTD200;VSTD200;1;10;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 16:16 Cal File: X041110.D
Als bottle: 11 Calibration Sample, Level: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	345259	50.0000	
181 2-Furfural	96	8.022	8.022	(1.037)	836647	8000.00	8871.12(AM)
173 3,3-Dimethyl-1-butanol	57	7.355	7.355	(0.951)	1275892	4000.00	4627.56(AM)
23 Chloroprene	53	1.854	1.854	(0.432)	464196	200.000	198.19(M)
43 2-Nitropropane	43	6.045	6.045	(1.407)	260546	200.000	197.06(M)
139 Diethyl ether	59	1.840	1.840	(0.428)	570282	200.000	208.39(AM)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	1056093	200.000	211.33(AM)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	1689371	4000.00	3891.69(M)
25 Methacrylonitrile	41	3.939	3.939	(0.917)	610634	200.000	189.18(M)
40 Methyl Methacrylate	41	5.686	5.686	(1.323)	596764	200.000	196.64(M)
4 Propionitrile	54	3.774	3.774	(0.878)	940316	2000.00	2004.87(AM)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	2217342	200.000	207.60(AM)
167 Ethanol	45	1.790	1.790	(0.417)	119950	4000.00	3980.75(M)
132 n-Butanol	56	5.343	5.343	(1.243)	324726	4000.00	3959.06(M)
176 tert-Amyl alcohol	59	4.727	4.727	(1.100)	878589	4000.00	3974.43(AM)
174 tert-Amyl methyl ether	73	4.770	4.770	(1.110)	2156009	200.000	209.63(AM)
175 tert-Butyl ethyl ether	59	3.495	3.495	(0.813)	2079815	200.000	203.15(AM)
172 tert-Butyl formate	59	4.727	4.727	(1.100)	878089	400.000	395.72(AM)
72 trans-1,4-Dichloro-2-butene	53	8.946	8.946	(1.156)	225186	200.000	195.09(M)
86 Benzyl Chloride	91	9.863	9.863	(1.275)	1453413	200.000	196.98(M)
150 Allyl alcohol	57	2.879	2.879	(0.670)	830539	4000.00	3985.71(M)
151 4-Methyl-2-pentanol	45	6.782	6.782	(1.339)	3042148	4000.00	4693.52(AM)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041111.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	ON-COL (ug/l)
162	Butyl acrylate	55	8.308	8.308	(1.074)	1661214	200.000	215.60 (AM)
185	Isoprene	39	1.854	1.854	(0.432)	309311	200.000	198.28 (M)
136	n-Hexane	57	2.879	2.879	(0.670)	828425	200.000	198.35 (M)
14	Allyl Chloride	41	2.291	2.291	(0.533)	1893033	200.000	215.61 (AM)
194	Acetaldehyde	44	1.274	1.274	(0.297)	216266	800.000	780.33 (M)
140	1,3-Butadiene	54	1.231	1.231	(0.287)	624220	200.000	197.35 (M)
134	Cyclohexanone	55	8.709	8.709	(0.895)	394001	4000.00	3924.99 (M)
2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	712363	200.000	199.92
3	Chloromethane	50	1.138	1.138	(0.265)	814923	200.000	202.25 (A)
5	Vinyl Chloride	62	1.202	1.202	(0.280)	866176	200.000	198.85
6	Bromomethane	94	1.403	1.403	(0.327)	557249	200.000	196.14
7	Chloroethane	64	1.475	1.475	(0.343)	472870	200.000	200.34 (A)
8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	927822	200.000	199.11
9	Acrolein	56	1.940	1.940	(0.452)	125829	400.000	392.23
10	Acetone	43	2.062	2.062	(0.480)	368573	400.000	385.38
11	1,1-Dichloroethene	96	1.997	1.997	(0.465)	605421	200.000	198.55
15	Iodomethane	142	2.119	2.119	(0.493)	1714979	400.000	297.97
16	Acrylonitrile	53	2.635	2.635	(0.613)	530788	400.000	415.59 (A)
17	Methylene Chloride	84	2.399	2.399	(0.558)	713815	200.000	197.76
18	Methyl tert-butyl ether	73	2.635	2.635	(0.613)	1935196	200.000	206.84 (A)
19	Carbon Disulfide	76	2.162	2.162	(0.503)	4237659	400.000	397.59
20	trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	678674	200.000	197.12
21	Vinyl Acetate	43	2.879	2.879	(0.670)	525344	400.000	394.68
22	1,1-Dichloroethane	63	3.029	3.029	(0.705)	1210302	200.000	225.70 (A)
24	2-Butanone	43	3.688	3.688	(0.858)	514555	400.000	393.89
26	2,2-Dichloropropane	77	3.631	3.631	(0.845)	860908	200.000	197.25
27	cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	750773	200.000	219.40 (A)
28	Chloroform	83	4.032	4.032	(0.938)	1116798	200.000	213.89 (A)
29	Bromochloromethane	128	3.917	3.917	(0.912)	314366	200.000	189.71
$ 30	Dibromofluoromethane	113	4.218	4.218	(0.982)	611016	200.000	184.04
31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	939311	200.000	198.08
32	1,1-Dichloropropene	75	4.397	4.397	(0.868)	919511	200.000	199.14
33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	795020	200.000	211.12 (A)
34	Carbon Tetrachloride	117	4.376	4.376	(0.864)	849669	200.000	199.14
$ 35	1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	642478	200.000	174.34
* 36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	513758	50.0000	
37	Benzene	78	4.619	4.619	(0.912)	2689274	200.000	198.24
38	Trichloroethene	130	5.300	5.300	(1.047)	725656	200.000	198.94
39	Bromodichloromethane	83	5.808	5.808	(1.147)	889818	200.000	216.14 (A)
41	2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	970543	400.000	408.97 (A)
42	1,2-Dichloropropane	63	5.529	5.529	(1.092)	715619	200.000	219.16 (A)
44	Dibromomethane	93	5.643	5.643	(1.115)	436051	200.000	211.85 (A)
45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	1221789	400.000	391.03
46	cis-1,3-Dichloropropene	75	6.238	6.238	(1.232)	1206719	200.000	218.74 (A)
* 47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	495824	50.0000	
$ 48	Toluene-d8	98	6.460	6.460	(0.835)	2237419	200.000	182.55
50	Toluene	91	6.525	6.525	(0.844)	2727118	200.000	217.87 (A)
51	trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	990661	200.000	212.95 (A)
52	2-Hexanone	43	7.155	7.155	(0.925)	828684	400.000	394.58
53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	514036	200.000	198.00
54	1,3-Dichloropropane	76	7.055	7.055	(0.912)	1081042	200.000	200.37 (A)
55	Dibromochloromethane	129	7.248	7.248	(0.937)	740390	200.000	207.80 (A)
56	Tetrachloroethene	164	7.004	7.004	(0.906)	558156	200.000	197.41
57	1,2-Dibromoethane	107	7.334	7.334	(0.948)	642660	200.000	203.18 (A)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041111.D
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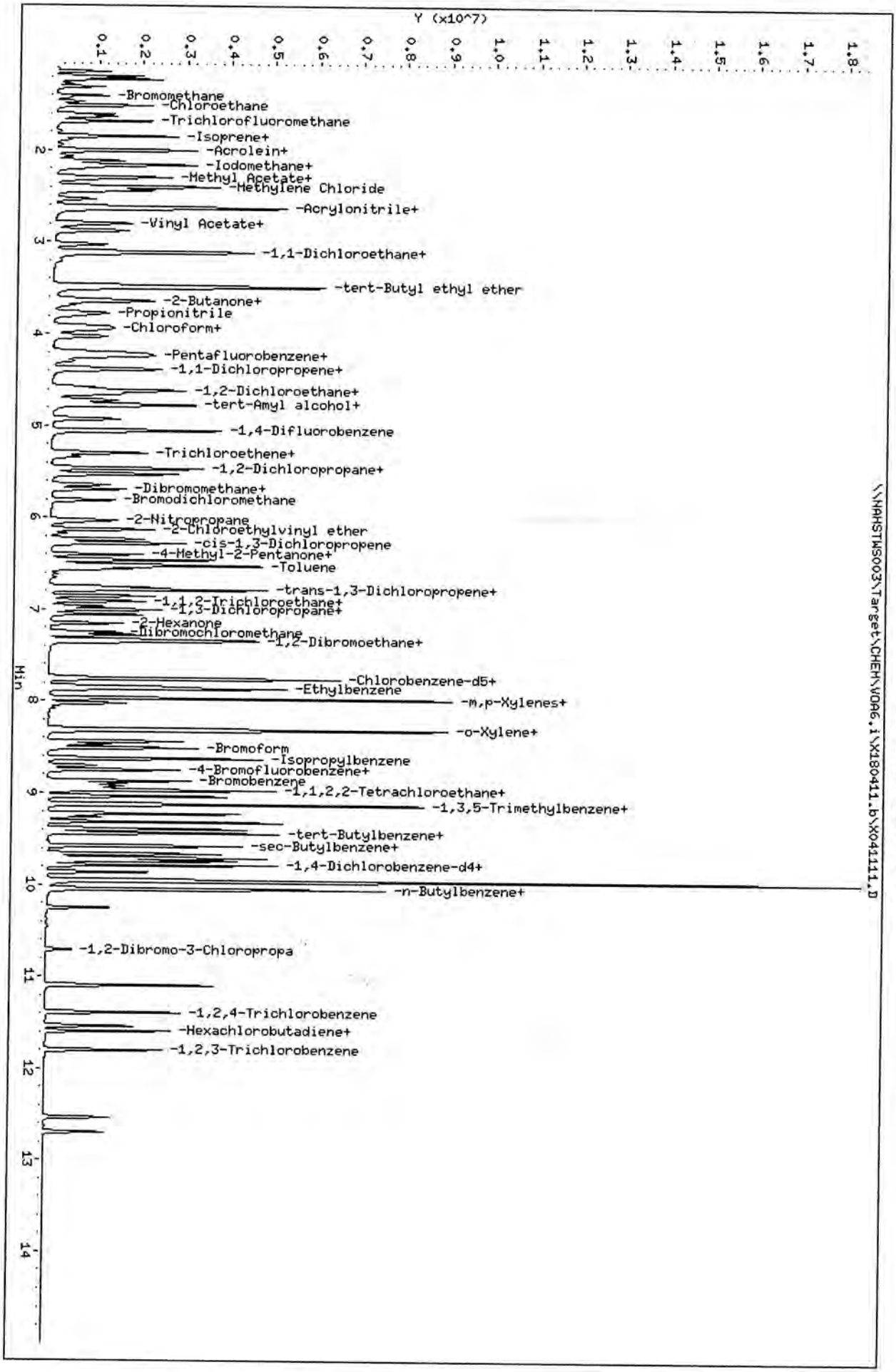
			QUANT SIG					AMOUNTS	
		Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/l)	ON-COL (ug/l)
	58	1-Chlorohexane	55	7.764	7.764	(1.533)	576606	200.000	196.70
	59	Chlorobenzene	112	7.764	7.764	(1.004)	1849418	200.000	218.21(A)
	60	1,1,1,2-Tetrachloroethane	131	7.843	7.843	(1.014)	671737	200.000	215.22(A)
	61	Ethylbenzene	106	7.864	7.864	(1.017)	954570	200.000	225.53(A)
	62	m,p-Xylenes	106	7.971	7.971	(1.031)	2325236	400.000	447.40(A)
	63	o-Xylene	106	8.308	8.308	(1.074)	1137526	200.000	217.79(A)
	64	Styrene	104	8.322	8.322	(1.076)	1959917	200.000	213.83(A)
	66	Bromoform	173	8.473	8.473	(1.095)	543136	200.000	202.90(A)
	67	Isopropylbenzene	105	8.623	8.623	(1.115)	2725551	200.000	197.56
	68	1,1,2,2-Tetrachloroethane	83	8.896	8.896	(0.915)	778010	200.000	196.74
$	69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	811292	200.000	179.22
*	70	1,4-Dichlorobenzene-d4	152	9.726	9.726	(1.000)	247278	50.0000	
	71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	967759	200.000	197.36
	73	n-Propylbenzene	91	8.974	8.974	(0.923)	3344811	200.000	197.51
	74	Bromobenzene	156	8.867	8.867	(0.912)	810986	200.000	214.34(A)
	75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.938)	2300882	200.000	224.55(A)
	76	2-Chlorotoluene	91	9.039	9.039	(0.929)	1975471	200.000	223.64(A)
	77	4-Chlorotoluene	91	9.132	9.132	(0.939)	2252127	200.000	221.07(A)
	78	tert-Butylbenzene	119	9.397	9.397	(0.966)	1949190	200.000	197.95
	79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	2357336	200.000	218.06(A)
	81	sec-Butylbenzene	105	9.583	9.583	(0.985)	2742019	200.000	198.34
	82	p-Isopropyltoluene	119	9.397	9.397	(0.966)	1949190	200.000	197.95
	83	1,3-Dichlorobenzene	146	9.662	9.662	(0.993)	1398664	200.000	215.55(A)
	84	1,4-Dichlorobenzene	146	9.741	9.741	(1.001)	1415786	200.000	211.31(A)
	87	n-Butylbenzene	91	10.049	10.049	(1.033)	1935893	200.000	198.84
	88	1,2-Dichlorobenzene	146	10.049	10.049	(1.033)	1312824	200.000	197.35
	89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	124506	200.000	199.08
	90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	865470	200.000	174.16
	91	Hexachlorobutadiene	225	11.539	11.539	(1.186)	353366	200.000	199.37
	92	Naphthalene	128	11.596	11.596	(1.192)	1792401	200.000	196.56
	93	1,2,3-Trichlorobenzene	180	11.797	11.797	(1.213)	739420	200.000	201.78(A)
M	94	1,2-Dichloroethylene (total)	96				1429447	400.000	(a)
	135	1,4-Dioxane	88	5.679	5.679	(1.322)	141608	4000.00	3947.81
	141	Cyclohexane	56	4.240	4.240	(0.987)	1142315	200.000	198.60
	138	Freon TF	101	2.005	2.005	(0.467)	594993	200.000	196.25
	147	Methylcyclohexane	83	5.464	5.464	(1.079)	1052508	200.000	200.26(A)
	146	Methyl Acetate	43	2.327	2.327	(0.542)	795765	200.000	199.12
	148	Tert-Butyl alcohol	59	2.535	2.535	(0.590)	1085696	4000.00	3873.51
	149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	723351	4000.00	3918.40

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041111.D
Date : 11-APR-2018 16:40
Client ID: VSTD200
Sample Info: VSTD200;VSTD200;1;10;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041114.D
Report Date: 15-May-2018 16:12

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041114.D
Lab Smp Id: VSTD-ICV Client Smp ID: VSDT-ICV
Inj Date : 11-APR-2018 17:54
Operator : PC Inst ID: voa6.i
Smp Info : VSTD-ICV;VSDT-ICV;3;;METHSPIKE
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\8260W.m
Meth Date : 15-May-2018 16:12 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 16:40 Cal File: X041111.D
Als bottle: 13 QC Sample: METHSPIKE
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	347754	50.0000	
181 2-Furfural	96	8.022	8.022	(1.037)	184602	1959.20	1959.19(M)
173 3,3-Dimethyl-1-butanol	57	7.348	7.355	(0.950)	269145	988.832	988.83(M)
23 Chloroprene	53	1.854	1.854	(0.432)	104374	46.6613	46.66(M)
43 2-Nitropropane	43	6.045	6.045	(1.407)	69516	52.3847	52.38(M)
139 Diethyl ether	59	1.840	1.840	(0.428)	143593	52.0966	52.09(M)
49 Ethyl Methacrylate	69	6.854	6.854	(1.354)	260398	50.2771	50.27(M)
12 Isobutyl Alcohol	43	4.777	4.777	(1.112)	434142	992.929	992.92(M)
25 Methacrylonitrile	41	3.939	3.939	(0.917)	165570	50.9277	50.92(M)
40 Methyl Methacrylate	41	5.686	5.686	(1.323)	160765	52.6712	52.67(M)
4 Propionitrile	54	3.767	3.774	(0.877)	245725	520.158	520.15(M)
156 Diisopropyl ether	45	3.108	3.108	(0.723)	598049	55.5933	55.59(M)
167 Ethanol	45	1.790	1.790	(0.417)	29422	975.978	975.97(M)
132 n-Butanol	56	5.335	5.343	(1.242)	75543	934.520	934.52(M)
176 tert-Amyl alcohol	59	4.719	4.727	(1.098)	210556	958.626	958.62(M)
174 tert-Amyl methyl ether	73	4.770	4.770	(1.110)	523360	50.5217	50.52(M)
175 tert-Butyl ethyl ether	59	3.487	3.495	(0.812)	554723	53.7975	53.79(M)
172 tert-Butyl formate	59	4.719	4.727	(1.098)	206449	93.7744	93.77(M)
72 trans-1,4-Dichloro-2-butene	53	8.946	8.946	(1.156)	57116	50.0809	50.08(M)
86 Benzyl Chloride	91	9.862	9.863	(1.275)	329480	45.8634	45.86(M)
150 Allyl alcohol	57	2.879	2.879	(0.670)	188211	945.659	945.65(M)
151 4-Methyl-2-pentanol	45	6.775	6.782	(1.338)	654692	974.595	974.59(M)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041114.D
Report Date: 15-May-2018 16:12

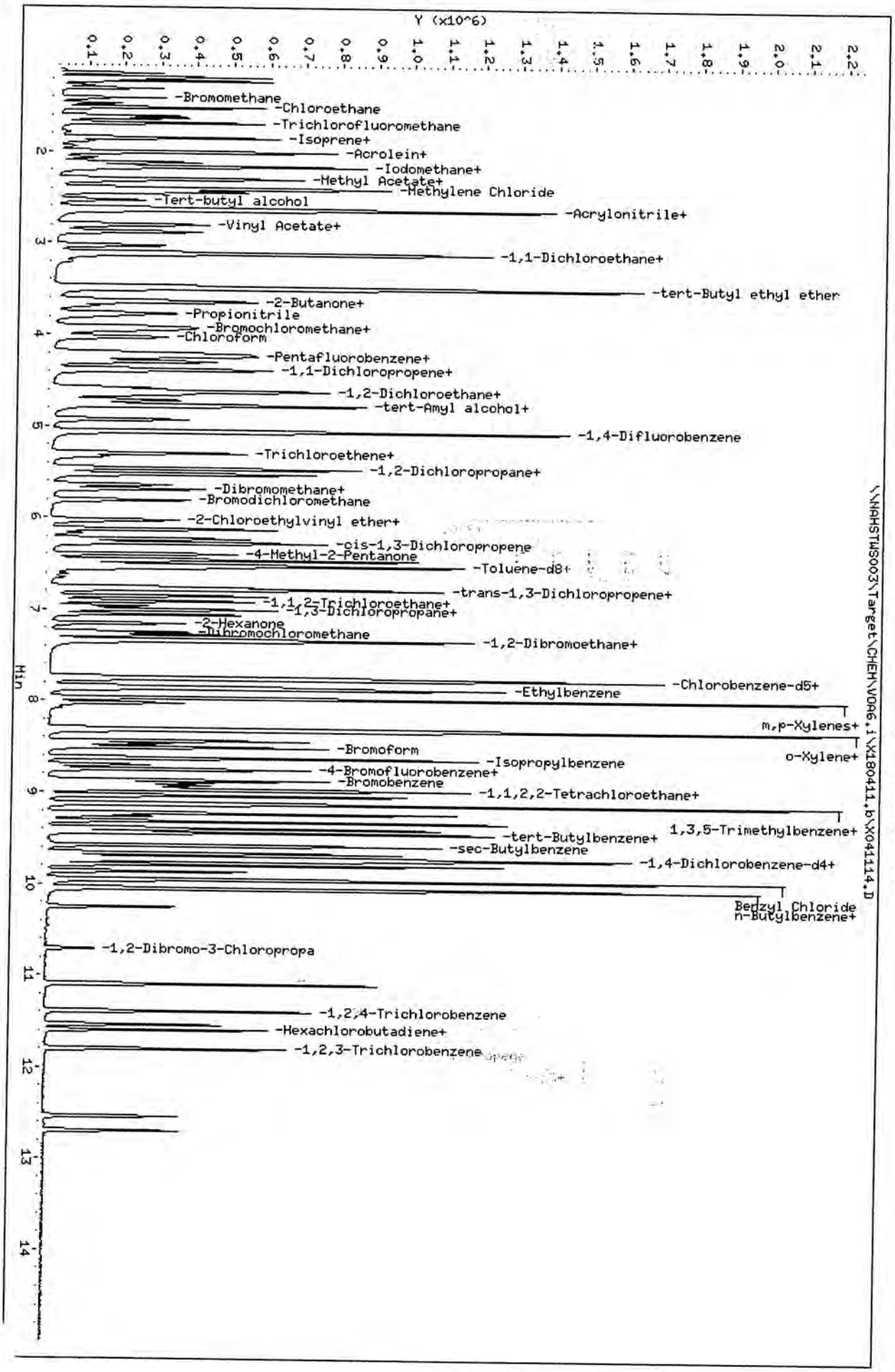
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	162 Butyl acrylate	55	8.308	8.308	(1.074)	402216	52.2506	52.25(M)
	185 Isoprene	39	1.854	1.854	(0.432)	68849	46.1721	46.17(M)
	136 n-Hexane	57	2.879	2.879	(0.670)	189661	47.4001	47.40(M)
	14 Allyl Chloride	41	2.291	2.291	(0.533)	488579	55.2507	55.25(M)
	194 Acetaldehyde	44	1.274	1.274	(0.297)	58651	206.447	206.44(M)
	140 1,3-Butadiene	54	1.231	1.231	(0.287)	149861	49.0646	49.06(M)
	134 Cyclohexanone	55	8.702	8.709	(0.895)	99214	969.311	969.31(M)
	2 Dichlorodifluoromethane	85	1.030	1.030	(0.240)	158686	47.1483	47.14
	3 Chloromethane	50	1.138	1.138	(0.265)	192518	49.9424	49.94
	5 Vinyl Chloride	62	1.210	1.202	(0.282)	198714	47.8101	47.81
	6 Bromomethane	94	1.410	1.403	(0.328)	121861	54.0463	54.04
	7 Chloroethane	64	1.475	1.475	(0.343)	112477	49.3216	49.32
	8 Trichlorofluoromethane	101	1.639	1.639	(0.382)	210161	47.3881	47.38
	9 Acrolein	56	1.940	1.940	(0.452)	31498	97.4810	97.48
	10 Acetone	43	2.062	2.062	(0.480)	98186	101.387	101.38
	11 1,1-Dichloroethene	96	2.005	1.997	(0.467)	137008	46.9938	46.99
	15 Iodomethane	142	2.119	2.119	(0.493)	399127	107.592	107.59
	16 Acrylonitrile	53	2.635	2.635	(0.613)	141105	109.689	109.68
	17 Methylene Chloride	84	2.399	2.399	(0.558)	181363	50.6059	50.60
	18 Methyl tert-butyl ether	73	2.635	2.635	(0.613)	504394	53.5253	53.52
	19 Carbon Disulfide	76	2.162	2.162	(0.503)	994714	96.9308	96.93
	20 trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	166047	49.3899	49.38
	21 Vinyl Acetate	43	2.879	2.879	(0.670)	121216	94.4107	94.41
	22 1,1-Dichloroethane	63	3.029	3.029	(0.705)	300308	55.6027	55.60
	24 2-Butanone	43	3.688	3.688	(0.858)	134315	102.251	102.25
	26 2,2-Dichloropropane	77	3.631	3.631	(0.845)	201746	47.4014	47.40
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	186910	54.2293	54.22
	28 Chloroform	83	4.032	4.032	(0.938)	283309	53.8706	53.87
	29 Bromochloromethane	128	3.917	3.917	(0.912)	93415	55.9688	55.96
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	164333	49.1428	49.14
	31 1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	228013	49.3924	49.39
	32 1,1-Dichloropropene	75	4.390	4.397	(0.867)	220025	48.0498	48.04
	33 1,2-Dichloroethane	62	4.662	4.662	(0.921)	204852	52.4887	52.48
	34 Carbon Tetrachloride	117	4.376	4.376	(0.864)	201492	47.7211	47.72
$	35 1,2-Dichloroethane-d4	65	4.576	4.583	(1.065)	177647	47.8621	47.86
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	532464	50.0000	
	37 Benzene	78	4.619	4.619	(0.912)	665730	49.0304	49.03
	38 Trichloroethene	130	5.300	5.300	(1.047)	174764	48.3494	48.34
	39 Bromodichloromethane	83	5.808	5.808	(1.147)	227674	53.3600	53.36
	41 2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	256647	104.348	104.34
	42 1,2-Dichloropropane	63	5.529	5.529	(1.092)	183790	54.3096	54.30
	44 Dibromomethane	93	5.643	5.643	(1.115)	110507	51.8027	51.80
	45 4-Methyl-2-Pentanone	43	6.396	6.403	(0.827)	318520	102.818	102.81
	46 cis-1,3-Dichloropropene	75	6.231	6.238	(1.231)	304296	53.2216	53.22
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	495362	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	609430	49.7700	49.77
	50 Toluene	91	6.525	6.525	(0.844)	685471	54.8148	54.81
	51 trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	249301	51.7082	51.70
	52 2-Hexanone	43	7.155	7.155	(0.925)	210214	101.558	101.55
	53 1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	134213	51.7465	51.74
	54 1,3-Dichloropropane	76	7.055	7.055	(0.912)	283029	52.5084	52.50
	55 Dibromochloromethane	129	7.248	7.248	(0.937)	188948	53.0804	53.08
	56 Tetrachloroethene	164	6.997	7.004	(0.905)	134120	49.4801	49.48
	57 1,2-Dibromoethane	107	7.327	7.334	(0.947)	166619	52.7286	52.72

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041114.D
Report Date: 15-May-2018 16:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	58 1-Chlorohexane	55	7.757	7.764	(1.532)	143122	48.6247	48.62
	59 Chlorobenzene	112	7.757	7.764	(1.003)	459404	54.2569	54.25
	60 1,1,1,2-Tetrachloroethane	131	7.843	7.843	(1.014)	166953	53.5409	53.54
	61 Ethylbenzene	106	7.864	7.864	(1.017)	235365	55.6608	55.66
	62 m,p-Xylenes	106	7.964	7.971	(1.030)	573250	110.405	110.40
	63 o-Xylene	106	8.301	8.308	(1.073)	285113	54.6388	54.63
	64 Styrene	104	8.322	8.322	(1.076)	494860	54.0418	54.04
	66 Bromoform	173	8.473	8.473	(1.095)	136763	51.1384	51.13
	67 Isopropylbenzene	105	8.623	8.623	(1.115)	668821	50.1403	50.14
	68 1,1,2,2-Tetrachloroethane	83	8.895	8.896	(0.915)	202555	50.4360	50.43
$	69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	216524	47.8768	47.87
*	70 1,4-Dichlorobenzene-d4	152	9.719	9.726	(1.000)	255103	50.0000	
	71 1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	241633	48.8395	48.83
	73 n-Propylbenzene	91	8.974	8.974	(0.923)	817020	48.6229	48.62
	74 Bromobenzene	156	8.867	8.867	(0.912)	201374	51.5906	51.59
	75 1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	570082	53.9317	53.93
	76 2-Chlorotoluene	91	9.032	9.039	(0.929)	486308	53.3673	53.36
	77 4-Chlorotoluene	91	9.132	9.132	(0.940)	562666	53.5382	53.53
	78 tert-Butylbenzene	119	9.397	9.397	(0.967)	483762	49.4951	49.49
	79 1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	583837	52.3506	52.35
	81 sec-Butylbenzene	105	9.576	9.583	(0.985)	671481	49.1811	49.18
	82 p-Isopropyltoluene	119	9.397	9.397	(0.967)	483762	49.4951	49.49
	83 1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	343516	51.3168	51.31
	84 1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	350937	50.7739	50.77
	87 n-Butylbenzene	91	10.049	10.049	(1.034)	487095	50.3870	50.38
	88 1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	331234	49.5222	49.52
	89 1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	29501	47.4001	47.40
	90 1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	214570	56.5067	56.50
	91 Hexachlorobutadiene	225	11.539	11.539	(1.187)	86901	50.2696	50.26
	92 Naphthalene	128	11.596	11.596	(1.193)	410814	52.4332	52.43
	93 1,2,3-Trichlorobenzene	180	11.797	11.797	(1.214)	185611	51.2691	51.26
M	94 1,2-Dichloroethylene (total)	96				352957	103.619	103.61
M	95 Xylenes (total)	106				858363	165.043	165.04
	135 1,4-Dioxane	88	5.679	5.679	(1.322)	32670	914.525	914.52
	141 Cyclohexane	56	4.239	4.240	(0.987)	268769	48.5159	48.51
	138 Freon TF	101	2.005	2.005	(0.467)	133903	49.1606	49.16
	147 Methylcyclohexane	83	5.464	5.464	(1.079)	253006	50.2672	50.26
	146 Methyl Acetate	43	2.327	2.327	(0.542)	213635	53.0741	53.07
	148 Tert-Butyl alcohol	59	2.528	2.535	(0.588)	269367	970.370	970.37
	149 Isopropyl Alcohol	45	2.191	2.191	(0.510)	181208	963.834	963.83

QC Flag Legend

M - Compound response manually integrated.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Date : 11-APR-2018 17:54
Client ID: VSDT-ICV
Sample Info: VSTD-ICV;VSDT-ICV;3;;METHSPIKE
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
\\NAHSTWS003\Target\CHEM\VOA6.i\X180411.b\X041114.D
Y (x10^6)
Min
-Bromomethane
-Chloroethane
-Trichlorofluoromethane
-Isoprene+
-Acrolein+
-Iodomethane+
-Methyl Acetate+
-Methylene Chloride
-Tert-butyl alcohol
-Acrylonitrile+
-Vinyl Acetate+
-1,1-Dichloroethane+
-tert-Butyl ethyl ether
-2-Butanone+
-Propionitrile
-Bromochloromethane+
-Chloroform
-Pentafluorobenzene+
-1,1-Dichloropropene+
-1,2-Dichloroethane+
-tert-Amyl alcohol+
-1,4-Difluorobenzene
-Trichloroethene+
-1,2-Dichloropropane+
-Dibromomethane+
-Bromodichloromethane
-2-Chloroethylvinyl ether+
-cis-1,3-Dichloropropene
-4-Methyl-2-Pentanone
-Toluene-d8+
-trans-1,3-Dichloropropene+
-1,1,2-Trichloroethane+
-1,3-Dichloropropane+
-2-Hexanone
-Dibromochloromethane
-1,2-Dibromoethane+
-Chlorobenzene-d5+
-Ethylbenzene
m,p-Xylenes+
o-Xylene+
-Bromoform
-Isopropylbenzene
-4-Bromofluorobenzene+
-Bromobenzene
-1,1,2,2-Tetrachloroethane+
1,3,5-Trimethylbenzene+
-tert-Butylbenzene+
-sec-Butylbenzene
-1,4-Dichlorobenzene-d4+
Benzyl Chloride
n-Butylbenzene+
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene+
-1,2,3-Trichlorobenzene

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Lab File ID: X042201 BFB Injection Date: 04/22/18

Instrument ID: VOA6 BFB Injection Time: 0947

GC Column: DB624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.3
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.6 (0.7)1
174	Greater than 50.0% of mass 95	81.5
175	5.0 - 9.0% of mass 174	6.4 (7.9)1
176	95.0 - 101.0% of mass 174	78.1 (95.8)1
177	5.0 - 9.0% of mass 176	5.3 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV	CCV	X042202	04/22/18	1011
02	VLCSW-180422	VLCSW-180422	X042203	04/22/18	1036
03	VBLKW-180422	VBLKW-180422	X042206	04/22/18	1149
04	HS18040991-0	HS18040991-02	X042209	04/22/18	1303
05	HS18040991-0	HS18040991-01	X042211	04/22/18	1352
06	HS18040701-0	HS18040701-07M	X042212	04/22/18	1417
07	HS18040701-0	HS18040701-07M	X042213	04/22/18	1441
08	CCV-END	CCV-END	X042229	04/22/18	2113
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Instrument ID: VOA6 Calibration Date: 04/22/18 Time: 1011

Lab File ID: X042202 Init. Calib. Date(s): 04/11/18 04/11/18

Init. Calib. Times: 1234 1640

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	55.390787	50.000000	0.5430111	0.1	-10.78	20.00	LINR	
Chloromethane	46.229660	50.000000	0.5095646	0.1	7.54	20.00	LINR	
Vinyl Chloride	53.042692	50.000000	0.6385357	0.1	-6.08	20.00	LINR	
Bromomethane	40.676569	50.000000	0.2572791	0.1	18.65	20.00	2RDR	
Chloroethane	53.710264	50.000000	0.3538400	0.1	-7.42	20.00	LINR	
Trichlorofluoromethane	51.102104	50.000000	0.6553276	0.1	-2.20	20.00	LINR	
Acrolein	4.6e-002	4.93e-002	4.93e-002	0.02	-7.17	20.00	AVRG	
Acetone	99.087188	100.00000	0.1379921	0.1	0.91	20.00	LINR	
1,1-Dichloroethene	53.833442	50.000000	0.4553339	0.1	-7.67	20.00	LINR	
Iodomethane	88.270050	100.00000	0.4592784	0.1	11.73	20.00	2RDR	
Acrylonitrile	0.1850000	0.2248258	0.2248258	0.05	-21.53	20.00	AVRG	<-
Methylene Chloride	53.882549	50.000000	0.5559478	0.1	-7.76	20.00	LINR	
Methyl tert-butyl ether	1.3550000	1.5640216	1.5640216	0.1	-15.42	20.00	AVRG	
Carbon Disulfide	109.06737	100.00000	1.6201894	0.1	-9.07	20.00	LINR	
trans-1,2-Dichloroethene	54.498639	50.000000	0.5289488	0.1	-9.00	20.00	LINR	
Vinyl Acetate	108.64802	100.00000	0.2020934	0.01	-8.65	20.00	LINR	
1,1-Dichloroethane	0.7760000	0.9109644	0.9109644	0.2	-17.39	20.00	AVRG	
2-Butanone	110.58962	100.00000	0.2089013	0.1	-10.59	20.00	LINR	
2,2-Dichloropropane	54.445729	50.000000	0.6700818	0.1	-8.89	20.00	LINR	
cis-1,2-Dichloroethene	0.4960000	0.5887279	0.5887279	0.1	-18.70	20.00	AVRG	
Chloroform	0.7560000	0.8668165	0.8668165	0.2	-14.66	20.00	AVRG	
Bromochloromethane	0.2400000	0.2876644	0.2876644	0.1	-19.86	20.00	AVRG	
1,1,1-Trichloroethane	52.342368	50.000000	0.6966407	0.1	-4.68	20.00	LINR	
1,1-Dichloropropene	50.079278	50.000000	0.4317096	0.1	-0.16	20.00	LINR	
1,2-Dichloroethane	0.3660000	0.3929774	0.3929774	0.1	-7.37	20.00	AVRG	
Carbon Tetrachloride	49.546890	50.000000	0.3937924	0.1	0.91	20.00	LINR	
Benzene	51.769630	50.000000	1.3234237	0.5	-3.54	20.00	LINR	
Trichloroethene	51.375093	50.000000	0.3500009	0.2	-2.75	20.00	LINR	
Bromodichloromethane	0.4010000	0.4320405	0.4320405	0.2	-7.74	20.00	AVRG	
2-Chloroethylvinyl ether	0.2310000	0.2506929	0.2506929	0.001	-8.52	20.00	AVRG	
1,2-Dichloropropane	0.3180000	0.3616882	0.3616882	0.1	-13.74	20.00	AVRG	
Dibromomethane	0.2000000	0.2158037	0.2158037	0.1	-7.90	20.00	AVRG	
4-Methyl-2-Pentanone	101.63763	100.00000	0.3177736	0.1	-1.64	20.00	LINR	
cis-1,3-Dichloropropene	0.5370000	0.5912850	0.5912850	0.2	-10.11	20.00	AVRG	
Toluene	1.2620000	1.3728322	1.3728322	0.4	-8.78	20.00	AVRG	
trans-1,3-Dichloropropene	0.4530000	0.4884670	0.4884670	0.1	-7.83	20.00	AVRG	
2-Hexanone	101.14309	100.00000	0.2112997	0.1	-1.14	20.00	LINR	
1,1,2-Trichloroethane	0.2620000	0.2625933	0.2625933	0.1	-0.23	20.00	AVRG	
1,3-Dichloropropane	0.5440000	0.5432914	0.5432914	0.1	0.13	20.00	AVRG	
Dibromochloromethane	0.3590000	0.3718943	0.3718943	0.1	-3.59	20.00	AVRG	
Tetrachloroethene	49.461260	50.000000	0.2706429	0.2	1.08	20.00	LINR	
1,2-Dibromoethane	0.3190000	0.3267776	0.3267776	0.1	-2.44	20.00	AVRG	

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date: 04/22/18 Time: 1011

Lab File ID: X042202 Init. Calib. Date(s): 04/11/18 04/11/18

Init. Calib. Times: 1234 1640

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Chlorobenzene	0.8540000	0.9063384	0.9063384	0.5	-6.13	20.00	AVRG	
1,1,1,2-Tetrachloroethane	0.3150000	0.3226734	0.3226734	0.1	-2.44	20.00	AVRG	
Ethylbenzene	0.4270000	0.4638594	0.4638594	0.1	-8.63	20.00	AVRG	
m,p-Xylenes	0.5240000	0.5638792	0.5638792	0.1	-7.61	20.00	AVRG	
o-Xylene	0.5270000	0.5698086	0.5698086	0.3	-8.12	20.00	AVRG	
Styrene	0.9240000	0.9847110	0.9847110	0.3	-6.57	20.00	AVRG	
Bromoform	0.2700000	0.2669386	0.2669386	0.1	1.13	20.00	AVRG	
Allyl Chloride	1.2710000	1.5769296	1.5769296	0.1	-24.07	20.00	AVRG	<-
Isopropylbenzene	48.906811	50.000000	1.3154710	0.1	2.19	20.00	LINR	
1,1,2,2-Tetrachloroethane	48.050522	50.000000	0.7556603	0.3	3.90	20.00	LINR	
1,2,3-Trichloropropane	47.675363	50.000000	0.9239471	0.1	4.65	20.00	LINR	
n-Propylbenzene	47.340744	50.000000	3.1138049	0.1	5.32	20.00	LINR	
Bromobenzene	0.7650000	0.7461664	0.7461664	0.1	2.46	20.00	AVRG	
1,3,5-Trimethylbenzene	2.0720000	2.1472491	2.1472491	0.1	-3.63	20.00	AVRG	
2-Chlorotoluene	1.7860000	1.8180995	1.8180995	0.1	-1.80	20.00	AVRG	
4-Chlorotoluene	2.0600000	2.1041660	2.1041660	0.1	-2.14	20.00	AVRG	
tert-Butylbenzene	47.559156	50.000000	1.8182759	0.1	4.88	20.00	LINR	
1,2,4-Trimethylbenzene	2.1860000	2.2163560	2.2163560	0.1	-1.39	20.00	AVRG	
sec-Butylbenzene	47.882382	50.000000	2.5585625	0.1	4.24	20.00	LINR	
p-Isopropyltoluene	47.559156	50.000000	1.8182759	0.1	4.88	20.00	LINR	
1,3-Dichlorobenzene	1.3120000	1.3092054	1.3092054	0.6	0.21	20.00	AVRG	
1,4-Dichlorobenzene	1.3550000	1.3174253	1.3174253	0.4	2.77	20.00	AVRG	
n-Butylbenzene	50.059191	50.000000	1.8963357	0.5	-0.12	20.00	LINR	
1,2-Dichlorobenzene	47.412197	50.000000	1.2411882	0.4	5.18	20.00	LINR	
1,2-Dibromo-3-Chloropropane	47.206845	50.000000	0.1151494	0.05	5.59	20.00	LINR	
1,2,4-Trichlorobenzene	56.412492	50.000000	0.8395842	0.2	-12.82	20.00	2RDR	
Hexachlorobutadiene	54.940555	50.000000	0.3747452	0.1	-9.88	20.00	LINR	
Naphthalene	53.551605	50.000000	1.6468884	0.2	-7.10	20.00	2RDR	
1,2,3-Trichlorobenzene	50.448830	50.000000	0.7152623	0.1	-0.90	20.00	LINR	
1-Chlorohexane	51.083977	50.000000	0.2865605	0.1	-2.17	20.00	LINR	
1,4-Dioxane	1140.8567	1000.0000	5.88e-003	0.001	-14.08	20.00	LINR	
n-Hexane	57.923205	50.000000	0.6746353	0.1	-15.85	20.00	LINR	
1,3-Butadiene	57.718074	50.000000	0.5104638	0.1	-15.44	20.00	LINR	
Cyclohexane	52.202828	50.000000	0.8351621	0.1	-4.40	20.00	LINR	
Freon TF	53.102732	50.000000	0.4183766	0.1	-6.20	20.00	2RDR	
Methylcyclohexane	32.539519	50.000000	0.2891974	0.1	34.92	20.00	LINR	<-
Methyl Acetate	0.5780000	0.6593836	0.6593836	0.1	-14.08	20.00	AVRG	
Tert-Butyl alcohol	1121.6071	1000.0000	4.49e-002	0.005	-12.16	20.00	LINR	
Isopropyl Alcohol	1129.6659	1000.0000	3.05e-002	0.005	-12.97	20.00	LINR	
Isoprene	55.122817	50.000000	0.2390491	0.1	-10.24	20.00	LINR	
Acetaldehyde	226.42639	200.00000	4.61e-002	0.001	-13.21	20.00	LINR	

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date: 04/22/18 Time: 1011

Lab File ID: X042202 Init. Calib. Date(s): 04/11/18 04/11/18

Init. Calib. Times: 1234 1640

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dibromofluoromethane	0.4810000	0.4898742	0.4898742	0.1	-1.84	20.00	AVRG
1,2-Dichloroethane-d4	0.5340000	0.4954736	0.4954736	0.1	7.21	20.00	AVRG
Toluene-d8	1.2360000	1.2083963	1.2083963	0.1	2.23	20.00	AVRG
4-Bromofluorobenzene	0.4560000	0.4388552	0.4388552	0.1	3.76	20.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Instrument ID: VOA6 Calibration Date: 04/22/18 Time: 2113

Lab File ID: X042229 Init. Calib. Date(s): 04/11/18 04/11/18

Init. Calib. Times: 1234 1640

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	56.204590	50.000000	0.5515707	0.1	-12.41	50.00	LINR
Chloromethane	38.926614	50.000000	0.4229381	0.1	22.15	50.00	LINR
Vinyl Chloride	55.109547	50.000000	0.6650457	0.1	-10.22	50.00	LINR
Bromomethane	37.140902	50.000000	0.2330997	0.1	25.72	50.00	2RDR
Chloroethane	55.131465	50.000000	0.3636852	0.1	-10.26	50.00	LINR
Trichlorofluoromethane	51.541722	50.000000	0.6613630	0.1	-3.08	50.00	LINR
Acrolein	4.6e-002	5.45e-002	5.45e-002	0.02	-18.48	50.00	AVRG
Acetone	106.66238	100.00000	0.1484639	0.1	-6.66	50.00	LINR
1,1-Dichloroethene	56.780586	50.000000	0.4817708	0.1	-13.56	50.00	LINR
Iodomethane	72.695906	100.00000	0.3705623	0.1	27.30	50.00	2RDR
Acrylonitrile	0.1850000	0.2267592	0.2267592	0.05	-22.57	50.00	AVRG
Methylene Chloride	54.445250	50.000000	0.5618590	0.1	-8.89	50.00	LINR
Methyl tert-butyl ether	1.3550000	1.5280454	1.5280454	0.1	-12.77	50.00	AVRG
Carbon Disulfide	113.95821	100.00000	1.6967528	0.1	-13.96	50.00	LINR
trans-1,2-Dichloroethene	55.925804	50.000000	0.5433259	0.1	-11.85	50.00	LINR
Vinyl Acetate	96.790605	100.00000	0.1789326	0.01	3.21	50.00	LINR
1,1-Dichloroethane	0.7760000	0.9467480	0.9467480	0.2	-22.00	50.00	AVRG
2-Butanone	112.11949	100.00000	0.2117972	0.1	-12.12	50.00	LINR
2,2-Dichloropropane	49.142383	50.000000	0.6023687	0.1	1.72	50.00	LINR
cis-1,2-Dichloroethene	0.4960000	0.5945474	0.5945474	0.1	-19.87	50.00	AVRG
Chloroform	0.7560000	0.8919116	0.8919116	0.2	-17.98	50.00	AVRG
Bromochloromethane	0.2400000	0.2951139	0.2951139	0.1	-22.96	50.00	AVRG
1,1,1-Trichloroethane	53.316543	50.000000	0.7101693	0.1	-6.63	50.00	LINR
1,1-Dichloropropene	51.348590	50.000000	0.4432733	0.1	-2.70	50.00	LINR
1,2-Dichloroethane	0.3660000	0.3974631	0.3974631	0.1	-8.60	50.00	AVRG
Carbon Tetrachloride	50.981682	50.000000	0.4058775	0.1	-1.96	50.00	LINR
Benzene	52.785352	50.000000	1.3505457	0.5	-5.57	50.00	LINR
Trichloroethene	52.337414	50.000000	0.3569292	0.2	-4.67	50.00	LINR
Bromodichloromethane	0.4010000	0.4433558	0.4433558	0.2	-10.56	50.00	AVRG
2-Chloroethylvinyl ether	0.2310000	0.2422356	0.2422356	0.001	-4.86	50.00	AVRG
1,2-Dichloropropane	0.3180000	0.3630446	0.3630446	0.1	-14.16	50.00	AVRG
Dibromomethane	0.2000000	0.2168655	0.2168655	0.1	-8.43	50.00	AVRG
4-Methyl-2-Pentanone	100.16946	100.00000	0.3131352	0.1	-0.17	50.00	LINR
cis-1,3-Dichloropropene	0.5370000	0.5854009	0.5854009	0.2	-9.01	50.00	AVRG
Toluene	1.2620000	1.3998767	1.3998767	0.4	-10.92	50.00	AVRG
trans-1,3-Dichloropropene	0.4530000	0.4777165	0.4777165	0.1	-5.46	50.00	AVRG
2-Hexanone	98.965090	100.00000	0.2066654	0.1	1.03	50.00	LINR
1,1,2-Trichloroethane	0.2620000	0.2616894	0.2616894	0.1	0.12	50.00	AVRG
1,3-Dichloropropane	0.5440000	0.5565891	0.5565891	0.1	-2.31	50.00	AVRG
Dibromochloromethane	0.3590000	0.3719504	0.3719504	0.1	-3.61	50.00	AVRG
Tetrachloroethene	49.622495	50.000000	0.2715747	0.2	0.76	50.00	LINR
1,2-Dibromoethane	0.3190000	0.3269721	0.3269721	0.1	-2.50	50.00	AVRG

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date: 04/22/18 Time: 2113

Lab File ID: X042229 Init. Calib. Date(s): 04/11/18 04/11/18

Init. Calib. Times: 1234 1640

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Chlorobenzene	0.8540000	0.9050593	0.9050593	0.5	-5.98	50.00	AVRG
1,1,1,2-Tetrachloroethane	0.3150000	0.3249259	0.3249259	0.1	-3.15	50.00	AVRG
Ethylbenzene	0.4270000	0.4614643	0.4614643	0.1	-8.07	50.00	AVRG
m,p-Xylenes	0.5240000	0.5598559	0.5598559	0.1	-6.84	50.00	AVRG
o-Xylene	0.5270000	0.5597711	0.5597711	0.3	-6.22	50.00	AVRG
Styrene	0.9240000	0.9686641	0.9686641	0.3	-4.83	50.00	AVRG
Bromoform	0.2700000	0.2679872	0.2679872	0.1	0.74	50.00	AVRG
Allyl Chloride	1.2710000	1.5837159	1.5837159	0.1	-24.60	50.00	AVRG
Isopropylbenzene	47.747171	50.000000	1.2828524	0.1	4.50	50.00	LINR
1,1,2,2-Tetrachloroethane	48.621363	50.000000	0.7648380	0.3	2.76	50.00	LINR
1,2,3-Trichloropropane	46.242091	50.000000	0.8953214	0.1	7.52	50.00	LINR
n-Propylbenzene	45.847715	50.000000	3.0102852	0.1	8.30	50.00	LINR
Bromobenzene	0.7650000	0.7422529	0.7422529	0.1	2.97	50.00	AVRG
1,3,5-Trimethylbenzene	2.0720000	2.0585538	2.0585538	0.1	0.65	50.00	AVRG
2-Chlorotoluene	1.7860000	1.8078252	1.8078252	0.1	-1.22	50.00	AVRG
4-Chlorotoluene	2.0600000	2.0462891	2.0462891	0.1	0.66	50.00	AVRG
tert-Butylbenzene	45.517486	50.000000	1.7359503	0.1	8.96	50.00	LINR
1,2,4-Trimethylbenzene	2.1860000	2.1261096	2.1261096	0.1	2.74	50.00	AVRG
sec-Butylbenzene	45.218820	50.000000	2.4075529	0.1	9.56	50.00	LINR
p-Isopropyltoluene	45.517486	50.000000	1.7359503	0.1	8.96	50.00	LINR
1,3-Dichlorobenzene	1.3120000	1.2623518	1.2623518	0.6	3.78	50.00	AVRG
1,4-Dichlorobenzene	1.3550000	1.2852811	1.2852811	0.4	5.14	50.00	AVRG
n-Butylbenzene	45.476504	50.000000	1.7136078	0.5	9.05	50.00	LINR
1,2-Dichlorobenzene	46.557876	50.000000	1.2180110	0.4	6.88	50.00	LINR
1,2-Dibromo-3-Chloropropane	45.924002	50.000000	0.1118692	0.05	8.15	50.00	LINR
1,2,4-Trichlorobenzene	51.354265	50.000000	0.7582655	0.2	-2.71	50.00	2RDR
Hexachlorobutadiene	42.545034	50.000000	0.2842679	0.1	14.91	50.00	LINR
Naphthalene	50.033268	50.000000	1.5323206	0.2	-0.07	50.00	2RDR
1,2,3-Trichlorobenzene	46.199005	50.000000	0.6513765	0.1	7.60	50.00	LINR
1-Chlorohexane	49.313963	50.000000	0.2764221	0.1	1.37	50.00	LINR
1,4-Dioxane	967.34848	1000.0000	4.97e-003	0.001	3.26	50.00	LINR
n-Hexane	49.887590	50.000000	0.5759399	0.1	0.22	50.00	LINR
1,3-Butadiene	60.927201	50.000000	0.5402898	0.1	-21.85	50.00	LINR
Cyclohexane	50.576095	50.000000	0.8076784	0.1	-1.15	50.00	LINR
Freon TF	53.472534	50.000000	0.4215090	0.1	-6.94	50.00	2RDR
Methylcyclohexane	52.594158	50.000000	0.4995701	0.1	-5.19	50.00	LINR
Methyl Acetate	0.5780000	0.6716287	0.6716287	0.1	-16.20	50.00	AVRG
Tert-Butyl alcohol	1035.3465	1000.0000	4.14e-002	0.005	-3.53	50.00	LINR
Isopropyl Alcohol	1018.9362	1000.0000	2.75e-002	0.005	-1.89	50.00	LINR
Isoprene	56.442680	50.000000	0.2451048	0.1	-12.88	50.00	LINR
Acetaldehyde	236.38088	200.00000	4.81e-002	0.001	-18.19	50.00	LINR

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS1804099

Instrument ID: VOA6 Calibration Date: 04/22/18 Time: 2113

Lab File ID: X042229 Init. Calib. Date(s): 04/11/18 04/11/18

Init. Calib. Times: 1234 1640

GC Column: DB624 ID: 0.18 (mm)

COMPOUND	RRF or AMOUNT	RRF50.000 or AMOUNT	CCAL RRF50.000	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dibromofluoromethane	0.4810000	0.4965339	0.4965339	0.1	-3.23	50.00	AVRG
1,2-Dichloroethane-d4	0.5340000	0.4979404	0.4979404	0.1	6.75	50.00	AVRG
Toluene-d8	1.2360000	1.2094264	1.2094264	0.1	2.15	50.00	AVRG
4-Bromofluorobenzene	0.4560000	0.4397075	0.4397075	0.1	3.57	50.00	AVRG

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Lab File ID (Standard): X042202 Date Analyzed: 04/22/18

Instrument ID: VOA6 Time Analyzed: 1011

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	313605	4.30	489593	5.06	485119	7.74
	UPPER LIMIT	627210	4.80	979186	5.56	970238	8.24
	LOWER LIMIT	156803	3.80	244797	4.56	242560	7.24
	CLIENT SAMPLE NO.						
01	VLCSW-180422	298796	4.30	467165	5.06	463833	7.74
02	VBLKW-180422	319226	4.30	502314	5.06	498433	7.74
03	HS18040991-02	316848	4.30	500219	5.06	490647	7.74
04	HS18040991-01	316657	4.30	498675	5.06	491932	7.74
05	HS18040701-07	315117	4.30	496578	5.06	491069	7.74
06	HS18040701-07	305707	4.30	485186	5.06	479761	7.74
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 = Pentafluorobenzene
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Contract:

Lab Code: Case No.: SAS No.: SDG No.: HS18040991

Lab File ID (Standard): X042202 Date Analyzed: 04/22/18

Instrument ID: VOA6 Time Analyzed: 1011

GC Column: DB624 ID: 0.18 (mm) Heated Purge: (Y/N) N

		IS4 (DCB) AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	255112	9.72				
	UPPER LIMIT	510224	10.22				
	LOWER LIMIT	127556	9.22				
	CLIENT SAMPLE NO.						
01	VLCSW-180422	243447	9.72				
02	VBLKW-180422	250767	9.72				
03	HS18040991-02	241806	9.72				
04	HS18040991-01	247663	9.72				
05	HS18040701-07	252951	9.72				
06	HS18040701-07	255518	9.72				
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS4 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

MSVOA06 -Logbook

Batch: 31745
Date: 04-22-2018
Method: 8260
Comments:

Analyst: Cesar Lira
Reviewer:
Laboratory: Houston

#	Samp ID	Type	Analyzed	DF	Init Wt/Vol	Final Vol	File ID	Matrix	Status	pH
1	VSTD050	ICAL7	04-11-2018 03:27 pm	1.00	40 mL	40 mL	X041108.D	Liquid	Y	NA
2	BFB	TUNE	04-22-2018 09:47 am	1.00	40 mL	40 mL	X042201.D	Liquid	Y	NA
3	CCV	CCV	04-22-2018 10:11 am	1.00	40 mL	40 mL	X042202.D	Liquid	Y	NA
	10µL cal STD/50mL DI Water									
4	VLCSW-180422	LCS	04-22-2018 10:36 am	1.00	40 mL	40 mL	X042203.D	Liquid	Y	NA
	10µL cal STD/50mL DI Water									
5	BLANKW	SAMP	04-22-2018 11:00 am	1.00	40 mL	40 mL	X042204.D	Liquid	Y	NA
6	VBLKW-180422	MBLK	04-22-2018 11:25 am	1.00	40 mL	40 mL	X042205.D	Liquid	Y	NA
7	VBLKW-180422	MBLK	04-22-2018 11:49 am	1.00	40 mL	40 mL	X042206.D	Liquid	Y	NA
8	HS18040701-07	SAMP	04-22-2018 12:14 pm	1.00	40 mL	40 mL	X042207.D	Liquid	Y	<2
9	HS18040595-02	SAMP	04-22-2018 12:38 pm	1.00	40 mL	40 mL	X042208.D	Liquid	Y	<2
10	HS18040991-02	SAMP	04-22-2018 01:03 pm	1.00	40 mL	40 mL	X042209.D	Liquid	Y	<2
11	HS18040595-01	SAMP	04-22-2018 01:27 pm	1.00	40 mL	40 mL	X042210.D	Liquid	Y	<2
12	HS18040991-01	SAMP	04-22-2018 01:52 pm	1.00	40 mL	40 mL	X042211.D	Liquid	Y	<2
13	HS18040701-07MS	MS	04-22-2018 02:17 pm	1.00	40 mL	40 mL	X042212.D	Liquid	Y	<2
	5µL cal STD/50mL DI Water									
14	HS18040701-07MSD	MSD	04-22-2018 02:41 pm	1.00	40 mL	40 mL	X042213.D	Liquid	Y	<2
	5µL cal STD/50mL DI Water									
15	HS18040539-04	SAMP	04-22-2018 03:06 pm	5.00	8 mL	40 mL	X042214.D	Liquid	Y	<2
16	HS18040542-03	SAMP	04-22-2018 03:30 pm	10.00	4 mL	40 mL	X042215.D	Liquid	Y	<2
17	HS18040542-11	SAMP	04-22-2018 03:54 pm	10.00	4 mL	40 mL	X042216.D	Liquid	Y	<2
18	HS18040539-02	SAMP	04-22-2018 04:19 pm	25.00	1.6 mL	40 mL	X042217.D	Liquid	Y	<2
19	HS18040480-05	SAMP	04-22-2018 04:44 pm	1.00	40 mL	40 mL	X042218.D	Liquid	Y	<2
20	HS18040797-05	SAMP	04-22-2018 05:08 pm	1.00	40 mL	40 mL	X042219.D	Liquid	Y	<2
21	HS18040539-05	SAMP	04-22-2018 05:33 pm	25.00	1.6 mL	40 mL	X042220.D	Liquid	Y	<2
22	HS18040701-09	SAMP	04-22-2018 05:57 pm	1.00	40 mL	40 mL	X042221.D	Liquid	Y	<2
23	HS18040701-08	SAMP	04-22-2018 06:22 pm	1.00	40 mL	40 mL	X042222.D	Liquid	Y	<2
24	HS18040734-01	SAMP	04-22-2018 06:46 pm	1.00	40 mL	40 mL	X042223.D	Liquid	Y	<2
25	HS18040734-04	SAMP	04-22-2018 07:11 pm	1.00	40 mL	40 mL	X042224.D	Liquid	Y	<2
26	HS18040734-05	SAMP	04-22-2018 07:35 pm	1.00	40 mL	40 mL	X042225.D	Liquid	Y	<2
27	HS18040734-06	SAMP	04-22-2018 08:00 pm	1.00	40 mL	40 mL	X042226.D	Liquid	Y	<2
28	HS18040734-07	SAMP	04-22-2018 08:24 pm	1.00	40 mL	40 mL	X042227.D	Liquid	Y	<2
29	HS18040734-11	SAMP	04-22-2018 08:49 pm	1.00	40 mL	40 mL	X042228.D	Liquid	Y	<2
30	CCV-END	CCV	04-22-2018 09:13 pm	1.00	40 mL	40 mL	X042229.D	Liquid	Y	NA
	10µL cal STD/50mL DI Water									

MSVOA06 -Logbook

Chemical	Value
SURR SPK ID	30502-18-03
IS ID	30502-18-04
ICV STD ID	30502-21-02
LCS/MS ID	30502-21-01
CAL STD ID	30502-21-01
Pentafluorobenzene Response	
BFB ID	30603-12-05
pH Paper	634-37-03

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042201.D

Date : 22-APR-2018 09:47

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

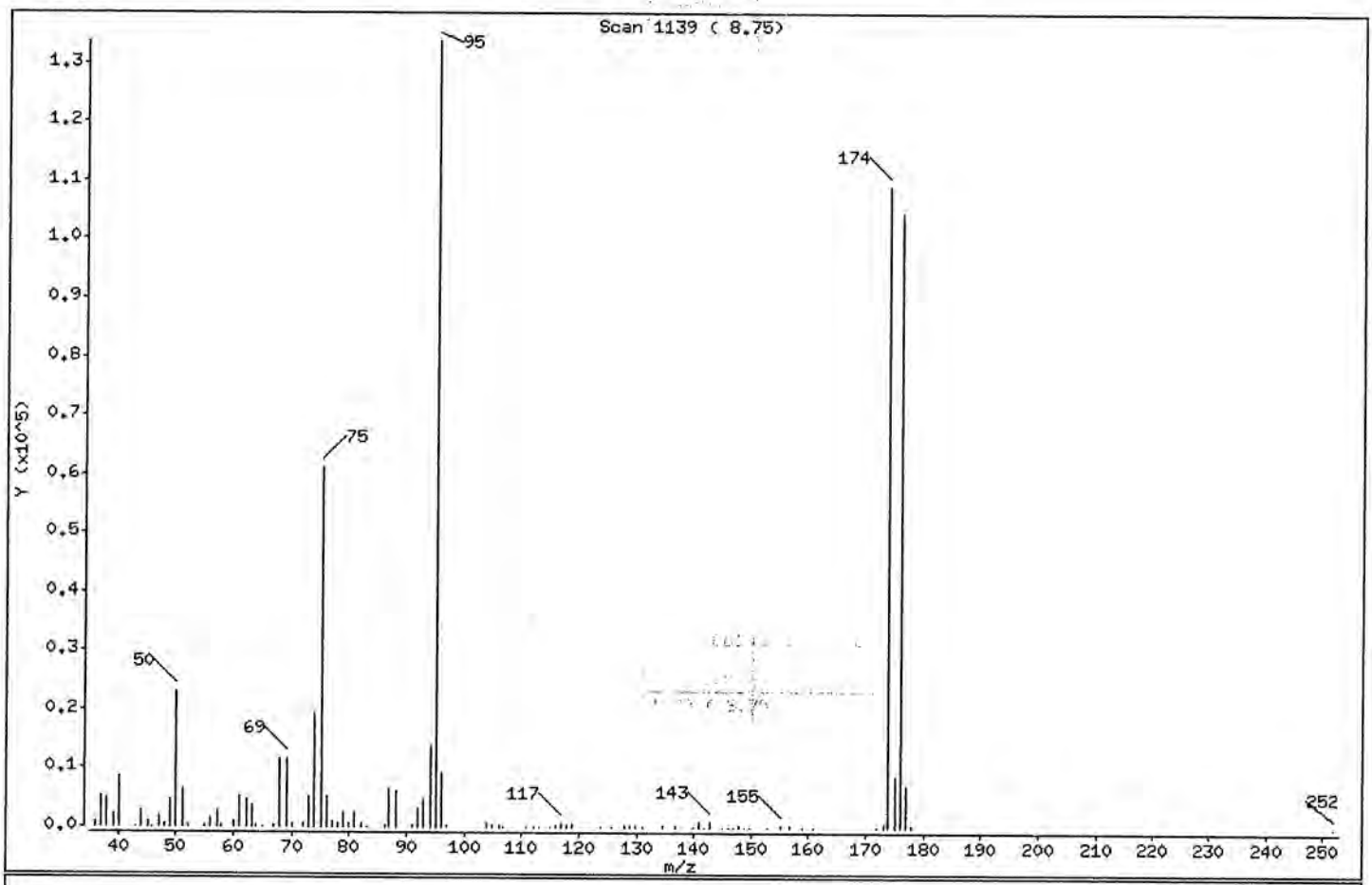
Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	17.35
75	30.00 - 60.00% of mass 95	45.73
96	5.00 - 9.00% of mass 95	7.00
173	Less than 2.00% of mass 174	0.56 (0.69)
174	Greater than 50.00% of mass 95	81.52
175	5.00 - 9.00% of mass 174	6.40 (7.85)
176	95.00 - 101.00% of mass 174	78.10 (95.81)
177	5.00 - 9.00% of mass 176	5.28 (6.76)

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042201.D

Date : 22-APR-2018 09:47

Client ID: BFB

Instrument: voa6.i

Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25

Data File: X042201.D
Spectrum: Scan 1139 (8.75)
Location of Maximum: 95.00
Number of points: 94

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1005	65.10	115	95.00	133632	140.90	900
37.00	5205	67.00	222	96.00	9354	142.00	85
38.00	4802	68.00	11679	97.00	232	142.90	907
39.10	2146	69.00	11698	103.80	488	145.10	95
40.00	8493	70.10	747	104.90	173	145.80	142
42.90	102	72.00	630	106.00	402	146.90	75
44.00	2871	73.00	5189	106.90	149	147.90	246
45.00	1060	74.00	19320	110.80	53	148.80	124
45.80	97	75.00	61104	112.00	72	149.90	87
47.10	1965	76.10	5350	113.00	117	152.90	115
48.00	719	77.00	810	115.00	112	155.00	262
49.00	4685	77.90	492	115.80	448	156.80	196
50.00	23184	78.90	2387	116.90	676	158.90	126
51.00	6541	80.00	702	117.90	391	160.80	139
52.20	219	80.90	2542	118.90	635	172.00	72
55.00	308	82.00	584	123.80	87	173.00	750
56.00	1499	82.90	71	125.70	51	173.90	108936
57.10	2840	86.10	195	127.90	396	174.90	8555
57.90	161	87.00	6460	129.00	182	175.90	104368
60.00	1019	88.00	6054	129.80	365	176.90	7054
61.00	5114	90.90	352	131.00	144	177.90	255
62.10	4609	92.00	3047	134.70	168	251.80	64
63.10	3627	93.00	4569	136.90	211		
63.90	283	94.00	13674	139.80	126		

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042201.D

Date : 22-APR-2018 09:47

Client ID: BFB

Instrument: voa6.i

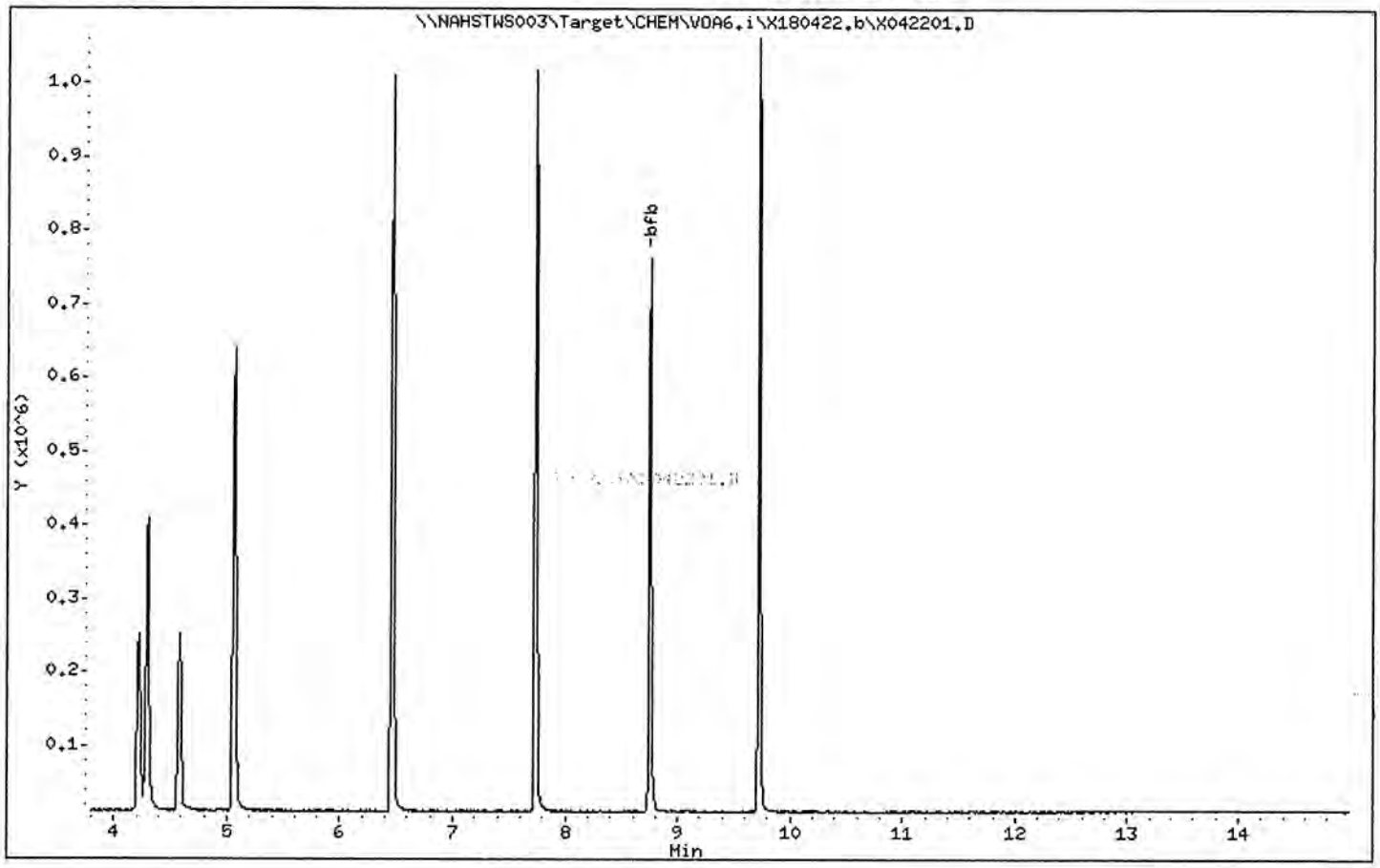
Sample Info: BFB;BFB;3;;BFB

Volume Injected (uL): 2.0

Operator: PC

Column phase: DB624

Column diameter: 0.25



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042202.D
Report Date: 15-May-2018 16:10

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042202.D
Lab Smp Id: CCV Client Smp ID: CCV
Inj Date : 22-APR-2018 10:11
Operator : PC Inst ID: voa6.i
Smp Info : CCV;CCV;2;;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\8260W.m
Meth Date : 15-May-2018 16:10 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	313605	50.0000	
185 Isoprene	39	1.854	1.854	(0.432)	74967	50.0000	55.12
136 n-Hexane	57	2.879	2.879	(0.670)	211569	50.0000	57.92
14 Allyl Chloride	41	2.291	2.291	(0.533)	494533	50.0000	62.01
194 Acetaldehyde	44	1.274	1.274	(0.297)	57889	200.000	226.42
140 1,3-Butadiene	54	1.231	1.231	(0.287)	160084	50.0000	57.71
2 Dichlorodifluoromethane	85	1.030	1.030	(0.240)	170291	50.0000	55.39
3 Chloromethane	50	1.138	1.138	(0.265)	159802	50.0000	46.22
5 Vinyl Chloride	62	1.202	1.202	(0.280)	200248	50.0000	53.04
6 Bromomethane	94	1.410	1.410	(0.328)	80684	50.0000	40.67
7 Chloroethane	64	1.475	1.475	(0.343)	110966	50.0000	53.71
8 Trichlorofluoromethane	101	1.639	1.639	(0.382)	205514	50.0000	51.10
9 Acrolein	56	1.940	1.940	(0.452)	30920	100.000	106.11
10 Acetone	43	2.062	2.062	(0.480)	86550	100.000	99.08
11 1,1-Dichloroethene	96	2.005	2.005	(0.467)	142795	50.0000	53.83
15 Iodomethane	142	2.119	2.119	(0.493)	288064	100.000	88.27
16 Acrylonitrile	53	2.635	2.635	(0.613)	141013	100.000	121.55
17 Methylene Chloride	84	2.399	2.399	(0.558)	174348	50.0000	53.88
18 Methyl tert-butyl ether	73	2.635	2.635	(0.613)	490485	50.0000	57.71
19 Carbon Disulfide	76	2.162	2.162	(0.503)	1016199	100.000	109.06
20 trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	165881	50.0000	54.49
21 Vinyl Acetate	43	2.879	2.879	(0.670)	126755	100.000	108.64

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042202.D
Report Date: 15-May-2018 16:10

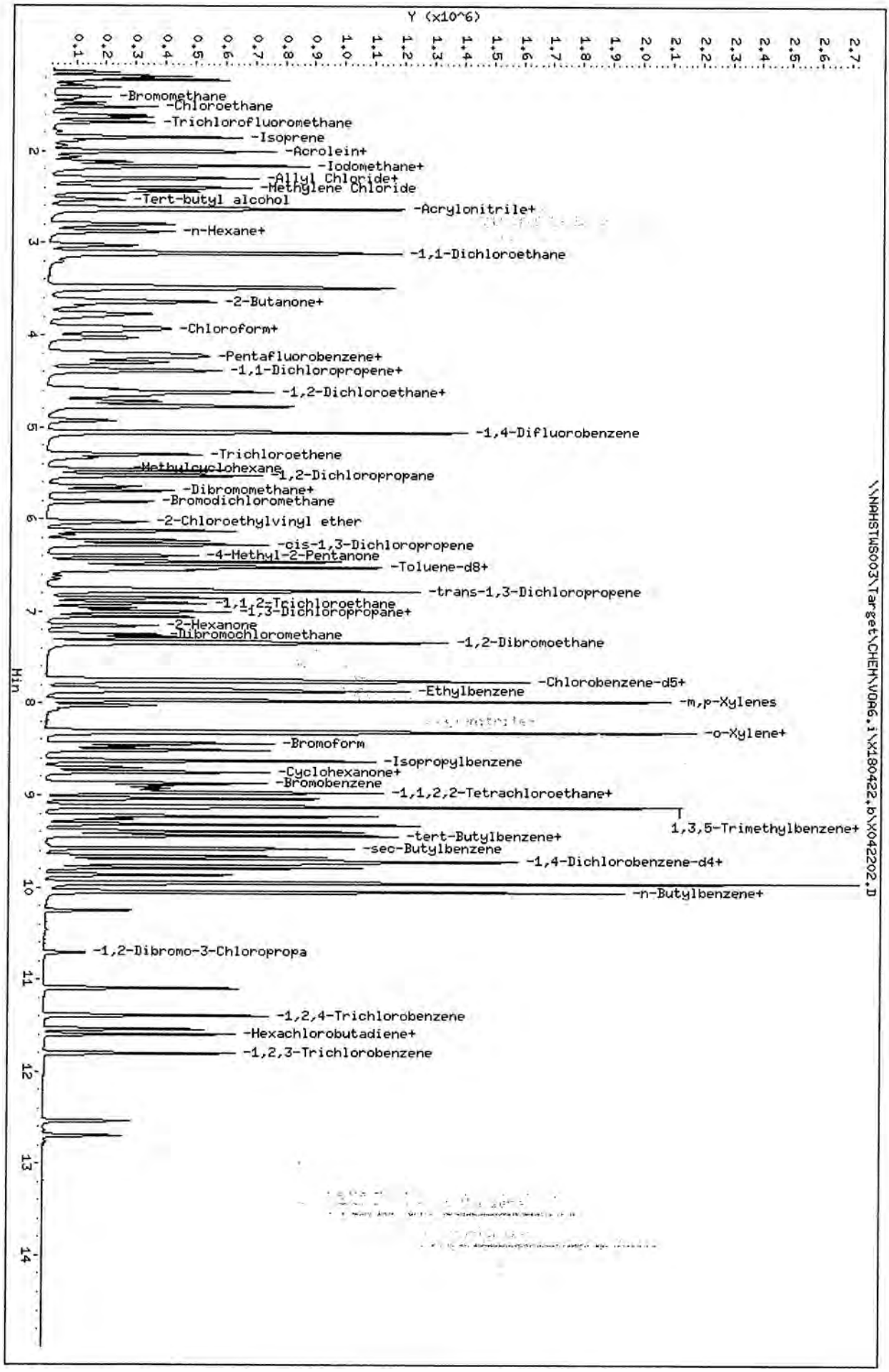
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	22 1,1-Dichloroethane	63	3.029	3.029	(0.705)	285683	50.0000	58.65
	24 2-Butanone	43	3.688	3.688	(0.858)	131025	100.000	110.58
	26 2,2-Dichloropropane	77	3.623	3.623	(0.843)	210141	50.0000	54.44
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	184628	50.0000	59.40
	28 Chloroform	83	4.032	4.032	(0.938)	271838	50.0000	57.31
	29 Bromochloromethane	128	3.917	3.917	(0.912)	90213	50.0000	59.93 (M)
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	153627	50.0000	50.94
	31 1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	218470	50.0000	52.34
	32 1,1-Dichloropropene	75	4.390	4.390	(0.867)	211362	50.0000	50.07
	33 1,2-Dichloroethane	62	4.662	4.662	(0.921)	192399	50.0000	53.61
	34 Carbon Tetrachloride	117	4.376	4.376	(0.864)	192798	50.0000	49.54
$	35 1,2-Dichloroethane-d4	65	4.576	4.576	(1.065)	155383	50.0000	46.42
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	489593	50.0000	
	37 Benzene	78	4.619	4.619	(0.912)	647939	50.0000	51.76
	38 Trichloroethene	130	5.300	5.300	(1.047)	171358	50.0000	51.37
	39 Bromodichloromethane	83	5.808	5.808	(1.147)	211524	50.0000	53.91
	41 2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	245475	100.000	108.54
	42 1,2-Dichloropropane	63	5.529	5.529	(1.092)	177080	50.0000	56.90
	44 Dibromomethane	93	5.643	5.643	(1.115)	105656	50.0000	53.86
	45 4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	308316	100.000	101.63
	46 cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	289489	50.0000	55.06
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	485119	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	586216	50.0000	48.88
	50 Toluene	91	6.524	6.524	(0.844)	665987	50.0000	54.38
	51 trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	239150	50.0000	53.94
	52 2-Hexanone	43	7.155	7.155	(0.925)	205011	100.000	101.14
	53 1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	127389	50.0000	50.15
	54 1,3-Dichloropropane	76	7.055	7.055	(0.912)	263561	50.0000	49.92
	55 Dibromochloromethane	129	7.248	7.248	(0.937)	180413	50.0000	51.75
	56 Tetrachloroethene	164	6.997	6.997	(0.905)	131294	50.0000	49.46
	57 1,2-Dibromoethane	107	7.334	7.334	(0.948)	158526	50.0000	51.22
	58 1-Chlorohexane	55	7.764	7.764	(1.533)	140298	50.0000	51.08
	59 Chlorobenzene	112	7.764	7.764	(1.004)	439682	50.0000	53.02
	60 1,1,1,2-Tetrachloroethane	131	7.842	7.842	(1.014)	156535	50.0000	51.25
	61 Ethylbenzene	106	7.864	7.864	(1.017)	225027	50.0000	54.33
	62 m,p-Xylenes	106	7.964	7.964	(1.030)	547097	100.000	107.59
	63 o-Xylene	106	8.301	8.301	(1.073)	276425	50.0000	54.09
	64 Styrene	104	8.322	8.322	(1.076)	477702	50.0000	53.26
	66 Bromoform	173	8.473	8.473	(1.095)	129497	50.0000	49.44
	67 Isopropylbenzene	105	8.623	8.623	(1.115)	638160	50.0000	48.90
	68 1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	192778	50.0000	48.05
$	69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	212897	50.0000	48.06
*	70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	255112	50.0000	
	71 1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	235710	50.0000	47.67
	73 n-Propylbenzene	91	8.974	8.974	(0.923)	794369	50.0000	47.34
	74 Bromobenzene	156	8.867	8.867	(0.912)	190356	50.0000	48.76
	75 1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	547789	50.0000	51.82
	76 2-Chlorotoluene	91	9.032	9.032	(0.929)	463819	50.0000	50.89
	77 4-Chlorotoluene	91	9.132	9.132	(0.940)	536798	50.0000	51.07
	78 tert-Butylbenzene	119	9.397	9.397	(0.967)	463864	50.0000	47.55
	79 1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	565419	50.0000	50.69
	81 sec-Butylbenzene	105	9.576	9.576	(0.985)	652720	50.0000	47.88
	82 p-Isopropyltoluene	119	9.397	9.397	(0.967)	463864	50.0000	47.55
	83 1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	333994	50.0000	49.89

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042202.D
Report Date: 15-May-2018 16:10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	
84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	336091	50.0000	48.62	
87	n-Butylbenzene	91	10.049	10.049	(1.034)	483778	50.0000	50.05	
88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	316642	50.0000	47.41	
89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	29376	50.0000	47.20	
90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	214188	50.0000	56.41	
91	Hexachlorobutadiene	225	11.539	11.539	(1.187)	95602	50.0000	54.94	
92	Naphthalene	128	11.596	11.596	(1.193)	420141	50.0000	53.55	
93	1,2,3-Trichlorobenzene	180	11.796	11.796	(1.214)	182472	50.0000	50.44	
M 94	1,2-Dichloroethylene (total)	96				350509	100.000		(a)
135	1,4-Dioxane	88	5.679	5.679	(1.322)	36861	1000.00	1140.85	
141	Cyclohexane	56	4.239	4.239	(0.987)	261911	50.0000	52.20	
138	Freon TF	101	2.005	2.005	(0.467)	131205	50.0000	53.10	
147	Methylcyclohexane	83	5.464	5.464	(1.079)	141589	50.0000	32.53	
146	Methyl Acetate	43	2.327	2.327	(0.542)	206786	50.0000	56.96	
148	Tert-Butyl alcohol	59	2.528	2.528	(0.588)	281634	1000.00	1121.60	
149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	191119	1000.00	1129.66	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.



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Client ID: CCV
Sample Info: CCV;CCV;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042203.D
Report Date: 15-May-2018 16:10

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042203.D
Lab Smp Id: VLCSW-180422 Client Smp ID: VLCSW-180422
Inj Date : 22-APR-2018 10:36
Operator : PC Inst ID: voa6.i
Smp Info : VLCSW-180422;VLCSW-180422;3;;LCS
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\8260W.m
Meth Date : 15-May-2018 16:10 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 3 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	298796	50.0000	
185 Isoprene	39	1.854	1.854	(0.432)	72616	55.9902	55.99
136 n-Hexane	57	2.879	2.879	(0.670)	193190	55.6375	55.63
14 Allyl Chloride	41	2.291	2.291	(0.533)	482615	63.5187	63.51
194 Acetaldehyde	44	1.274	1.274	(0.297)	56101	230.394	230.39
140 1,3-Butadiene	54	1.224	1.231	(0.285)	158834	59.9901	59.99
2 Dichlorodifluoromethane	85	1.031	1.030	(0.240)	163361	55.7444	55.74
3 Chloromethane	50	1.138	1.138	(0.265)	160586	48.5800	48.58
5 Vinyl Chloride	62	1.202	1.202	(0.280)	195673	54.3163	54.31
6 Bromomethane	94	1.410	1.410	(0.328)	84115	44.1934	44.19
7 Chloroethane	64	1.475	1.475	(0.343)	105805	53.7484	53.74
8 Trichlorofluoromethane	101	1.632	1.639	(0.380)	203732	53.0335	53.03
9 Acrolein	56	1.940	1.940	(0.452)	29948	107.870	107.87
10 Acetone	43	2.062	2.062	(0.480)	85868	103.209	103.20
11 1,1-Dichloroethene	96	1.998	2.005	(0.465)	141186	55.7489	55.74
15 Iodomethane	142	2.119	2.119	(0.493)	295737	94.3694	94.36
16 Acrylonitrile	53	2.635	2.635	(0.613)	134400	121.595	121.59
17 Methylene Chloride	84	2.399	2.399	(0.558)	168143	54.5286	54.52
18 Methyl tert-butyl ether	73	2.635	2.635	(0.613)	464054	57.3132	57.31
19 Carbon Disulfide	76	2.162	2.162	(0.503)	1003088	112.795	112.79
20 trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	160450	55.2967	55.29
21 Vinyl Acetate	43	2.879	2.879	(0.670)	118128	106.385	106.38

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042203.D
Report Date: 15-May-2018 16:10

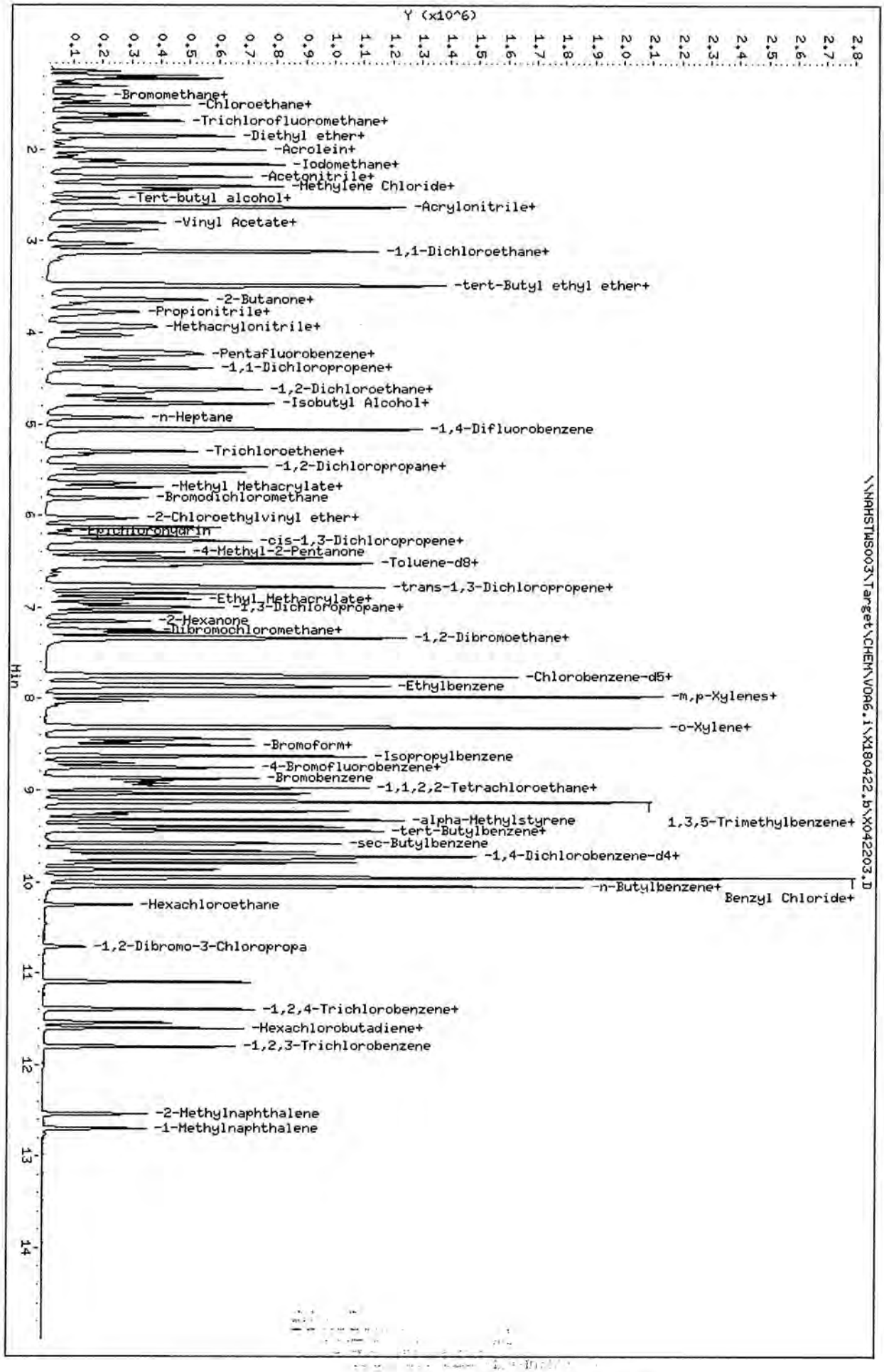
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	22 1,1-Dichloroethane	63	3.029	3.029	(0.705)	280874	60.5254	60.52
	24 2-Butanone	43	3.688	3.688	(0.858)	127271	112.741	112.74
	26 2,2-Dichloropropane	77	3.624	3.623	(0.843)	208960	56.7373	56.73
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	177126	59.8110	59.81
	28 Chloroform	83	4.032	4.032	(0.938)	264739	58.5877	58.58
	29 Bromochloromethane	128	3.917	3.917	(0.912)	88118	61.4457	61.44(M)
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	147320	51.2737	51.27
	31 1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	216203	54.2823	54.28
	32 1,1-Dichloropropene	75	4.390	4.390	(0.867)	210207	52.0829	52.08
	33 1,2-Dichloroethane	62	4.662	4.662	(0.921)	186727	54.5321	54.53
	34 Carbon Tetrachloride	117	4.376	4.376	(0.864)	190399	51.1817	51.18
$	35 1,2-Dichloroethane-d4	65	4.583	4.576	(1.067)	148074	46.4312	46.43
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	467165	50.0000	
	37 Benzene	78	4.619	4.619	(0.912)	638055	53.3567	53.35
	38 Trichloroethene	130	5.300	5.300	(1.047)	171845	53.8538	53.85
	39 Bromodichloromethane	83	5.808	5.808	(1.147)	208657	55.7385	55.73
	41 2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	241851	112.077	112.07
	42 1,2-Dichloropropane	63	5.529	5.529	(1.092)	172785	58.1944	58.19
	44 Dibromomethane	93	5.644	5.643	(1.115)	104496	55.8319	55.83
	45 4-Methyl-2-Pentanone	43	6.396	6.403	(0.827)	297820	102.672	102.67
	46 cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	283264	56.4681	56.46
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	463833	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	560545	48.8895	48.88
	50 Toluene	91	6.525	6.524	(0.844)	660096	56.3738	56.37
	51 trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	234729	55.4909	55.49
	52 2-Hexanone	43	7.155	7.155	(0.925)	196866	101.574	101.57
	53 1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	124906	51.4317	51.43
	54 1,3-Dichloropropane	76	7.055	7.055	(0.912)	258546	51.2267	51.22
	55 Dibromochloromethane	129	7.248	7.248	(0.937)	177505	53.2554	53.25
	56 Tetrachloroethene	164	6.997	6.997	(0.905)	129725	51.0250	51.02
	57 1,2-Dibromoethane	107	7.334	7.334	(0.948)	156305	52.8269	52.82
	58 1-Chlorohexane	55	7.757	7.764	(1.532)	135765	51.7918	51.79
	59 Chlorobenzene	112	7.757	7.764	(1.003)	437158	55.1391	55.13
	60 1,1,1,2-Tetrachloroethane	131	7.843	7.842	(1.014)	154565	52.9375	52.93
	61 Ethylbenzene	106	7.864	7.864	(1.017)	223645	56.4843	56.48
	62 m,p-Xylenes	106	7.964	7.964	(1.030)	543930	111.879	111.87
	63 o-Xylene	106	8.301	8.301	(1.073)	272413	55.7536	55.75
	64 Styrene	104	8.322	8.322	(1.076)	467722	54.5502	54.55
	66 Bromoform	173	8.473	8.473	(1.095)	127802	51.0361	51.03
	67 Isopropylbenzene	105	8.623	8.623	(1.115)	632185	50.5950	50.59
	68 1,1,2,2-Tetrachloroethane	83	8.896	8.895	(0.915)	192142	50.1401	50.14
$	69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	204241	48.2306	48.23
*	70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	243447	50.0000	
	71 1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	229191	48.5513	48.55
	73 n-Propylbenzene	91	8.974	8.974	(0.923)	773773	48.2724	48.27
	74 Bromobenzene	156	8.867	8.867	(0.912)	190290	51.0851	51.08
	75 1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	537684	53.3022	53.30
	76 2-Chlorotoluene	91	9.032	9.032	(0.929)	457507	52.6105	52.61
	77 4-Chlorotoluene	91	9.132	9.132	(0.940)	531133	52.9575	52.95
	78 tert-Butylbenzene	119	9.397	9.397	(0.967)	447456	48.0484	48.04
	79 1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	550449	51.7200	51.72
	81 sec-Butylbenzene	105	9.576	9.576	(0.985)	624764	48.0193	48.01
	82 p-Isopropyltoluene	119	9.397	9.397	(0.967)	447456	48.0484	48.04
	83 1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	328651	51.4469	51.44

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042203.D
Report Date: 15-May-2018 16:10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	84 1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	333083	50.4981	50.49
	87 n-Butylbenzene	91	10.049	10.049	(1.034)	453350	49.2034	49.20
	88 1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	311565	48.8357	48.83
	89 1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	30542	51.2378	51.23
	90 1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	206959	57.0615	57.06
	91 Hexachlorobutadiene	225	11.539	11.539	(1.187)	81355	49.3830	49.38
	92 Naphthalene	128	11.596	11.596	(1.193)	453090	60.0675	60.06
	93 1,2,3-Trichlorobenzene	180	11.797	11.796	(1.214)	184210	53.2036	53.20
M	94 1,2-Dichloroethylene (total)	96				337576	115.108	115.10
M	95 Xylenes (total)	106				816343	167.632	167.63
	135 1,4-Dioxane	88	5.679	5.679	(1.322)	33562	1090.83	1090.82
	141 Cyclohexane	56	4.240	4.239	(0.987)	254485	53.1818	53.18
	138 Freon TF	101	2.005	2.005	(0.467)	127557	54.1091	54.10
	147 Methylcyclohexane	83	5.464	5.464	(1.079)	210533	47.9317	47.93
	146 Methyl Acetate	43	2.320	2.327	(0.540)	201619	58.2961	58.29
	148 Tert-Butyl alcohol	59	2.528	2.528	(0.588)	265013	1107.99	1107.98
	149 Isopropyl Alcohol	45	2.191	2.191	(0.510)	178752	1108.67	1108.67

QC Flag Legend

M - Compound response manually integrated.



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Client ID: VLCSW-180422
Sample Info: VLCSW-180422;VLCSW-180422;3;;LCS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042206.D
Report Date: 15-May-2018 16:10

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042206.D
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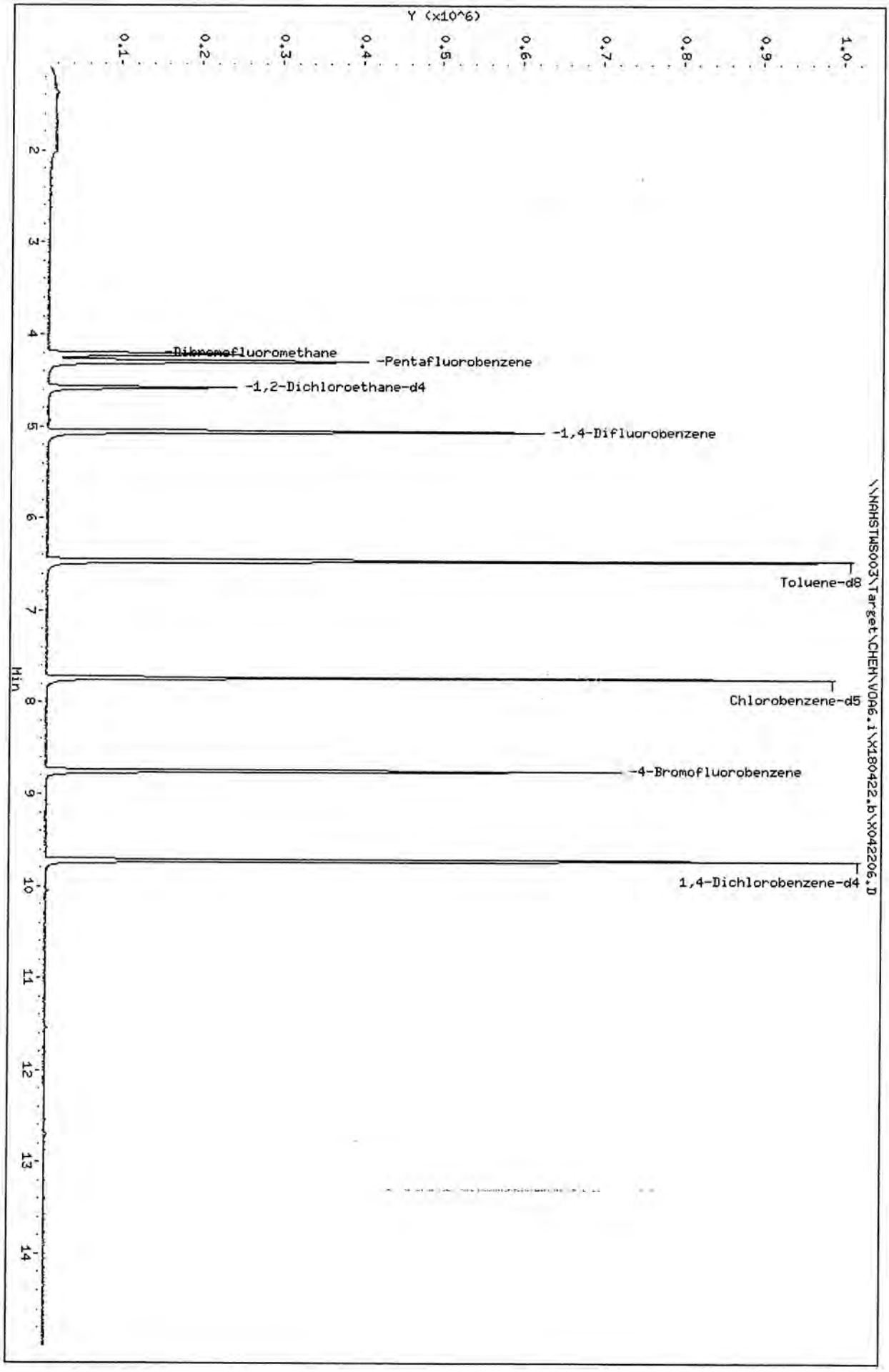
Inj Date : 22-APR-2018 11:49
Operator : PC Inst ID: voa6.i
Smp Info : VBLKW-180422;VBLKW-180422;3;;BLANK
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\8260W.m
Meth Date : 15-May-2018 16:10 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 6 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo) * 1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	319226	50.0000	
$ 30 Dibromofluoromethane	113	4.218	4.218	(0.982)	155820	50.7613	50.76
$ 35 1,2-Dichloroethane-d4	65	4.583	4.576	(1.067)	158131	46.4114	46.41
* 36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	502314	50.0000	
* 47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	498433	50.0000	
$ 48 Toluene-d8	98	6.460	6.460	(0.835)	601892	48.8515	48.85
$ 69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	214614	47.1621	47.16
* 70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	250767	50.0000	



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042206.D
Date : 22-APR-2018 11:49
Client ID: VBLKW-180422
Sample Info: VBLKW-180422;VBLKW-180422;3;;BLANK
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042209.D
Report Date: 15-May-2018 16:10

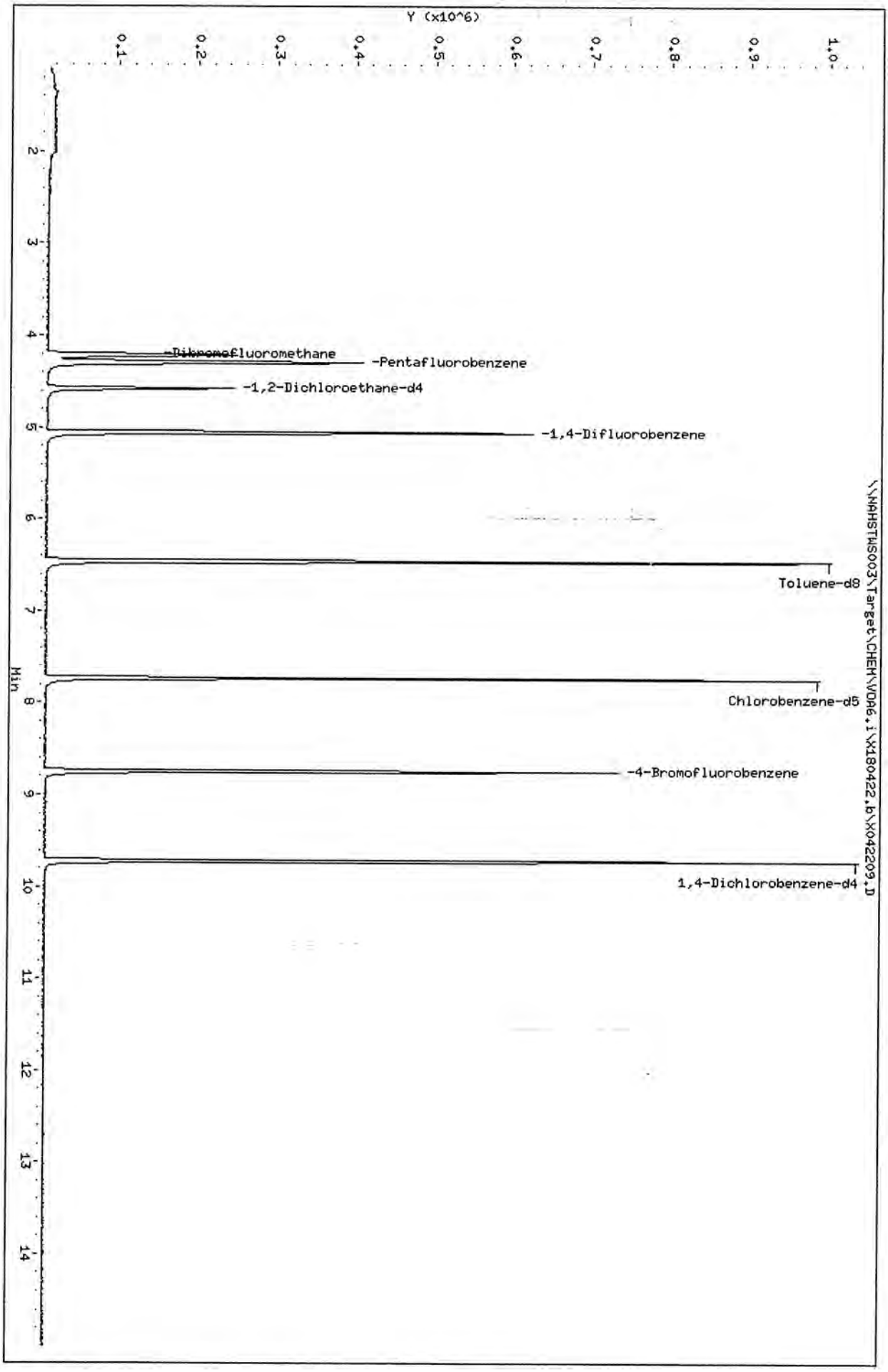
ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042209.D
Lab Smp Id: HS18040991-02 Client Smp ID: HS18040991-02
Inj Date : 22-APR-2018 13:03
Operator : PC Inst ID: voa6.i
Smp Info : HS18040991-02;HS18040991-02;;;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\8260W.m
Meth Date : 15-May-2018 16:10 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	316848	50.0000	
$ 30 Dibromofluoromethane	113	4.218	4.218	(0.982)	156476	51.3576	51.35
$ 35 1,2-Dichloroethane-d4	65	4.583	4.576	(1.067)	161748	47.8293	47.82
* 36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	500219	50.0000	
* 47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	490647	50.0000	
$ 48 Toluene-d8	98	6.460	6.460	(0.835)	601925	49.6295	49.62
$ 69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	214757	47.9424	47.94
* 70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	241806	50.0000	


Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042209.D
Date : 22-APR-2018 13:03
Client ID: HS18040991-02
Sample Info: HS18040991-02;HS18040991-02;;;
Purge Volume: 5.0
Column phase: DB624
Instrument: voa6.i
Operator: PC
Column diameter: 0.18
Y (x10^6)
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
2
3
4
5
6
7
8
9
10
11
12
13
14
Min
-Dibromofluoromethane
-Pentafluorobenzene
-1,2-Dichloroethane-d4
-1,4-Difluorobenzene
Toluene-d8
Chlorobenzene-d5
-4-Bromofluorobenzene
1,4-Dichlorobenzene-d4
\\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042209.D

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042211.D
Report Date: 15-May-2018 16:10

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042211.D
Lab Smp Id: HS18040991-01 Client Smp ID: HS18040991-01
Inj Date : 22-APR-2018 13:52
Operator : PC Inst ID: voa6.i
Smp Info : HS18040991-01;HS18040991-01;;;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\8260W.m
Meth Date : 15-May-2018 16:10 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

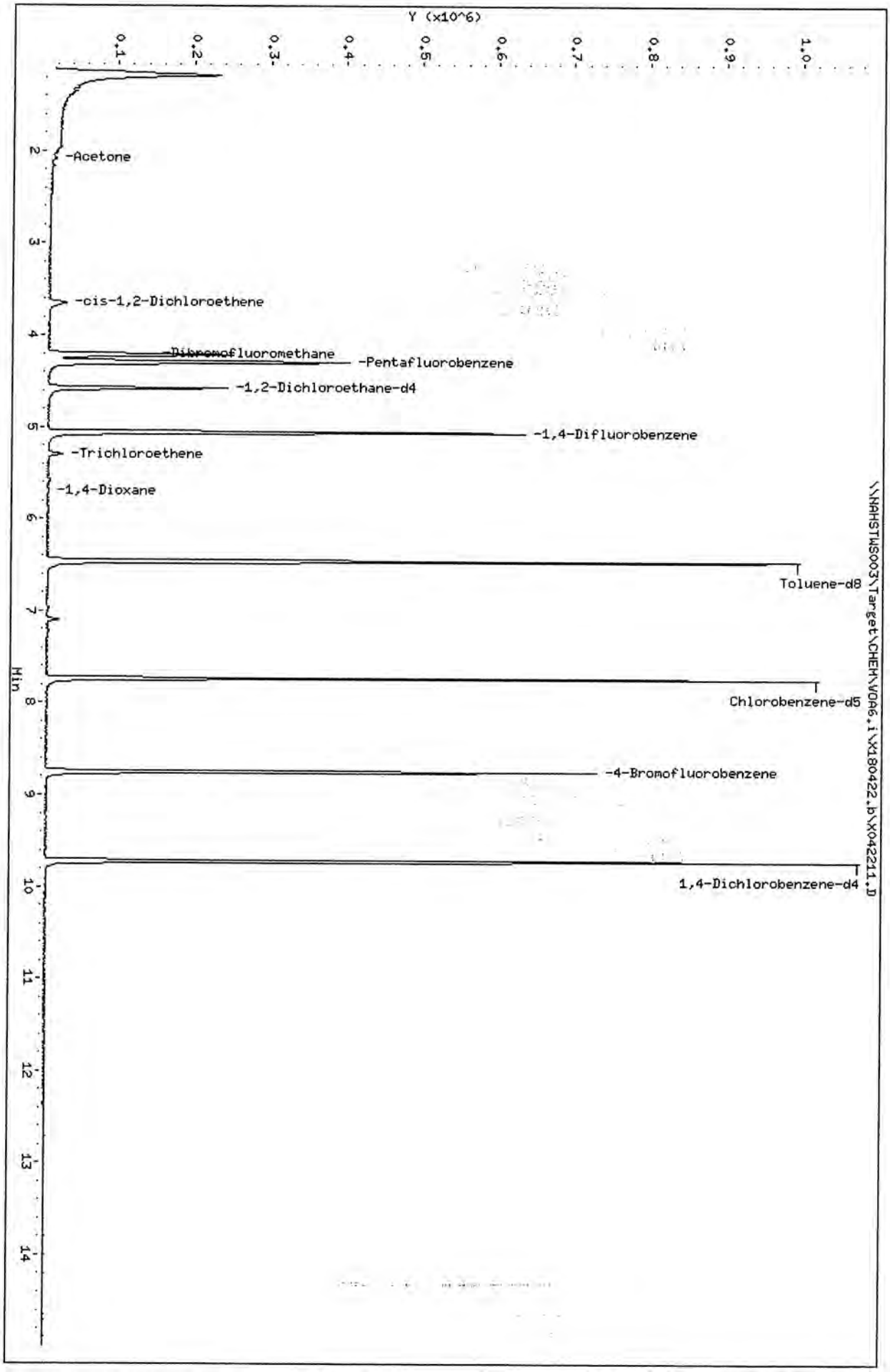
Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	FINAL (ug/l)
*	1 Pentafluorobenzene	168	4.297	4.297	(1.000)	316657	50.0000	
	10 Acetone	43	2.069	2.062	(0.482)	3310	3.04599	3.04(a)
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	10907	3.47528	3.47(a)
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	156031	51.2424	51.24
$	35 1,2-Dichloroethane-d4	65	4.583	4.576	(1.067)	160354	47.4457	47.44
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	498675	50.0000	
	38 Trichloroethene	130	5.300	5.300	(1.047)	6564	4.58884	4.58(a)
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	491932	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	603346	49.6167	49.61
$	69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	217563	48.4419	48.44
*	70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	247663	50.0000	
M	94 1,2-Dichloroethylene (total)	96				10907	3.47528	3.47(a)
	135 1,4-Dioxane	88	5.694	5.679	(1.325)	1299	52.6721	52.67(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042211.D
Date : 22-APR-2018 13:52
Client ID: HS18040991-01
Sample Info: HS18040991-01;HS18040991-01;;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042211.D

Date : 22-APR-2018 13:52

Client ID: HS18040991-01

Instrument: voa6.i

Sample Info: HS18040991-01;HS18040991-01;;;

Purge Volume: 5.0

Operator: PC

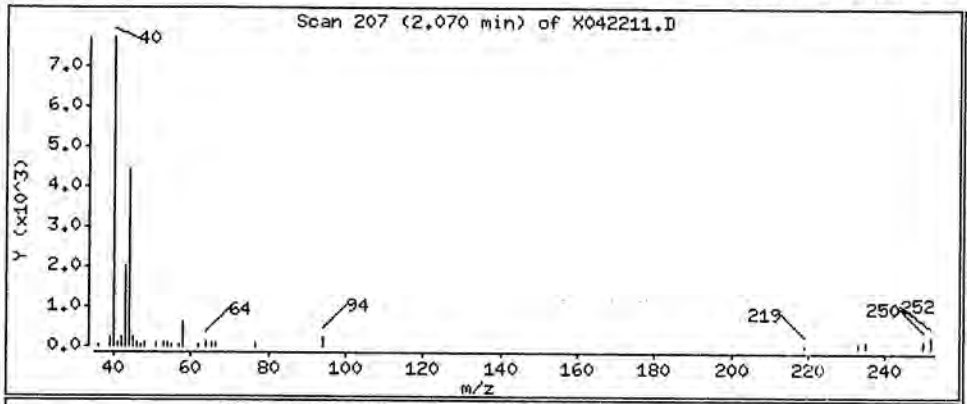
Column phase: DB624

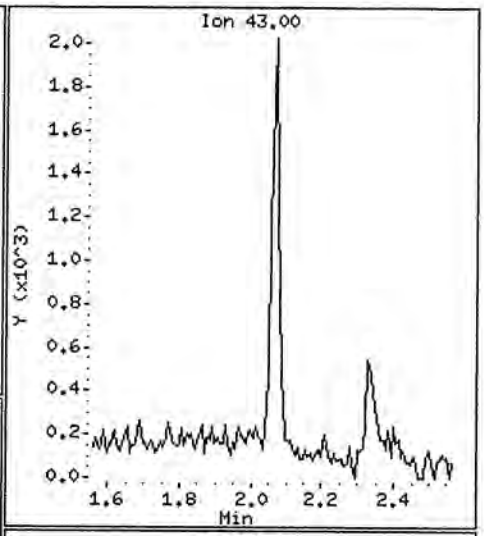
Column diameter: 0.18

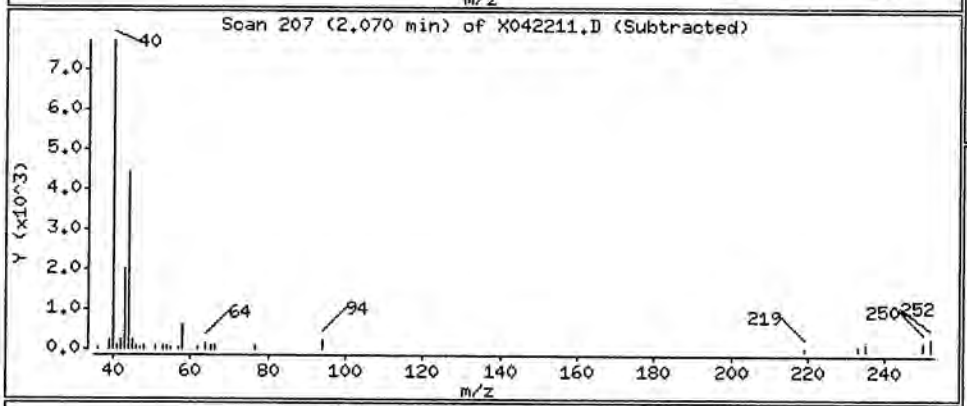
10 Acetone

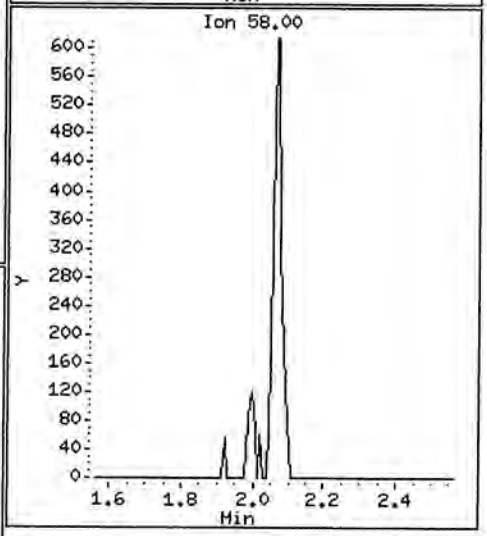
Concentration: 3.04 ug/l

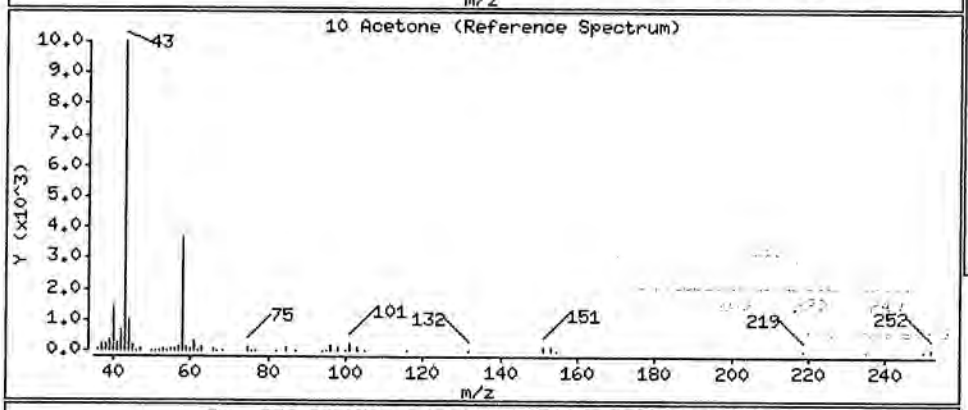
Review Code:

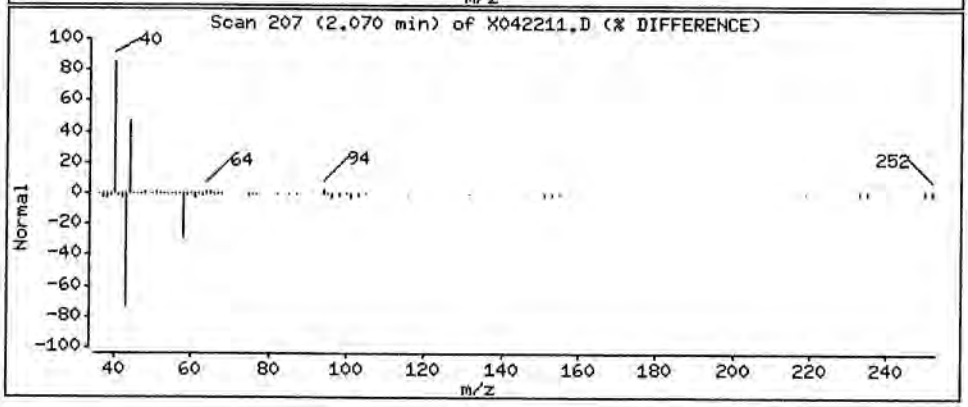












Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042211.D

Date : 22-APR-2018 13:52

Client ID: HS18040991-01

Instrument: voa6.i

Sample Info: HS18040991-01;HS18040991-01;;;

Purge Volume: 5.0

Operator: PC

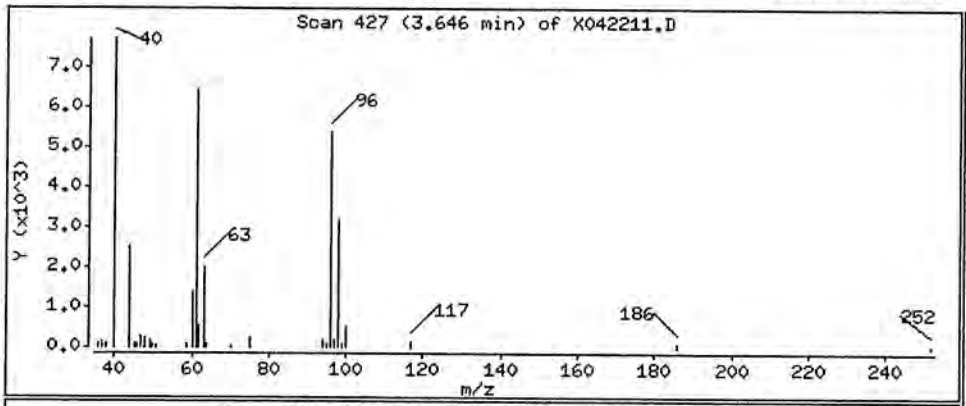
Column phase: DB624

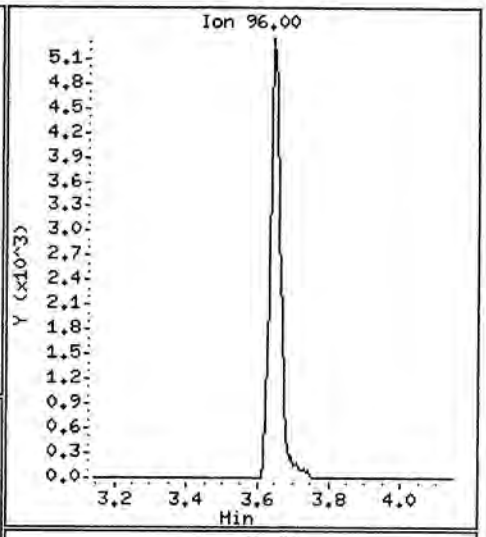
Column diameter: 0.18

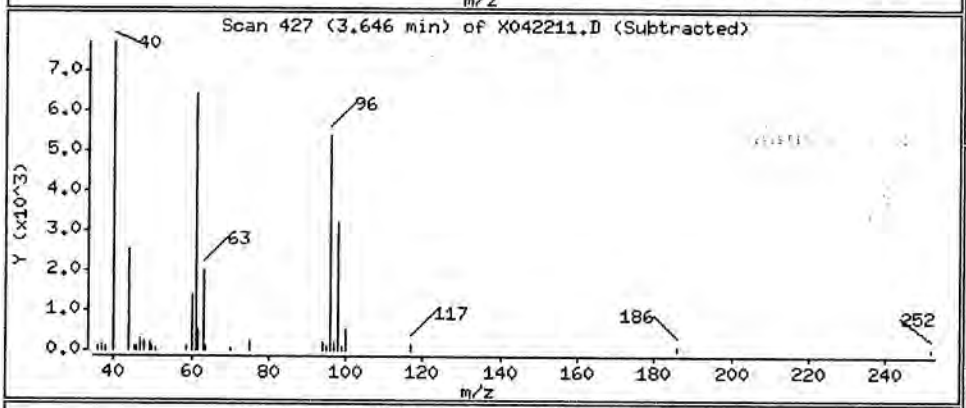
27 cis-1,2-Dichloroethene

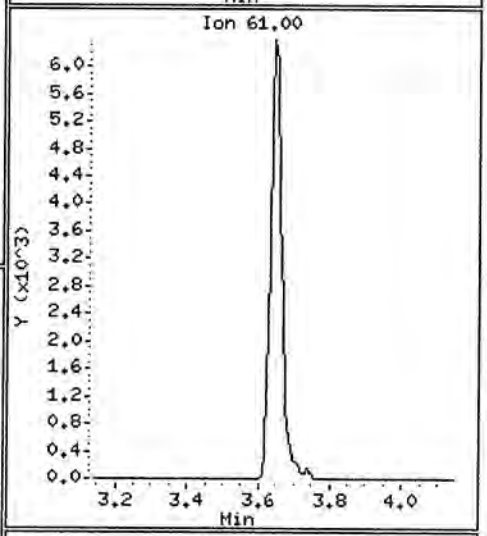
Concentration: 3.47 ug/l

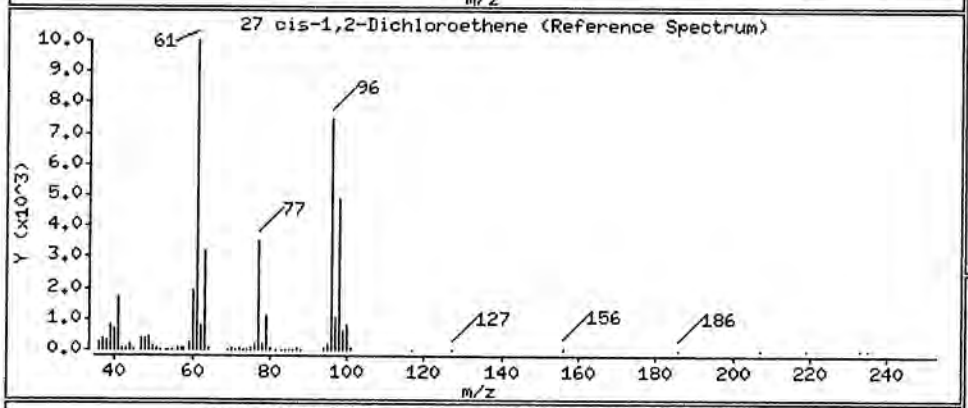
Review Code:

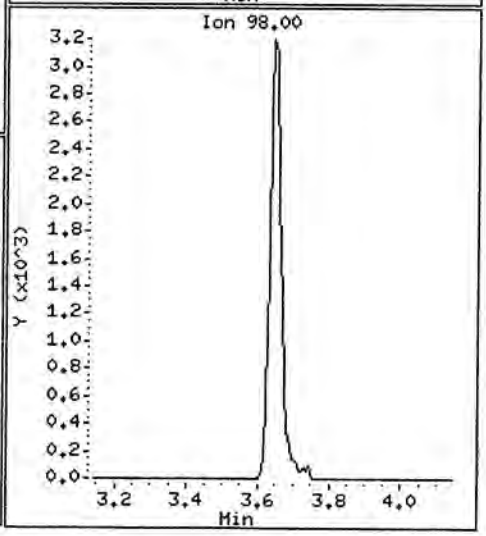


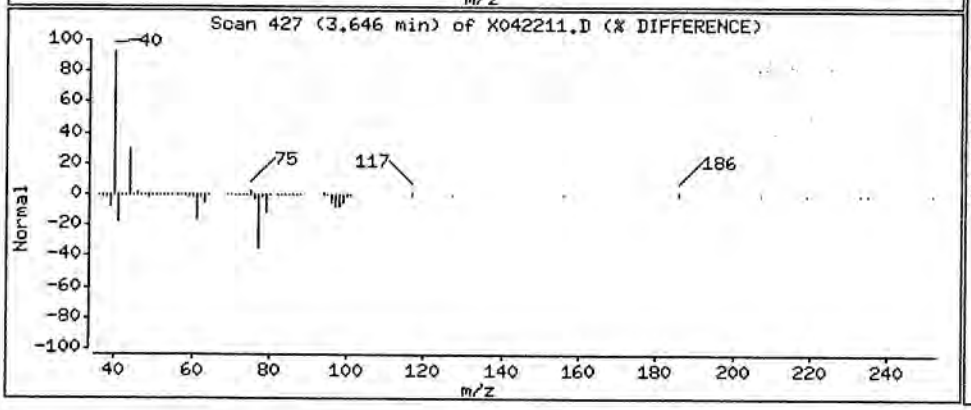












Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042211.D

Date : 22-APR-2018 13:52

Client ID: HS18040991-01

Instrument: voa6.i

Sample Info: HS18040991-01;HS18040991-01;;;

Purge Volume: 5.0

Operator: PC

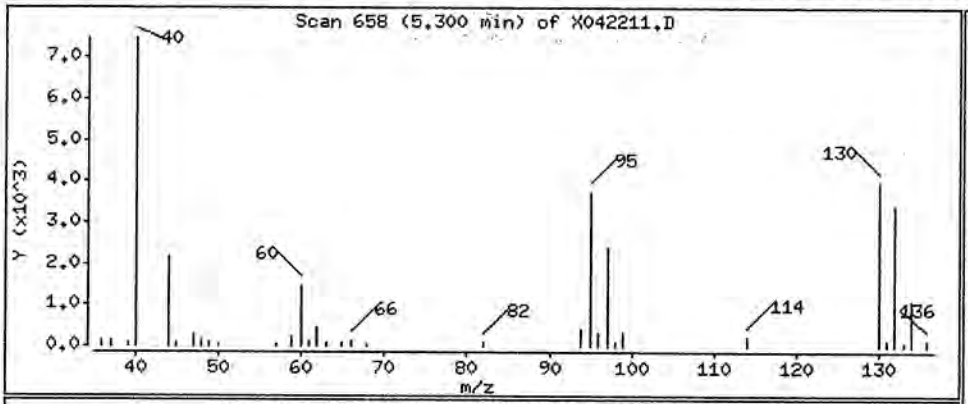
Column phase: DB624

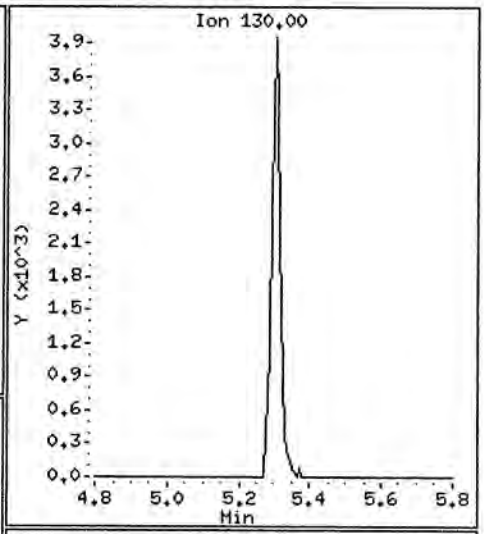
Column diameter: 0.18

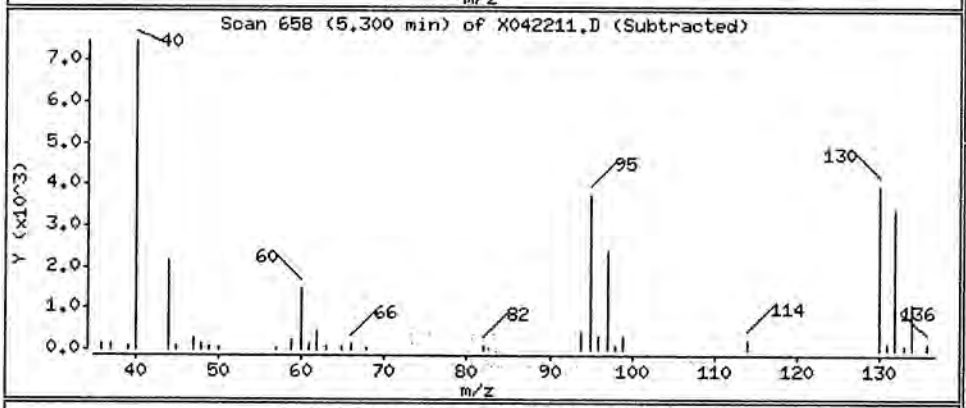
38 Trichloroethene

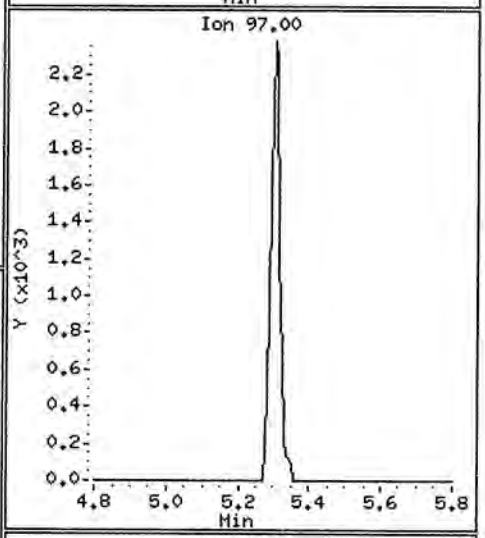
Concentration: 4.58 ug/l

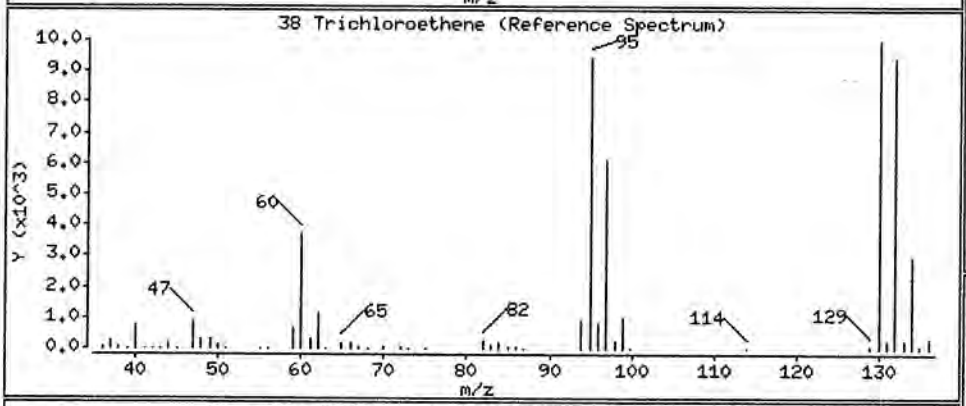
Review Code:

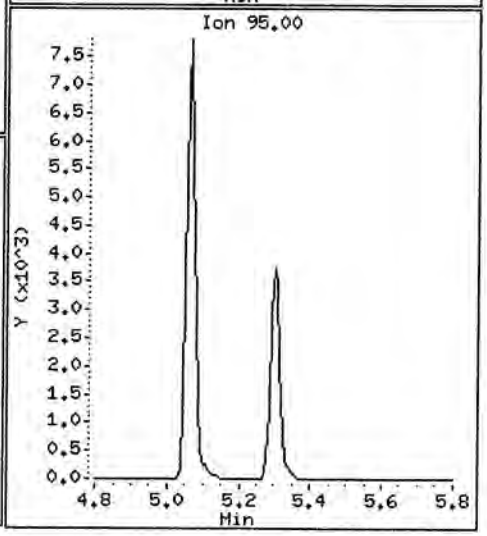


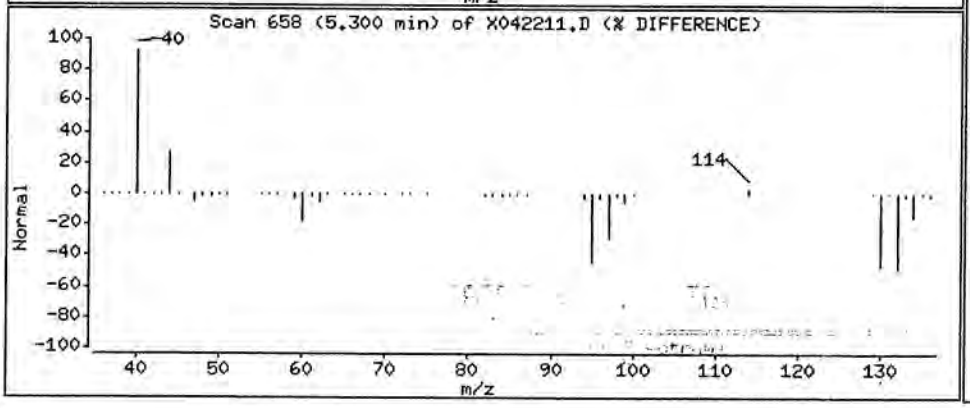












Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042211.D

Date : 22-APR-2018 13:52

Client ID: HS18040991-01

Instrument: voa6.i

Sample Info: HS18040991-01;HS18040991-01;;;

Purge Volume: 5.0

Operator: PC

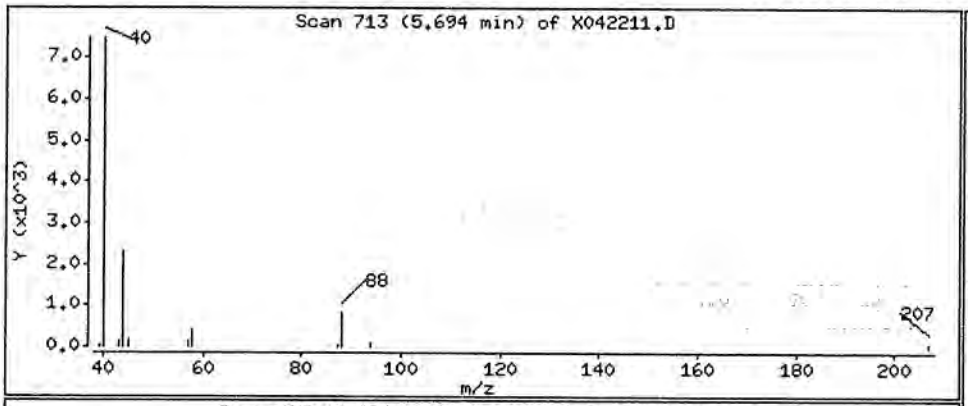
Column phase: DB624

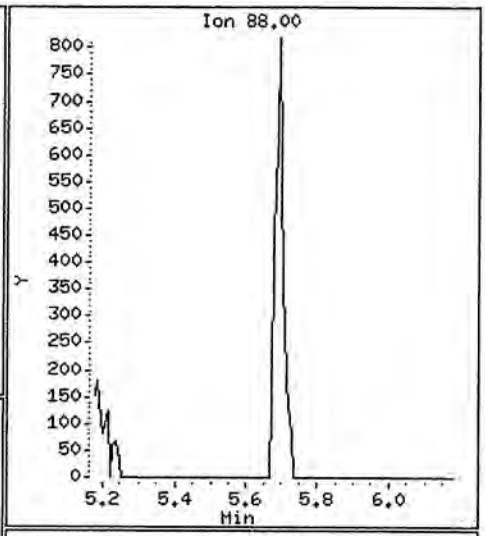
Column diameter: 0.18

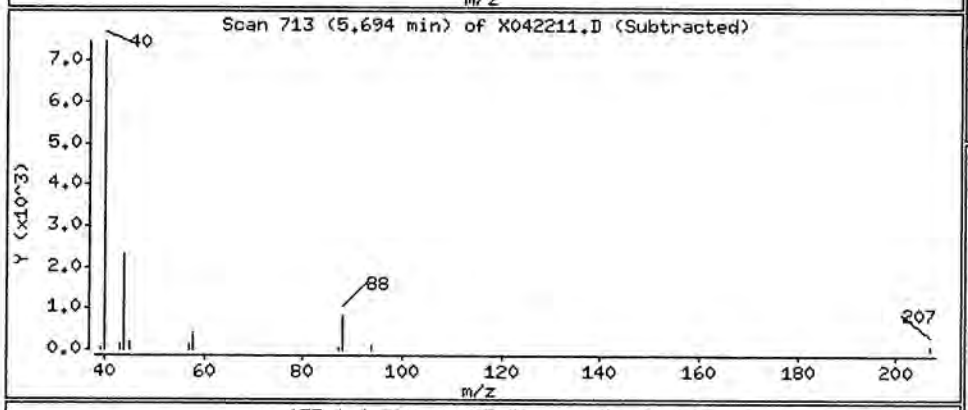
135 1,4-Dioxane

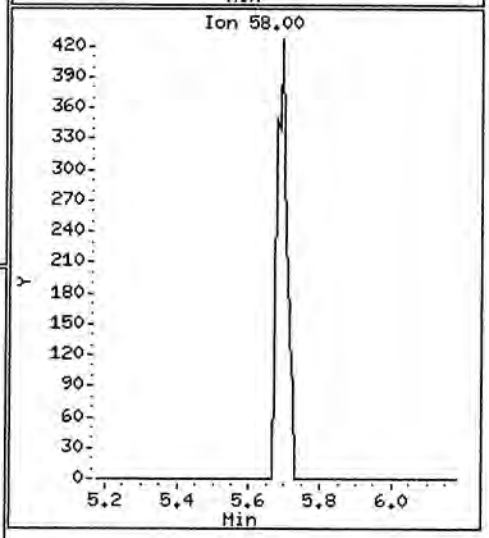
Concentration: 52.67 ug/l

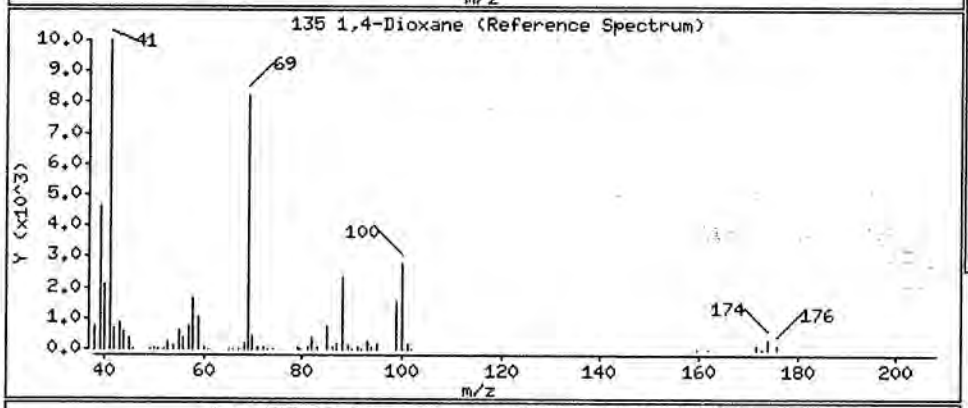
Review Code:

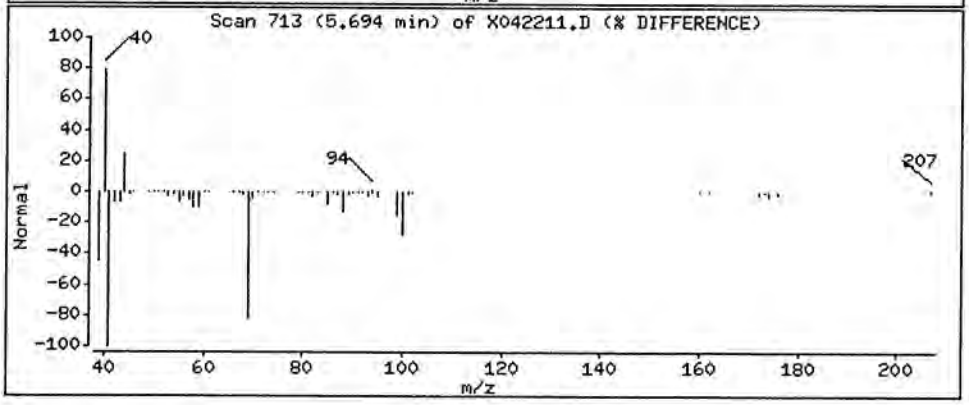












Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042212.D
Report Date: 15-May-2018 16:10

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042212.D
Lab Smp Id: HS18040701-07MS Client Smp ID: HS18040701-07MS
Inj Date : 22-APR-2018 14:17
Operator : PC Inst ID: voa6.i
Smp Info : HS18040701-07MS;HS18040701-07MS;3;;MS
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\8260W.m
Meth Date : 15-May-2018 16:10 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 12 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

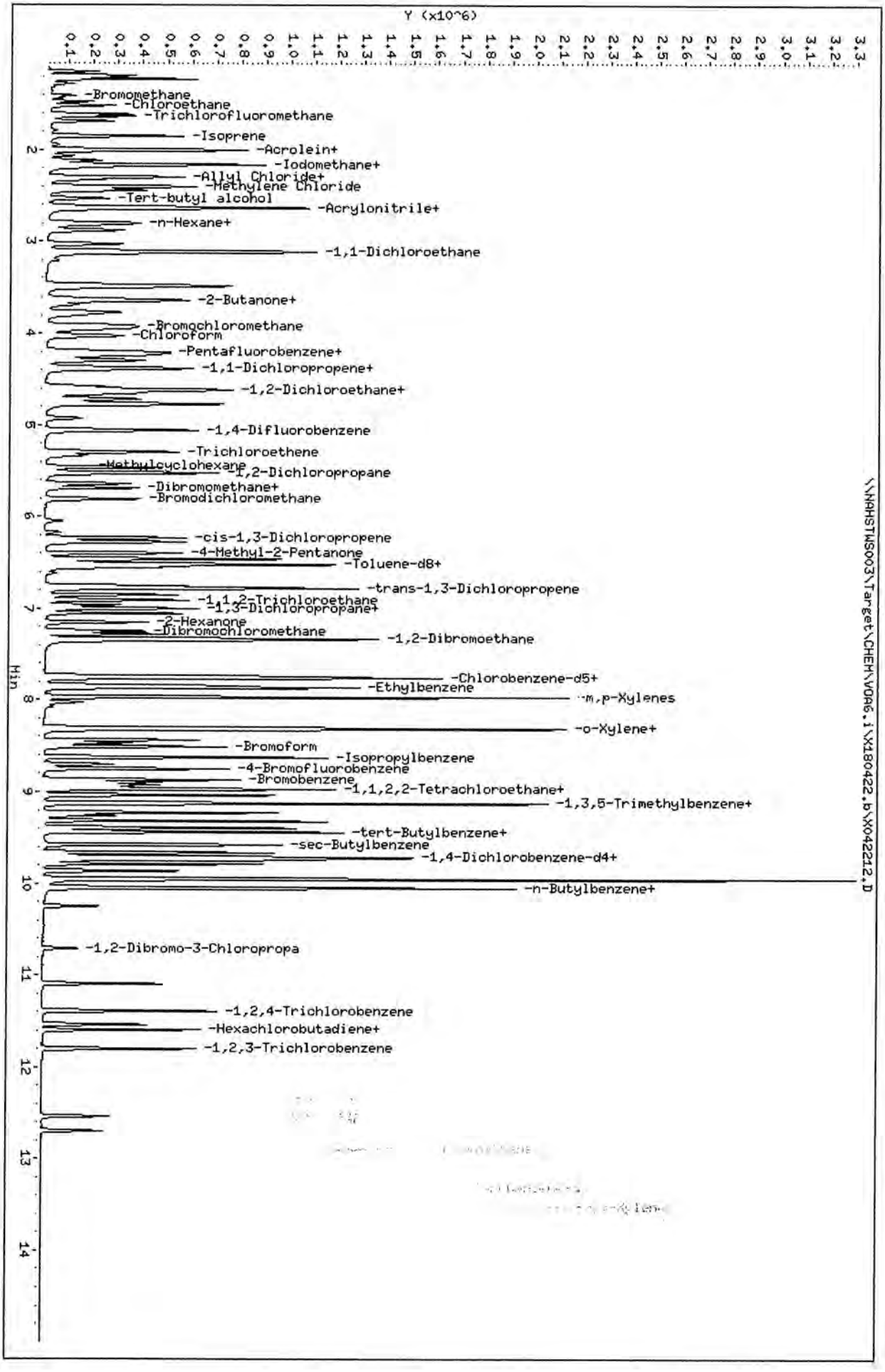
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1	Pentafluorobenzene	168	4.297	4.297	(1.000)	315117	50.0000	
185	Isoprene	39	1.854	1.854	(0.432)	60953	45.1799	45.17
136	n-Hexane	57	2.878	2.879	(0.670)	154428	42.8958	42.89
14	Allyl Chloride	41	2.291	2.291	(0.533)	406732	50.7589	50.75
194	Acetaldehyde	44	1.274	1.274	(0.297)	55233	214.748	214.74
140	1,3-Butadiene	54	1.231	1.231	(0.287)	146811	52.9226	52.92
2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	148913	48.6931	48.69
3	Chloromethane	50	1.145	1.138	(0.267)	144472	41.9222	41.92
5	Vinyl Chloride	62	1.209	1.202	(0.282)	195972	51.7459	51.74
6	Bromomethane	94	1.410	1.410	(0.328)	41829	22.1795	22.17
7	Chloroethane	64	1.474	1.475	(0.343)	129929	62.1522	62.15
8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	207643	51.3652	51.36
9	Acrolein	56	1.947	1.940	(0.453)	29421	100.483	100.48
10	Acetone	43	2.062	2.062	(0.480)	89932	102.490	102.49
11	1,1-Dichloroethene	96	2.004	2.005	(0.467)	137856	51.8426	51.84
15	Iodomethane	142	2.119	2.119	(0.493)	217068	68.0052	68.00
16	Acrylonitrile	53	2.635	2.635	(0.613)	123635	106.063	106.06
17	Methylene Chloride	84	2.398	2.399	(0.558)	183544	56.4066	56.40
18	Methyl tert-butyl ether	73	2.635	2.635	(0.613)	411273	48.1637	48.16
19	Carbon Disulfide	76	2.162	2.162	(0.503)	1058829	112.892	112.89
20	trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	168748	55.1498	55.14
21	Vinyl Acetate	43	2.878	2.879	(0.670)	100262	86.6304	86.63

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042212.D
Report Date: 15-May-2018 16:10

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	22	1,1-Dichloroethane	63	3.029	3.029	(0.705)	298502	60.9925	60.99
	24	2-Butanone	43	3.695	3.688	(0.860)	142181	119.411	119.41
	26	2,2-Dichloropropane	77	3.630	3.623	(0.845)	212046	54.6674	54.66
	27	cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	192445	61.6181	61.61
	28	Chloroform	83	4.032	4.032	(0.938)	287093	60.2440	60.24
	29	Bromochloromethane	128	3.917	3.917	(0.912)	97310	64.3409	64.34
$	30	Dibromofluoromethane	113	4.218	4.218	(0.982)	155358	51.2707	51.27
	31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	224829	53.5548	53.55
	32	1,1-Dichloropropene	75	4.390	4.390	(0.867)	216935	50.6446	50.64
	33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	207550	57.0231	57.02
	34	Carbon Tetrachloride	117	4.375	4.376	(0.864)	195728	49.5898	49.58
$	35	1,2-Dichloroethane-d4	65	4.583	4.576	(1.067)	155625	46.2715	46.27
*	36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	496578	50.0000	
	37	Benzene	78	4.619	4.619	(0.912)	673669	53.0129	53.01
	38	Trichloroethene	130	5.299	5.300	(1.047)	178902	52.8014	52.80
	39	Bromodichloromethane	83	5.808	5.808	(1.147)	229788	57.7474	57.74
	42	1,2-Dichloropropane	63	5.529	5.529	(1.092)	186968	59.2413	59.24
	44	Dibromomethane	93	5.643	5.643	(1.115)	114887	57.7479	57.74
	45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	338843	110.257	110.25
	46	cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	314586	58.9975	58.99
*	47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	491069	50.0000	
$	48	Toluene-d8	98	6.460	6.460	(0.835)	588014	48.4408	48.44
	50	Toluene	91	6.524	6.524	(0.844)	699466	56.4230	56.42
	51	trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	255362	56.7929	56.79
	52	2-Hexanone	43	7.155	7.155	(0.925)	221398	107.781	107.78
	53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	139691	54.3294	54.32
	54	1,3-Dichloropropane	76	7.054	7.055	(0.912)	289799	54.2344	54.23
	55	Dibromochloromethane	129	7.248	7.248	(0.937)	196673	55.7336	55.73
	56	Tetrachloroethene	164	6.997	6.997	(0.905)	132930	49.4703	49.47
	57	1,2-Dibromoethane	107	7.334	7.334	(0.948)	170608	54.4629	54.46
	58	1-Chlorohexane	55	7.764	7.764	(1.533)	125684	45.2423	45.24
	59	Chlorobenzene	112	7.756	7.764	(1.003)	467602	55.7079	55.70
	60	1,1,1,2-Tetrachloroethane	131	7.842	7.842	(1.014)	168680	54.5676	54.56
	61	Ethylbenzene	106	7.864	7.864	(1.017)	233629	55.7332	55.73
	62	m,p-Xylenes	106	7.971	7.964	(1.031)	565344	109.834	109.83
	63	o-Xylene	106	8.301	8.301	(1.073)	285152	55.1240	55.12
	64	Styrene	104	8.322	8.322	(1.076)	500559	55.1421	55.14
	66	Bromoform	173	8.473	8.473	(1.095)	140365	52.9441	52.94
	67	Isopropylbenzene	105	8.623	8.623	(1.115)	645466	48.8691	48.86
	68	1,1,2,2-Tetrachloroethane	83	8.895	8.895	(0.915)	213208	53.4756	53.47
$	69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	213343	47.5858	47.58
*	70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	252951	50.0000	
	71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	243945	49.7006	49.70
	73	n-Propylbenzene	91	8.974	8.974	(0.923)	793135	47.6541	47.65
	74	Bromobenzene	156	8.867	8.867	(0.912)	205133	53.0007	53.00
	75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	544444	51.9444	51.94
	76	2-Chlorotoluene	91	9.031	9.032	(0.929)	474726	52.5395	52.53
	77	4-Chlorotoluene	91	9.132	9.132	(0.940)	544857	52.2847	52.28
	78	tert-Butylbenzene	119	9.397	9.397	(0.967)	457285	47.2994	47.29
	79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	563134	50.9239	50.92
	81	sec-Butylbenzene	105	9.583	9.576	(0.936)	630095	46.6903	46.69
	82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	457285	47.2994	47.29
	83	1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	339530	51.1529	51.15
	84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	347641	50.7249	50.72

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042212.D
Report Date: 15-May-2018 16:10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
87	n-Butylbenzene	91	10.049	10.049	(1.034)	462058	48.3120	48.31
88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	325905	49.1529	49.15
89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	30775	49.7545	49.75
90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	204811	54.5628	54.56
91	Hexachlorobutadiene	225	11.538	11.539	(1.187)	78037	45.8657	45.86
92	Naphthalene	128	11.596	11.596	(1.193)	423523	54.3907	54.39
93	1,2,3-Trichlorobenzene	180	11.796	11.796	(1.214)	175400	48.9955	48.99
M 94	1,2-Dichloroethylene (total)	96				361193	116.768	116.76
M 95	Xylenes (total)	106				850496	164.958	164.95
135	1,4-Dioxane	88	5.686	5.679	(1.323)	37469	1153.96	1153.95
141	Cyclohexane	56	4.239	4.239	(0.987)	202261	40.7615	40.76
138	Freon TF	101	2.004	2.005	(0.467)	131928	53.1366	53.13
147	Methylcyclohexane	83	5.464	5.464	(1.079)	109660	26.0223	26.02
146	Methyl Acetate	43	2.327	2.327	(0.542)	208265	57.0988	57.09
148	Tert-Butyl alcohol	59	2.527	2.528	(0.588)	278535	1104.28	1104.28
149	Isopropyl Alcohol	45	2.191	2.191	(0.510)	200161	1178.04	1178.03



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Sample Info: HS18040701-07MS;HS18040701-07MS;3;;MS
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042213.D
Report Date: 15-May-2018 16:10

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042213.D
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Inj Date : 22-APR-2018 14:41
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Als bottle: 13 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
* 1 Pentafluorobenzene	168	4.297	4.297	(1.000)	305707	50.0000	
185 Isoprene	39	1.854	1.854	(0.432)	61789	47.0736	47.07
136 n-Hexane	57	2.879	2.879	(0.670)	162208	46.1961	46.19
14 Allyl Chloride	41	2.291	2.291	(0.533)	381988	49.1382	49.13
194 Acetaldehyde	44	1.274	1.274	(0.297)	69896	281.648	281.64
140 1,3-Butadiene	54	1.231	1.231	(0.287)	141850	52.7195	52.71
2 Dichlorodifluoromethane	85	1.030	1.030	(0.240)	144610	48.7378	48.73
3 Chloromethane	50	1.145	1.138	(0.267)	130885	39.3650	39.36
5 Vinyl Chloride	62	1.210	1.202	(0.282)	187303	51.0275	51.02
6 Bromomethane	94	1.410	1.410	(0.328)	56668	30.0825	30.08
7 Chloroethane	64	1.475	1.475	(0.343)	115991	57.4027	57.40
8 Trichlorofluoromethane	101	1.639	1.639	(0.382)	197502	50.4263	50.42
9 Acrolein	56	1.947	1.940	(0.453)	29635	104.330	104.32
10 Acetone	43	2.062	2.062	(0.480)	80331	94.3082	94.30
11 1,1-Dichloroethene	96	2.005	2.005	(0.467)	135009	52.3056	52.30
15 Iodomethane	142	2.119	2.119	(0.493)	288634	90.4725	90.47
16 Acrylonitrile	53	2.635	2.635	(0.613)	115497	102.131	102.13
17 Methylene Chloride	84	2.406	2.399	(0.560)	170960	54.1948	54.19
18 Methyl tert-butyl ether	73	2.635	2.635	(0.613)	388761	46.9287	46.92
19 Carbon Disulfide	76	2.162	2.162	(0.503)	1013411	111.450	111.44
20 trans-1,2-Dichloroethene	96	2.635	2.628	(0.613)	159600	53.8157	53.81
21 Vinyl Acetate	43	2.879	2.879	(0.670)	104074	92.3293	92.32

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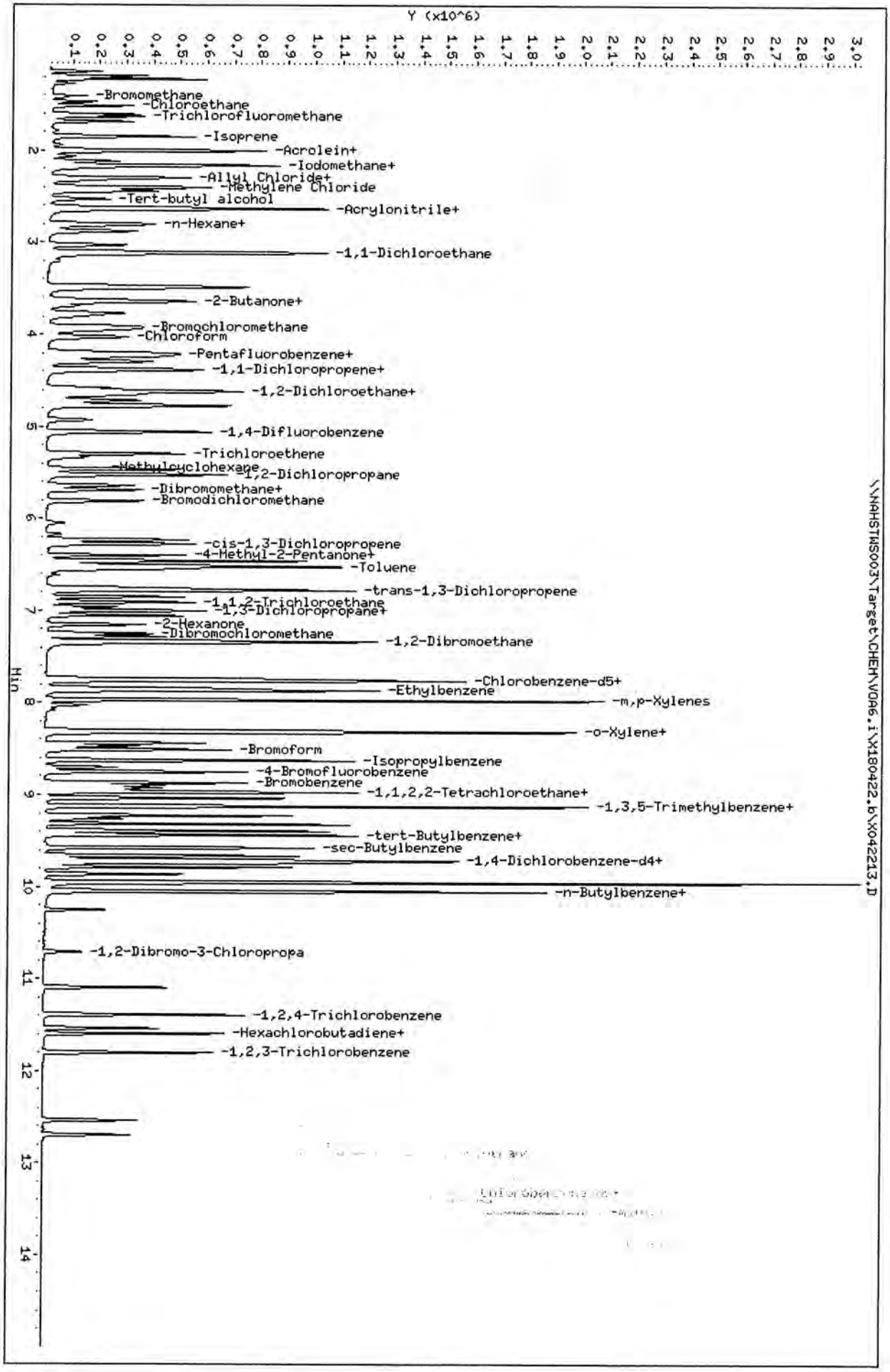
Report Date: 15-May-2018 16:10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	22 1,1-Dichloroethane	63	3.029	3.029	(0.705)	291251	61.3427	61.34
	24 2-Butanone	43	3.688	3.688	(0.858)	126702	109.706	109.70
	26 2,2-Dichloropropane	77	3.631	3.623	(0.845)	203232	54.0315	54.03
	27 cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	180663	59.6263	59.62
	28 Chloroform	83	4.032	4.032	(0.938)	270042	58.4103	58.41
	29 Bromochloromethane	128	3.917	3.917	(0.912)	91842	62.5947	62.59
$	30 Dibromofluoromethane	113	4.218	4.218	(0.982)	150282	51.1222	51.12
	31 1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	216767	53.2372	53.23
	32 1,1-Dichloropropene	75	4.390	4.390	(0.867)	206505	49.4109	49.41
	33 1,2-Dichloroethane	62	4.662	4.662	(0.921)	194137	54.5903	54.59
	34 Carbon Tetrachloride	117	4.383	4.376	(0.866)	192780	49.9671	49.96
$	35 1,2-Dichloroethane-d4	65	4.583	4.576	(1.067)	152731	46.8089	46.80
*	36 1,4-Difluorobenzene	114	5.063	5.063	(1.000)	485186	50.0000	
	37 Benzene	78	4.619	4.619	(0.912)	637676	51.4276	51.42
	38 Trichloroethene	130	5.300	5.300	(1.047)	168273	50.9335	50.93
	39 Bromodichloromethane	83	5.808	5.808	(1.147)	213230	54.8445	54.84
	42 1,2-Dichloropropane	63	5.529	5.529	(1.092)	178368	57.8434	57.84
	44 Dibromomethane	93	5.643	5.643	(1.115)	108916	56.0320	56.03
	45 4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	310347	103.431	103.43
	46 cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	294080	56.4468	56.44
*	47 Chlorobenzene-d5	117	7.735	7.735	(1.000)	479761	50.0000	
$	48 Toluene-d8	98	6.460	6.460	(0.835)	579630	48.8756	48.87
	50 Toluene	91	6.525	6.524	(0.844)	662401	54.6925	54.69
	51 trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	240998	54.8568	54.85
	52 2-Hexanone	43	7.155	7.155	(0.925)	204568	102.035	102.03
	53 1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	131266	52.2560	52.25
	54 1,3-Dichloropropane	76	7.055	7.055	(0.912)	269145	51.5563	51.55
	55 Dibromochloromethane	129	7.248	7.248	(0.937)	180800	52.4431	52.44
	56 Tetrachloroethene	164	7.004	6.997	(0.906)	129085	49.1876	49.18
	57 1,2-Dibromoethane	107	7.334	7.334	(0.948)	162534	53.1084	53.10
	58 1-Chlorohexane	55	7.764	7.764	(1.533)	126939	46.7314	46.73
	59 Chlorobenzene	112	7.764	7.764	(1.004)	441370	53.8221	53.82
	60 1,1,1,2-Tetrachloroethane	131	7.843	7.842	(1.014)	160644	53.1929	53.19
	61 Ethylbenzene	106	7.864	7.864	(1.017)	224478	54.8124	54.81
	62 m,p-Xylenes	106	7.964	7.964	(1.030)	548180	109.009	109.00
	63 o-Xylene	106	8.301	8.301	(1.073)	274765	54.3679	54.36
	64 Styrene	104	8.322	8.322	(1.076)	476616	53.7420	53.74
	66 Bromoform	173	8.473	8.473	(1.095)	133134	51.4002	51.40
	67 Isopropylbenzene	105	8.623	8.623	(1.115)	636939	49.3386	49.33
	68 1,1,2,2-Tetrachloroethane	83	8.896	8.895	(0.915)	200055	49.7472	49.74
$	69 4-Bromofluorobenzene	95	8.752	8.752	(1.131)	210064	47.9588	47.95
*	70 1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	255518	50.0000	
	71 1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	227605	46.0137	46.01
	73 n-Propylbenzene	91	8.974	8.974	(0.923)	786055	46.8001	46.80
	74 Bromobenzene	156	8.867	8.867	(0.912)	193536	49.5020	49.50
	75 1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	536854	50.7057	50.70
	76 2-Chlorotoluene	91	9.032	9.032	(0.929)	459919	50.3894	50.38
	77 4-Chlorotoluene	91	9.132	9.132	(0.940)	531832	50.5221	50.52
	78 tert-Butylbenzene	119	9.397	9.397	(0.967)	457273	46.8478	46.84
	79 1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	553563	49.5555	49.55
	81 sec-Butylbenzene	105	9.576	9.576	(0.985)	636463	46.6885	46.68
	82 p-Isopropyltoluene	119	9.397	9.397	(0.967)	457273	46.8478	46.84
	83 1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	327306	48.8158	48.81
	84 1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	334132	48.2640	48.26

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042213.D
Report Date: 15-May-2018 16:10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)
	87 n-Butylbenzene	91	10.049	10.049	(1.034)	462598	47.9048	47.90
	88 1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	316204	47.2763	47.27
	89 1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	30363	48.6459	48.64
	90 1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	208013	54.8356	54.83
	91 Hexachlorobutadiene	225	11.539	11.539	(1.187)	74901	43.7597	43.75
	92 Naphthalene	128	11.596	11.596	(1.193)	445372	56.4853	56.48
	93 1,2,3-Trichlorobenzene	180	11.797	11.796	(1.214)	180081	49.7507	49.75
M	94 1,2-Dichloroethylene (total)	96				340263	113.442	113.44
M	95 Xylenes (total)	106				822945	163.377	163.37
	135 1,4-Dioxane	88	5.679	5.679	(1.322)	32092	1020.34	1020.33
	141 Cyclohexane	56	4.240	4.239	(0.987)	208314	43.1028	43.10
	138 Freon TF	101	2.005	2.005	(0.467)	135531	56.0459	56.04
	147 Methylcyclohexane	83	5.464	5.464	(1.079)	125601	29.6486	29.64
	146 Methyl Acetate	43	2.327	2.327	(0.542)	186858	52.8067	52.80
	148 Tert-Butyl alcohol	59	2.528	2.528	(0.588)	245105	1003.66	1003.65
	149 Isopropyl Alcohol	45	2.184	2.191	(0.508)	176709	1070.74	1070.74



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Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042229.D
Report Date: 15-May-2018 16:39

ALS Laboratory Group

Data file : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042229.D
Lab Smp Id: CCV-END Client Smp ID: CCV-END
Inj Date : 22-APR-2018 21:13
Operator : PC Inst ID: voa6.i
Smp Info : CCV-END;CCV-END;2;;
Misc Info : HS16030331;WATER;0;1;
Comment :
Method : \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\8260W.m
Meth Date : 15-May-2018 16:39 voa6.i Quant Type: ISTD
Cal Date : 11-APR-2018 15:27 Cal File: X041108.D
Als bottle: 29 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8260_GB++.sub
Target Version: 4.14
Processing Host: ALSHSW7085

Concentration Formula: Amt * DF * (Uf/Vo)*1 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	5.000	ng unit correction factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
* 1	Pentafluorobenzene	168	4.297	4.297	(1.000)	309284	50.0000	
185	Isoprene	39	1.854	1.854	(0.432)	75807	50.0000	56.44
136	n-Hexane	57	2.879	2.879	(0.670)	178129	50.0000	49.88
14	Allyl Chloride	41	2.291	2.291	(0.533)	489818	50.0000	62.28
194	Acetaldehyde	44	1.274	1.274	(0.297)	59547	200.000	236.38
140	1,3-Butadiene	54	1.231	1.231	(0.287)	167103	50.0000	60.92
2	Dichlorodifluoromethane	85	1.030	1.030	(0.240)	170592	50.0000	56.20
3	Chloromethane	50	1.145	1.145	(0.267)	130808	50.0000	38.92
5	Vinyl Chloride	62	1.210	1.210	(0.282)	205688	50.0000	55.10
6	Bromomethane	94	1.410	1.410	(0.328)	72094	50.0000	37.14
7	Chloroethane	64	1.475	1.475	(0.343)	112482	50.0000	55.13
8	Trichlorofluoromethane	101	1.639	1.639	(0.382)	204549	50.0000	51.54
9	Acrolein	56	1.940	1.940	(0.452)	33713	100.000	117.31
10	Acetone	43	2.062	2.062	(0.480)	91835	100.000	106.66
11	1,1-Dichloroethene	96	2.005	2.005	(0.467)	149004	50.0000	56.78
15	Iodomethane	142	2.119	2.119	(0.493)	229218	100.000	72.69
16	Acrylonitrile	53	2.635	2.635	(0.613)	140266	100.000	122.59
17	Methylene Chloride	84	2.399	2.399	(0.558)	173774	50.0000	54.44
18	Methyl tert-butyl ether	73	2.635	2.635	(0.613)	472600	50.0000	56.38
19	Carbon Disulfide	76	2.162	2.162	(0.503)	1049557	100.000	113.95
20	trans-1,2-Dichloroethene	96	2.628	2.628	(0.612)	168042	50.0000	55.92
21	Vinyl Acetate	43	2.879	2.879	(0.670)	110682	100.000	96.79

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042229.D
Report Date: 15-May-2018 16:39

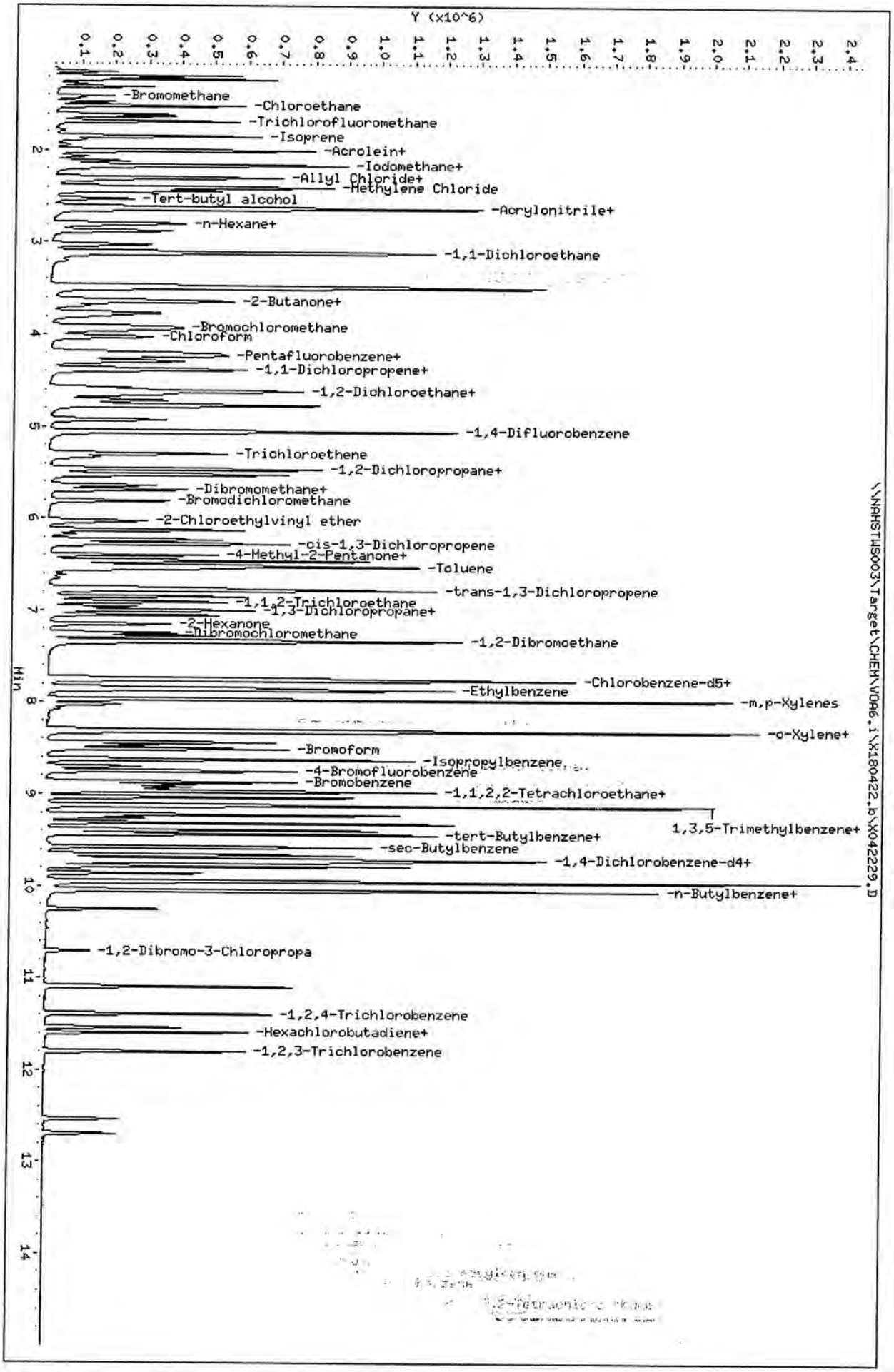
		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)
	22	1,1-Dichloroethane	63	3.029	3.029	(0.705)	292814	50.0000	60.95
	24	2-Butanone	43	3.688	3.688	(0.858)	131011	100.000	112.11
	26	2,2-Dichloropropane	77	3.631	3.631	(0.845)	186303	50.0000	49.14
	27	cis-1,2-Dichloroethene	96	3.645	3.645	(0.848)	183884	50.0000	59.98
	28	Chloroform	83	4.032	4.032	(0.938)	275854	50.0000	58.97
	29	Bromochloromethane	128	3.917	3.917	(0.912)	91274	50.0000	61.48
$	30	Dibromofluoromethane	113	4.218	4.218	(0.982)	153570	50.0000	51.63
	31	1,1,1-Trichloroethane	97	4.204	4.204	(0.978)	219644	50.0000	53.31
	32	1,1-Dichloropropene	75	4.390	4.390	(0.867)	214988	50.0000	51.34
	33	1,2-Dichloroethane	62	4.662	4.662	(0.921)	192770	50.0000	54.22
	34	Carbon Tetrachloride	117	4.383	4.383	(0.866)	196851	50.0000	50.98
$	35	1,2-Dichloroethane-d4	65	4.583	4.583	(1.067)	154005	50.0000	46.65
*	36	1,4-Difluorobenzene	114	5.063	5.063	(1.000)	485001	50.0000	
	37	Benzene	78	4.619	4.619	(0.912)	655016	50.0000	52.78
	38	Trichloroethene	130	5.300	5.300	(1.047)	173111	50.0000	52.33
	39	Bromodichloromethane	83	5.808	5.808	(1.147)	215028	50.0000	55.32
	41	2-Chloroethylvinyl ether	63	6.123	6.123	(1.209)	234969	100.000	104.88
	42	1,2-Dichloropropane	63	5.529	5.529	(1.092)	176077	50.0000	57.12
	44	Dibromomethane	93	5.643	5.643	(1.115)	105180	50.0000	54.13
	45	4-Methyl-2-Pentanone	43	6.403	6.403	(0.828)	302704	100.000	100.16
	46	cis-1,3-Dichloropropene	75	6.231	6.231	(1.231)	283920	50.0000	54.51
*	47	Chlorobenzene-d5	117	7.735	7.735	(1.000)	483344	50.0000	
$	48	Toluene-d8	98	6.460	6.460	(0.835)	584569	50.0000	48.92
	50	Toluene	91	6.525	6.525	(0.844)	676622	50.0000	55.45
	51	trans-1,3-Dichloropropene	75	6.754	6.754	(1.334)	231693	50.0000	52.75
	52	2-Hexanone	43	7.155	7.155	(0.925)	199781	100.000	98.96
	53	1,1,2-Trichloroethane	83	6.911	6.911	(0.894)	126486	50.0000	49.97
	54	1,3-Dichloropropane	76	7.055	7.055	(0.912)	269024	50.0000	51.15
	55	Dibromochloromethane	129	7.248	7.248	(0.937)	179780	50.0000	51.76
	56	Tetrachloroethene	164	6.997	6.997	(0.905)	131264	50.0000	49.62
	57	1,2-Dibromoethane	107	7.334	7.334	(0.948)	158040	50.0000	51.25
	58	1-Chlorohexane	55	7.764	7.764	(1.533)	134065	50.0000	49.31
	59	Chlorobenzene	112	7.757	7.757	(1.003)	437455	50.0000	52.94
	60	1,1,1,2-Tetrachloroethane	131	7.843	7.843	(1.014)	157051	50.0000	51.61
	61	Ethylbenzene	106	7.864	7.864	(1.017)	223046	50.0000	54.05
	62	m,p-Xylenes	106	7.964	7.964	(1.030)	541206	100.000	106.82
	63	o-Xylene	106	8.301	8.301	(1.073)	270562	50.0000	53.13
	64	Styrene	104	8.322	8.322	(1.076)	468198	50.0000	52.40
	66	Bromoform	173	8.473	8.473	(1.095)	129530	50.0000	49.63
	67	Isopropylbenzene	105	8.623	8.623	(1.115)	620059	50.0000	47.74
	68	1,1,2,2-Tetrachloroethane	83	8.896	8.896	(0.915)	195501	50.0000	48.62
$	69	4-Bromofluorobenzene	95	8.752	8.752	(1.131)	212530	50.0000	48.16
*	70	1,4-Dichlorobenzene-d4	152	9.719	9.719	(1.000)	255611	50.0000	
	71	1,2,3-Trichloropropane	75	8.924	8.924	(0.918)	228854	50.0000	46.24
	73	n-Propylbenzene	91	8.974	8.974	(0.923)	769462	50.0000	45.84
	74	Bromobenzene	156	8.867	8.867	(0.912)	189728	50.0000	48.51
	75	1,3,5-Trimethylbenzene	105	9.125	9.125	(0.939)	526189	50.0000	49.68
	76	2-Chlorotoluene	91	9.032	9.032	(0.929)	462100	50.0000	50.60
	77	4-Chlorotoluene	91	9.132	9.132	(0.940)	523054	50.0000	49.67
	78	tert-Butylbenzene	119	9.397	9.397	(0.967)	443728	50.0000	45.51
	79	1,2,4-Trimethylbenzene	105	9.440	9.440	(0.971)	543457	50.0000	48.63
	81	sec-Butylbenzene	105	9.576	9.576	(0.985)	615397	50.0000	45.21
	82	p-Isopropyltoluene	119	9.397	9.397	(0.967)	443728	50.0000	45.51
	83	1,3-Dichlorobenzene	146	9.662	9.662	(0.994)	322671	50.0000	48.10

Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042229.D
Report Date: 15-May-2018 16:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/l)	AMOUNTS ON-COL (ug/l)	
84	1,4-Dichlorobenzene	146	9.741	9.741	(1.002)	328532	50.0000	47.43	
87	n-Butylbenzene	91	10.049	10.049	(1.034)	438017	50.0000	45.47	
88	1,2-Dichlorobenzene	146	10.049	10.049	(1.034)	311337	50.0000	46.55	
89	1,2-Dibromo-3-Chloropropane	155	10.715	10.715	(1.102)	28595	50.0000	45.92	
90	1,2,4-Trichlorobenzene	180	11.395	11.395	(1.172)	193821	50.0000	51.35	
91	Hexachlorobutadiene	225	11.539	11.539	(1.187)	72662	50.0000	42.54	
92	Naphthalene	128	11.596	11.596	(1.193)	391678	50.0000	50.03	
93	1,2,3-Trichlorobenzene	180	11.797	11.797	(1.214)	166499	50.0000	46.19	
M 94	1,2-Dichloroethylene (total)	96				351926	100.000		(a)
135	1,4-Dioxane	88	5.679	5.679	(1.322)	30759	1000.00	967.34	
141	Cyclohexane	56	4.240	4.240	(0.987)	249802	50.0000	50.57	
138	Freon TF	101	2.005	2.005	(0.467)	130366	50.0000	53.47	
147	Methylcyclohexane	83	5.464	5.464	(1.079)	242292	50.0000	52.59	
146	Methyl Acetate	43	2.327	2.327	(0.542)	207724	50.0000	58.02	
148	Tert-Butyl alcohol	59	2.528	2.528	(0.588)	255974	1000.00	1035.34	
149	Isopropyl Alcohol	45	2.184	2.184	(0.508)	170241	1000.00	1018.93	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).



Data File: \\NAHSTWS003\Target\CHEM\VOA6.i\X180422.b\X042229.D
Date : 22-APR-2018 21:13
Client ID: CCV-END
Sample Info: CCV-END;CCV-END;2;;
Purge Volume: 5.0
Column phase: DB624

Instrument: voa6.i
Operator: PC
Column diameter: 0.18

Wet Chemistry Raw Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT PLANT
ALS WO# HS18040991

Sequence: 042718 HS18040991
Operator: ALSHS.NoUser

Printed: 5/2/2018 1:08:14 PM

Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92

Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

No.	Name	Comment	Type	Pos.	Dil. Factor	Inj. Vol.	*Initial_Vol_Wt	*Final_Volume
1	STD1		Standard	1	1.0000	10.0	1.00	1.00
2	STD2		Standard	2	1.0000	10.0	1.00	1.00
3	STD3		Standard	3	1.0000	10.0	1.00	1.00
4	STD4		Standard	4	1.0000	10.0	1.00	1.00
5	STD5		Standard	5	1.0000	10.0	1.00	1.00
6	STD6		Standard	6	1.0000	10.0	1.00	1.00
7	ICV		Unknown	7	1.0000	10.0	1.00	1.00
8	ICB		Unknown	8	1.0000	10.0	1.00	1.00
9	CCV		Unknown	1	1.0000	10.0	1.00	1.00
10	CCB		Unknown	2	1.0000	10.0	1.00	1.00
11	WBLKW1-042718		Unknown	5	1.0000	10.0	1.00	1.00
12	WLCSW1-042718		Unknown	6	1.0000	10.0	1.00	1.00
13	WLCSDW1-042718		Unknown	7	1.0000	10.0	1.00	1.00
14	HS18040991-01DF10	9056_W CL SO4	Unknown	9	10.0000	10.0	1.00	1.00
15	HS18041033-01	300_W	Unknown	11	1.0000	10.0	1.00	1.00
16	HS18041033-01MS	CL BR SO4	Unknown	12	1.0000	10.0	1.00	1.00
17	HS18041033-01MSD		Unknown	13	1.0000	10.0	1.00	1.00
18	HS18041033-01DF10		Unknown	14	10.0000	10.0	1.00	1.00
19	HS18041033-03		Unknown	15	1.0000	10.0	1.00	1.00
20	HS18041033-03DF10		Unknown	16	10.0000	10.0	1.00	1.00
21	CCV1		Unknown	3	1.0000	10.0	1.00	1.00
22	CCB		Unknown	4	1.0000	10.0	1.00	1.00
23	HS18041033-02		Unknown	17	1.0000	10.0	1.00	1.00
24	HS18041033-02DF10	DO 50X	Unknown	18	10.0000	10.0	1.00	1.00
25	HS18041395-01	CL SO4	Unknown	19	1.0000	10.0	1.00	1.00
26	HS18041395-01DF10		Unknown	20	10.0000	10.0	1.00	1.00
27	HS18041395-02	CL SO4	Unknown	21	1.0000	10.0	1.00	1.00
28	HS18041395-02DF10	SO4 OFF	Unknown	22	10.0000	10.0	1.00	1.00
29	HS18041012-01DF10	CL	Unknown	23	10.0000	10.0	1.00	1.00
30	HS18041012-01MSDF10		Unknown	24	10.0000	10.0	1.00	1.00
31	HS18041012-01MSDDF10		Unknown	25	10.0000	10.0	1.00	1.00
32	HS18041012-02DF10		Unknown	26	10.0000	10.0	1.00	1.00
33	CCV		Unknown	1	1.0000	10.0	1.00	1.00
34	CCB		Unknown	2	1.0000	10.0	1.00	1.00
35	HS18041012-03DF10		Unknown	27	10.0000	10.0	1.00	1.00
36	HS18041012-05DF50		Unknown	28	50.0000	10.0	1.00	1.00
37	HS18041012-06DF10		Unknown	29	10.0000	10.0	1.00	1.00
38	HS18041032-01DF10		Unknown	30	10.0000	10.0	1.00	1.00
39	HS18041032-02DF10		Unknown	31	10.0000	10.0	1.00	1.00
40	HS18041032-03DF10		Unknown	32	10.0000	10.0	1.00	1.00
41	HS18041032-04DF10		Unknown	33	10.0000	10.0	1.00	1.00
42	HS18041032-05DF10		Unknown	34	10.0000	10.0	1.00	1.00

Sequence: 042718
Operator: ALSHS.NoUser

Printed: 5/2/2018 1:08:14 PM

Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92

Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

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1	STD1	042618	Finished	4/26/2018 1:23:55 PM	Anions Gradient Program
2	STD2	042618	Finished	4/26/2018 1:38:28 PM	Anions Gradient Program
3	STD3	042618	Finished	4/26/2018 1:53:01 PM	Anions Gradient Program
4	STD4	042618	Finished	4/26/2018 2:07:34 PM	Anions Gradient Program
5	STD5	042618	Finished	4/26/2018 2:22:07 PM	Anions Gradient Program
6	STD6	042618	Finished	4/26/2018 2:36:39 PM	Anions Gradient Program
7	ICV	042618	Finished	4/26/2018 3:55:05 PM	Anions Gradient Program
8	ICB	042618	Finished	4/26/2018 4:09:38 PM	Anions Gradient Program
9	CCV	042618	Finished	4/27/2018 7:35:33 PM	Anions Gradient Program
10	CCB	042618	Finished	4/27/2018 7:50:04 PM	Anions Gradient Program
11	WBLKW1-042718	042618	Finished	4/27/2018 8:04:37 PM	Anions Gradient Program
12	WLCSW1-042718	042618	Finished	4/27/2018 9:21:12 PM	Anions Gradient Program
13	WLCSDW1-042718	042618	Finished	4/27/2018 9:35:45 PM	Anions Gradient Program
14	HS18040991-01DF10	042618	Finished	4/27/2018 9:50:18 PM	Anions Gradient Program
15	HS18041033-01	042618	Finished	4/27/2018 10:04:51 PM	Anions Gradient Program
16	HS18041033-01MS	042618	Finished	4/27/2018 10:19:24 PM	Anions Gradient Program
17	HS18041033-01MSD	042618	Finished	4/27/2018 10:33:57 PM	Anions Gradient Program
18	HS18041033-01DF10	042618	Finished	4/27/2018 10:48:30 PM	Anions Gradient Program
19	HS18041033-03	042618	Finished	4/27/2018 11:03:03 PM	Anions Gradient Program
20	HS18041033-03DF10	042618	Finished	4/27/2018 11:17:36 PM	Anions Gradient Program
21	CCV1	042618	Finished	4/27/2018 11:32:09 PM	Anions Gradient Program
22	CCB	042618	Finished	4/27/2018 11:46:41 PM	Anions Gradient Program
23	HS18041033-02	042618	Finished	4/28/2018 12:01:14 AM	Anions Gradient Program
24	HS18041033-02DF10	042618	Finished	4/28/2018 12:15:47 AM	Anions Gradient Program
25	HS18041395-01	042618	Finished	4/28/2018 12:30:20 AM	Anions Gradient Program
26	HS18041395-01DF10	042618	Finished	4/28/2018 12:44:52 AM	Anions Gradient Program
27	HS18041395-02	042618	Finished	4/28/2018 12:59:25 AM	Anions Gradient Program
28	HS18041395-02DF10	042618	Finished	4/28/2018 1:13:58 AM	Anions Gradient Program
29	HS18041012-01DF10	042618	Finished	4/28/2018 1:28:31 AM	Anions Gradient Program
30	HS18041012-01MSDF10	042618	Finished	4/28/2018 1:43:04 AM	Anions Gradient Program
31	HS18041012-01MSDDF10	042618	Finished	4/28/2018 1:57:37 AM	Anions Gradient Program
32	HS18041012-02DF10	042618	Finished	4/28/2018 2:12:09 AM	Anions Gradient Program
33	CCV	042618	Finished	4/28/2018 2:26:42 AM	Anions Gradient Program
34	CCB	042618	Finished	4/28/2018 2:41:15 AM	Anions Gradient Program
35	HS18041012-03DF10	042618	Finished	4/28/2018 2:55:48 AM	Anions Gradient Program
36	HS18041012-05DF50	042618	Finished	4/28/2018 3:10:21 AM	Anions Gradient Program
37	HS18041012-06DF10	042618	Finished	4/28/2018 3:24:53 AM	Anions Gradient Program
38	HS18041032-01DF10	042618	Finished	4/28/2018 3:39:26 AM	Anions Gradient Program
39	HS18041032-02DF10	042618	Finished	4/28/2018 3:53:58 AM	Anions Gradient Program
40	HS18041032-03DF10	042618	Finished	4/28/2018 4:08:30 AM	Anions Gradient Program
41	HS18041032-04DF10	042618	Finished	4/28/2018 4:23:03 AM	Anions Gradient Program
42	HS18041032-05DF10	042618	Finished	4/28/2018 4:37:36 AM	Anions Gradient Program

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Timebase: ICS2100
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Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

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2	STD2	e1774668-4980-11e8-b6d9-ac2a724b15e4
3	STD3	e9df5050-4982-11e8-b6d9-ac2a724b15e4
4	STD4	f22134e8-4984-11e8-b6d9-ac2a724b15e4
5	STD5	fa2ea632-4986-11e8-b6d9-ac2a724b15e4
6	STD6	026e2875-4989-11e8-b6d9-ac2a724b15e4
7	ICV	7a1849cd-4993-11e8-b6d9-ac2a724b15e4
8	ICB	ff9ed68c-4995-11e8-b6d9-ac2a724b15e4
9	CCV	edbbb589-4a7b-11e8-b6d9-ac2a724b15e4
10	CCB	f5b6142b-4a7d-11e8-b6d9-ac2a724b15e4
11	WBLKW1-042718	fdd435c8-4a7f-11e8-b6d9-ac2a724b15e4
12	WLCSW1-042718	33add6a9-4a8a-11e8-b6d9-ac2a724b15e4
13	WLCSDW1-042718	b8f1a21c-4a8c-11e8-b6d9-ac2a724b15e4
14	HS18040991-01DF10	c14dc05b-4a8e-11e8-b6d9-ac2a724b15e4
15	HS18041033-01	c9a519f0-4a90-11e8-b6d9-ac2a724b15e4
16	HS18041033-01MS	d201382f-4a92-11e8-b6d9-ac2a724b15e4
17	HS18041033-01MSD	d9f6d227-4a94-11e8-b6d9-ac2a724b15e4
18	HS18041033-01DF10	e2a19d5b-4a96-11e8-b6d9-ac2a724b15e4
19	HS18041033-03	eab897f9-4a98-11e8-b6d9-ac2a724b15e4
20	HS18041033-03DF10	f314b638-4a9a-11e8-b6d9-ac2a724b15e4
21	CCV1	fb5b5f7a-4a9c-11e8-b6d9-ac2a724b15e4
22	CCB	03725a18-4a9f-11e8-b6d9-ac2a724b15e4
23	HS18041033-02	0bcc1602-4aa1-11e8-b6d9-ac2a724b15e4
24	HS18041033-02DF10	13c1affa-4aa3-11e8-b6d9-ac2a724b15e4
25	HS18041395-01	1c1b6be4-4aa5-11e8-b6d9-ac2a724b15e4
26	HS18041395-01DF10	2466d9d0-4aa7-11e8-b6d9-ac2a724b15e4
27	HS18041395-02	2c7dd46e-4aa9-11e8-b6d9-ac2a724b15e4
28	HS18041395-02DF10	34d52e03-4aab-11e8-b6d9-ac2a724b15e4
29	HS18041012-01DF10	3d2ed016-4aad-11e8-b6d9-ac2a724b15e4
30	HS18041012-01MSDF10	45a50d91-4aaf-11e8-b6d9-ac2a724b15e4
31	HS18041012-01MSDDF10	4dadb87c-4ab1-11e8-b6d9-ac2a724b15e4
32	HS18041012-02DF10	55a5b4c9-4ab3-11e8-b6d9-ac2a724b15e4
33	CCV	5db58868-4ab5-11e8-b6d9-ac2a724b15e4
34	CCB	66081d53-4ab7-11e8-b6d9-ac2a724b15e4
35	HS18041012-03DF10	6e5d1493-4ab9-11e8-b6d9-ac2a724b15e4
36	HS18041012-05DF50	76b20bd3-4abb-11e8-b6d9-ac2a724b15e4
37	HS18041012-06DF10	7eb5f3c9-4abd-11e8-b6d9-ac2a724b15e4
38	HS18041032-01DF10	8703c40a-4abf-11e8-b6d9-ac2a724b15e4
39	HS18041032-02DF10	8ef95e02-4ac1-11e8-b6d9-ac2a724b15e4
40	HS18041032-03DF10	96e7d0fb-4ac3-11e8-b6d9-ac2a724b15e4
41	HS18041032-04DF10	9f0854ed-4ac5-11e8-b6d9-ac2a724b15e4
42	HS18041032-05DF10	a715c637-4ac7-11e8-b6d9-ac2a724b15e4

Sequence: 042718
Operator: ALSHS.NoUser

Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92

Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

No.	Name	Comment	Type	Pos.	Dil. Factor	Inj Vol.	*Initial_Vol_Wt	*Final_Volume
43	HS18041032-06DF10		Unknown	35	10.0000	10.0	1.00	1.00
44	HS18041032-07DF10		Unknown	36	10.0000	10.0	1.00	1.00
45	CCV1		Unknown	3	1.0000	10.0	1.00	1.00
46	CCB		Unknown	4	1.0000	10.0	1.00	1.00
47	HS18041434-01DF10	NO2 NO3	Unknown	37	10.0000	10.0	1.00	1.00
48	HS18041434-01DF100		Unknown	38	100.0000	10.0	1.00	1.00
49	DI H2O		Unknown	39	1.0000	10.0	1.00	1.00
50	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
51	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
52	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
53	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
54	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
55	CCV		Unknown	1	1.0000	10.0	1.00	1.00
56	CCB		Unknown	2	1.0000	10.0	1.00	1.00
57	MBLK-127840	9056_S OFF	Unknown	40	1.0000	10.0	1.00	1.00
58	LCS-127840	9056_S	Unknown	41	1.0000	10.0	1.00	1.00
59	LCSD-127840		Unknown	42	1.0000	10.0	1.00	1.00
60	HS18041090-01	CL	Unknown	43	1.0000	10.0	1.00	1.00
61	HS18041090-02		Unknown	44	1.0000	10.0	1.00	1.00
62	HS18041090-03		Unknown	45	1.0000	10.0	1.00	1.00
63	HS18041090-04		Unknown	46	1.0000	10.0	1.00	1.00
64	HS18041090-05		Unknown	47	1.0000	10.0	1.00	1.00
65	HS18041090-06		Unknown	48	1.0000	10.0	1.00	1.00
66	HS18041090-07		Unknown	49	1.0000	10.0	1.00	1.00
67	CCV1		Unknown	3	1.0000	10.0	1.00	1.00
68	CCB		Unknown	4	1.0000	10.0	1.00	1.00
69	HS18031380-14	HI NO3 OFF	Unknown	50	1.0000	10.0	1.00	1.00
70	HS18031380-17DF10		Unknown	51	10.0000	10.0	1.00	1.00
71	HS18031380-18		Unknown	52	1.0000	10.0	1.00	1.00
72	MBLK-127840	RR CL 9056_S	Unknown	40	1.0000	10.0	1.00	1.00
73	HS18031380-28DF10		Unknown	53	10.0000	10.0	1.00	1.00
74	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
75	HS18031380-41DF10		Unknown	54	10.0000	10.0	1.00	1.00
76	HS18031380-41MSDF10		Unknown	55	10.0000	10.0	1.00	1.00
77	HS18031380-41MSDDF10	9056_S	Unknown	56	10.0000	10.0	1.00	1.00
78	HS18031380-14DF5		Unknown	8	5.0000	10.0	1.00	1.00
79	CCV		Unknown	1	1.0000	10.0	1.00	1.00
80	CCB		Unknown	2	1.0000	10.0	1.00	1.00
81	WLCSDW1-042718	RR 300_W NO2	Unknown	7	1.0000	10.0	1.00	1.00
82	HS18031380-42DF5	9056_S	Unknown	57	5.0000	10.0	1.00	1.00
83	HS18031380-44DF5		Unknown	58	5.0000	10.0	1.00	1.00
84	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00

Sequence: 042718
Operator: ALSHS.NoUser

Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92

Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

No.	Name	Method	Status	Inj. Date/Time	Program
43	HS18041032-06DF10	042618	Finished	4/28/2018 4:52:09 AM	Anions Gradient Program
44	HS18041032-07DF10	042618	Finished	4/28/2018 5:06:41 AM	Anions Gradient Program
45	CCV1	042618	Finished	4/28/2018 5:21:14 AM	Anions Gradient Program
46	CCB	042618	Finished	4/28/2018 5:35:47 AM	Anions Gradient Program
47	HS18041434-01DF10	042618	Finished	4/28/2018 5:50:19 AM	Anions Gradient Program
48	HS18041434-01DF100	042618	Finished	4/28/2018 6:04:52 AM	Anions Gradient Program
49	DI H2O	042618	Finished	4/28/2018 6:19:24 AM	Anions Gradient Program
50	DI H2O	042618	Finished	4/28/2018 6:33:57 AM	Anions Gradient Program
51	DI H2O	042618	Finished	4/28/2018 6:48:30 AM	Anions Gradient Program
52	DI H2O	042618	Finished	4/28/2018 7:03:03 AM	Anions Gradient Program
53	DI H2O	042618	Finished	4/28/2018 7:17:36 AM	Anions Gradient Program
54	DI H2O	042618	Finished	4/28/2018 7:32:09 AM	Anions Gradient Program
55	CCV	042618	Finished	4/28/2018 7:46:42 AM	Anions Gradient Program
56	CCB	042618	Finished	4/28/2018 8:01:15 AM	Anions Gradient Program
57	MBLK-127840	042618	Finished	4/28/2018 8:15:48 AM	Anions Gradient Program
58	LCS-127840	042618	Finished	4/28/2018 8:30:21 AM	Anions Gradient Program
59	LCSD-127840	042618	Finished	4/28/2018 8:44:54 AM	Anions Gradient Program
60	HS18041090-01	042618	Finished	4/28/2018 8:59:25 AM	Anions Gradient Program
61	HS18041090-02	042618	Finished	4/28/2018 9:13:58 AM	Anions Gradient Program
62	HS18041090-03	042618	Finished	4/28/2018 9:28:31 AM	Anions Gradient Program
63	HS18041090-04	042618	Finished	4/28/2018 9:43:04 AM	Anions Gradient Program
64	HS18041090-05	042618	Finished	4/28/2018 9:57:37 AM	Anions Gradient Program
65	HS18041090-06	042618	Finished	4/28/2018 10:12:10 AM	Anions Gradient Program
66	HS18041090-07	042618	Finished	4/28/2018 10:26:43 AM	Anions Gradient Program
67	CCV1	042618	Finished	4/28/2018 10:41:16 AM	Anions Gradient Program
68	CCB	042618	Finished	4/28/2018 10:55:48 AM	Anions Gradient Program
69	HS18031380-14	042618	Finished	4/28/2018 11:24:53 AM	Anions Gradient Program
70	HS18031380-17DF10	042618	Finished	4/28/2018 11:39:26 AM	Anions Gradient Program
71	HS18031380-18	042618	Finished	4/28/2018 11:53:58 AM	Anions Gradient Program
72	MBLK-127840	042618	Finished	4/28/2018 12:16:21 PM	Anions Gradient Program
73	HS18031380-28DF10	042618	Finished	4/28/2018 12:30:54 PM	Anions Gradient Program
74	DI H2O	042618	Finished	4/28/2018 12:45:27 PM	Anions Gradient Program
75	HS18031380-41DF10	042618	Finished	4/28/2018 1:00:00 PM	Anions Gradient Program
76	HS18031380-41MSDF10	042618	Finished	4/28/2018 1:14:32 PM	Anions Gradient Program
77	HS18031380-41MSDDF10	042618	Finished	4/28/2018 1:29:06 PM	Anions Gradient Program
78	HS18031380-14DF5	042618	Finished	4/28/2018 1:43:39 PM	Anions Gradient Program
79	CCV	042618	Finished	4/28/2018 1:58:12 PM	Anions Gradient Program
80	CCB	042618	Finished	4/28/2018 2:12:45 PM	Anions Gradient Program
81	WLCSDW1-042718	042618	Finished	4/28/2018 2:27:18 PM	Anions Gradient Program
82	HS18031380-42DF5	042618	Finished	4/28/2018 2:41:50 PM	Anions Gradient Program
83	HS18031380-44DF5	042618	Finished	4/28/2018 2:56:23 PM	Anions Gradient Program
84	DI H2O	042618	Finished	4/28/2018 3:10:55 PM	Anions Gradient Program

Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92
Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

No.	Name	GUID
43	HS18041032-06DF10	af65f8cd-4ac9-11e8-b6d9-ac2a724b15e4
44	HS18041032-07DF10	b7b88db8-4acb-11e8-b6d9-ac2a724b15e4
45	CCV1	bfabc55b-4acd-11e8-b6d9-ac2a724b15e4
46	CCB	c7f9959c-4acf-11e8-b6d9-ac2a724b15e4
47	HS18041434-01DF10	cfea6aea-4ad1-11e8-b6d9-ac2a724b15e4
48	HS18041434-01DF100	d7fca0de-4ad3-11e8-b6d9-ac2a724b15e4
49	DI H2O	e00a1228-4ad5-11e8-b6d9-ac2a724b15e4
50	DI H2O	e85ca713-4ad7-11e8-b6d9-ac2a724b15e4
51	DI H2O	f0b19e53-4ad9-11e8-b6d9-ac2a724b15e4
52	DI H2O	f91745e6-4adb-11e8-b6d9-ac2a724b15e4
53	DI H2O	016c3d26-4ade-11e8-b6d9-ac2a724b15e4
54	DI H2O	09c13466-4ae0-11e8-b6d9-ac2a724b15e4
55	CCV	122479a4-4ae2-11e8-b6d9-ac2a724b15e4
56	CCB	1a7970e4-4ae4-11e8-b6d9-ac2a724b15e4
57	MBLK-127840	227af685-4ae6-11e8-b6d9-ac2a724b15e4
58	LCS-127840	2acd8b70-4ae8-11e8-b6d9-ac2a724b15e4
59	LCSD-127840	332c0c04-4aea-11e8-b6d9-ac2a724b15e4
60	HS18041090-01	3b1357fe-4aec-11e8-b6d9-ac2a724b15e4
61	HS18041090-02	42dba5a7-4aee-11e8-b6d9-ac2a724b15e4
62	HS18041090-03	4b2975e8-4af0-11e8-b6d9-ac2a724b15e4
63	HS18041090-04	53d905c6-4af2-11e8-b6d9-ac2a724b15e4
64	HS18041090-05	5c2473b2-4af4-11e8-b6d9-ac2a724b15e4
65	HS18041090-06	64796af2-4af6-11e8-b6d9-ac2a724b15e4
66	HS18041090-07	6ccbffdd-4af8-11e8-b6d9-ac2a724b15e4
67	CCV1	74cb2329-4afa-11e8-b6d9-ac2a724b15e4
68	CCB	7ce4801c-4afc-11e8-b6d9-ac2a724b15e4
69	HS18031380-14	8ccfb40c-4b00-11e8-b6d9-ac2a724b15e4
70	HS18031380-17DF10	953a2049-4b02-11e8-b6d9-ac2a724b15e4
71	HS18031380-18	9d1f09ee-4b04-11e8-b6d9-ac2a724b15e4
72	MBLK-127840	40f37b1b-4b07-11e8-b6d9-ac2a724b15e4
73	HS18031380-28DF10	c60c5c94-4b09-11e8-b6d9-ac2a724b15e4
74	DI H2O	ce55682b-4b0b-11e8-b6d9-ac2a724b15e4
75	HS18031380-41DF10	d6607720-4b0d-11e8-b6d9-ac2a724b15e4
76	HS18031380-41MSDF10	de6de86a-4b0f-11e8-b6d9-ac2a724b15e4
77	HS18031380-41MSDDF10	e6b6f401-4b11-11e8-b6d9-ac2a724b15e4
78	HS18031380-14DF5	ef5f5ce0-4b13-11e8-b6d9-ac2a724b15e4
79	CCV	f7b45420-4b15-11e8-b6d9-ac2a724b15e4
80	CCB	000e100a-4b18-11e8-b6d9-ac2a724b15e4
81	WLCSDW1-042718	0867cbf4-4b1a-11e8-b6d9-ac2a724b15e4
82	HS18031380-42DF5	105d65ec-4b1c-11e8-b6d9-ac2a724b15e4
83	HS18031380-44DF5	1874608a-4b1e-11e8-b6d9-ac2a724b15e4
84	DI H2O	2069fa82-4b20-11e8-b6d9-ac2a724b15e4

Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92
Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

No.	Name	Comment	Type	Pos.	Dil. Factor	Inj. Vol.	*Initial_Vol_Wt	*Final_Volume
85	HS18031380-95DF5		Unknown	59	5.0000	10.0	1.00	1.00
86	HS18031380-96DF5		Unknown	60	5.0000	10.0	1.00	1.00
87	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
88	HS18041033-02DF50	RR 300_W SO4	Unknown	61	50.0000	10.0	1.00	1.00
89	HS18041395-02DF20	RR 300_W SO4	Unknown	62	20.0000	10.0	1.00	1.00
90	DI H2O		Unknown	10	1.0000	10.0	1.00	1.00
91	CCV1		Unknown	3	1.0000	10.0	1.00	1.00
92	CCB		Unknown	4	1.0000	10.0	1.00	1.00

Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92
Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

No.	Name	Method	Status	Inj. Date/Time	Program
85	HS18031380-95DF5	042618	Finished	4/28/2018 3:25:27 PM	Anions Gradient Program
86	HS18031380-96DF5	042618	Finished	4/28/2018 3:40:00 PM	Anions Gradient Program
87	DI H2O	042618	Finished	4/28/2018 3:54:33 PM	Anions Gradient Program
88	HS18041033-02DF50	042618	Finished	4/28/2018 4:29:10 PM	Anions Gradient Program
89	HS18041395-02DF20	042618	Finished	4/28/2018 4:49:47 PM	Anions Gradient Program
90	DI H2O	042618	Finished	4/28/2018 5:04:20 PM	Anions Gradient Program
91	CCV1	042618	Finished	4/28/2018 5:18:52 PM	Anions Gradient Program
92	CCB	042618	Finished	4/28/2018 5:33:25 PM	Anions Gradient Program

Sequence: 042718
Operator: ALSHS.NoUser

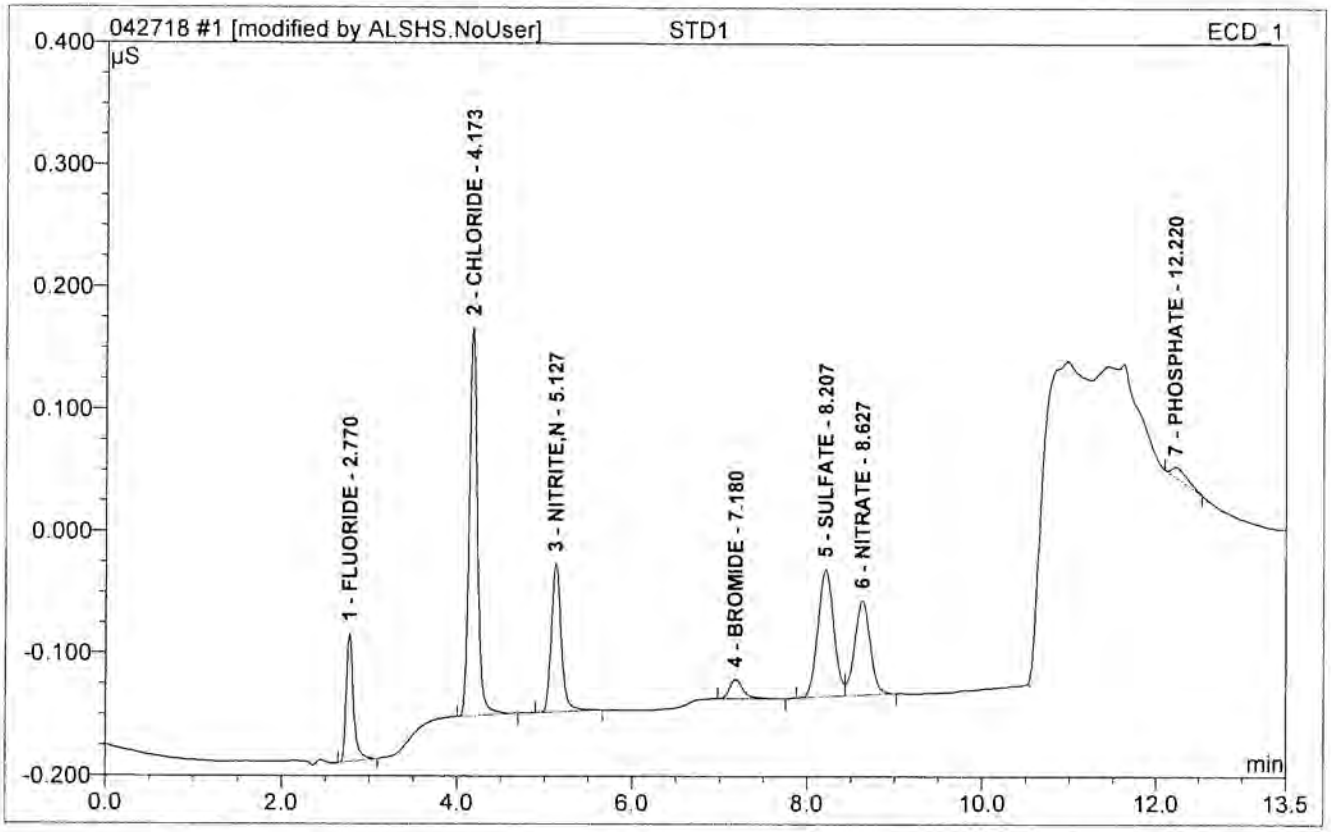
Title:
Datasource: DB7CGHK1_local
Location: ICS2100\Sequences and Data\01-2018
Timebase: ICS2100
#Samples: 92

Created: 4/27/2018 8:51:36 PM by ALSHS.NoUser
Last Update: 5/2/2018 1:08:10 PM by ALSHS.NoUser

No.	Name	GUID
85	HS18031380-95DF5	287e92cb-4b22-11e8-b6d9-ac2a724b15e4
86	HS18031380-96DF5	307b53c2-4b24-11e8-b6d9-ac2a724b15e4
87	DI H2O	38de9900-4b26-11e8-b6d9-ac2a724b15e4
88	HS18041033-02DF50	921982b0-4b2a-11e8-b6d9-ac2a724b15e4
89	HS18041395-02DF20	72e6b7ac-4b2d-11e8-b6d9-ac2a724b15e4
90	DI H2O	f83d95c7-4b2f-11e8-b6d9-ac2a724b15e4
91	CCV1	009751b1-4b32-11e8-b6d9-ac2a724b15e4
92	CCB	08ae4c4f-4b34-11e8-b6d9-ac2a724b15e4

1 STD1

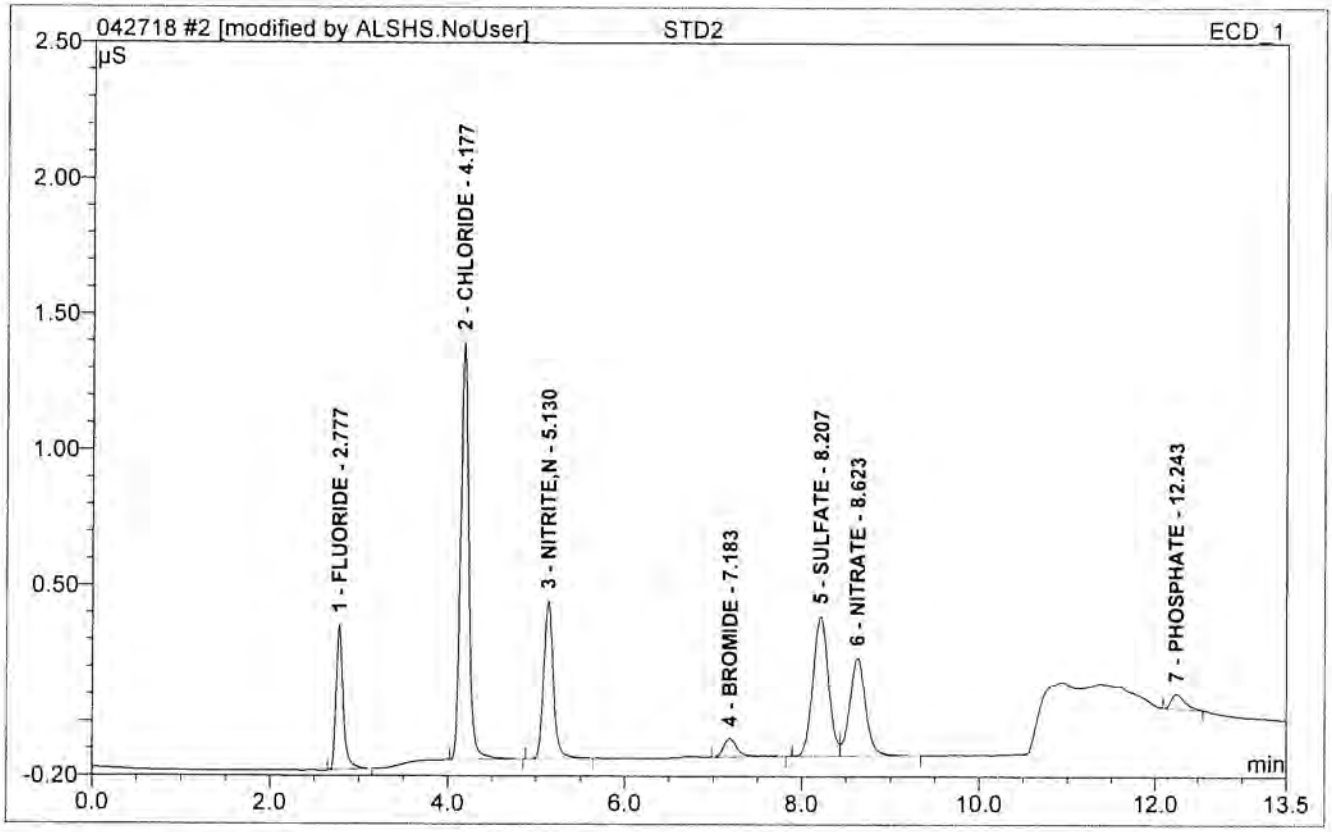
Sample Name:	**STD1**	*Injection Volume:*	**10.0**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 13:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.77	FLUORIDE	0.105	0.010	9.73	0.101	1.
2	4.17	CHLORIDE	0.317	0.034	33.43	0.521	1.
3	5.13	NITRITE,N	0.121	0.016	15.46	0.089	1.
4	7.18	BROMIDE	0.016	0.003	2.80	0.121	1.
5	8.21	SULFATE	0.104	0.022	21.24	0.558	1.
6	8.63	NITRATE	0.077	0.016	15.45	0.111	1.
7	12.22	PHOSPHATE	0.008	0.002	1.90	0.448	1.
Total:			0.749	0.103	100.00	1.949	

2 STD2

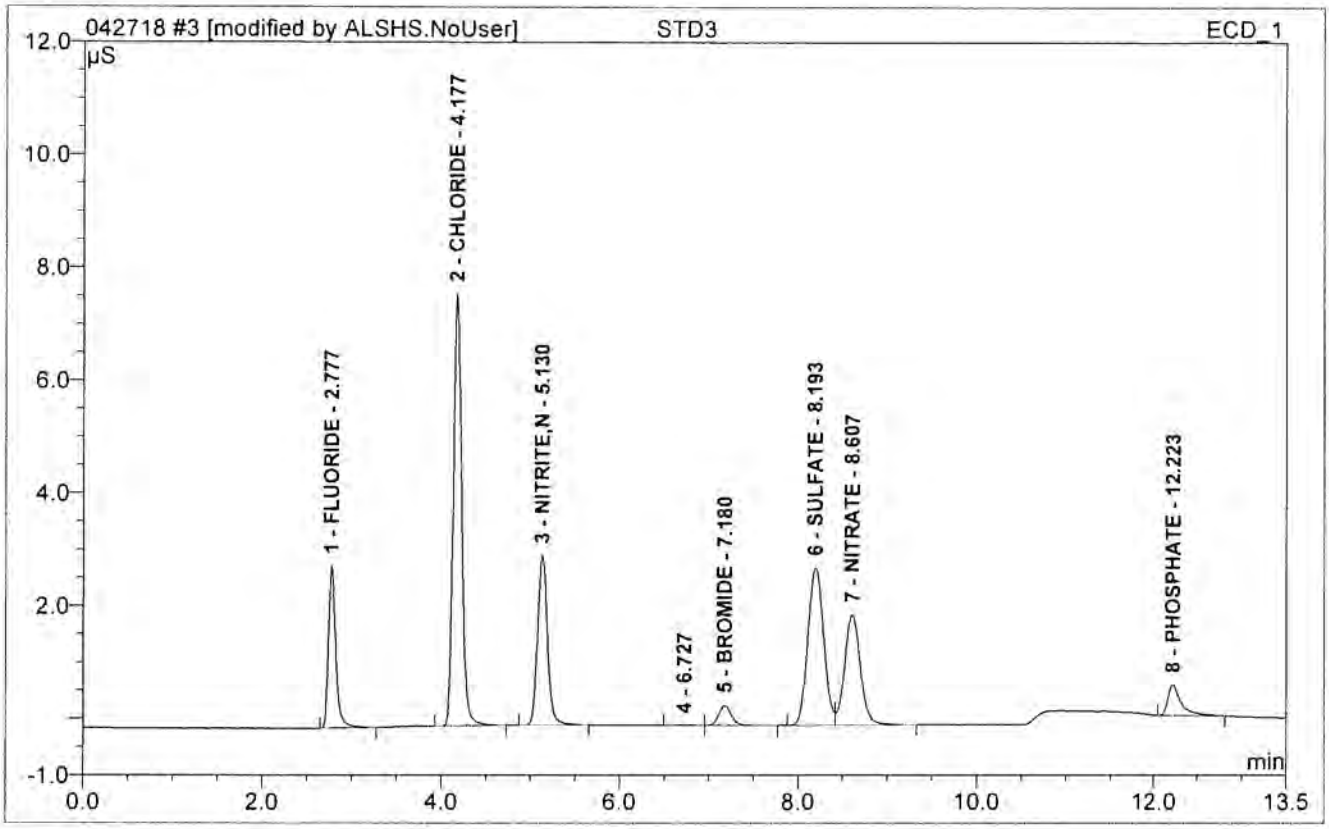
Sample Name:	**STD2**	*Injection Volume:*	**10.0**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 13:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	0.534	0.049	10.06	0.382	1.
2	4.18	CHLORIDE	1.536	0.164	33.45	1.989	1.
3	5.13	NITRITE,N	0.580	0.074	15.04	0.398	1.
4	7.18	BROMIDE	0.068	0.013	2.57	0.391	1.
5	8.21	SULFATE	0.515	0.105	21.54	1.884	1.
6	8.62	NITRATE	0.360	0.075	15.27	0.375	1.
7	12.24	PHOSPHATE	0.056	0.010	2.07	0.555	1.
Total:			3.649	0.489	100.00	5.974	

3 STD3

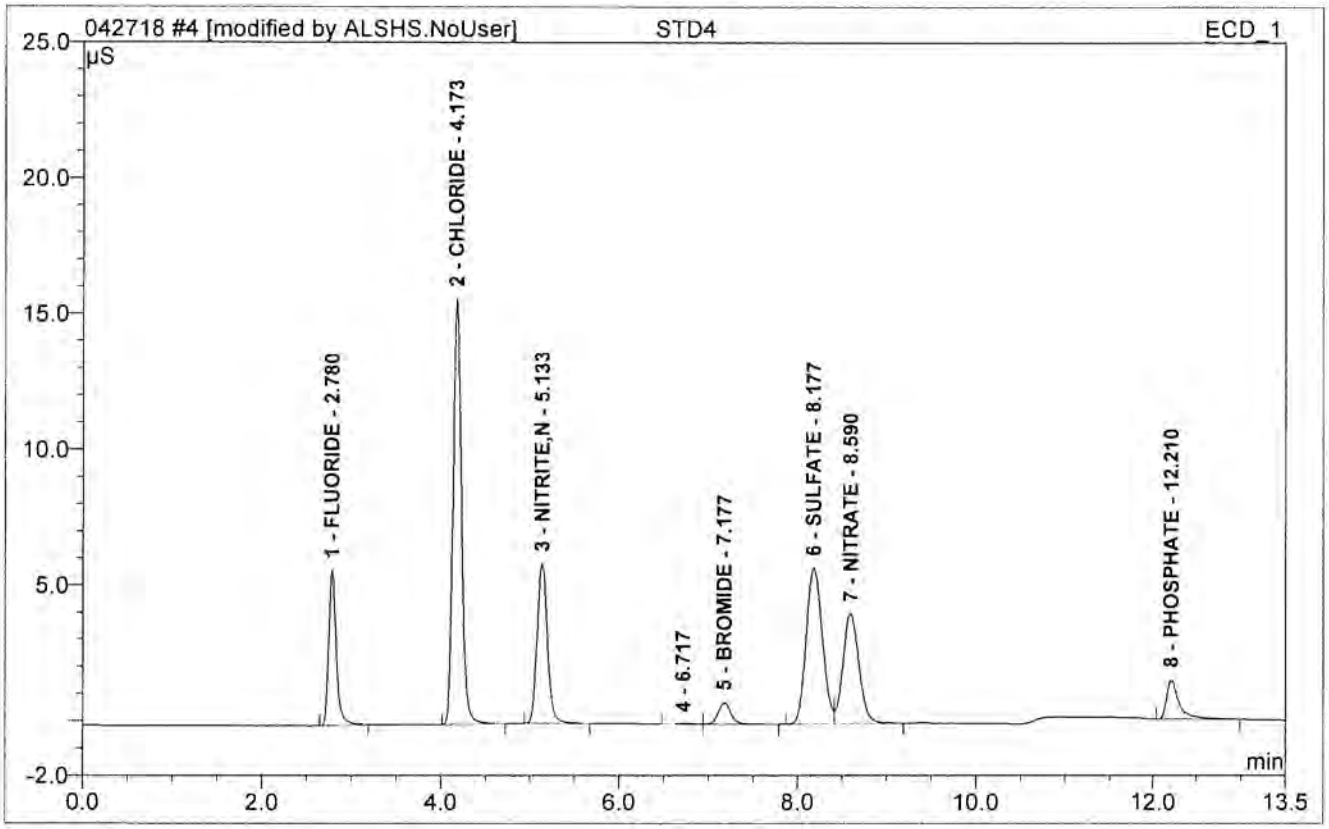
Sample Name:	**STD3**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 13:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	2.881	0.275	10.42	2.003	1.
2	4.18	CHLORIDE	7.667	0.832	31.49	9.575	1.
3	5.13	NITRITE,N	3.011	0.393	14.87	2.105	1.
5	7.18	BROMIDE	0.358	0.059	2.25	1.692	1.
6	8.19	SULFATE	2.797	0.578	21.86	9.384	1.
7	8.61	NITRATE	1.972	0.405	15.33	1.863	1.
8	12.22	PHOSPHATE	0.548	0.098	3.69	1.697	1.
Total:			19.233	2.640	99.91	28.318	

4 STD4

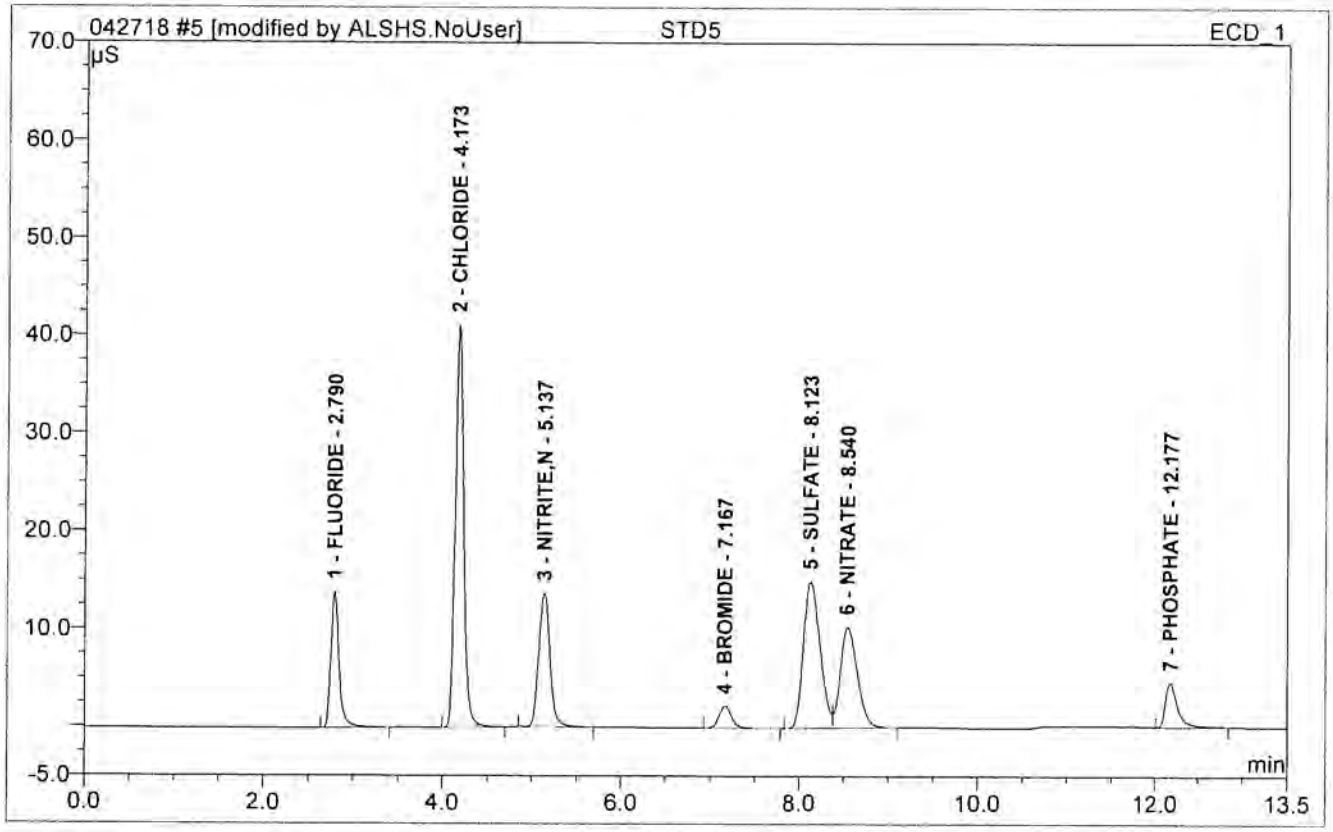
Sample Name:	**STD4**	*Injection Volume:*	**10.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 14:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	5.716	0.561	10.18	4.050	1.
2	4.17	CHLORIDE	15.662	1.714	31.11	19.593	1.
3	5.13	NITRITE,N	5.887	0.796	14.46	4.263	1.
5	7.18	BROMIDE	0.787	0.129	2.35	3.637	1.
6	8.18	SULFATE	5.753	1.209	21.95	19.413	1.
7	8.59	NITRATE	4.059	0.851	15.44	3.869	1.
8	12.21	PHOSPHATE	1.441	0.245	4.44	3.615	1.
Total:			39.305	5.505	99.92	58.441	

5 STD5

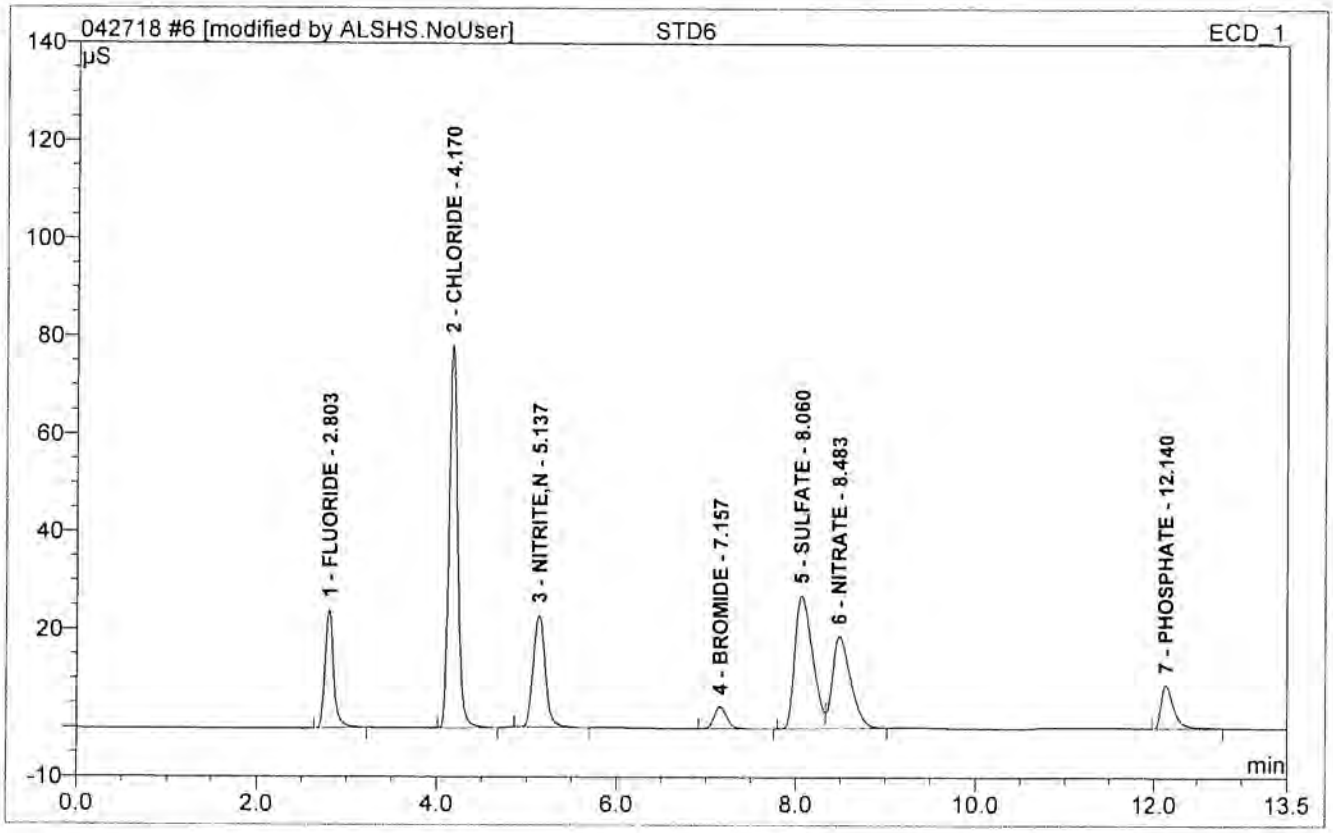
Sample Name:	**STD5**	*Injection Volume:*	**10.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 14:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.79	FLUORIDE	13.977	1.484	10.09	10.677	1.
2	4.17	CHLORIDE	41.234	4.552	30.93	51.811	1.
3	5.14	NITRITE,N	13.758	2.005	13.62	10.726	1.
4	7.17	BROMIDE	2.258	0.369	2.51	10.302	1.
5	8.12	SULFATE	15.028	3.268	22.20	52.102	1.
6	8.54	NITRATE	10.425	2.293	15.58	10.362	1.
7	12.18	PHOSPHATE	4.602	0.746	5.07	10.164	1.
Total:			101.282	14.717	100.00	156.145	

6 STD6

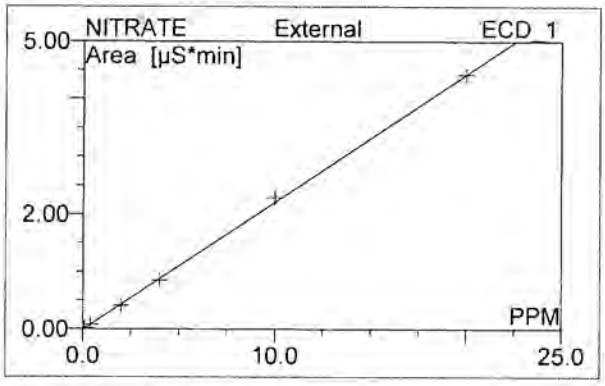
Sample Name:	**STD6**	*Injection Volume:*	**10.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 14:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

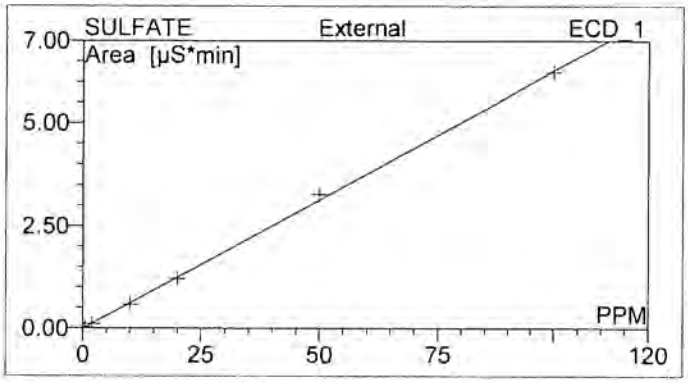


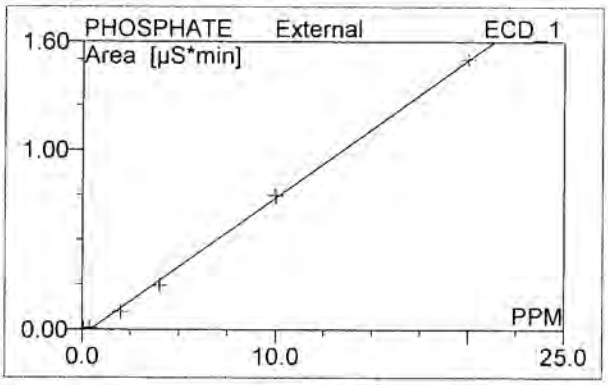
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.80	FLUORIDE	24.122	2.694	9.67	19.354	1.
2	4.17	CHLORIDE	78.319	8.708	31.27	99.011	1.
3	5.14	NITRITE,N	22.896	3.560	12.78	19.039	1.
4	7.16	BROMIDE	4.472	0.734	2.64	20.477	1.
5	8.06	SULFATE	27.203	6.231	22.37	99.159	1.
6	8.48	NITRATE	18.761	4.423	15.88	19.951	1.
7	12.14	PHOSPHATE	8.892	1.501	5.39	20.020	1.
Total:			184.665	27.851	100.00	297.011	

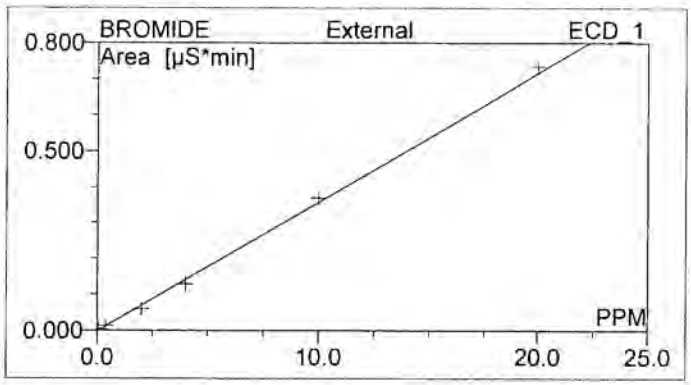
6 STD6

Sample Name:	**STD6**	*Injection Volume:*	**10.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 14:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**









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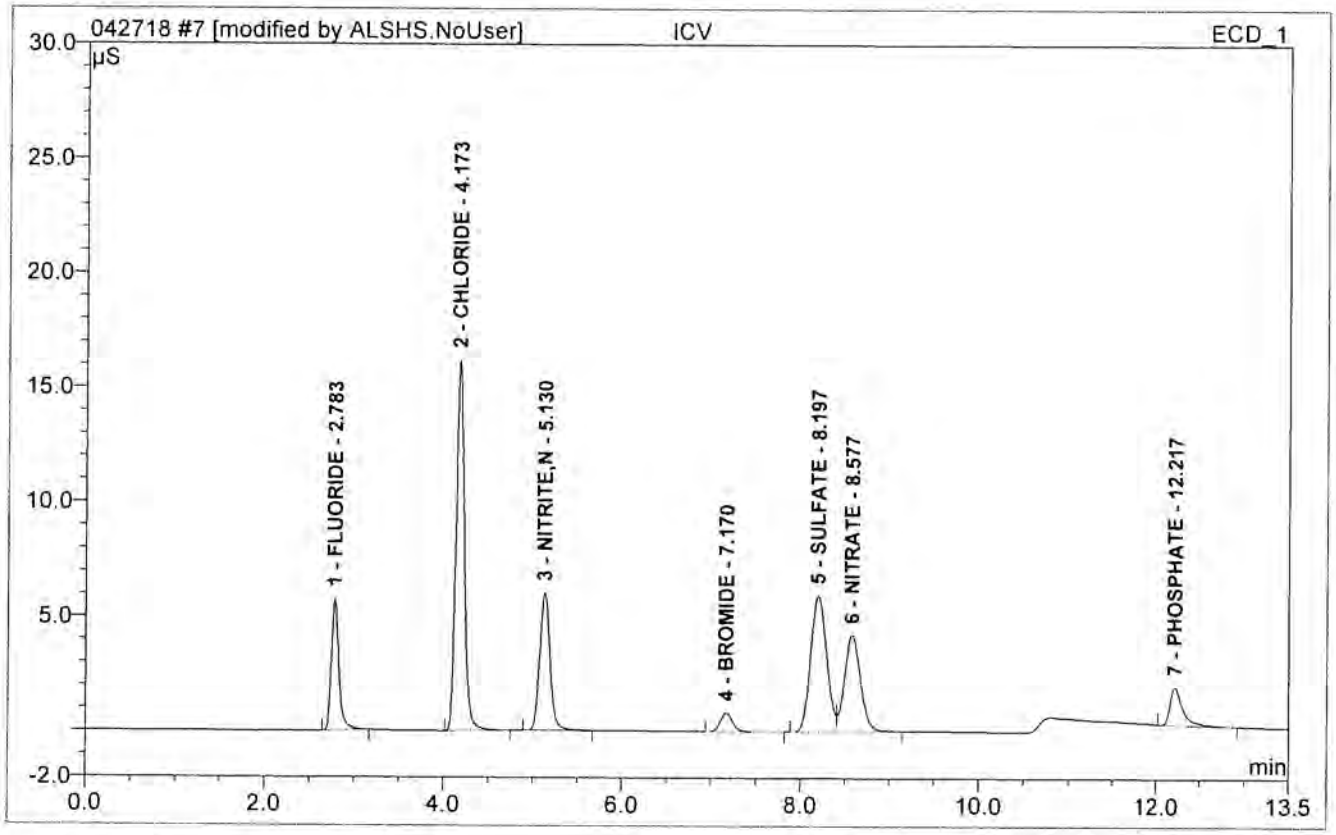
No.	Ret.Time min	Peak Name	Cal.Type	Points	Coeff.Det. %	Offset	Slope	Curve
1	2.80	FLUORIDE	YLOff	6	99.807	-0.0040	0.1394	0.000
2	4.17	CHLORIDE	XLOff	6	99.939	-0.0114	0.0881	0.000
3	5.14	NITRITE,N	YLOff	6	99.648	-0.0008	0.1870	0.000
4	7.16	BROMIDE	YLOff	6	99.649	-0.0015	0.0359	0.000
5	8.06	SULFATE	XLOff	6	99.903	-0.0132	0.0630	0.000
6	8.48	NITRATE	YLOff	6	99.909	-0.0087	0.2221	0.000
7	12.14	PHOSPHATE	LOff	6	99.862	-0.0324	0.0766	0.000
Average:					99.8168	-0.0103	0.1160	0.0000

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	RF-Value	Std.Dev.	RSD %
1	2.80	FLUORIDE	YLOff	6	99.904	7.173	0.010	22.058
2	4.17	CHLORIDE	XLOff	6	99.970	11.355	0.021	11.367
3	5.14	NITRITE,N	YLOff	6	99.824	5.347	0.020	27.572
4	7.16	BROMIDE	YLOff	6	99.824	27.832	0.004	28.560
5	8.06	SULFATE	XLOff	6	99.952	15.881	0.019	14.933
6	8.48	NITRATE	YLOff	6	99.955	4.502	0.011	15.206
7	12.14	PHOSPHATE	LOff	6	99.931	13.054	0.025	5.675
Average:					99.9084	12.1635	0.0158	17.9102

7 ICV

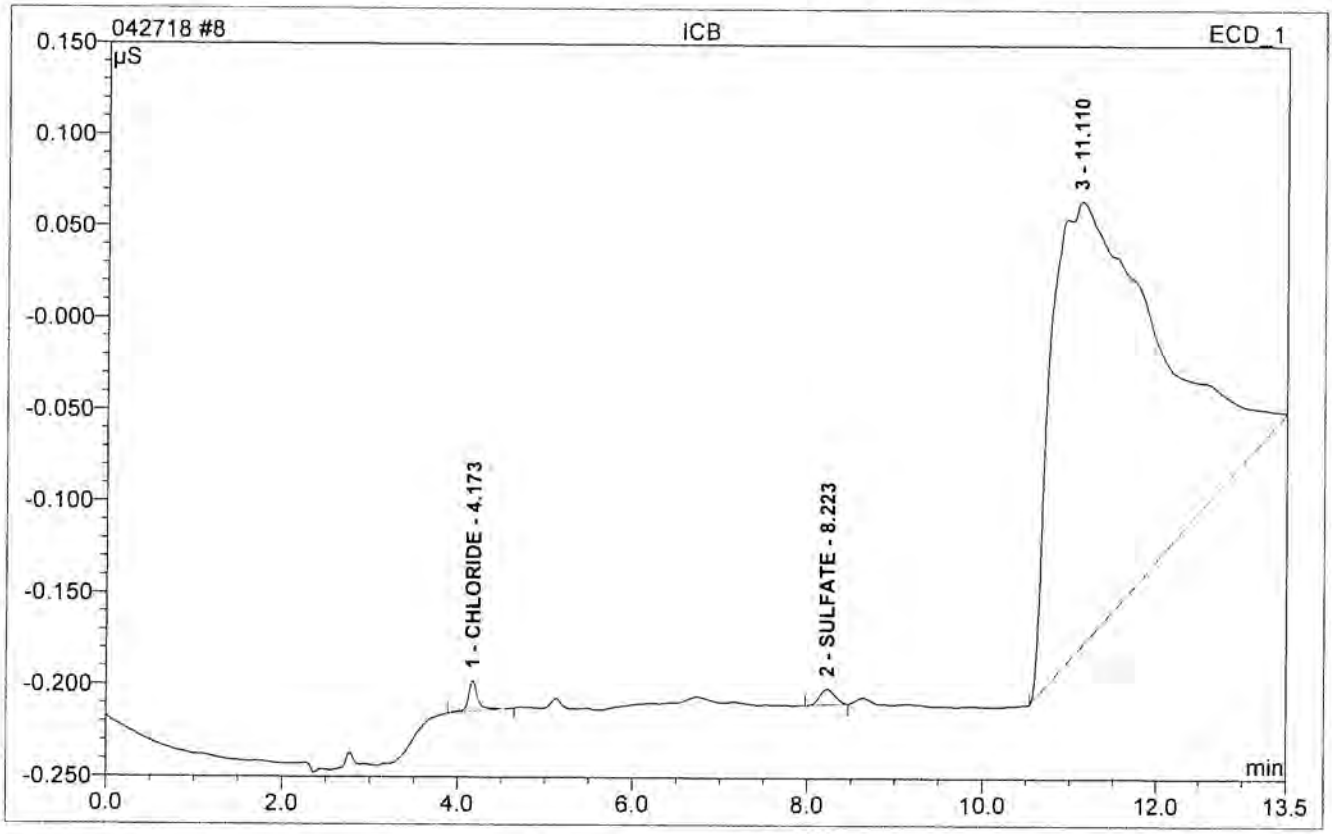
Sample Name:	**ICV**	*Injection Volume:*	**10.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 15:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	5.746	0.560	9.87	4.046	1.
2	4.17	CHLORIDE	16.161	1.756	30.96	20.069	1.
3	5.13	NITRITE,N	6.016	0.813	14.33	4.350	1.
4	7.17	BROMIDE	0.819	0.134	2.36	3.761	1.
5	8.20	SULFATE	5.960	1.248	22.01	20.035	1.
6	8.58	NITRATE	4.210	0.883	15.57	4.015	1.
7	12.22	PHOSPHATE	1.654	0.279	4.91	4.062	1.
Total:			40.567	5.673	100.00	60.338	

8 ICB

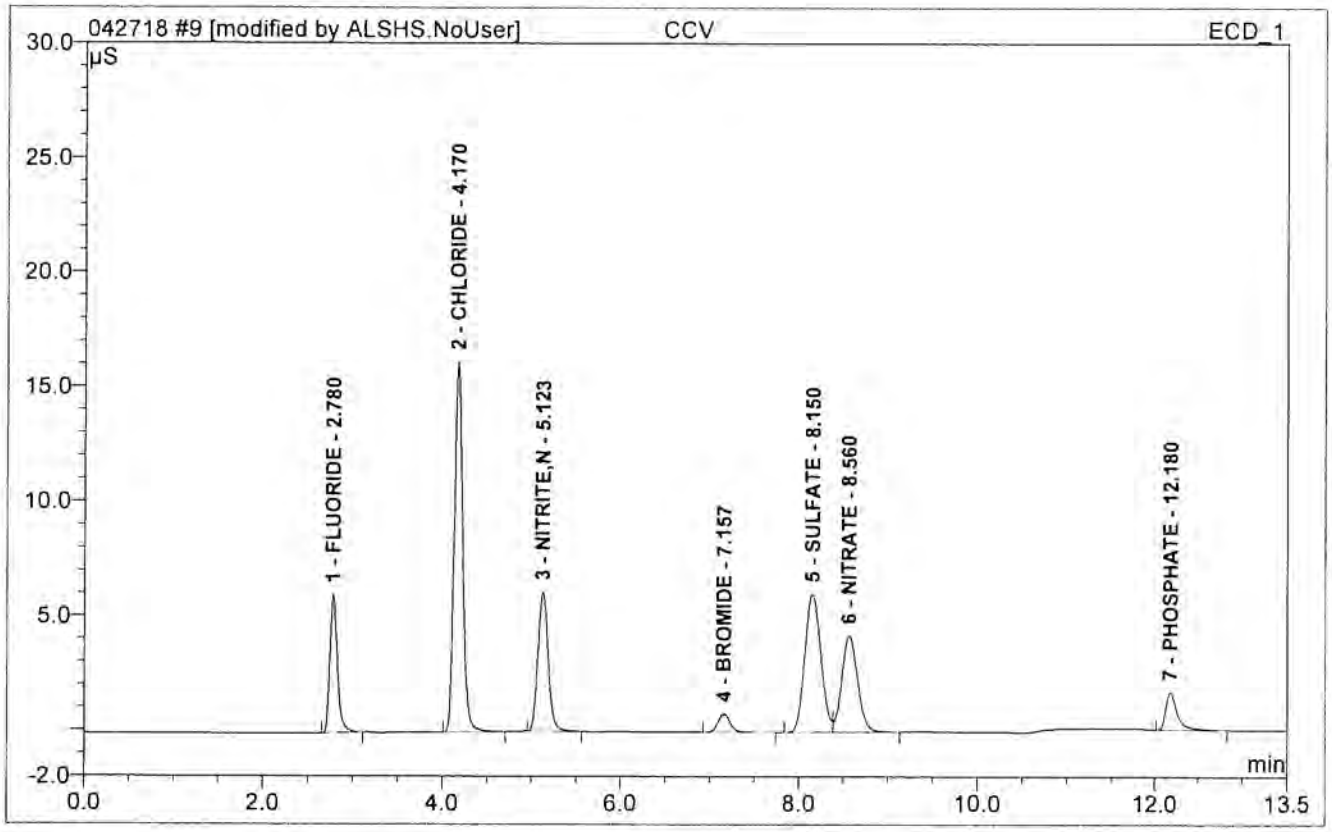
Sample Name:	**ICB**	*Injection Volume:*	**10.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/26/2018 16:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	4.17	CHLORIDE	0.016	0.002	0.60	0.153	1.
2	8.22	SULFATE	0.008	0.002	0.50	0.237	1.
Total:			0.025	0.004	1.10	0.391	

9 CCV

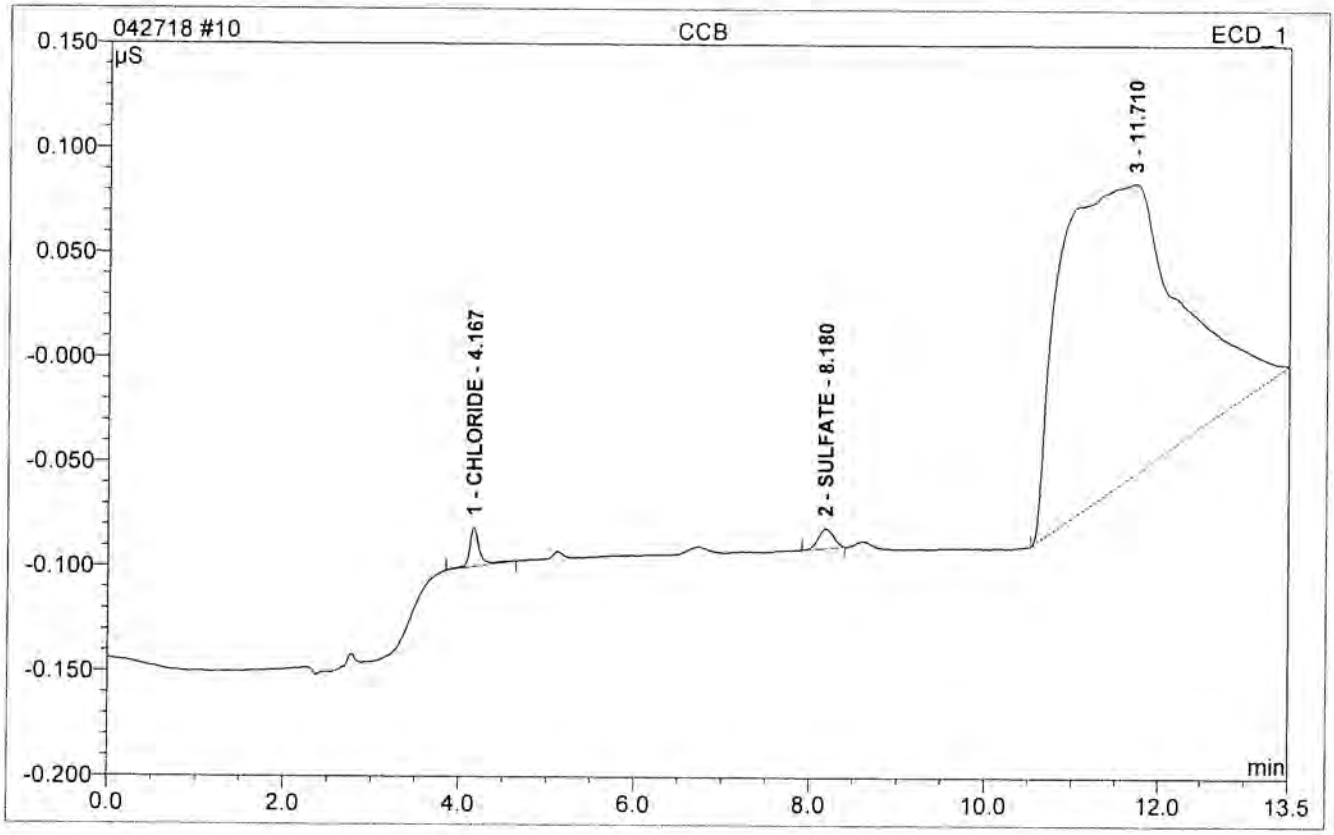
Sample Name:	**CCV**	*Injection Volume:*	**10.0**
Vial Number:	**1**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 19:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	6.038	0.588	10.30	4.247	1.
2	4.17	CHLORIDE	16.139	1.778	31.13	20.317	1.
3	5.12	NITRITE,N	6.076	0.820	14.35	4.388	1.
4	7.16	BROMIDE	0.802	0.130	2.27	3.653	1.
5	8.15	SULFATE	6.061	1.266	22.17	20.323	1.
6	8.56	NITRATE	4.209	0.872	15.27	3.966	1.
7	12.18	PHOSPHATE	1.642	0.257	4.50	3.780	1.
Total:			40.966	5.711	100.00	60.673	

10 CCB

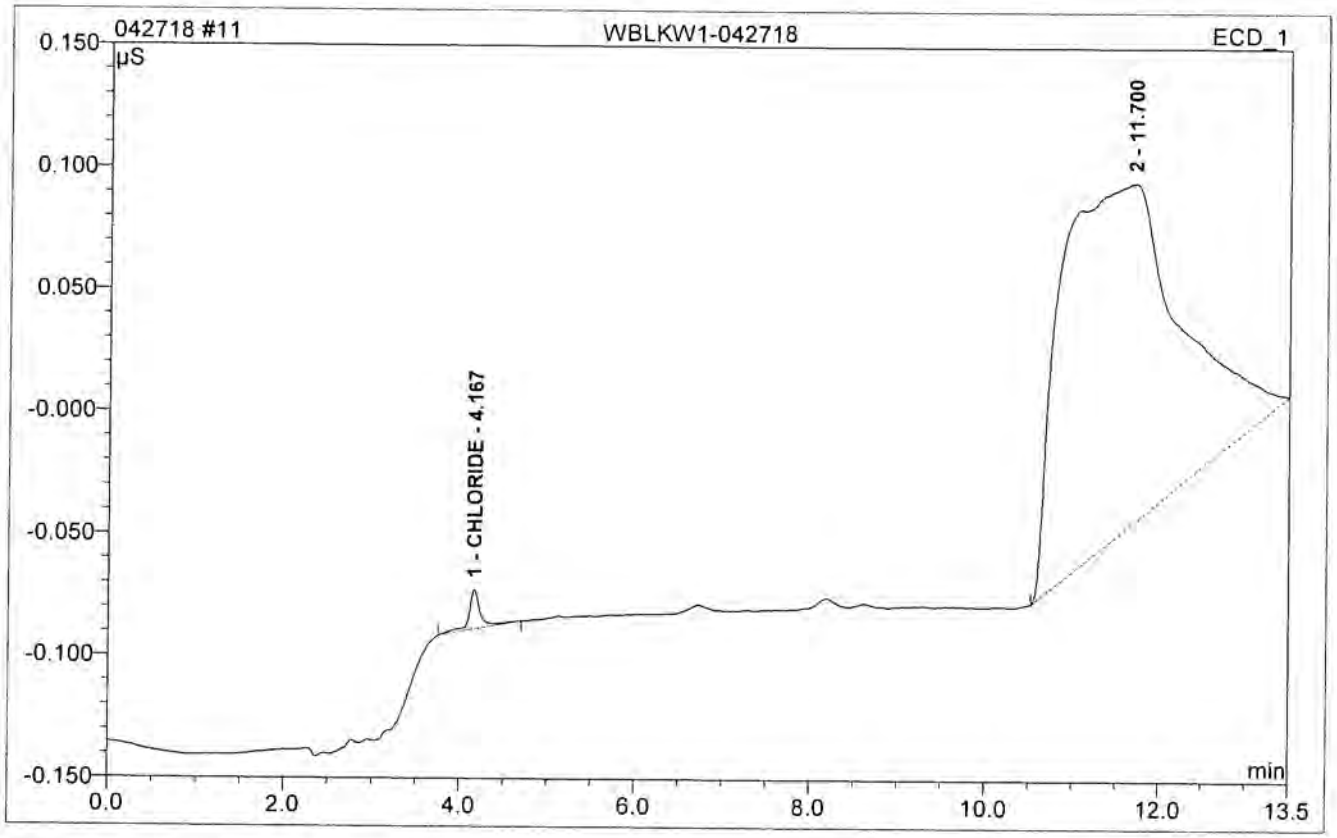
Sample Name:	**CCB**	*Injection Volume:*	**10.0**
Vial Number:	**2**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 19:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	4.17	CHLORIDE	0.019	0.002	1.02	0.157	1.
2	8.18	SULFATE	0.010	0.002	0.81	0.241	1.
Total:			0.028	0.004	1.84	0.398	

11 WBLKW1-042718

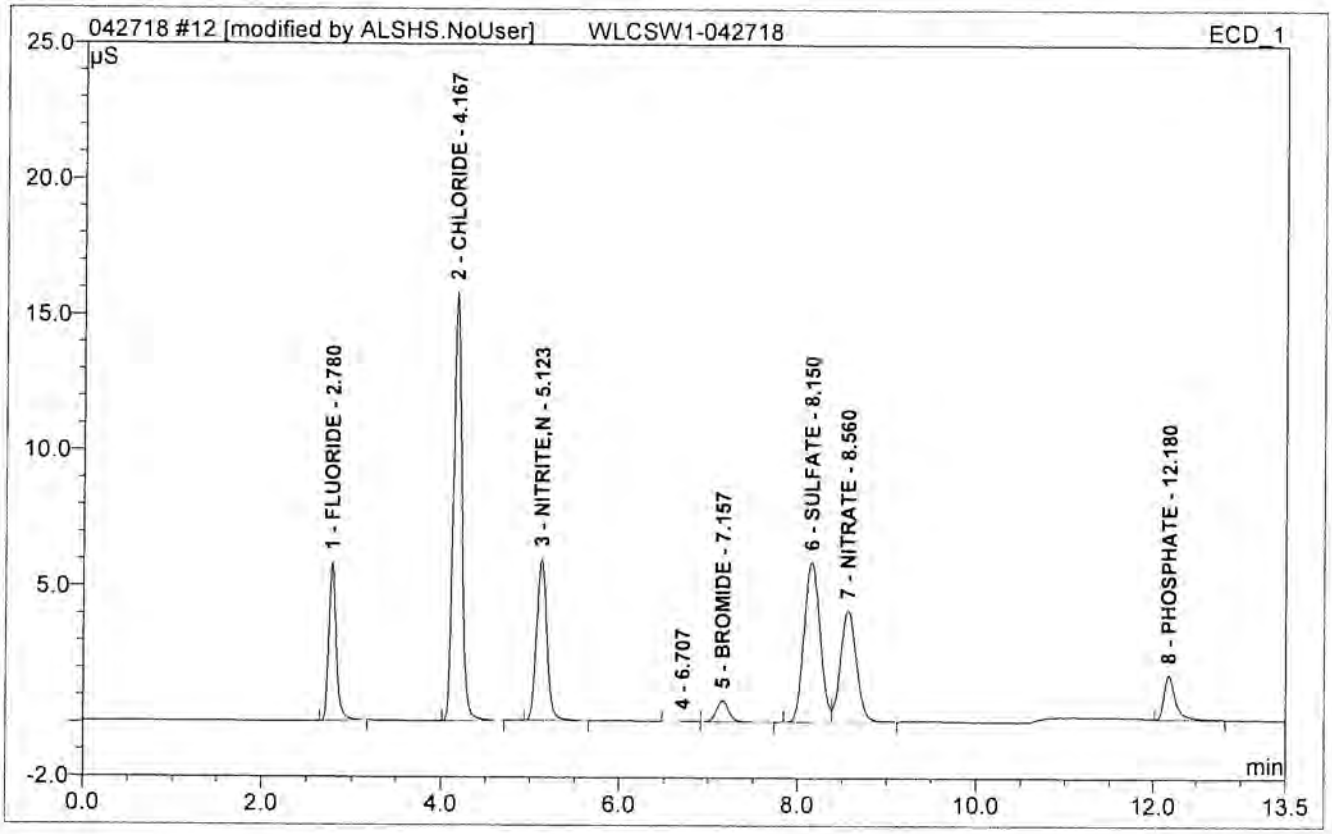
Sample Name:	**WBLKW1-042718**	*Injection Volume:*	**10.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 20:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	4.17	CHLORIDE	0.016	0.002	1.06	0.158	1.
Total:			0.016	0.002	1.06	0.158	

12 WLCSW1-042718

Sample Name:	**WLCSW1-042718**	*Injection Volume:*	**10.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 21:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

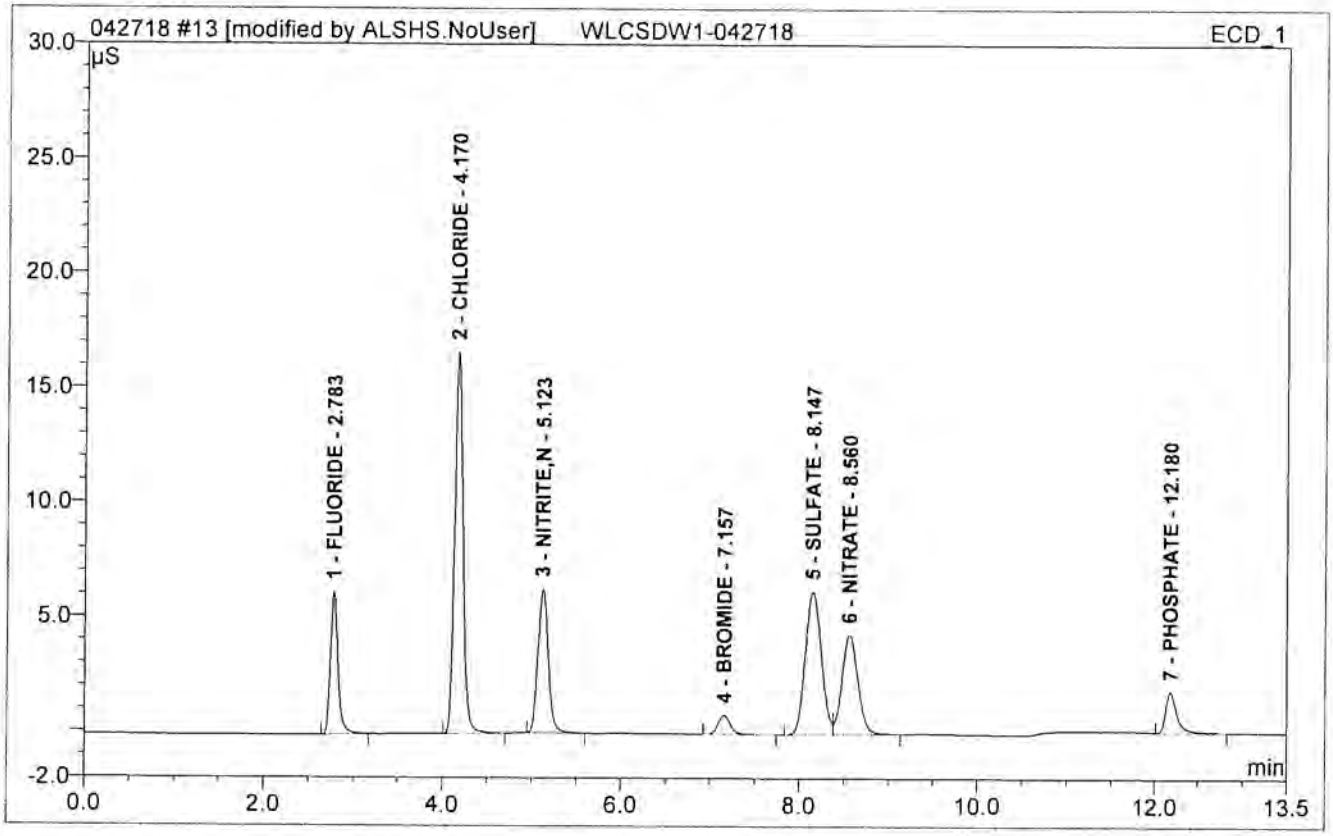


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	5.815	0.561	10.09	4.055	1.
2	4.17	CHLORIDE	15.781	1.732	31.13	19.793	1.
3	5.12	NITRITE,N	5.941	0.803	14.43	4.296	1.
5	7.16	BROMIDE	0.789	0.130	2.33	3.652	1.
6	8.15	SULFATE	5.892	1.231	22.13	19.759	1.
7	8.56	NITRATE	4.114	0.851	15.29	3.868	1.
8	12.18	PHOSPHATE	1.635	0.252	4.54	3.717	1.
Total:			39.966	5.559	99.94	59.141	

13 WLCSDW1-042718

HI NO2- RR

Sample Name:	**WLCSDW1-042718**	*Injection Volume:*	**10.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 21:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

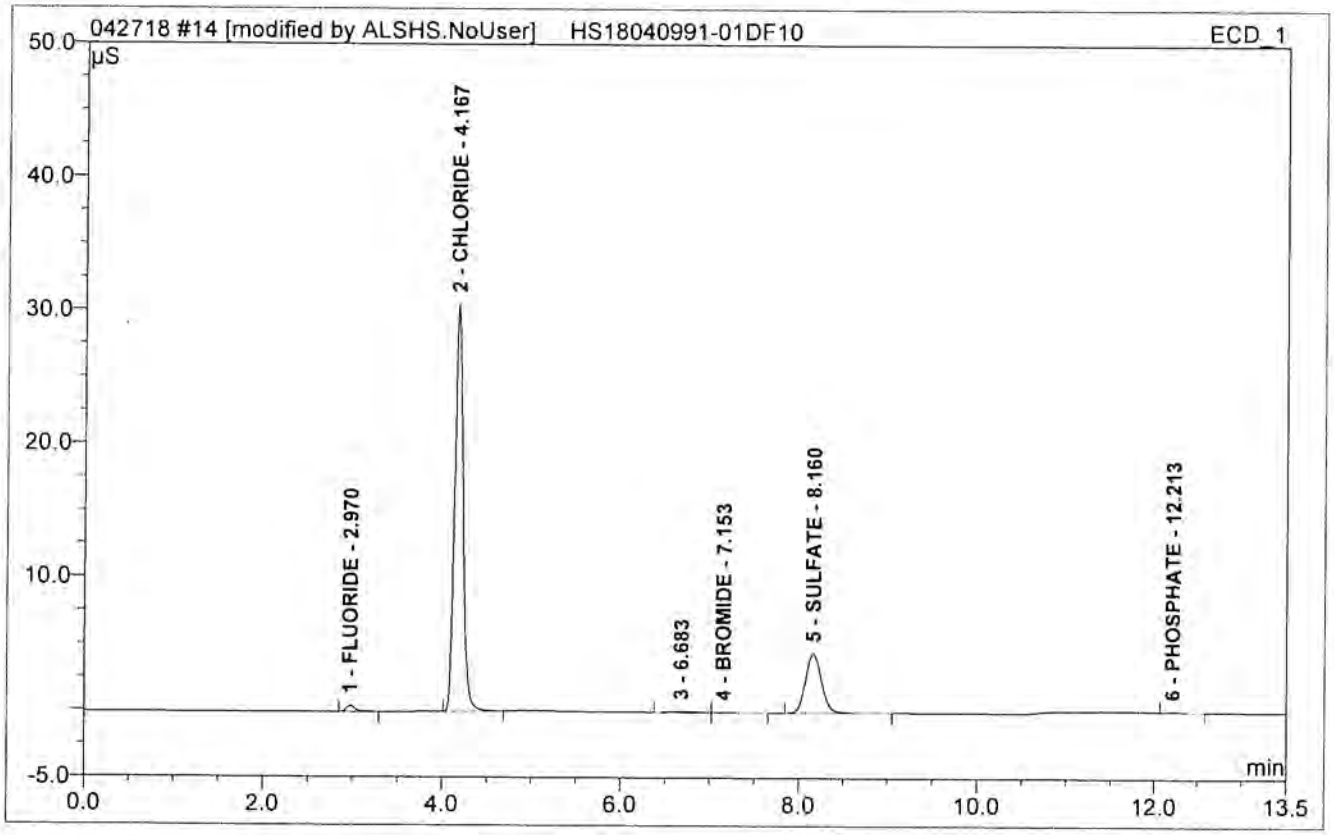


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	6.198	0.606	10.27	4.372	1.
2	4.17	CHLORIDE	16.645	1.832	31.07	20.927	1.
3	5.12	NITRITE,N	6.262	0.845	14.33	4.520	1.
4	7.16	BROMIDE	0.833	0.135	2.28	3.789	1.
5	8.15	SULFATE	6.232	1.305	22.14	20.933	1.
6	8.56	NITRATE	4.340	0.900	15.27	4.093	1.
7	12.18	PHOSPHATE	1.771	0.273	4.64	3.990	1.
Total:			42.282	5.895	100.00	62.624	

14 HS18040991-01DF10

9056_W CL SO4

Sample Name:	**HS18040991-01DF10**	*Injection Volume:*	**10.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**10.**
Recording Time:	**4/27/2018 21:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

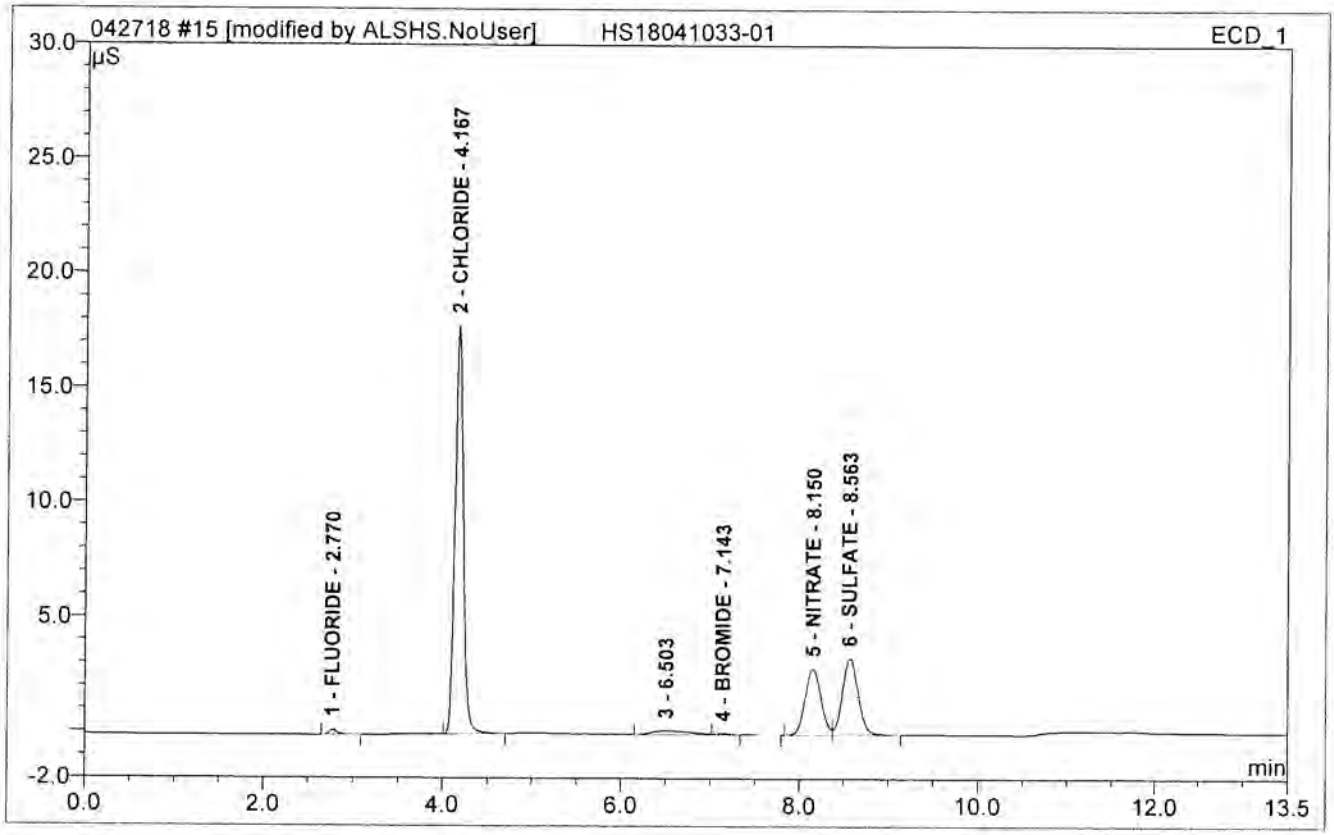


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.97	FLUORIDE	0.467	0.054	1.22	4.155	10.
2	4.17	CHLORIDE	30.557	3.384	76.71	385.501	10.
4	7.15	BROMIDE	0.024	0.005	0.11	1.772	10.
5	8.16	SULFATE	4.456	0.940	21.32	151.456	10.
6	12.21	PHOSPHATE	0.047	0.008	0.17	5.223	10.
Total:			35.551	4.391	99.54	548.107	

15 HS18041033-01

300_W

Sample Name:	**HS18041033-01**	*Injection Volume:*	**10.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 22:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**

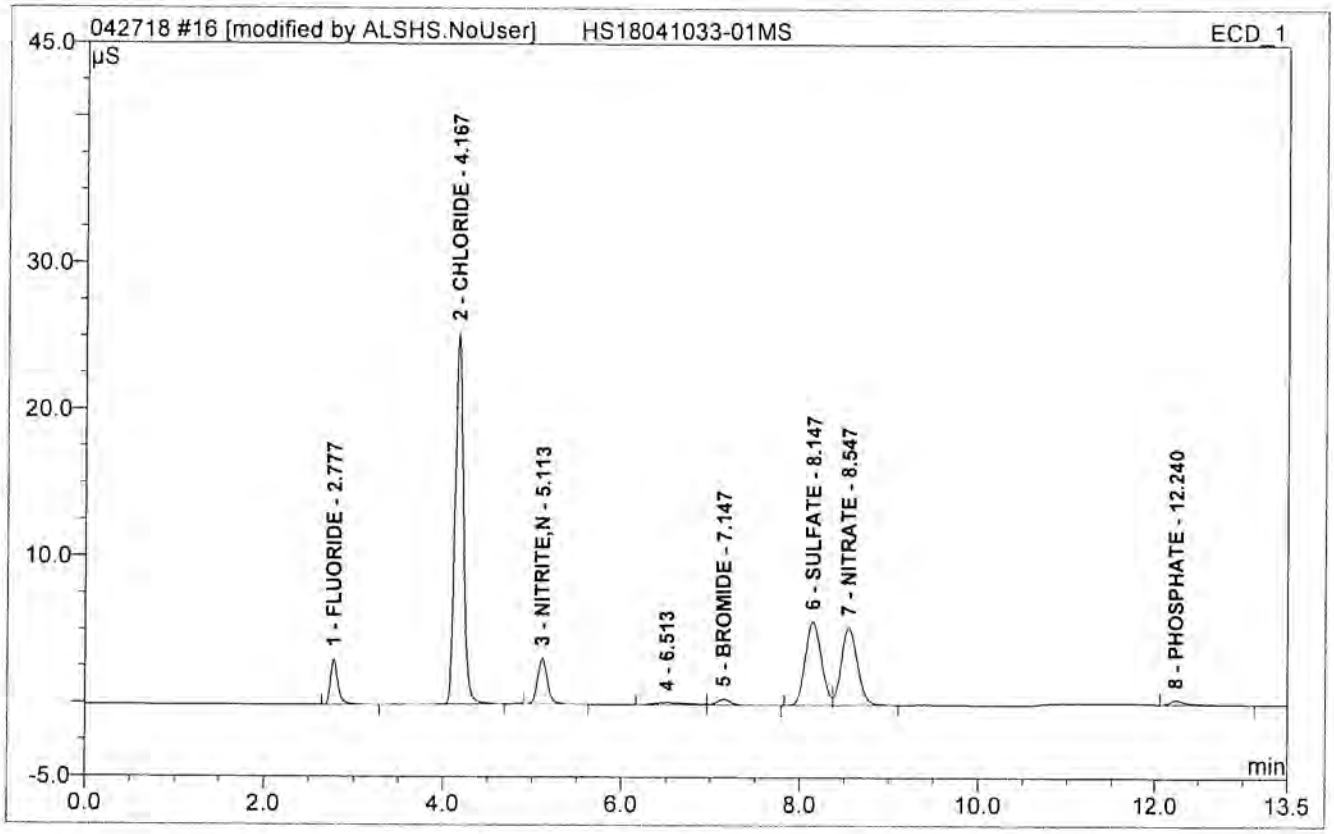


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.77	FLUORIDE	0.237	0.023	0.69	0.194	1.
2	4.17	CHLORIDE	17.812	1.944	58.26	22.201	1.
4	7.14	BROMIDE	0.030	0.004	0.13	0.160	1.
5	8.15	NITRATE	2.879	0.596	17.87	2.723	1.
6	8.56	SULFATE	3.338	0.681	20.42	11.028	1.
Total:			24.296	3.249	97.36	36.306	

16 HS18041033-01MS

CL BR SO4

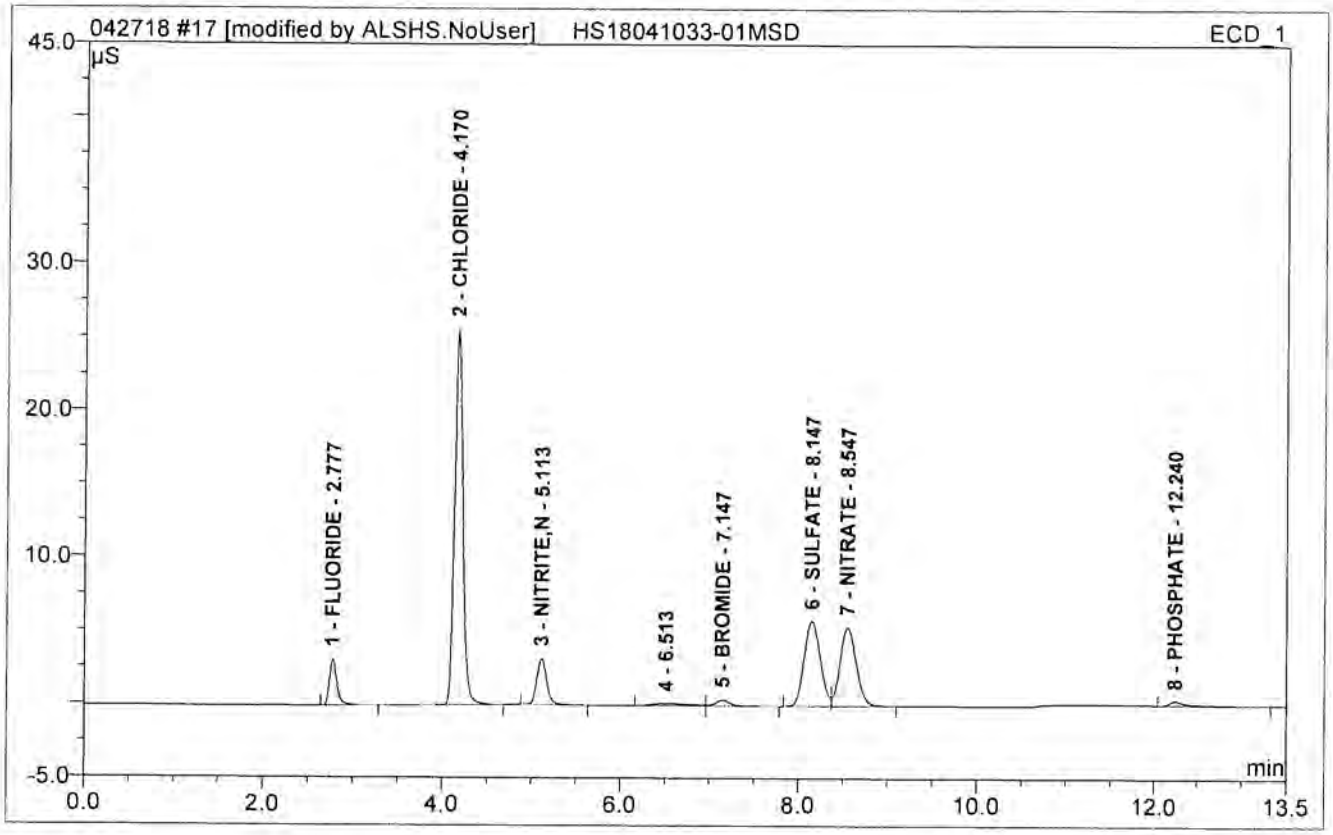
Sample Name:	**HS18041033-01MS**	*Injection Volume:*	**10.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 22:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	3.102	0.301	5.02	2.188	1.
2	4.17	CHLORIDE	25.346	2.772	46.17	31.601	1.
3	5.11	NITRITE,N	3.079	0.395	6.58	2.116	1.
5	7.15	BROMIDE	0.407	0.073	1.21	2.070	1.
6	8.15	SULFATE	5.726	1.211	20.17	19.444	1.
7	8.55	NITRATE	5.338	1.114	18.56	5.054	1.
8	12.24	PHOSPHATE	0.293	0.067	1.11	1.291	1.
Total:			43.292	5.932	98.81	63.765	

17 HS18041033-01MSD

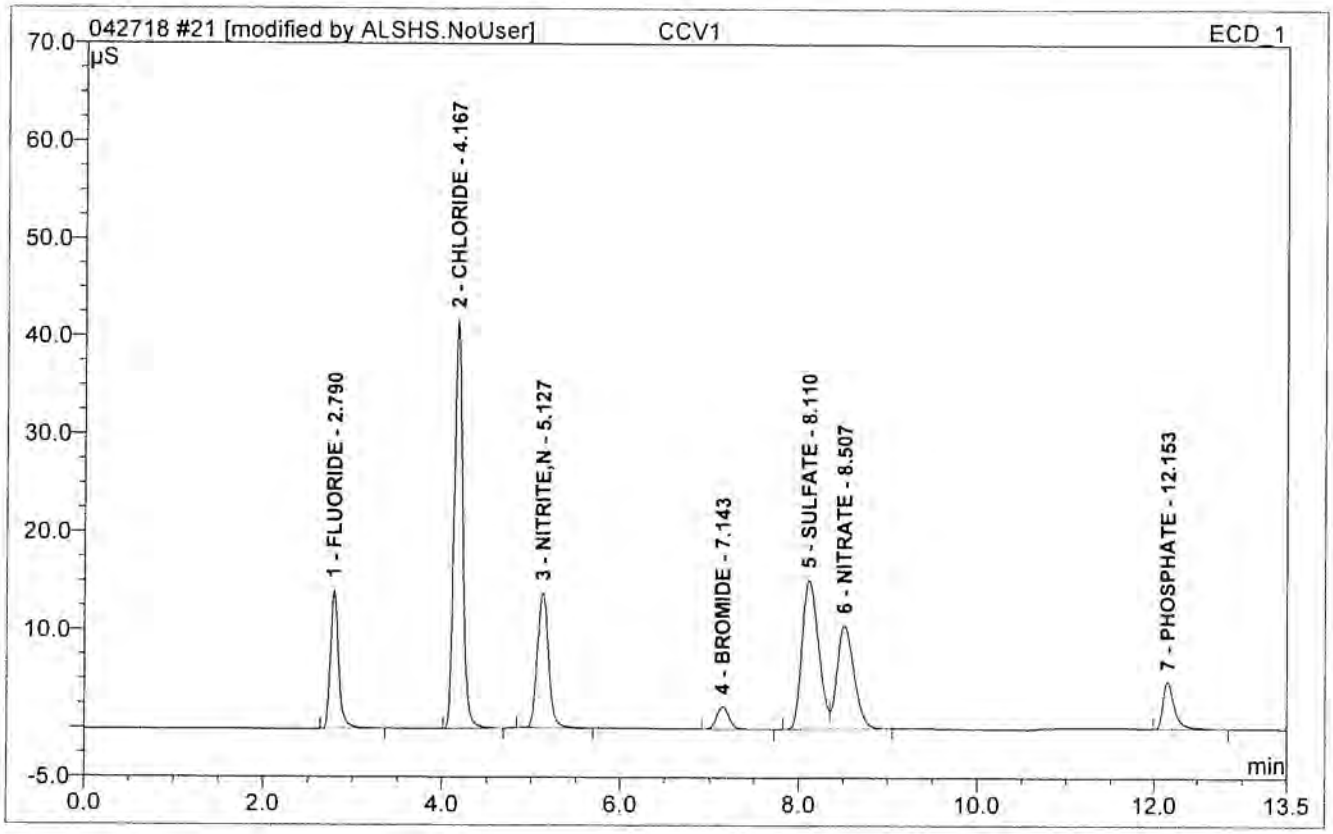
Sample Name:	**HS18041033-01MSD**	*Injection Volume:*	**10.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 22:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.78	FLUORIDE	3.141	0.305	5.03	2.218	1.
2	4.17	CHLORIDE	25.617	2.802	46.14	31.940	1.
3	5.11	NITRITE,N	3.118	0.401	6.61	2.149	1.
5	7.15	BROMIDE	0.412	0.074	1.21	2.088	1.
6	8.15	SULFATE	5.793	1.224	20.15	19.643	1.
7	8.55	NITRATE	5.393	1.128	18.58	5.117	1.
8	12.24	PHOSPHATE	0.292	0.068	1.12	1.313	1.
Total:			43.767	6.001	98.84	64.469	

21 CCV1

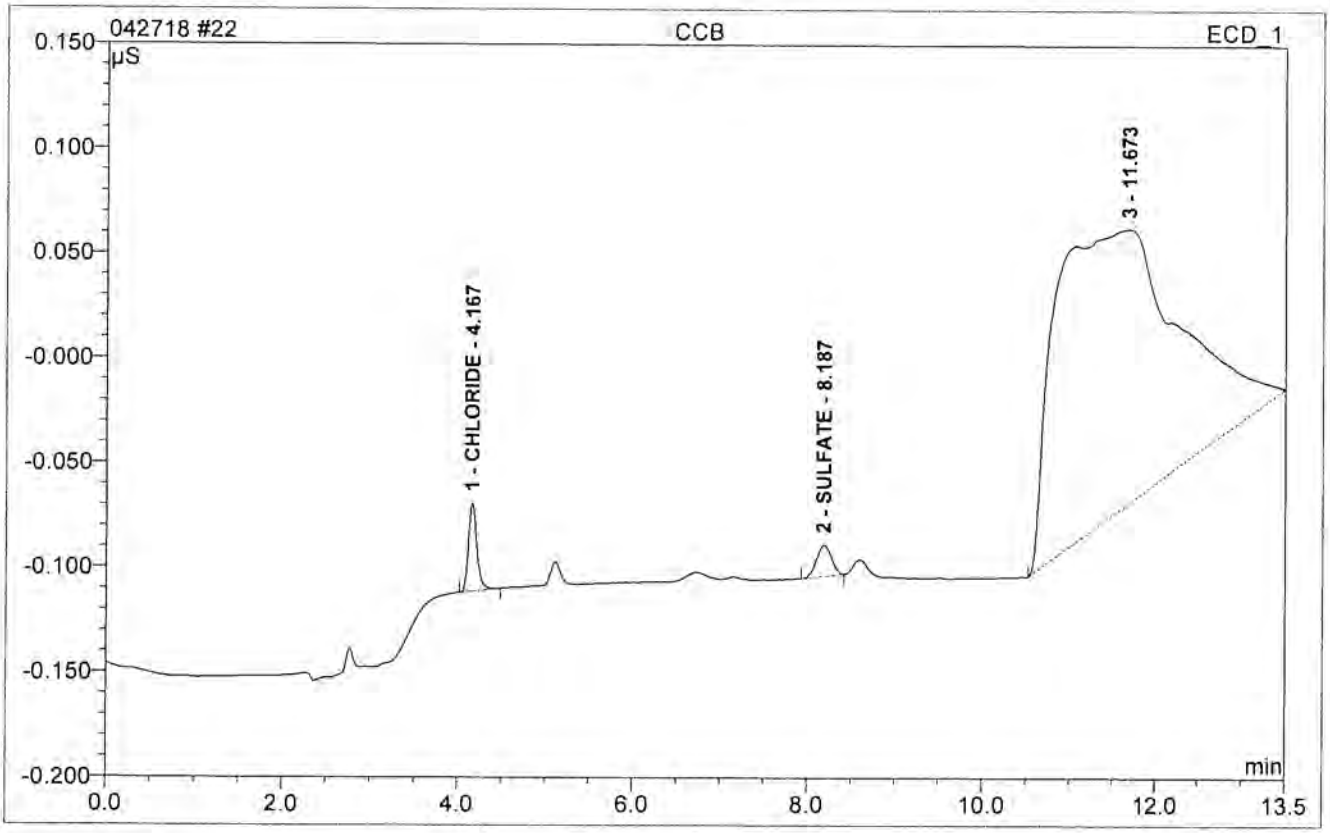
Sample Name:	**CCV1**	*Injection Volume:*	**10.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 23:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	2.79	FLUORIDE	14.187	1.507	10.07	10.836	1.
2	4.17	CHLORIDE	41.753	4.640	31.01	52.816	1.
3	5.13	NITRITE,N	13.850	2.022	13.52	10.818	1.
4	7.14	BROMIDE	2.314	0.374	2.50	10.460	1.
5	8.11	SULFATE	15.294	3.318	22.18	52.904	1.
6	8.51	NITRATE	10.642	2.343	15.66	10.587	1.
7	12.15	PHOSPHATE	4.823	0.759	5.07	10.325	1.
Total:			102.864	14.963	100.00	158.745	

22 CCB

Sample Name:	**CCB**	*Injection Volume:*	**10.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Anions Gradient Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042618**	*Dilution Factor:*	**1.**
Recording Time:	**4/27/2018 23:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**13.50**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount PPM	Dil.Fac.
1	4.17	CHLORIDE	0.042	0.005	1.97	0.183	1.
2	8.19	SULFATE	0.015	0.003	1.26	0.257	1.
Total:			0.057	0.008	3.23	0.440	

10450 Stancliff Rd. Suite 210
Houston, TX 77099
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F: +1 281 530 5887
www.alsglobal.com

WorkOrder: HS18041331

Longhorn GW Treatment Plant Weekly Samples

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

23-May-2018

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

May 09, 2018

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS18041331**

Laboratory Results for: **Longhorn GW Treatment Plant Weekly Samples**

Dear Marcia,

ALS Environmental received 1 sample(s) on Apr 26, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: RJ.MODASHIA
RJ Modashia
Project Manager

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS18041331

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18041331-01	LH18/24-SP650_042518	Water		25-Apr-2018 14:00	26-Apr-2018 08:42	☐

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**

Project: Longhorn GW Treatment Plant Weekly Samples

Work Order:

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Sample ID: LH18/24-SP650_042518
Collection Date: 25-Apr-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18041331
Lab ID:HS18041331-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**17**		**0.20**	**0.20**	**0.20**	**mg/L**	1	30-Apr-2018 14:21
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**2.24**		**0.100**	**0.500**	**0.250**	**mg/L**	10	27-Apr-2018 12:00
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: AJH
Organic Carbon, Total	**44.3**		**0.500**	**1.25**	**1.00**	**mg/L**	1	08-May-2018 21:10
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	04-May-2018 10:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS18041331

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R315343	**Test Name :** AMMONIA AS N BY E350.3(ISE)			**Matrix:** Water		
HS18041331-01	LH18/24-SP650_042518	25 Apr 2018 14:00			30 Apr 2018 14:21	1
Batch ID R315593	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3			**Matrix:** Water		
HS18041331-01	LH18/24-SP650_042518	25 Apr 2018 14:00			27 Apr 2018 12:00	10
Batch ID R315618	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			**Matrix:** Water		
HS18041331-01	LH18/24-SP650_042518	25 Apr 2018 14:00			04 May 2018 10:00	1
Batch ID R315898	**Test Name :** TOTAL ORGANIC CARBON BY E415.1			**Matrix:** Water		
HS18041331-01	LH18/24-SP650_042518	25 Apr 2018 14:00			08 May 2018 21:10	1

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS18041331

QC BATCH REPORT

Batch ID: R315343 **Instrument: WetChem_HS** **Method: E350.3**

MBLK Sample ID: **MBLK-315343** Units: **mg/L** Analysis Date: **30-Apr-2018 14:21**
Client ID: Run ID: **WetChem_HS_315343** SeqNo: **4541121** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.20	0.20								U

LCS Sample ID: **LCS-315343** Units: **mg/L** Analysis Date: **30-Apr-2018 14:21**
Client ID: Run ID: **WetChem_HS_315343** SeqNo: **4541122** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.17	0.20	10	0	102	80 - 120				

MS Sample ID: **HS18041445-01MS** Units: **mg/L** Analysis Date: **30-Apr-2018 14:21**
Client ID: Run ID: **WetChem_HS_315343** SeqNo: **4541125** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	15.01	0.20	10	4.847	102	80 - 120				

MSD Sample ID: **HS18041445-01MSD** Units: **mg/L** Analysis Date: **30-Apr-2018 14:21**
Client ID: Run ID: **WetChem_HS_315343** SeqNo: **4541126** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	15.1	0.20	10	4.847	103	80 - 120	15.01	0.598	20	

The following samples were analyzed in this batch: HS18041331-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS18041331

QC BATCH REPORT

Batch ID: R315593 **Instrument: UV-2450** **Method: E365.3**

MBLK Sample ID: **MBLK-315593** Units: **mg/L** Analysis Date: **27-Apr-2018 12:00**
Client ID: Run ID: **UV-2450_315593** SeqNo: **4546422** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0500	0.0250								U

LCS Sample ID: **LCS-315593** Units: **mg/L** Analysis Date: **27-Apr-2018 12:00**
Client ID: Run ID: **UV-2450_315593** SeqNo: **4546423** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.247	0.0250	0.25	0	98.8	85 - 115				

MS Sample ID: **HS18041331-01MS** Units: **mg/L** Analysis Date: **27-Apr-2018 12:00**
Client ID: **LH18/24-SP650_042518** Run ID: **UV-2450_315593** SeqNo: **4546425** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	4.87	0.250	2.5	2.24	105	80 - 120				

MSD Sample ID: **HS18041331-01MSD** Units: **mg/L** Analysis Date: **27-Apr-2018 12:00**
Client ID: **LH18/24-SP650_042518** Run ID: **UV-2450_315593** SeqNo: **4546426** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	4.81	0.250	2.5	2.24	103	80 - 120	4.87	1.24	20	

The following samples were analyzed in this batch: HS18041331-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS18041331

QC BATCH REPORT

Batch ID: R315898 **Instrument: TOC_02** **Method: E415.1**

MBLK Sample ID: **WBLKW1-180508** Units: **mg/L** Analysis Date: **08-May-2018 20:28**
Client ID: Run ID: **TOC_02_315898** SeqNo: **4553518** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	1.25	1.00								U

LCS Sample ID: **WLCSW1-180508** Units: **mg/L** Analysis Date: **08-May-2018 20:43**
Client ID: Run ID: **TOC_02_315898** SeqNo: **4553519** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.801	1.00	10	0	98.0	80 - 120				

LCSD Sample ID: **WLCSDW1-180508** Units: **mg/L** Analysis Date: **08-May-2018 20:56**
Client ID: Run ID: **TOC_02_315898** SeqNo: **4553520** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.775	1.00	10	0	97.8	80 - 120	9.801	0.266	20	

MS Sample ID: **HS18050237-01MS** Units: **mg/L** Analysis Date: **08-May-2018 21:52**
Client ID: Run ID: **TOC_02_315898** SeqNo: **4553524** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	13.65	1.00	10	3.882	97.7	80 - 120				

The following samples were analyzed in this batch: HS18041331-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
WorkOrder: HS18041331

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919 2016-2018	31-Jul-2018
Oklahoma	2017-088	31-Aug-2018
North Carolina	624-2018	31-Dec-2018
Louisiana	03087 2017-2018	30-Jun-2018
Arkansas	88-0356	27-Mar-2019
Kansas	E-10352 2017-218	31-Jul-2018

ALS Group Houston, Corp Date: 09-May-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant Weekly Samples
Work Order: HS18041331

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS18041331-01	LH18/24-SP650_042518	Login	4/26/2018 12:02:02 PM	JRM	Sub
HS18041331-01	LH18/24-SP650_042518	Login	4/26/2018 12:02:02 PM	JRM	WET048
HS18041331-01	LH18/24-SP650_042518	Login	4/26/2018 12:02:02 PM	JRM	WET048
HS18041331-01	LH18/24-SP650_042518	Login	4/26/2018 12:02:02 PM	JRM	WET048

Date: 09-May-18

Sample Receipt Checklist

Client Name:	Bhate Environmental	Date/Time Received:	**26-Apr-2018 08:42**
Work Order:	HS18041331	Received by:	**RPG**

Checklist completed by:	*Jared R. Makan* eSignature	26-Apr-2018 Date	Reviewed by: *RJ Modashia* eSignature	26-Apr-2018 Date

Matrices: **Water** Carrier name: **FedEx Priority Overnight**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	0.9c/0.4c UC/C	IR11	
Cooler(s)/Kit(s):	42663		
Date/Time sample(s) sent to storage:	04/26/2018 12:20		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: SONIA WEST

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

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	AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_042518	Water	04/25/18 / 14:00		2	X	X			H2SO4	
LH18/24-SP650_042518	Water	04/25/18 / 14:00		2			X	X	NONE	

HS18041331
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant Weekly Samples

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	04/25/18	14:30	R Cisz	4/26/18	8:42						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks: cooler # 42663 TEMP 0.9c IR # 11 CF -0.5.

(Word) S:\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

42663

CUSTODY SEAL

Date: 4/25/18 Time: 1430
Name: SGOH Bresingler
Company: BHHTE

Seal Broken By: Jm
Date: 4/26/18

FedEx.
TRK# 0221 7376 9752 9476

THU - 26 APR 10:30A
PRIORITY OVERNIGHT

AB SGRA 42663

77099
TX-US
IAH

FID 162705 25APR18 GGGA 546C1/9132/8C8A

Wet Chemistry Raw Data

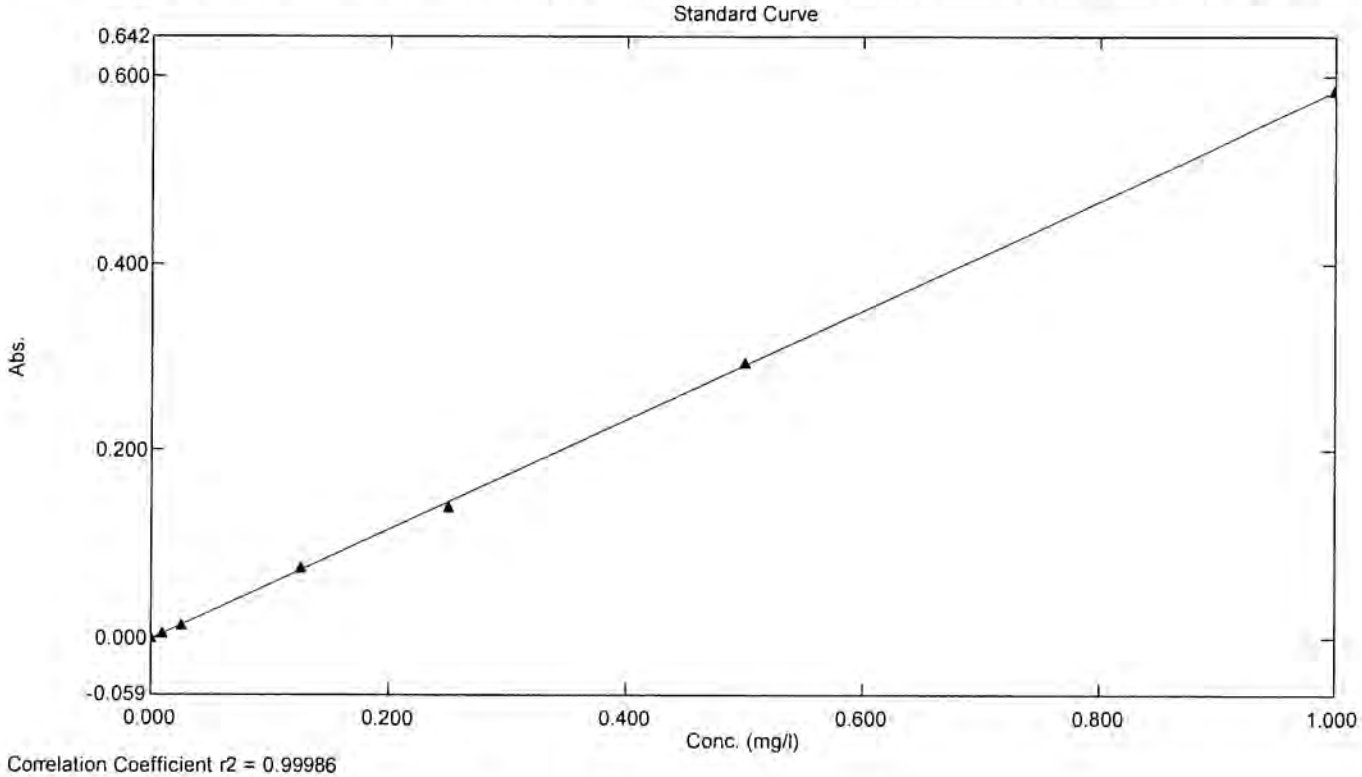
Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT PLANT
WEEKLY SAMPLES
ALS WO#HS18041331

HS1804133 1

Standard Table Report

05/15/2018 02:09:47 PM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\O_PO4_UNKNOWN\ORTHO_2018\180427_P_ORTH



Correlation Coefficient r2 = 0.99986

Standard Table

	Sample ID	Type	Ex	Conc	WL880.0	Wgt.Facto	Comments
1	STD1	Standard		0.000	-0.000	1.000	
2	STD2	Standard		0.010	0.006	1.000	
3	STD3	Standard		0.025	0.014	1.000	
4	STD4	Standard		0.125	0.075	1.000	
5	STD5	Standard		0.250	0.140	1.000	
6	STD6	Standard		0.500	0.294	1.000	
7	STD7	Standard		1.000	0.584	1.000	
8							

Sample Table Report

05/15/2018 01:56:31 PM

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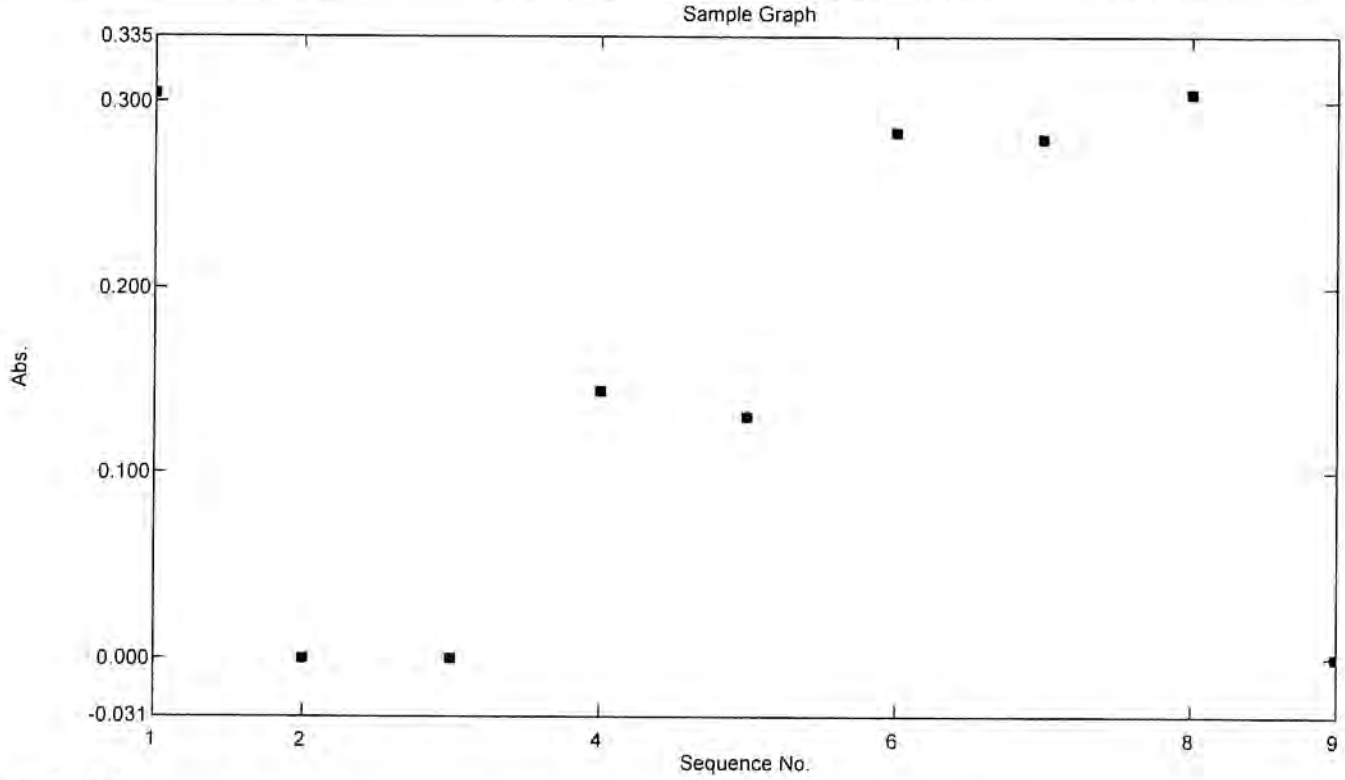


Sample Table

	Sample ID	Type	Ex	Conc	WL880.0	Comments
1	CCV	Unknown		0.522	0.305	
2	CCB	Unknown		0.000	-0.000	
3	MBLK	Unknown		-0.000	-0.001	
4	LCS	Unknown		0.247	0.144	
5	18041331.01	Unknown		0.224	0.131	FILTER,10X,12:00PM
6	18041331.01MS	Unknown		0.487	0.284	10X
7	18041331.01MSD	Unknown		0.481	0.281	10X
8	CCV2	Unknown		0.523	0.305	
9	CCB2	Unknown		0.001	-0.000	
10						

HS1804133 1
NIT-AMN- W-ISE 350.3

ALS Laboratory Group

Logbook **30611**

Ion Selective Electrode Logbook

Analyst: MD				Date: 04/30/2018	
Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F					
Probe Calibration Date: 04/30/2018		Cal Std ID: 30606261(03-07)		Probe ID: SR15190	
Std Level		mV	Conc., mg/L:	Sodium Thiosulfate ID:	
STD 1 (mg/L):	0.2	116.3	0.2003	Std Level / mV / Conc., mg/L:	
STD 2 (mg/L):	1	59	1.071	STD 4 (mg/L): 10	18.8 / 10.01
STD 3 (mg/L):	5	40.3	5.103	STD 5 (mg/L): 50	-46.8 / 50.10
LSC / MS Spike ID:	29702059 09			ICAL Date & Slope:	
ICV Cal STD ID:	30606 6701			98.4% / -58.1 mV	
DPD Reagent ID:	29702041302				

WO # / SX #	Bottle #	Initial g or ml	Final Vol. ml	Dilution Factor	Initial Conc. mg/L	Final Conc. mg/L	Chlorine Check (+/-)	Comments
ICV		some	some		10.10			
CCB		↓	↓		0.02587			
MBLK					0.02300			
LCS					10.17			
HS1804133 1-01					17.04	-	-VE	hydrosample
HS1804138 2-01		1 mL	some	50X	10.12		+VE	high in salt
HS1804163 6-01		1 mL	some	50X	0.1644	8.22	+VE	high in salt
HS1804144 5-01		some	some		4.847		-VE	
HS1804144 5-01 MS		↓	↓		15.01			
HS1804144 5-01 MSD					15.10			
CCV		some	some		10.04			
CCB		↓	↓		0.02491			

Batch ID: W-350.2 / 315343 / ISE-W / 315350

Reported By: MD

Reviewed By: PMU

HS18041331

	T	Analys	Sample Name	Sample ID	Origin	Result	Status	Date / Time	Vial
1	S	NPOC	CAL	306.067;504-509	05-08-2018_W.		Completed	5/8/2018 6:22:07 PM	1, 2,
2	U	NPOC	ICV	Untitled	05-08-2018_W.	NPOC:9.923mg/L	Completed	5/8/2018 6:35:35 PM	7
3	U	NPOC	ICB	Untitled	05-08-2018_W.	NPOC:0.09481mg/	Completed	5/8/2018 6:48:48 PM	8
4	U	NPOC	WBLKW1-180508	TOC_W	05-08-2018_W.	NPOC:0.1325mg/L	Completed	5/8/2018 8:34:22 PM	9
5	U	NPOC	WLCSW1-180508	Untitled	05-08-2018_W.	NPOC:9.801mg/L	Completed	5/8/2018 8:47:46 PM	10
6	U	NPOC	WLCSDW1-180508	Untitled	05-08-2018_W.	NPOC:9.775mg/L	Completed	5/8/2018 9:00:59 PM	11
7	U	NPOC	HS18041331-01	1/1	05-08-2018_W.	NPOC:44.32mg/L	Completed	5/8/2018 9:14:44 PM	12
8	U	NPOC	HS18050220-01	1/1 OFF	05-08-2018_W.	NPOC:86.84mg/L	Completed	5/8/2018 9:27:57 PM	13
9	U	NPOC	HS18050237-01	1/2	05-08-2018_W.	NPOC:3.882mg/L	Completed	5/8/2018 9:43:15 PM	14
10	U	NPOC	HS18050237-01MS	1/2	05-08-2018_W.	NPOC:13.65mg/L	Completed	5/8/2018 9:56:24 PM	15
11	U	NPOC	CCV	Untitled	05-08-2018_W.	NPOC:24.60mg/L	Completed	5/8/2018 10:09:37 PM	16
12	U	NPOC	CCB	Untitled	05-08-2018_W.	NPOC:0.08446mg/	Completed	5/8/2018 10:24:55 PM	17

Instr.Information

System	TOC csh with asi
Instrument Options	TOC/ASI/IC Unit/
Catalyst	Regular Sensitivity

Cal. Curve

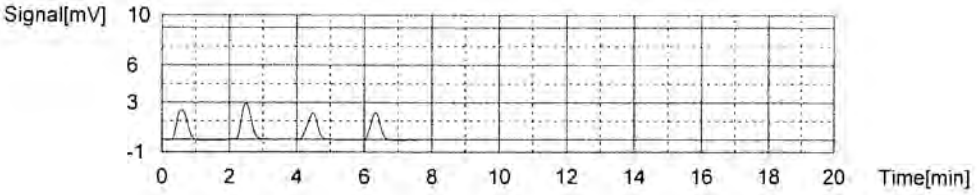
Sample Name:	CAL
Sample ID:	Untitled
Cal. Curve:	05-08-2018_W.2018_05_08_16_59_08.cal
Status	Completed

Type	Anal.
Standard	NPOC

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.281	50uL	1	*******		5/8/2018 5:07:52 PM
2	5.767	50uL	1	*******	E	5/8/2018 5:09:57 PM
3	4.377	50uL	1	*******		5/8/2018 5:12:02 PM
4	4.321	50uL	1	*******		5/8/2018 5:14:07 PM

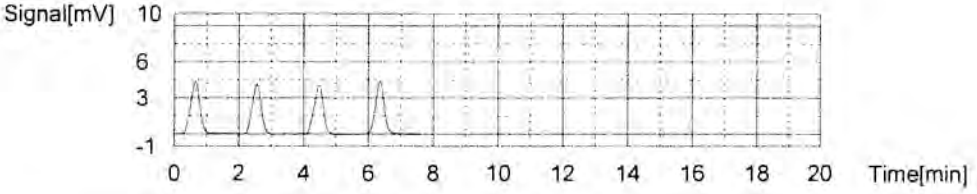
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 4.660



Conc: 2.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	8.552	50uL	1	*******	E	5/8/2018 5:23:05 PM
2	7.956	50uL	1	*******		5/8/2018 5:25:10 PM
3	7.917	50uL	1	*******		5/8/2018 5:27:15 PM
4	7.981	50uL	1	*******		5/8/2018 5:29:20 PM

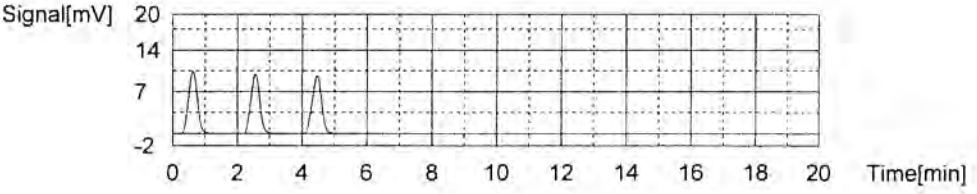
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 7.951



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	19.68	50uL	1	*******		5/8/2018 5:38:18 PM
2	19.11	50uL	1	*******		5/8/2018 5:40:23 PM
3	19.32	50uL	1	*******		5/8/2018 5:42:28 PM

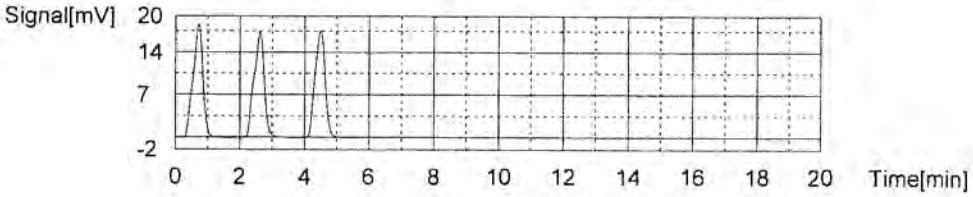
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 19.37



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	38.73	50uL	1	*******		5/8/2018 5:51:31 PM
2	37.61	50uL	1	*******		5/8/2018 5:53:36 PM
3	38.22	50uL	1	*******		5/8/2018 5:55:41 PM

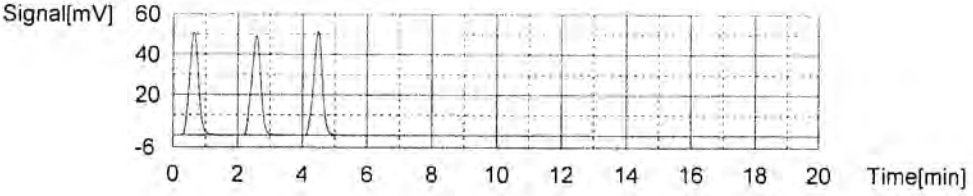
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 38.19



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	97.00	50uL	1	*******		5/8/2018 6:04:44 PM
2	96.71	50uL	1	*******		5/8/2018 6:06:49 PM
3	96.75	50uL	1	*******		5/8/2018 6:08:54 PM

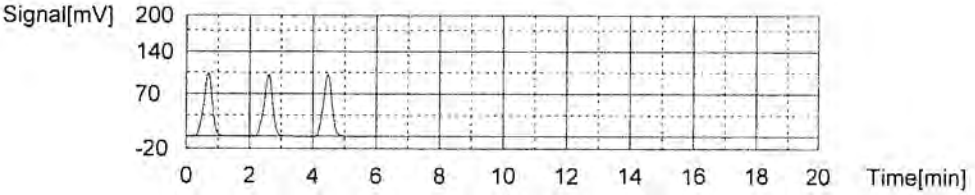
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 96.82



Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	195.4	50uL	1	*******		5/8/2018 6:17:57 PM
2	193.7	50uL	1	*******		5/8/2018 6:20:02 PM
3	194.1	50uL	1	*******		5/8/2018 6:22:07 PM

Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 194.4



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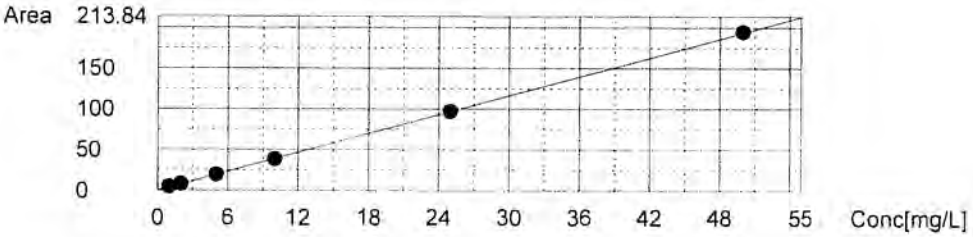
Intercept 0.07512
r^2 1.0000
r 1.0000
Zero Shift No



Sample

Sample Name: ICV
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

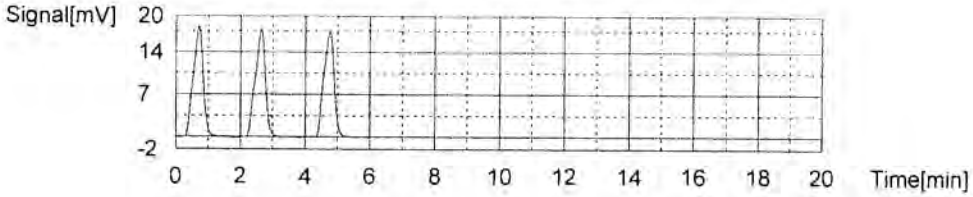
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.923mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	38.63	9.934mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:31:10 PM
2	38.67	9.944mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:33:30 PM
3	38.46	9.890mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:35:35 PM

Mean Area 38.59
Mean Conc. 9.923mg/L



Sample

Sample Name: ICB
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

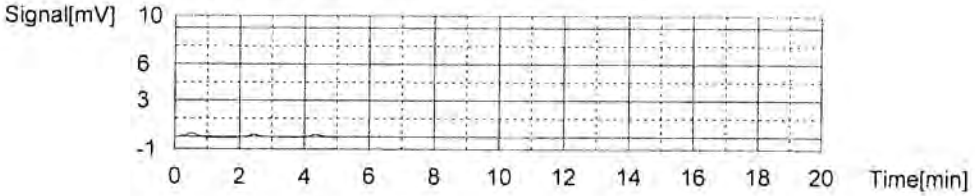
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.09481mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4983	0.1090mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:44:38 PM
2	0.3330	0.06645mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:46:43 PM
3	0.4980	0.1090mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:48:48 PM

Mean Area 0.4431
Mean Conc. 0.09481mg/L



Sample

Sample Name: WBLKW1-180508
Sample ID: TOC_W
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

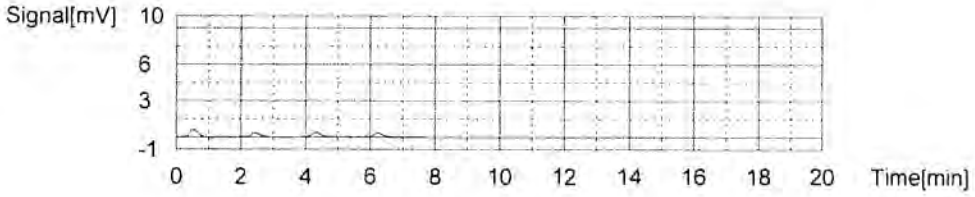
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1325mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.031	0.2463mg/L	50uL	1	E	05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:28:07 PM
2	0.6210	0.1407mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:30:12 PM
3	0.6160	0.1394mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:32:17 PM
4	0.5313	0.1175mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:34:22 PM

Mean Area 0.5894
Mean Conc. 0.1325mg/L



Sample

Sample Name: WLCSW1-180508
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

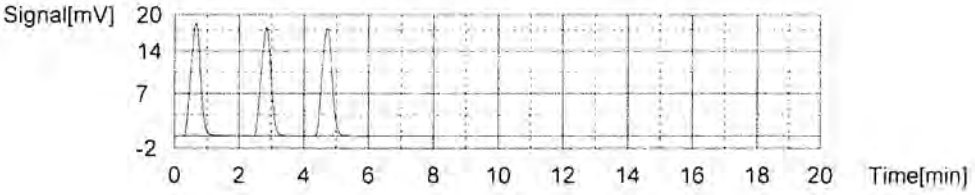
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.801mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	38.51	9.903mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:43:36 PM
2	37.91	9.749mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:45:41 PM
3	37.92	9.751mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:47:46 PM

Mean Area 38.11
Mean Conc. 9.801mg/L



Sample

Sample Name: WLCSDW1-180508
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

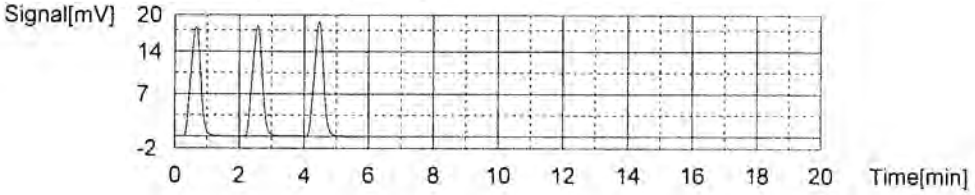
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.775mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	38.06	9.787mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:56:49 PM
2	38.21	9.826mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 8:58:54 PM
3	37.77	9.713mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:00:59 PM

Mean Area 38.01
Mean Conc. 9.775mg/L



Sample

Sample Name: HS18041331-01
Sample ID: 1/1
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

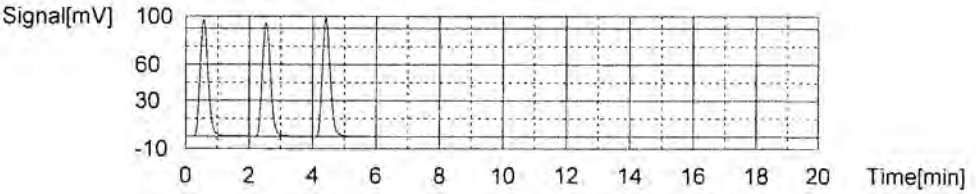
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:44.32mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	170.1	43.81mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:10:05 PM
2	172.5	44.43mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:12:10 PM
3	173.7	44.74mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:14:44 PM

Mean Area 172.1
Mean Conc. 44.32mg/L



Sample

Sample Name: HS18050237-01
Sample ID: 1/2
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

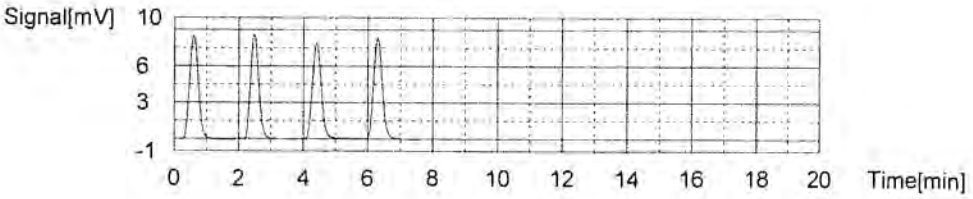
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.882mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.04	4.114mg/L	50uL	1	E	05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:37:00 PM
2	15.21	3.900mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:39:05 PM
3	15.03	3.853mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:41:10 PM
4	15.18	3.892mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:43:15 PM

Mean Area 15.14
Mean Conc. 3.882mg/L



Sample

Sample Name: HS18050237-01MS
Sample ID: 1/2
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

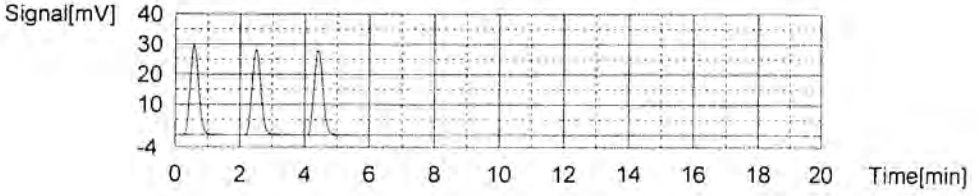
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:13.65mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.09	13.66mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:52:13 PM
2	53.38	13.73mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:54:19 PM
3	52.65	13.55mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 9:56:24 PM

Mean Area 53.04
Mean Conc. 13.65mg/L



Sample

Sample Name: CCV
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

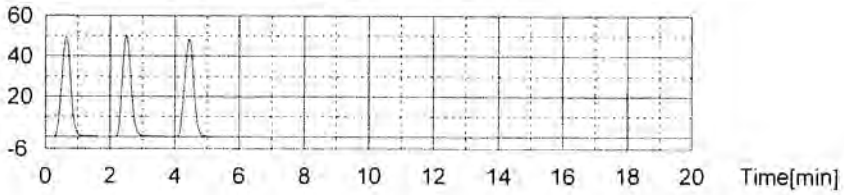
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.60mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	96.18	24.76mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 10:05:27 PM
2	94.96	24.45mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 10:07:32 PM
3	95.45	24.57mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 10:09:37 PM

Mean Area 95.53
Mean Conc. 24.60mg/L



Sample

Sample Name: CCB
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

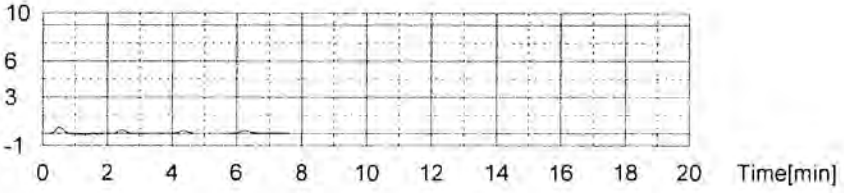
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.08446mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.9054	0.2139mg/L	50uL	1	E	05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 10:18:40 PM
2	0.4830	0.1051mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 10:20:45 PM
3	0.3724	0.07660mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 10:22:50 PM
4	0.3533	0.07168mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 10:24:55 PM

Mean Area 0.4029
Mean Conc. 0.08446mg/L



Sub Contract Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT PLANT
WEEKLY SAMPLES
ALS WO#HS18041331

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 1811190; 1811879

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2086 (213815)

General Set Information: There were two field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: NA

Method QC data: The method blank (LMB 598507) was less than 1/2 the CRDL. The recovery for the LCS (598508) was within acceptable parameters.

MS/MSD Analysis: The matrix spike and matrix spike duplicate (MS/MSD) was performed on sample 1811190001 (Client ID: LH18/24-SP650_041818). The MS/MSD percent recoveries and relative percent difference (RPD) were within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1. Manual Integrations was performed for datafile 02APRD01/02.

Thomas Bosch May 02, 2018
Analyst Date

ANALYTICAL REPORT

Report Date: May 03, 2018

RJ Masahisa
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-1811879**
Project ID: HS18041331 042518
Purchase Order: HS18041331
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
LH18/24-SP650_042518	1811879001	04/25/18	04/26/18	

ANALYTICAL REPORT

Workorder: 34-1811879
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **LH18/24-SP650_042518**	Sampling Site: NA	Collected: 04/25/2018
Lab ID: 1811879001	Media: 125 mL Nalgene	Received: 04/26/2018
Matrix: Water	Sampling Parameter: NA	

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable	**Analysis:** EPA 6850, DoD QSM Water	**Instrument ID:** LCMS04
	Batch: ELMS/2086 (HBN: 213815)	**Percent Solid:** NA
	Analyzed: 04/30/2018 13:02	**Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**46**	1.0	2.0	4.0	1	

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 05/02/2018 14:46	/S/ Stephen Brose 05/03/2018 12:51

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

ANALYTICAL REPORT

Workorder: 34-1811879
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body	Certificate Number	Website
Environmental	PJLA (DoD ELAP)		
	Utah (TNI)		
	Nevada		
	Oklahoma		
	Iowa		

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< This testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 1811879

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2086 (HBN: 213815)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 598507
Analyzed: 04/30/2018 11:51
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 598508
Analyzed: 04/30/2018 12:05
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	4.71	5.00	94.2	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample: 1811190001	**MS:** 598509	**MSD:** 598510
Analyzed: 04/30/2018 12:20	**Analyzed:** 04/30/2018 12:34	**Analyzed:** 04/30/2018 12:48
Dilution: 1	**Dilution:** 1	**Dilution:** 1
Units: ug/L	**Units:** ug/L	**Units:** ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	55.0	59.2	5	79.6	78.8	123.8	60.4	104	2.01	0.0	20.0

Continuing Calibration Verification

CCV: 598503	**CCV:** 598511
Analyzed: 04/30/2018 11:09	**Analyzed:** 04/30/2018 13:16
Units: ug/L	**Units:** ug/L
Criteria: ± 15%	**Criteria:** ± 15%

Analyte	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	25.6	25.0	102	25.6	25.0	102

Interference Check Sample

ICSA: 598506
Analyzed: 04/30/2018 11:37
Units: ug/L
Criteria: ± 30%

Analyte	Result	Target	% Rec.
Perchlorate	0.995	1.00	99.5

Limit of Detection Verification

LODV: 598505	**LODV:** 598512
Analyzed: 04/30/2018 11:23	**Analyzed:** 04/30/2018 13:30
Units: ug/L	**Units:** ug/L
Criteria: ± 50%	**Criteria:** ± 50%

Analyte	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	0.798	1.00	79.8	0.854	1.00	85.4

Quality Control Sample
Batch Report

Analysis Information

Workorder: 1811879

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2086 (HBN: 213815)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
05/02/2018 14:47	05/03/2018 12:51

Symbols and Definitions

* - Analyte above reporting limit or outside of control limits
▲ - Sample result is greater than 4 times the spike added
- Sample and Matrix Duplicate less than 5 times the reporting limit
- Result is above the calibration range
- The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

18698/#2

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 9025

1811879

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	Jumoke M. Lawal
Email:	jumoke.lawal@alsglobal.com

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS18041331
TSR:	Danielle Winnings

	LAB SAMPLE ID / ANALYSIS REQUESTED	CLIENT SAMPLE ID	MATRIX	COLLECT DATE / DUE DATE
1.	**HS18041331-01**	**LH18/24-SP650_042518**	**Water**	**25 Apr 2018 14:00**
	SUB_Perch-6850			10 May 2018

Comments: Please analyze for the analysis listed above. Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 4/26/18 1800

Received By: Luter Woodard LAS Date/Time: 4/26/18 0945

Cooler ID(s): _____ Temperature(s): 4°C

00902534

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS18041331	Split:	Workorder ID: 1811879	Level: ENV_LVL4	Requested Analysis
Client: ALS Environmental (Houston)		Account: 8101	Type: 125Poly	
Comments:			Preservatives	
			COOL	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	EPA 6850, DoD QSM
1	04/25/2018 14:00	LH18/24-SP650_042518	1811879001		Water	A	1	A
2								
3								
4								
5								
6								
7								
8								
9								
10								

37 of 108

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	04/26/2018 09:45	ALS Sample Receiving	Sample Login
Julie Warath 4/26/18 1125		13B	storage
R.33.1	4.30.18/09:00	T.Bush	6850

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

ALS-SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: 1811879

Date/Time of Receipt: _____

Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.
1	C18 -8481	4 °C	4	C18	°C	7	C18	°C
2	C18	°C	5	C18	°C	8	C18	°C
3	C18	°C	6	C18	°C	9	C18	°C

Taken By: Julie Warath (Signature) Julie Warath (Printed Name) 4/26/18 (Date)

CLIENT-RELATED INFORMATION

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

ORIGIN ID:SGRA (281) 530-5656
CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 26APR18
ACTWGT: 8.20 LB
CAD: 300130/CAFE3111
DIMS: 14x11x10 IN

BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS18041331 - RJ

546C1/9132/53C1

FedEx Express

JT7101610260l uv

FRI - 27 APR 3:00P
STANDARD OVERNIGHT

TRK# 0201 4380 9528 6782

AX BTFA

84123
UT-US SLC

tch Worklist

Batch: ELMS/ 2086
Rule: EPA 6850, DoD QSM Water
Created: 4/30/2018 10:56
Analyst: T. Bosch
Instrument: LCMS04
Status: RE
HBN: 213815

Workorder: 1811190 [ENV_LVL4]
Workorder: 1811879 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	598503	CCV for HBN 213815 [ELMS/2086]				CCV	3		E685041C3Q	5311		5/3/2018	4/30/2018
2	598505	LODV for HBN 213815 [ELMS/2086				LODV	3		E6850..D3Q	5311		5/3/2018	4/30/2018
3	598506	ICS for HBN 213815 [ELMS/2086]				ICS	3		E6850..D3Q	5311		5/3/2018	4/30/2018
4	598507	LMB for HBN 213815 [ELMS/2086]				LMB	3		E6850Q413Q	5311		5/3/2018	4/30/2018
5	598508	LCS for HBN 213815 [ELMS/2086]				LCS	3		E6850Q413Q	5311		5/3/2018	4/30/2018
6	1811190001	LH18/24-SP650_041818				SAMPLE	3	1811190001-A	E6850Q41.3	5480	5/16/2018	5/3/2018	4/30/2018
7	598509	LH18/24-SP650...(1811190001MS)				MS	3		E6850Q413Q	5311		5/3/2018	4/30/2018
8	598510	LH18/24-SP65...(1811190001MSD)				MSD	3		E6850Q413Q	5311		5/3/2018	4/30/2018
9	1811879001	LH18/24-SP650_042518				SAMPLE	3	1811879001-A	E6850Q41.3	5480	5/23/2018	5/9/2018	4/30/2018
10	598511	CCV for HBN 213815 [ELMS/2086]				CCV	3		E685041C3Q	5311		5/3/2018	4/30/2018
11	598512	LODV for HBN 213815 [ELMS/2086				LODV	3		E6850..D3Q	5311		5/3/2018	4/30/2018

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

ALS Work Order #'s & Sample #( )'s: 1811190 (001); 1811879 (001)
ELMS Batch/HBN ID: 2086 (213815)
Prep Date: 04/30/2018 Analysis Date: 04/30/2018 Analyst: T. Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2018\APR\30APR18D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by TNB. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/ 5% ACN (B&J Lot DI735)/0.1% glacial acetic acid (JT-Baker Lot 04802).
Eluent B1: 95% ACN (B&J Lot DI735)/ 5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 04802).

STANDARDS: Internal Standard Spiking Solution Horizon# 38780. Dilutions of Working Standard Solution ID 32373 used for CCV's, LODV's, RLVS and IPC.

CALIBRATION CURVE: Used curve from 04/02/2018, sequence 02APR18D.s Offline Quantitation Method: CLO4-DPR.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-DOD.M Fragmentor: 160 Output Gain: 3 Injection Volume: 25µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.80
4.0	0.80
5.0	0.25
10.0	0.25
10.5	0.80
13.0	0.80

QC DATA: 5.0µL of QC Solution Horizon ID 36749 was used for LCS 598508; Target = 5.0µg/L. ASTM type II water was used for LMB 598507.

MS/MSD: MS/MSD was performed on sample 1811190001 (Client ID: LH18/24-SP650_041818). 5.0µl of Working Standard Solution Horizon ID 36735 was added to 10.0mL of sample preparation. Spike target = 5.0µg/L.

COMMENTS:
1) Results reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2018\APR\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations was performed for datafiles 02APRD01/02.
5) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2018\213815-DOD-ALS-HSTN-LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK		Description - 6850 WKG Std 100.ug/L
Standard: 36735	Created By: T. Bosch	Amount: 10 mL
MFG: ALS/SLC	Create Date: 05/10/2017	Expires: 05/10/2018
MFG Lot: TNB: 05/10/17	Lab Lot: CLO4 WRK	Usable: Yes
Part ID:		

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36734	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	05/10/2018

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK		Description - 6850 Stock AccStd 1,000ug/mL
Standard: 36733	Created By: T. Bosch	Amount: 100 mL
MFG: AccuStandard	Create Date: 5/10/2017	Expires: 10/4/2018
MFG Lot: 216095148	Lab Lot: CLO4 STOCK	Usable: Yes
Part ID: IC-PER-10X-1		

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			Description - ASTM Type II Water
Standard: 109		Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House		Create Date: 10/6/2005	Expires: 11/7/2025
MFG Lot:		Lab Lot: LAB 109	Usable: Yes
Part ID:			

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT		Description - 6850 Intermdt AccStd 10.ug/mL
Standard: 36734	Created By: T. Bosch	Amount: 10 mL
MFG: ALS/SLC	Create Date: 05/10/2017	Expires: 05/10/2018
MFG Lot: TNB: 05/10/17	Lab Lot: CLO4 INT	Usable: Yes
Part ID:		

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36733	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	10/04/2018

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK — Description - 6850 QC WKG STD 100ug/L

Standard: 36750
MFG: ALS/SLC
MFG Lot: TNB: 05/11/17
Part ID:

Created By: T. Bosch
Create Date: 05/11/2017
Lab Lot: CLO4 QC WRK 100.ug/L

Amount: 10 mL
Expires: 05/11/2018
Usable: Yes

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36749	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	05/11/2018

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT		Description - 6850 QC Intrmdt Std-QC 10ug/mL
Standard: 36749	Created By: T. Bosch	Amount: 10 mL
MFG: ALS/SLC	Create Date: 05/11/2017	Expires: 05/11/2018
MFG Lot: TNB: 05/11/2017	Lab Lot: CLO4 QC INT 10.ug/mL	Usable: Yes
Part ID:		

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			Description - ASTM Type II Water
Standard: 109		Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House		Create Date: 10/6/2005	Expires: 11/7/2025
MFG Lot:		Lab Lot: LAB 109	Usable: Yes
Part ID:			

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK	Description - 6850 QC Stock STD 1,000ug/mL

Standard: 36748	Created By: T. Bosch	Amount: 100 mL
MFG: Ultra Scientific	Create Date: 5/11/2017	Expires: 3/31/2020
MFG Lot: CP-0860	Lab Lot: CLO4 QC STOCK	Usable: Yes
Part ID: ICC-013		

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 38780	Created By: Thomas Bosch	Amount: 10 mL
MFG: ALS/SLC	Create Date: 10/09/2017 01:10PM	Expires: 10/09/2018
MFG Lot: TNB: 10/09/17	Verified By: Thomas Bosch	Usable: Yes
Pipette ID: Not Provided	Verify Date:	Lab Lot: CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
23118	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.1 mL	02/27/2024

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 23118	Created By: Thomas Bosch	Amount: 1 mL
MFG: Cambridge Isotope	Create Date: 04/04/2014 03:04PM	Expires: 02/27/2024
MFG Lot: SDDG-013	Verified By: Thomas Bosch	Usable: Yes
Part ID: OLM-7310-S	Verify Date: 02/05/2009 12:02AM	Lab Lot: CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

TRIPLE ISO CERTIFICATION ULTRA ISO 9001 • ISO GUIDE 34 • ISO 17025

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED ACCREDITATION 17034 REFERENCE MATERIAL PRODUCER

ANAB ACCREDITED ACCREDITATION 17025 TESTING LABORATORY

ALS

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 216095148
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: Warning

Date Certified: Oct 4, 2016
Expiration: Oct 4, 2018
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)
Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.2%. See reverse side for details.
The final solution was checked against an independent standard to verify its concentration.
We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.
All solutions are filtered through a 0.2 µm filter prior to being bottled.
All glassware used in preparation is Class A and calibrated regularly.
All weights are traceable through NIST, Test No. 822-275872-11
All bottles are triple rinsed with deionized water prior to use.
Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.
We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

Quality Standards:
ISO Guide 34 • ISO/IEC 17025 • ISO 13485 • cGMP

23118

Product Name: (Isotopic Label & Enrichment Specification)	PERCHLORIC ACID, SODIUM SALT (18O4, 90%+) 100 UG/ML IN WATER
Lot Number:	SDDG-013
Catalog Number:	OLM-7310-S

Product Information

Chemical Purity Specification:	≥98%
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
MW*:	130.4
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

* *For isotopically labeled compounds, MW listed is for the fully enriched product.*

Approved by: T. J. Eckersley

Timothy J. Eckersley, Ph.D., Quality Assurance

Quality Control Tests and Results

QC Release Date	2/27/2014
Expiration Date	2/27/2024
Concentration Based on Gravimetry	102 µg/mL
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	109.4 ± 2.8 µg/mL (k=2)

ALS 50 Frontage Road, Andover, MA 01810-5413, USA • 1.800.322.1174 (North America) • 1.978.749.8000 (International) • isotope.com

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Batch Report: C:\HPCHEM\1\DATA\30APR18D\30APR18D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DPR.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorate RT	Perchlorate Amount
*	598503	CCV@25	Vial 71	1	Control	1	9.91122e5	8.785	25.61939
*	598505	LODV@1.	Vial 72	1	Control	2	3.56650e4	8.796	7.97701e-1
*	598506	ICS@1.0	Vial 73	1	Control	3	3.21747e4	8.595	9.95052e-1
*	598507	LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	598508	QC@5	Vial 75	1	Control	5	1.76999e5	8.663	4.71022
*	1811190001		Vial 76	1	Sample	6	1.82750e6	8.328	55.17657
*	598509	111901S	Vial 77	1	Control	7	2.02085e6	8.328	59.15476
*	598510	111901D	Vial 78	1	Control	8	2.09219e6	8.312	60.35582
*	1811879001		Vial 79	1	Sample	9	1.27079e6	8.898	45.86356
*	598511	CCV@25	Vial 71	1	Control	10	9.47695e5	8.709	25.57106
*	598512	LODV@1.	Vial 72	1	Control	11	3.69632e4	8.752	8.53554e-1

#*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	598503	CCV@25	Vial 71	1	Control	1	3.12807e5	8.801	25.97315
*	598505	LODV@1.	Vial 72	1	Control	2	1.36971e4	8.806	8.43902e-1
*	598506	ICS@1.0	Vial 73	1	Control	3	1.28706e4	8.607	1.13269
*	598507	LMB	Vial 74	1	Control	4	0.00000	0.000	0.00000
*	598508	QC@5	Vial 75	1	Control	5	6.22481e4	8.680	5.08315
*	1811190001		Vial 76	1	Sample	6	5.88660e5	8.344	58.38100
*	598509	111901S	Vial 77	1	Control	7	6.49290e5	8.343	62.61232
*	598510	111901D	Vial 78	1	Control	8	6.82369e5	8.328	64.71157
*	1811879001		Vial 79	1	Sample	9	4.17726e5	8.917	49.05622
*	598511	CCV@25	Vial 71	1	Control	10	3.00733e5	8.725	26.05079
*	598512	LODV@1.	Vial 72	1	Control	11	1.43661e4	8.777	9.23900e-1

#*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-ISTD RT	CLO4-89-ISTD Amount
*	598503	CCV@25	Vial 71	1	Control	1	1.57850e5	8.805	5.00000
*	598505	LODV@1.	Vial 72	1	Control	2	1.99662e5	8.812	5.00000
*	598506	ICS@1.0	Vial 73	1	Control	3	1.45793e5	8.616	5.00000
*	598507	LMB	Vial 74	1	Control	4	1.76098e5	8.773	5.00000
*	598508	QC@5	Vial 75	1	Control	5	1.71553e5	8.687	5.00000
*	1811190001		Vial 76	1	Sample	6	1.16599e5	8.350	5.00000
*	598509	111901S	Vial 77	1	Control	7	1.18077e5	8.348	5.00000
*	598510	111901D	Vial 78	1	Control	8	1.19159e5	8.334	5.00000
*	1811879001		Vial 79	1	Sample	9	1.01961e5	8.921	5.00000
*	598511	CCV@25	Vial 71	1	Control	10	1.51258e5	8.730	5.00000
*	598512	LODV@1.	Vial 72	1	Control	11	1.94012e5	8.772	5.00000

*** End of Report ***

Sequence: C:\HPCHEM\1\SEQUENCE\CLO4\2018\APR\30APR18D.S

Sequence Table:

Method and Injection Info Part:

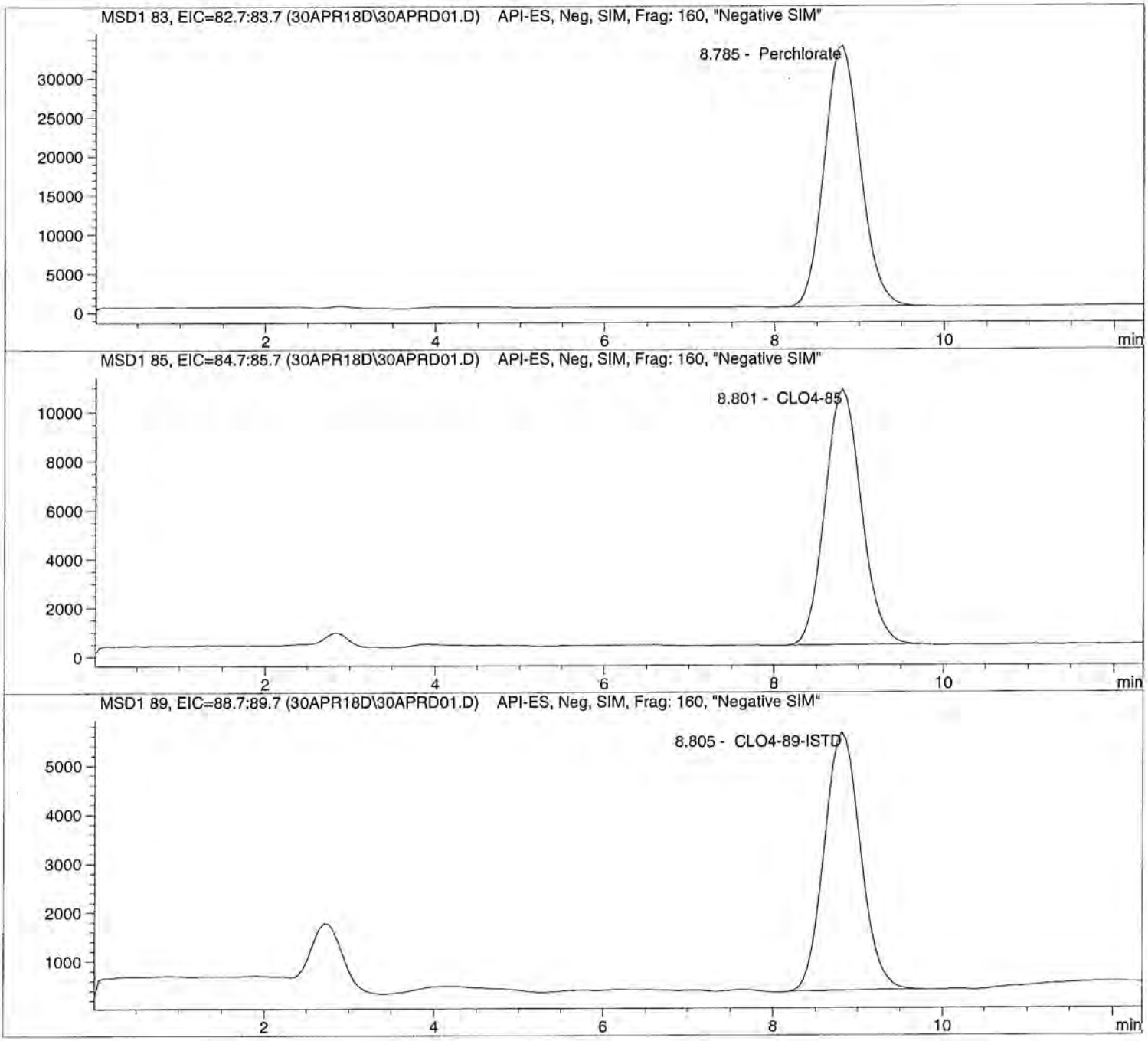
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	598503 CCV@25	CLO4-DOD	1	Ctrl Samp		
2	Vial 72	598505 LODV@1.	CLO4-DOD	1	Ctrl Samp		
3	Vial 73	598506 ICS@1.0	CLO4-DOD	1	Ctrl Samp		
4	Vial 74	598507 LMB	CLO4-DOD	1	Ctrl Samp		
5	Vial 75	598508 QC@5	CLO4-DOD	1	Ctrl Samp		
6	Vial 76	1811190001	CLO4-DOD	1	Sample		
7	Vial 77	598509 111901S	CLO4-DOD	1	Ctrl Samp		
8	Vial 78	598510 111901D	CLO4-DOD	1	Ctrl Samp		
9	Vial 79	1811879001	CLO4-DOD	1	Sample		
10	Vial 71	598511 CCV@25	CLO4-DOD	1	Ctrl Samp		
11	Vial 72	598512 LODV@1.	CLO4-DOD	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD01.D Sample Name: 598503 CCV@25

Injection Date:	4/30/2018 11:09:11	Seq Line:	1
Sample Name:	598503 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD01.D Sample Name: 598503 CCV@25

Injection Date:	4/30/2018 11:09:11	Seq Line:	1
Sample Name:	598503 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.785	PBA	991122.2	25.6194	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.801	PBA	312807.3	25.9732	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.805	PBA	157850.0	5.0000	CLO4-89-ISTD

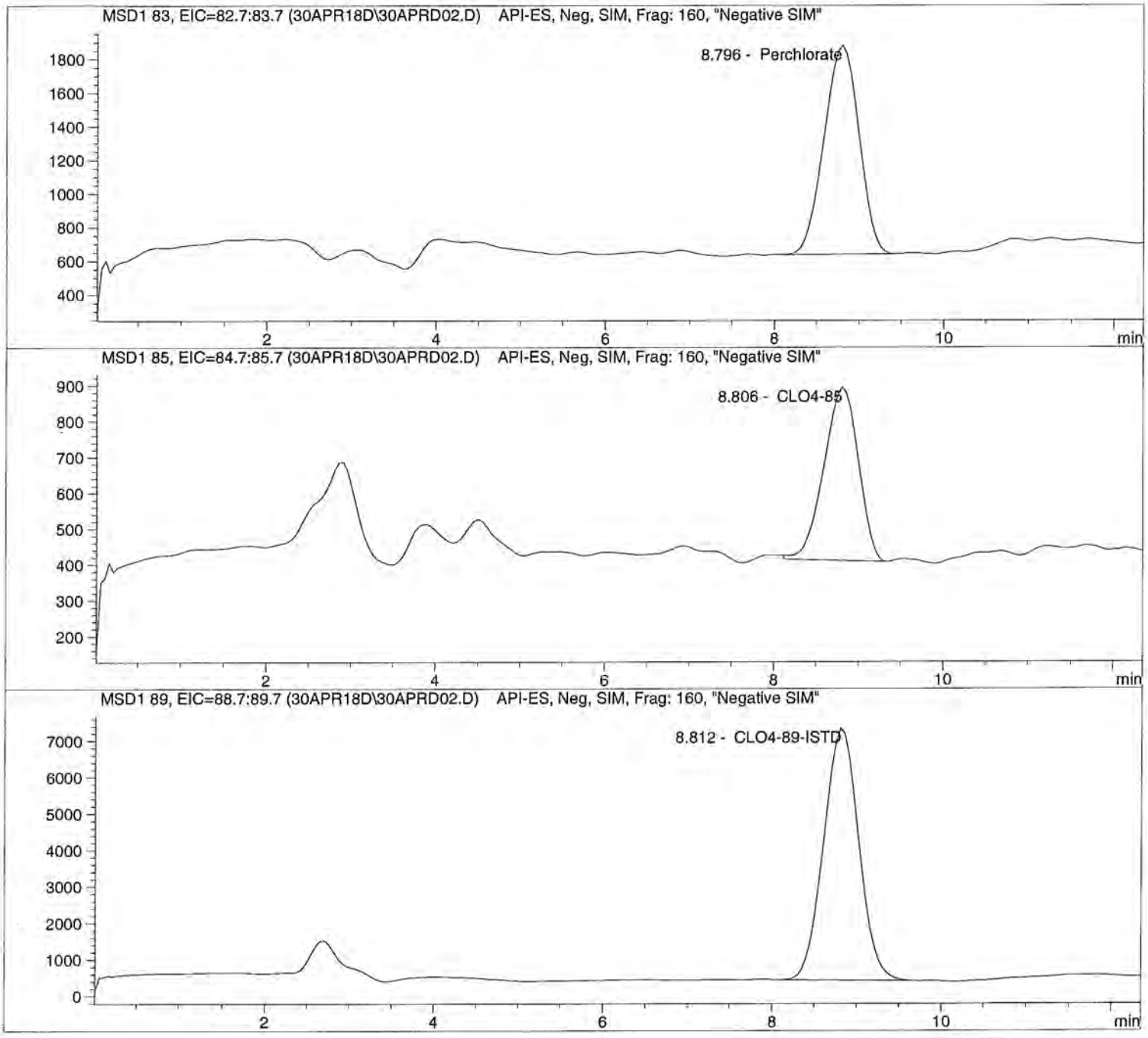
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD02.D Sample Name: 598505 LODV@1.

Injection Date:	4/30/2018 11:23:20	Seq Line:	2
Sample Name:	598505 LODV@1.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD02.D Sample Name: 598505 LODV@1.

Injection Date:	4/30/2018 11:23:20	Seq Line:	2
Sample Name:	598505 LODV@1.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.796	BBA	35665.0	0.7977	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.806	BBA	13697.1	0.8439	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.812	BBA	199662.2	5.0000	CLO4-89-ISTD

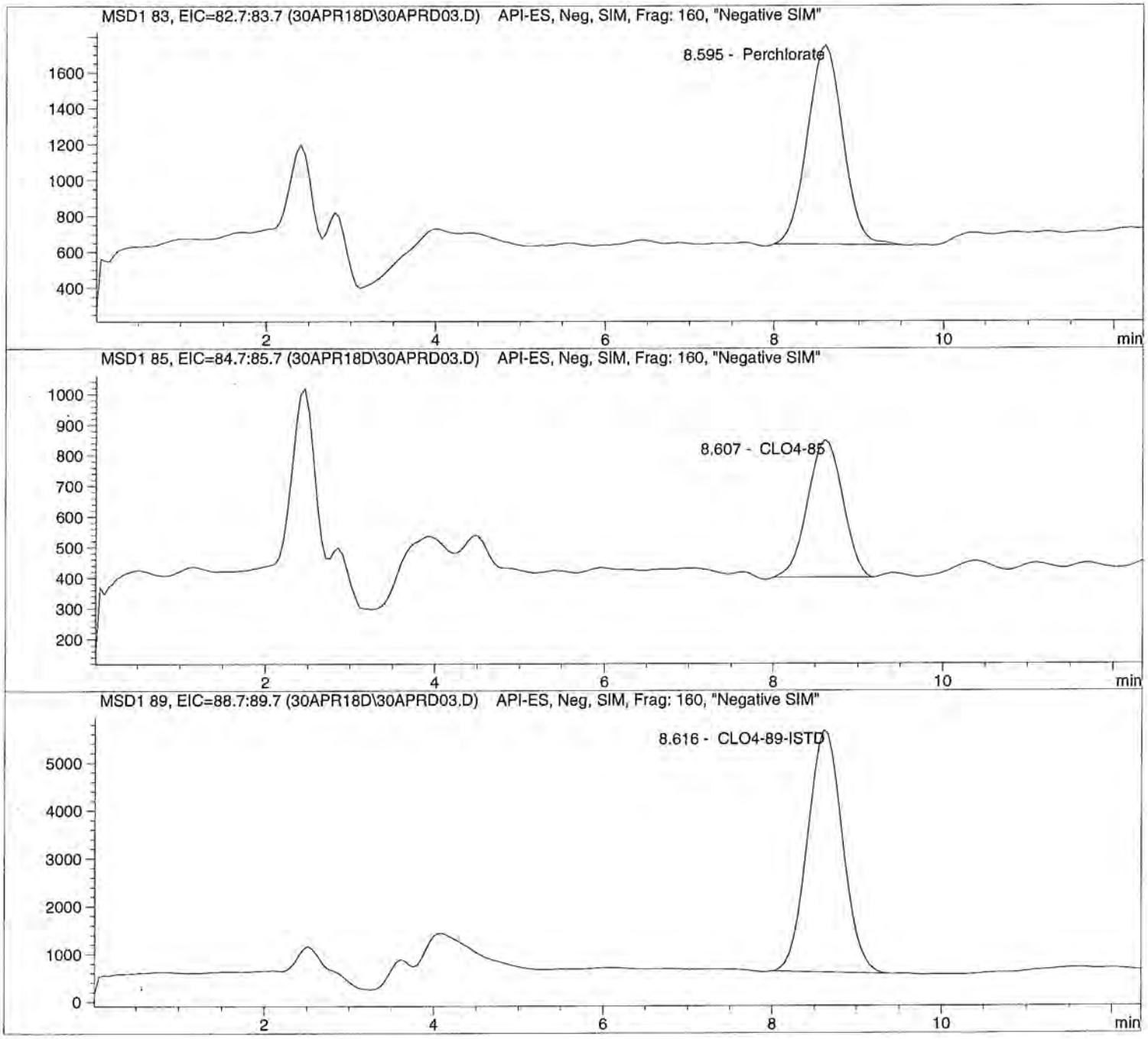
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD03.D Sample Name: 598506 ICS@1.0

Injection Date:	4/30/2018 11:37:34	Seq Line:	3
Sample Name:	598506 ICS@1.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD03.D Sample Name: 598506 ICS@1.0

Injection Date:	4/30/2018 11:37:34	Seq Line:	3
Sample Name:	598506 ICS@1.0	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.595	PBA	32174.7	0.9951	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.607	PBA	12870.6	1.1327	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.616	PBA	145793.3	5.0000	CLO4-89-ISTD

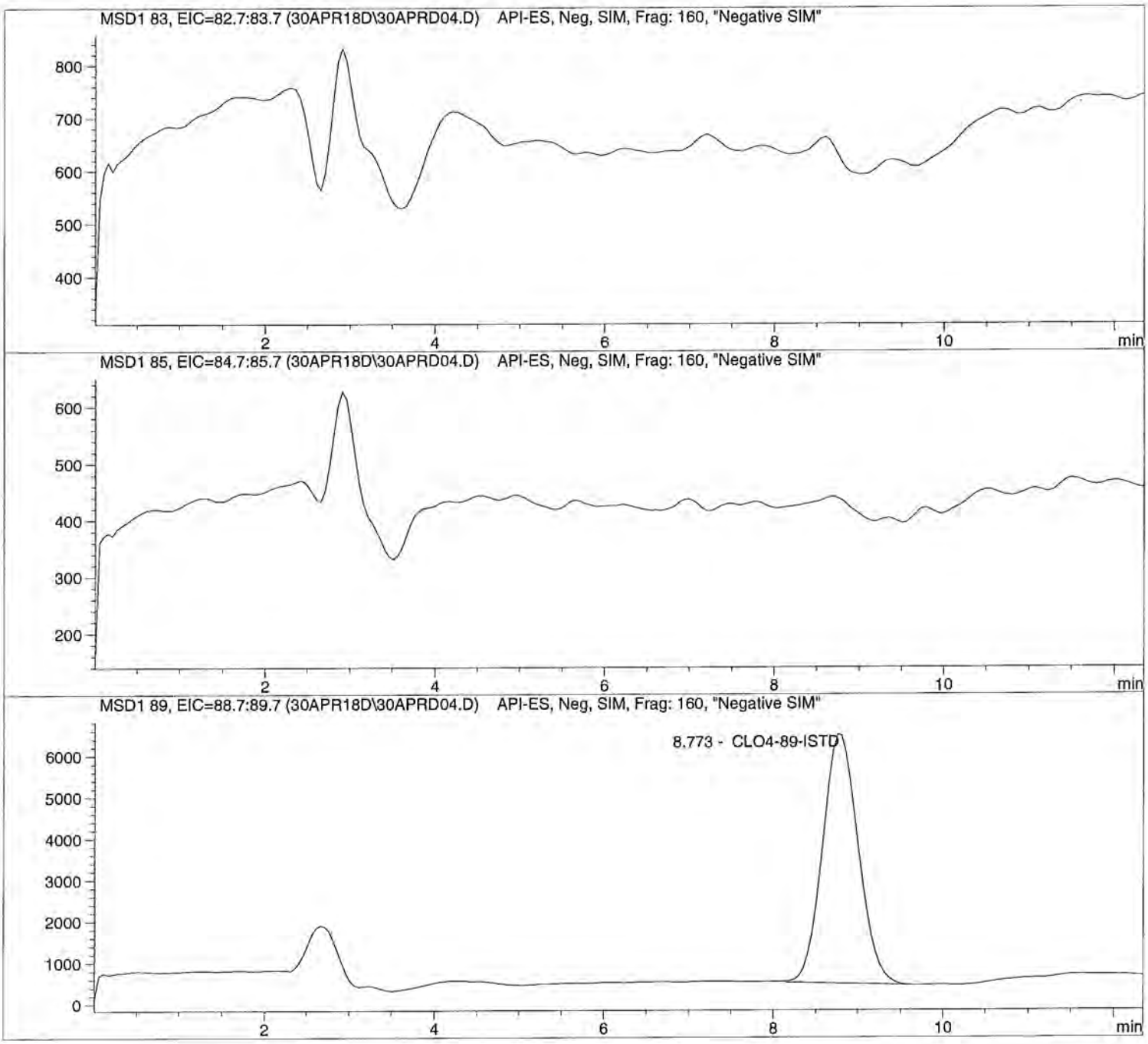
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD04.D Sample Name: 598507 LMB

Injection Date:	4/30/2018 11:51:46	Seq Line:	4
Sample Name:	598507 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD04.D Sample Name: 598507 LMB

Injection Date:	4/30/2018 11:51:46	Seq Line:	4
Sample Name:	598507 LMB	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.773	BBA	176098.3	5.0000	CLO4-89-ISTD

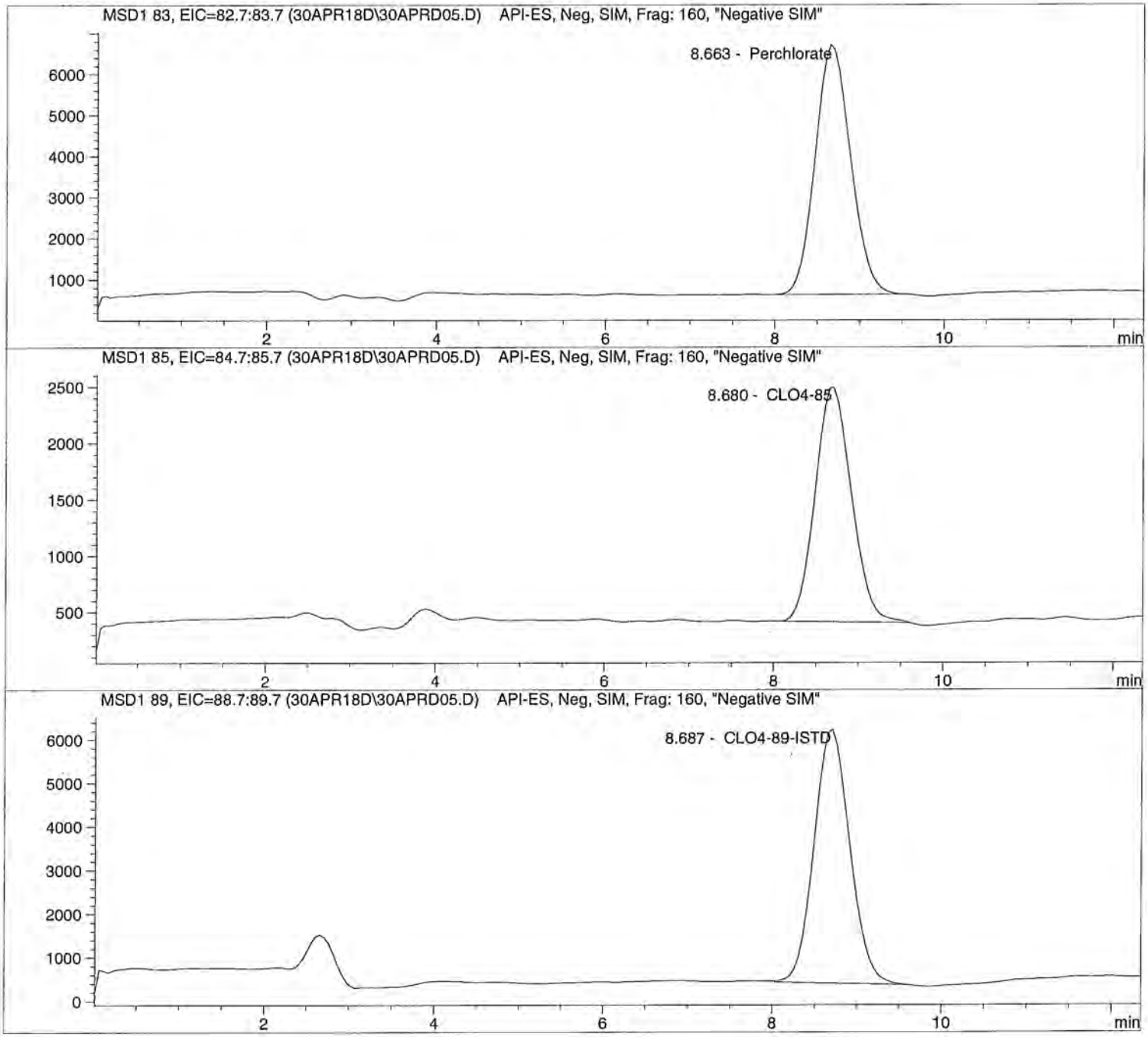
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD05.D Sample Name: 598508 QC@5

Injection Date:	4/30/2018 12:05:56	Seq Line:	5
Sample Name:	598508 QC@5	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD05.D Sample Name: 598508 QC@5

Injection Date:	4/30/2018 12:05:56	Seq Line:	5
Sample Name:	598508 QC@5	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.663	PBA	176999.3	4.7102	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.680	BBA	62248.1	5.0831	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.687	BBA	171553.4	5.0000	CLO4-89-ISTD

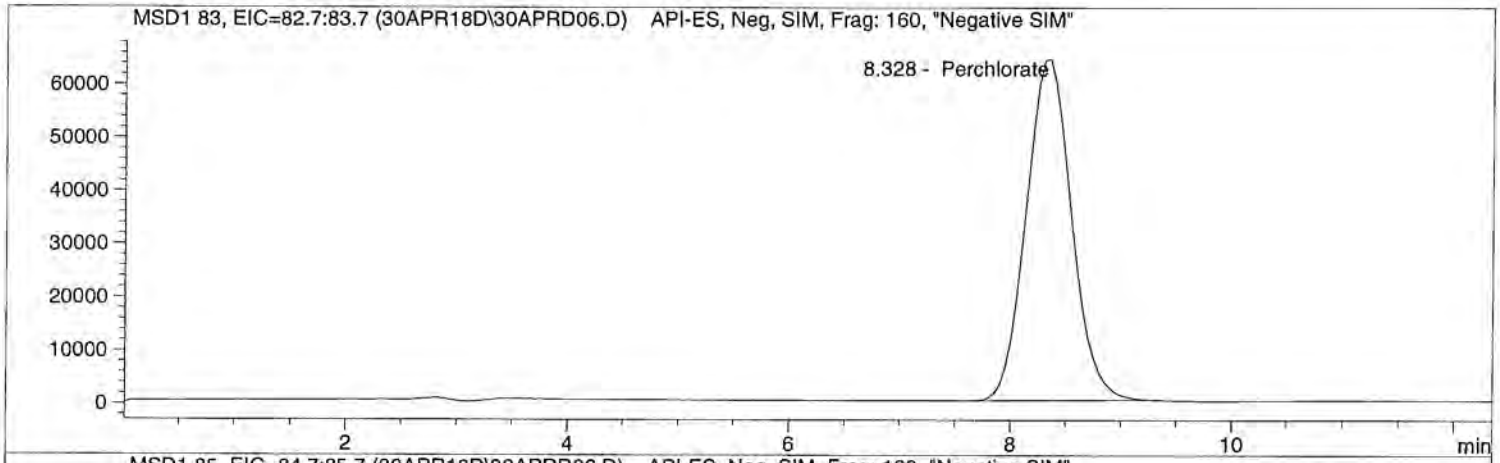
*** End of Report ***

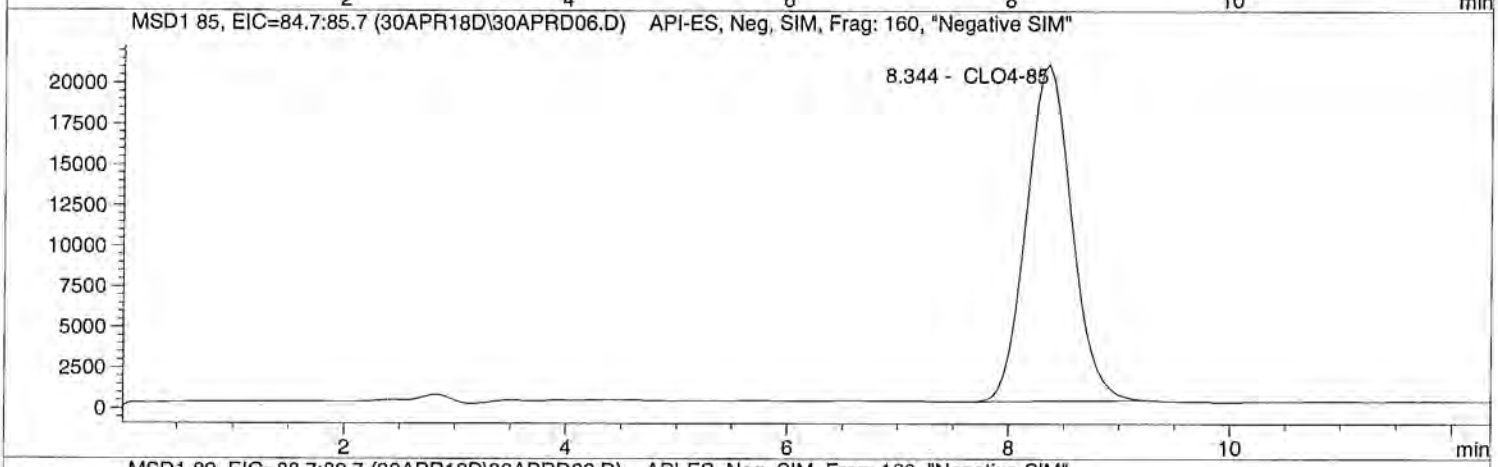
Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD06.D Sample Name: 1811190001

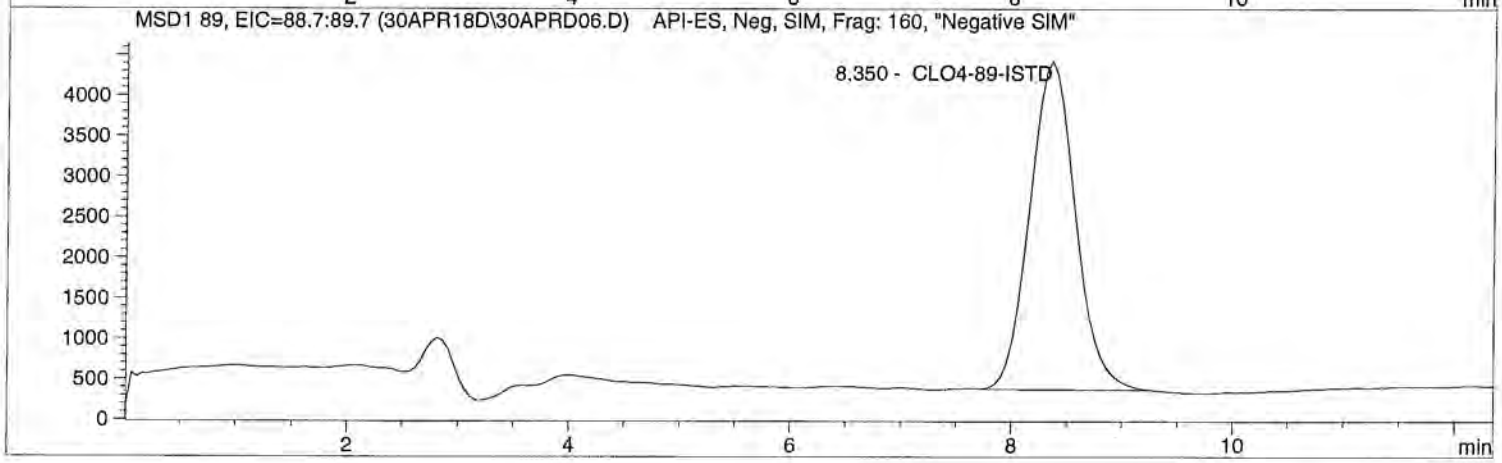
Injection Date:	4/30/2018 12:20:05	Seq Line:	6
Sample Name:	1811190001	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD06.D Sample Name: 1811190001

Injection Date:	4/30/2018 12:20:05	Seq Line:	6
Sample Name:	1811190001	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.328	PBA	1827501.9	55.1766	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.344	PBA	588659.9	58.3810	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.350	BBA	116598.9	5.0000	CLO4-89-ISTD

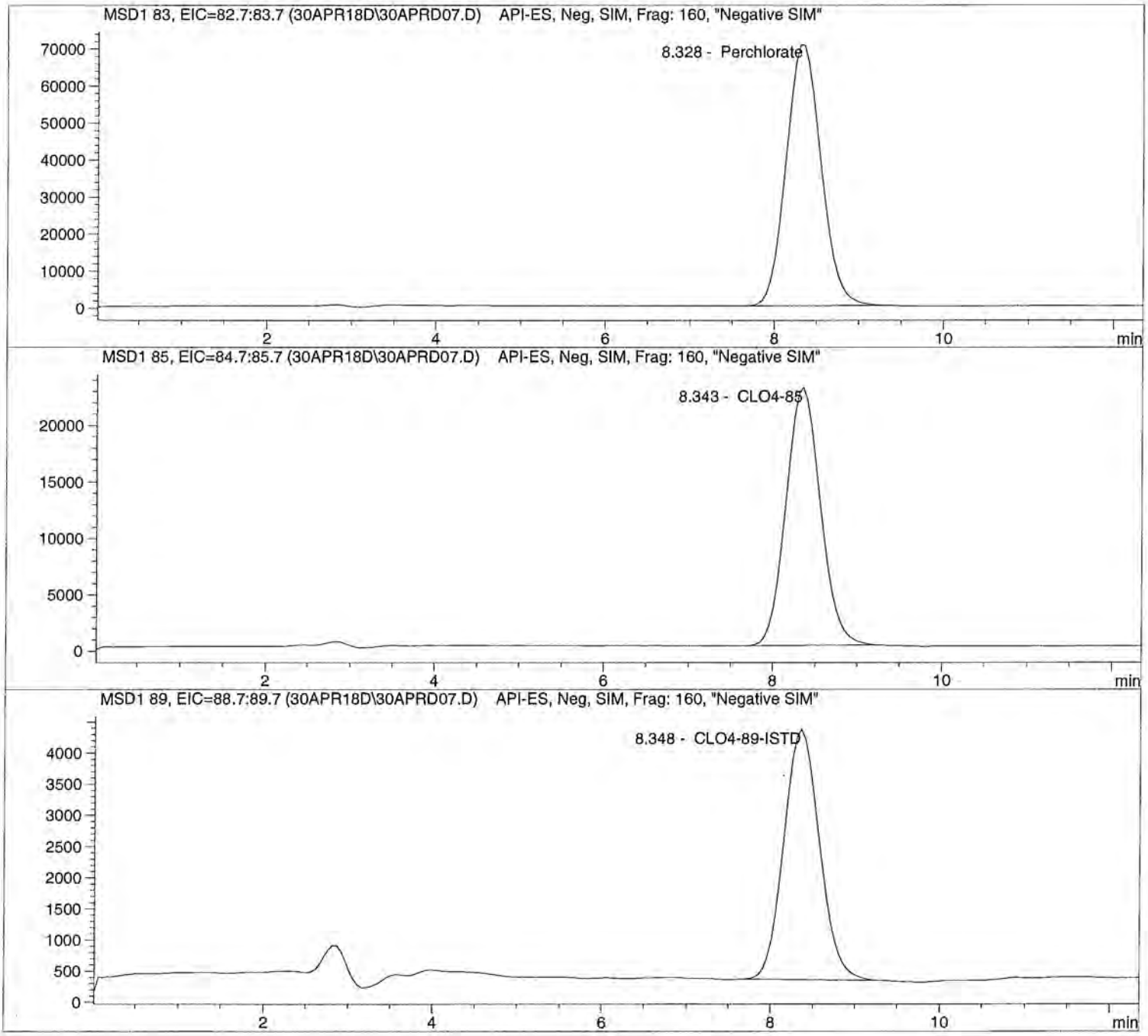
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD07.D Sample Name: 598509 111901S

Injection Date:	4/30/2018 12:34:18	Seq Line:	7
Sample Name:	598509 111901S	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD07.D Sample Name: 598509 111901S

Injection Date:	4/30/2018 12:34:18	Seq Line:	7
Sample Name:	598509 111901S	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.328	PBA	2020846.6	59.1548	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.343	PBA	649290.5	62.6123	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.348	BBA	118076.8	5.0000	CLO4-89-ISTD

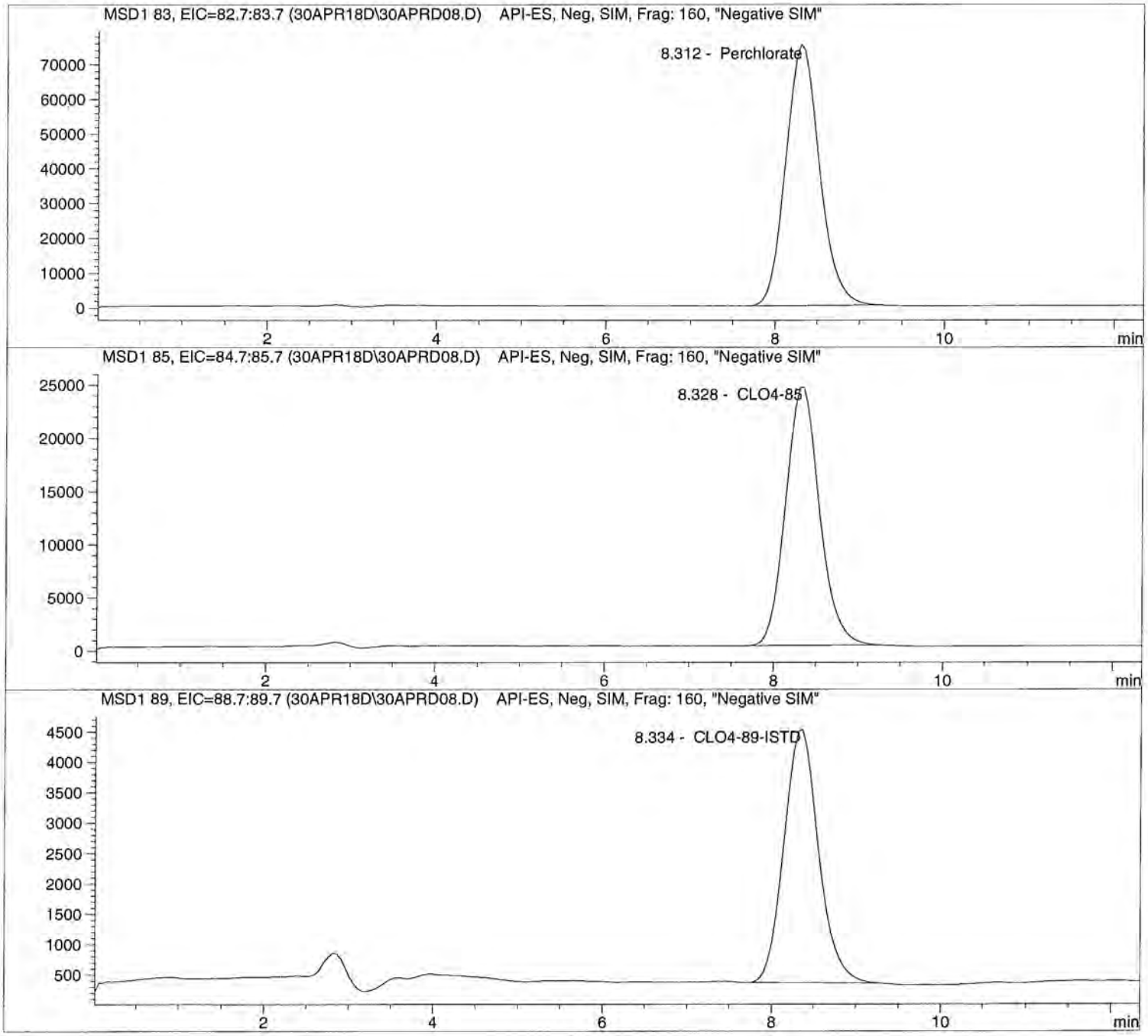
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD08.D Sample Name: 598510 111901D

Injection Date:	4/30/2018 12:48:28	Seq Line:	8
Sample Name:	598510 111901D	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD08.D Sample Name: 598510 111901D

Injection Date:	4/30/2018 12:48:28	Seq Line:	8
Sample Name:	598510 111901D	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.312	PBA	2092194.6	60.3558	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.328	PBA	682368.7	64.7116	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.334	PBA	119158.6	5.0000	CLO4-89-ISTD

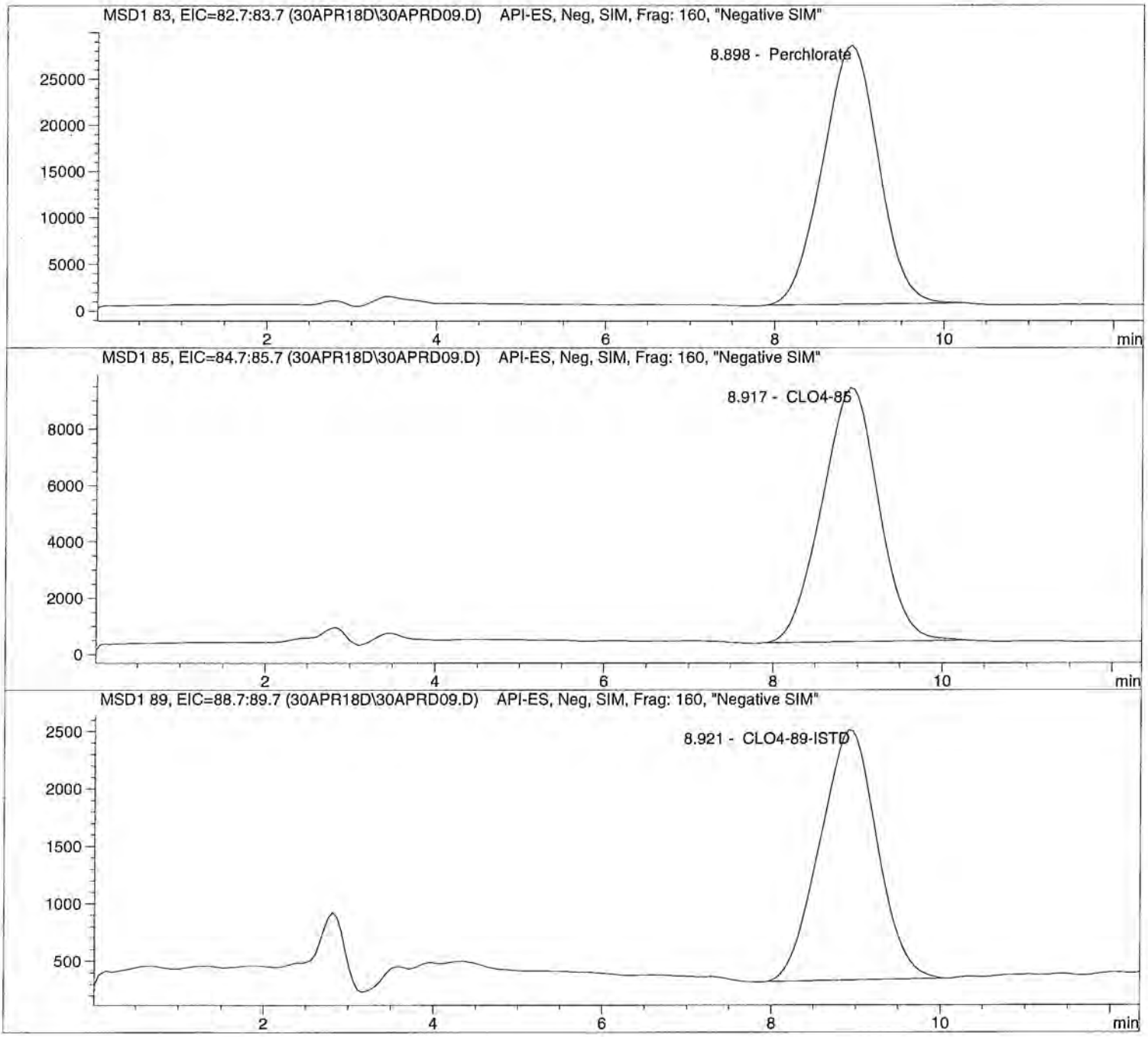
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD09.D Sample Name: 1811879001

Injection Date:	4/30/2018 13:02:38	Seq Line:	9
Sample Name:	1811879001	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD09.D Sample Name: 1811879001

Injection Date:	4/30/2018 13:02:38	Seq Line:	9
Sample Name:	1811879001	Location:	Vial 79
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.898	PBA	1270788.0	45.8636	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.917	PBA	417726.1	49.0562	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.921	PBA	101961.2	5.0000	CLO4-89-ISTD

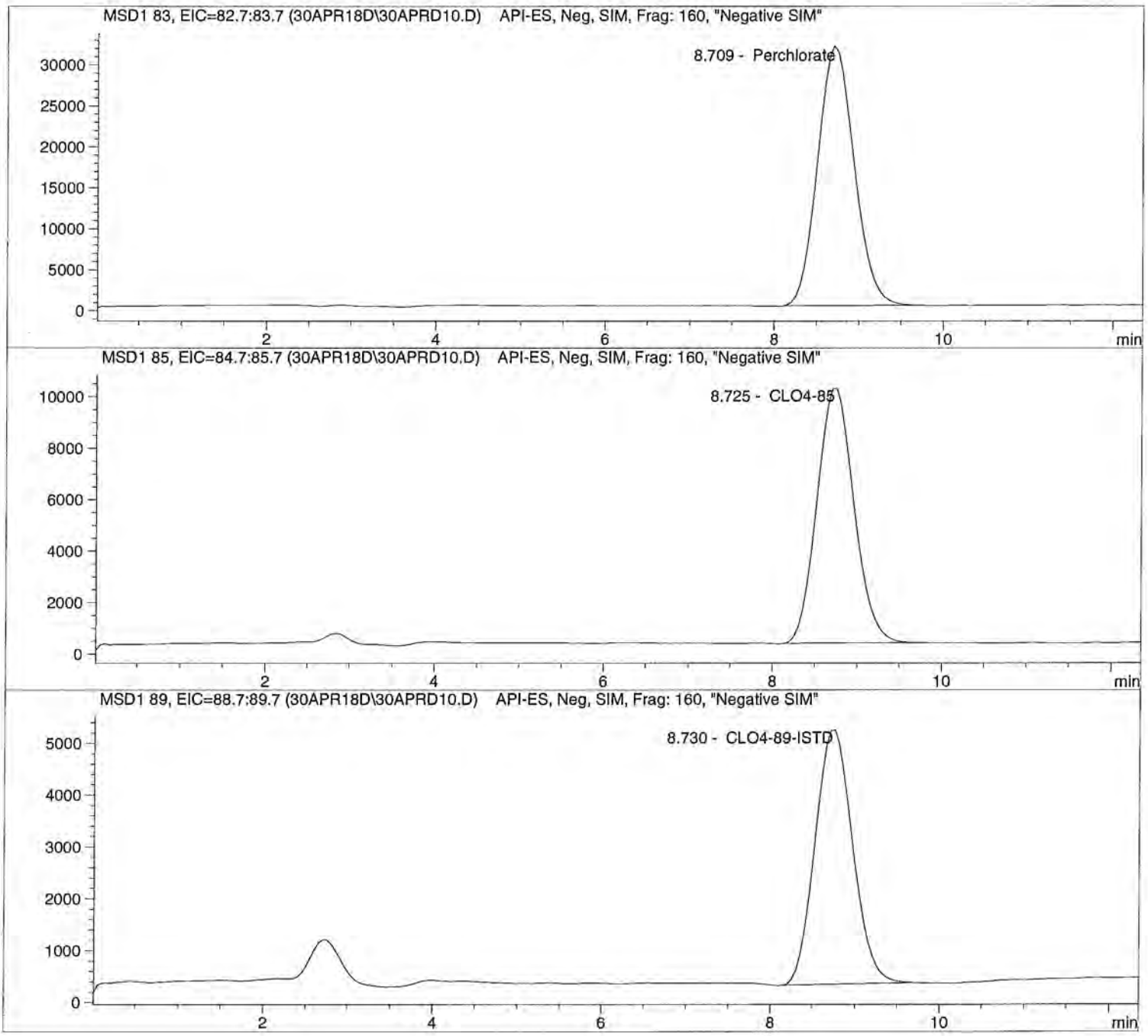
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD10.D Sample Name: 598511 CCV@25

Injection Date:	4/30/2018 13:16:49	Seq Line:	10
Sample Name:	598511 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD10.D Sample Name: 598511 CCV@25

Injection Date:	4/30/2018 13:16:49	Seq Line:	10
Sample Name:	598511 CCV@25	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.709	PBA	947694.8	25.5711	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.725	PBA	300733.2	26.0508	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.730	PBA	151257.9	5.0000	CLO4-89-ISTD

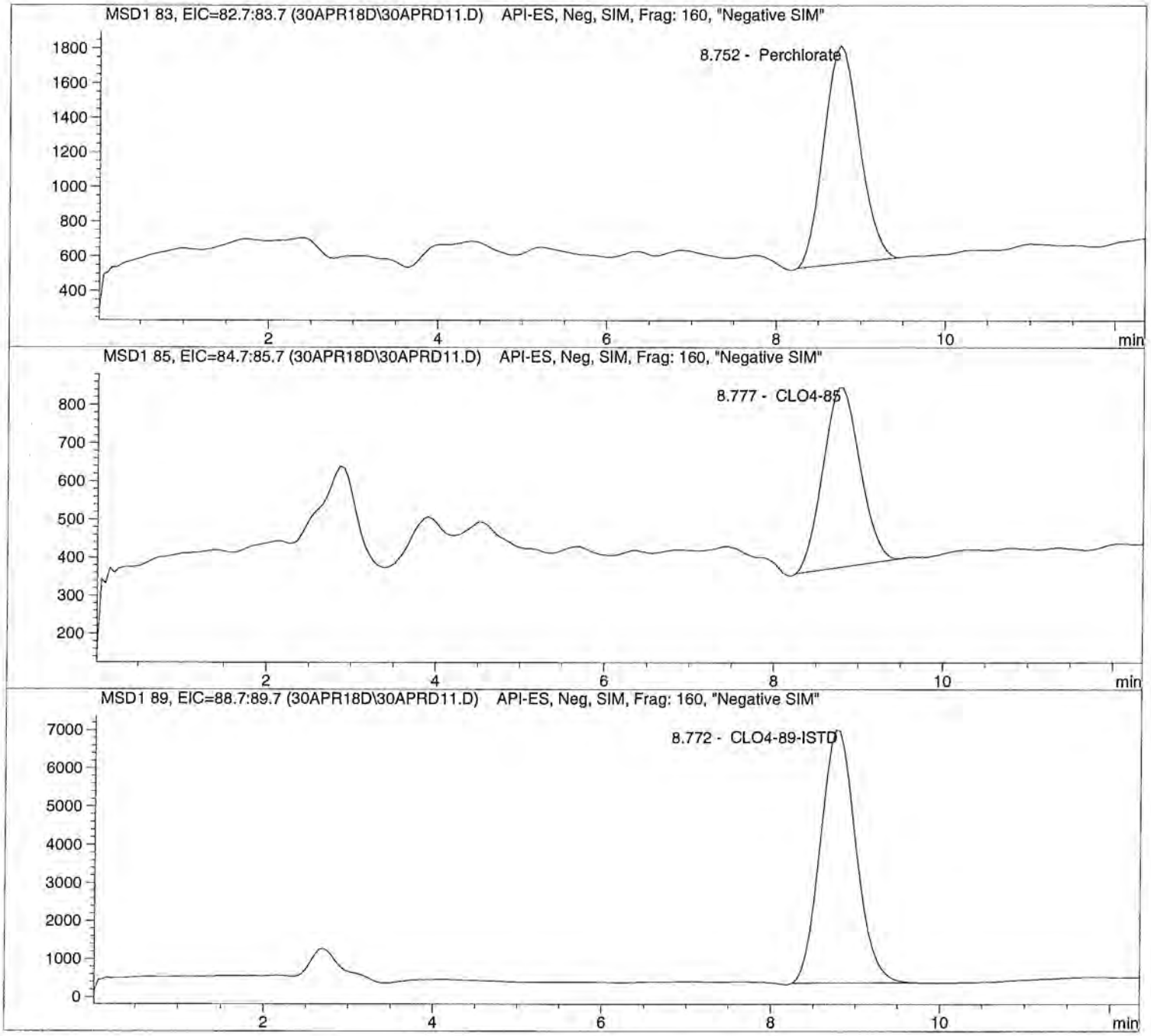
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD11.D Sample Name: 598512 LODV@1.

Injection Date:	4/30/2018 13:30:57	Seq Line:	11
Sample Name:	598512 LODV@1.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\30APR18D\30APRD11.D Sample Name: 598512 LODV@1.

Injection Date:	4/30/2018 13:30:57	Seq Line:	11
Sample Name:	598512 LODV@1.	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.752	PBA	36963.2	0.8536	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.777	PBA	14366.1	0.9239	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.772	PBA	194012.2	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

00902580

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DPR.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorate RT	Perchlorate Amount
*	ICAL1@ 1.0ug/L	Vial 71	1	Control	1	4.75217e4	8.805	1.04383
*	ICAL2@ 2.0ug/L	Vial 72	1	Control	2	7.57673e4	8.842	1.88584
*	ICAL3@ 5.0ug/L	Vial 73	1	Control	3	1.87507e5	8.869	5.06681
*	ICAL4@ 10.ug/L	Vial 74	1	Control	4	4.00349e5	8.838	9.89695
*	ICAL5@ 25.ug/L	Vial 75	1	Control	5	1.13339e6	8.844	25.44483
*	ICAL6@ 50.ug/L	Vial 76	1	Control	6	2.22347e6	8.787	49.47140
*	ICAL7@ 75.ug/L	Vial 77	1	Control	7	3.56432e6	8.816	75.20096
*	ICAL Verf@10ug/L	Vial 78	1	Control	8	3.99588e5	8.826	10.16984

#*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	ICAL1@ 1.0ug/L	Vial 71	1	Control	1	1.48071e4	8.787	8.93940e-1
*	ICAL2@ 2.0ug/L	Vial 72	1	Control	2	2.78914e4	8.863	2.05665
*	ICAL3@ 5.0ug/L	Vial 73	1	Control	3	6.40466e4	8.880	5.32040
*	ICAL4@ 10.ug/L	Vial 74	1	Control	4	1.32002e5	8.855	10.20400
*	ICAL5@ 25.ug/L	Vial 75	1	Control	5	3.49808e5	8.856	25.27336
*	ICAL6@ 50.ug/L	Vial 76	1	Control	6	6.58628e5	8.801	48.60374
*	ICAL7@ 75.ug/L	Vial 77	1	Control	7	1.06294e6	8.833	75.70015
*	ICAL Verf@10ug/L	Vial 78	1	Control	8	1.27530e5	8.845	10.16575

#*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-ISTD RT	CLO4-89-ISTD Amount
*	ICAL1@ 1.0ug/L	Vial 71	1	Control	1	2.05633e5	8.818	5.00000
*	ICAL2@ 2.0ug/L	Vial 72	1	Control	2	1.83981e5	8.862	5.00000
*	ICAL3@ 5.0ug/L	Vial 73	1	Control	3	1.68695e5	8.888	5.00000
*	ICAL4@ 10.ug/L	Vial 74	1	Control	4	1.79911e5	8.861	5.00000
*	ICAL5@ 25.ug/L	Vial 75	1	Control	5	1.81917e5	8.865	5.00000
*	ICAL6@ 50.ug/L	Vial 76	1	Control	6	1.62538e5	8.808	5.00000
*	ICAL7@ 75.ug/L	Vial 77	1	Control	7	1.52621e5	8.841	5.00000
*	ICAL Verf@10ug/L	Vial 78	1	Control	8	1.74490e5	8.846	5.00000

*** End of Report ***

Calibration Table

Perchlorate

Calib. Data Modified : 4/2/2018 11:32:41 AM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
8.740	1	1	1.00000	4.75217e4	2.10430e-5		1	Perchlorate
		2	2.00000	7.57673e4	2.63966e-5			
		3	5.00000	1.87507e5	2.66656e-5			
		4	10.00000	4.00349e5	2.49782e-5			
		5	25.00000	1.13339e6	2.20577e-5			
		6	50.00000	2.22347e6	2.24874e-5			
		7	75.00000	3.56432e6	2.10419e-5			
8.787	2	1	1.00000	1.48071e4	6.75351e-5		1	CLO4-85
		2	2.00000	2.78914e4	7.17068e-5			
		3	5.00000	6.40466e4	7.80681e-5			
		4	10.00000	1.32002e5	7.57564e-5			
		5	25.00000	3.49808e5	7.14678e-5			
		6	50.00000	6.58628e5	7.59154e-5			
		7	75.00000	1.06294e6	7.05587e-5			
8.818	3	1	5.00000	2.05633e5	2.43151e-5	+I1		CLO4-89-ISTD
		2	5.00000	1.83981e5	2.71766e-5			
		3	5.00000	1.68695e5	2.96393e-5			
		4	5.00000	1.79911e5	2.77915e-5			
		5	5.00000	1.81917e5	2.74851e-5			
		6	5.00000	1.62538e5	3.07621e-5			

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		7	5.00000	1.52621e5	3.27608e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 6.650 min To 10.650 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 1 : 1
  - Level 2 : 0.5
  - Level 3 : 0.2
  - Level 4 : 0.1
  - Level 5 : 0.04
  - Level 6 : 0.02
  - Level 7 : 0.013333

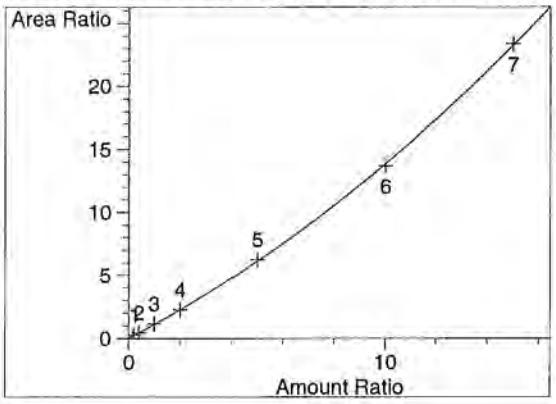
Compound: CLO4-85
- Time Window : From 6.682 min To 10.682 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 1 : 1
  - Level 2 : 0.5
  - Level 3 : 0.2
  - Level 4 : 0.1
  - Level 5 : 0.04
  - Level 6 : 0.02
  - Level 7 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 6.711 min To 10.711 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 1 : 1
  - Level 2 : 1
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1

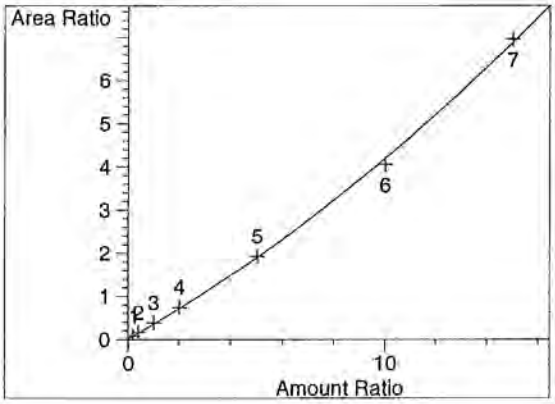
Peak Sum Table

No Entries in table

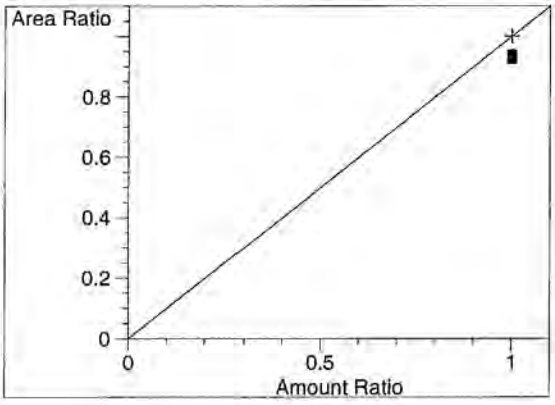
Calibration Curves



Perchlorate at exp. RT: 8.740
MSD1 83, EIC=82.7:83.7
Correlation: 0.99992
Residual Std. Dev.: 0.10616
Formula: $y = ax^2 + bx + c$
a: 3.31374e-2
b: 1.05374
c: 9.66975e-3
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.5
Level 3 : 0.2
Level 4 : 0.1
Level 5 : 0.04
Level 6 : 0.02
Level 7 : 0.013333



CLO4-85 at exp. RT: 8.787
MSD1 85, EIC=84.7:85.7
Correlation: 0.99968
Residual Std. Dev.: 0.07365
Formula: $y = ax^2 + bx + c$
a: 8.04074e-3
b: 3.37521e-1
c: 1.14057e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.5
Level 3 : 0.2
Level 4 : 0.1
Level 5 : 0.04
Level 6 : 0.02
Level 7 : 0.013333



CLO4-89-ISTD at exp. RT: 8.818
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 1
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1

Sequence Table:

Method and Injection Info Part:

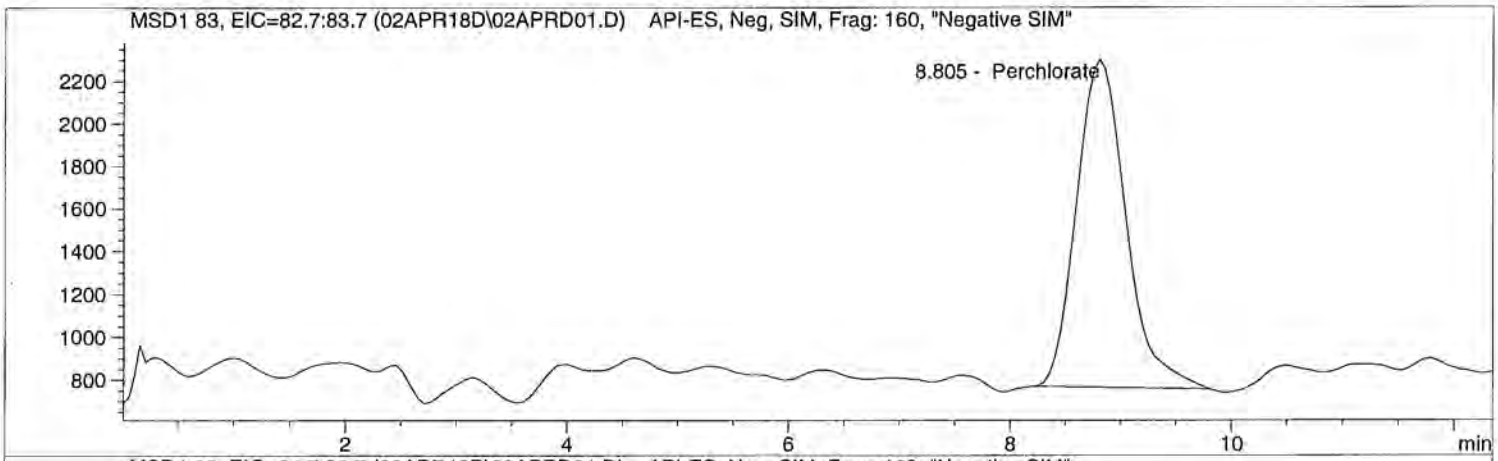
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	ICAL1@ 1.0ug/L	CLO4-DOD	1	Ctrl Samp		
2	Vial 72	ICAL2@ 2.0ug/L	CLO4-DOD	1	Ctrl Samp		
3	Vial 73	ICAL3@ 5.0ug/L	CLO4-DOD	1	Ctrl Samp		
4	Vial 74	ICAL4@ 10.ug/L	CLO4-DOD	1	Ctrl Samp		
5	Vial 75	ICAL5@ 25.ug/L	CLO4-DOD	1	Ctrl Samp		
6	Vial 76	ICAL6@ 50.ug/L	CLO4-DOD	1	Ctrl Samp		
7	Vial 77	ICAL7@ 75.ug/L	CLO4-DOD	1	Ctrl Samp		
8	Vial 78	ICAL Verf@10ug/L	CLO4-DOD	1	Ctrl Samp		

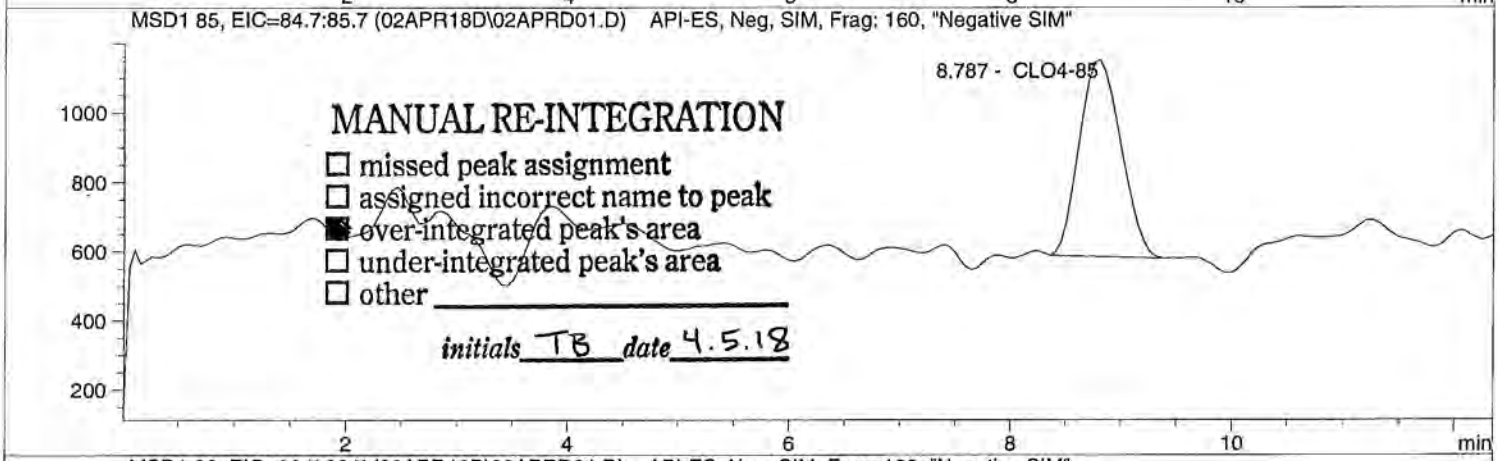
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD01.D Sample Name: ICAL1@ 1.0ug/L

Injection Date:	4/02/2018 09:08:19	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

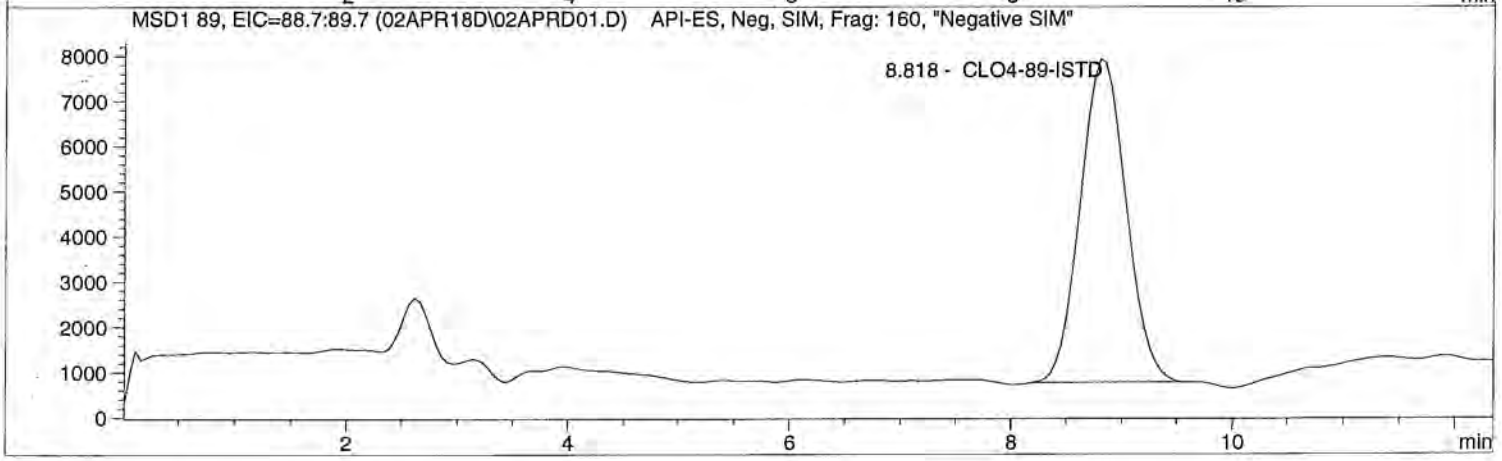




MANUAL RE-INTEGRATION

- ☐ missed peak assignment
- ☐ assigned incorrect name to peak
- ☒ over-integrated peak's area
- ☐ under-integrated peak's area
- ☐ other _____

initials TB *date* 4.5.18



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD01.D Sample Name: ICAL1@ 1.0ug/L

Injection Date:	4/02/2018 09:08:19	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.805	PBA	47521.7	1.0438	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.787	MM	14807.1	0.8939	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.818	PBA	205633.2	5.0000	CLO4-89-ISTD

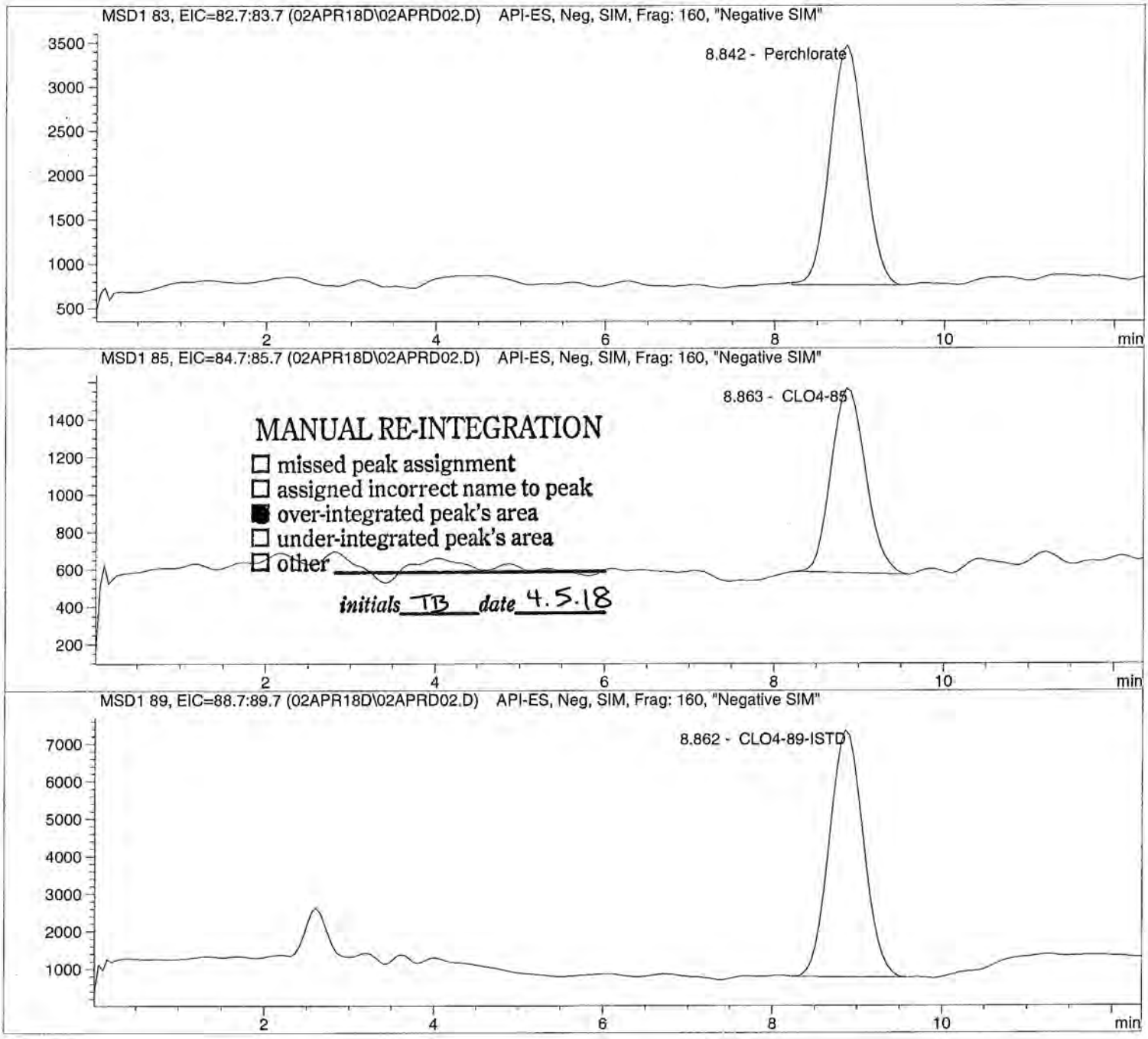
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.842	BBA	75767.3	1.8858	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.863	MM	27891.4	2.0567	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.862	BBA	183981.5	5.0000	CLO4-89-ISTD

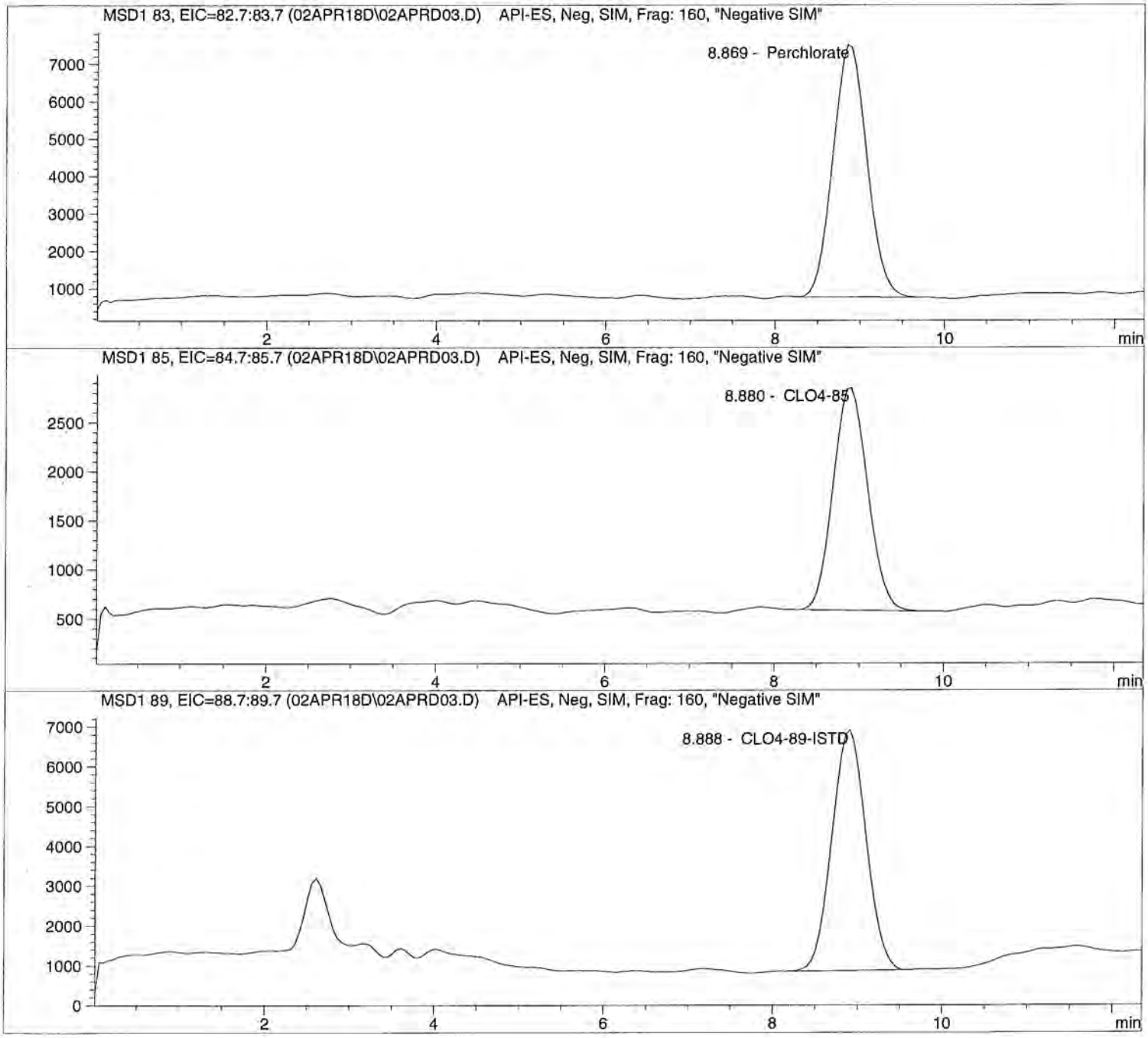
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD03.D Sample Name: ICAL3@ 5.0ug/L

Injection Date:	4/02/2018 09:36:38	Seq Line:	3
Sample Name:	ICAL3@ 5.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD03.D Sample Name: ICAL3@ 5.0ug/L

Injection Date:	4/02/2018 09:36:38	Seq Line:	3
Sample Name:	ICAL3@ 5.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.869	BBA	187507.2	5.0668	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.880	PBA	64046.6	5.3204	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.888	BBA	168695.0	5.0000	CLO4-89-ISTD

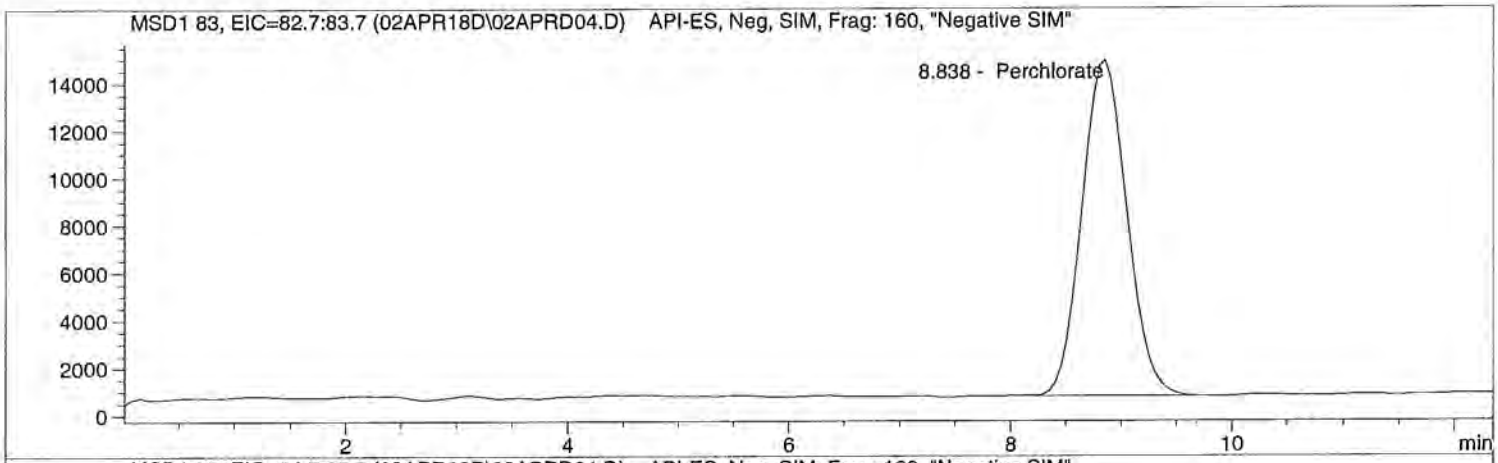
*** End of Report ***

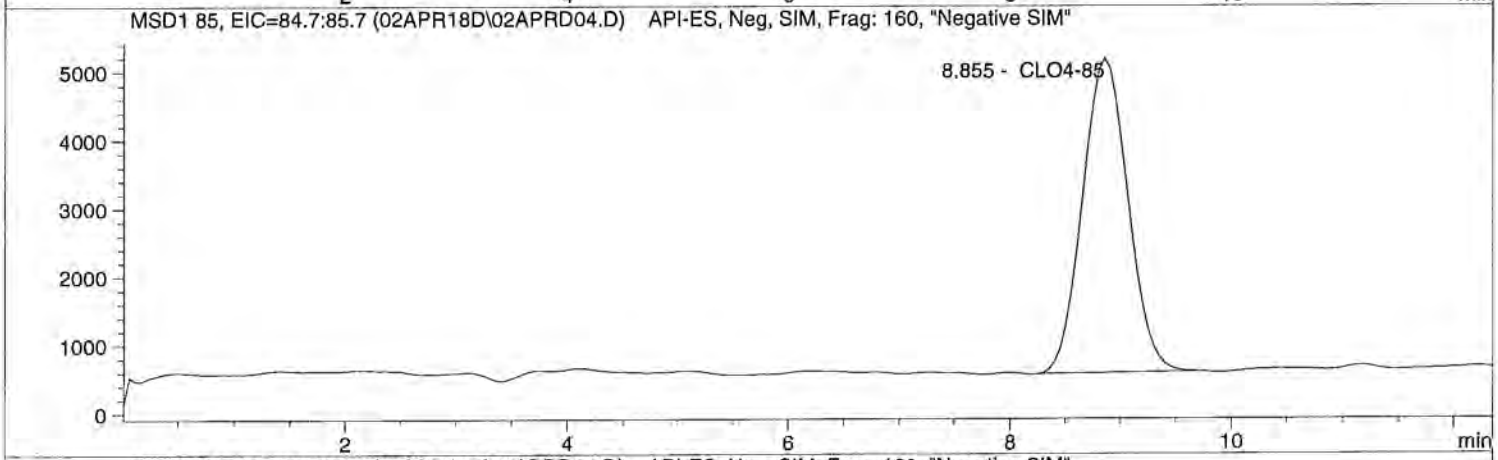
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD04.D Sample Name: ICAL4@ 10.ug/L

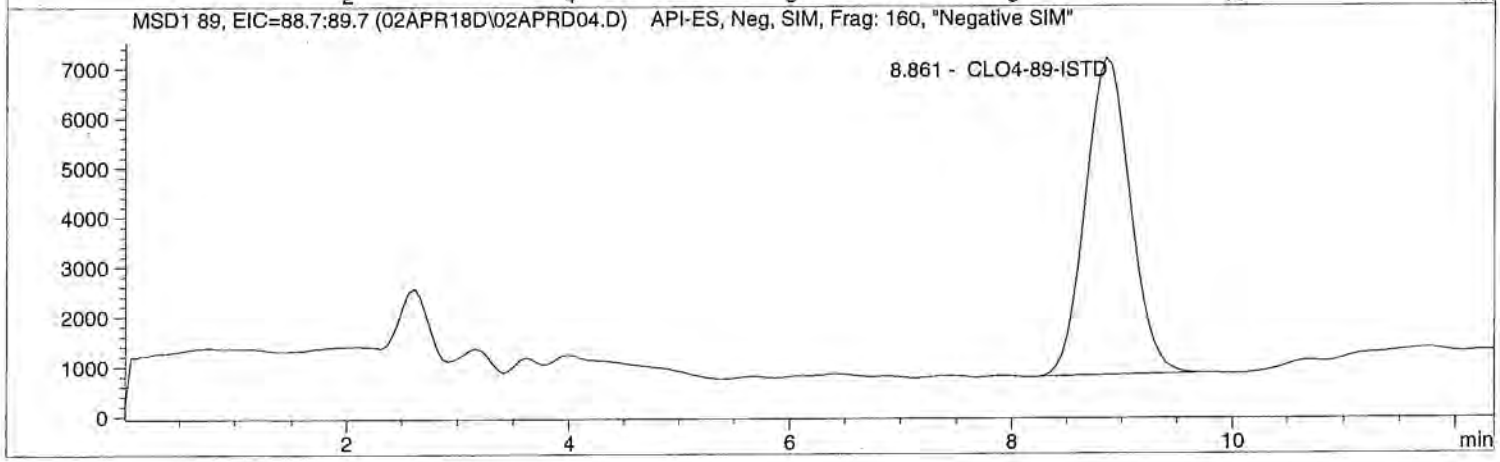
Injection Date:	4/02/2018 09:50:54	Seq Line:	4
Sample Name:	ICAL4@ 10.ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD04.D Sample Name: ICAL4@ 10.ug/L

Injection Date:	4/02/2018 09:50:54	Seq Line:	4
Sample Name:	ICAL4@ 10.ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.838	BBA	400349.0	9.8969	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.855	PBA	132002.1	10.2040	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.861	PBA	179911.2	5.0000	CLO4-89-ISTD

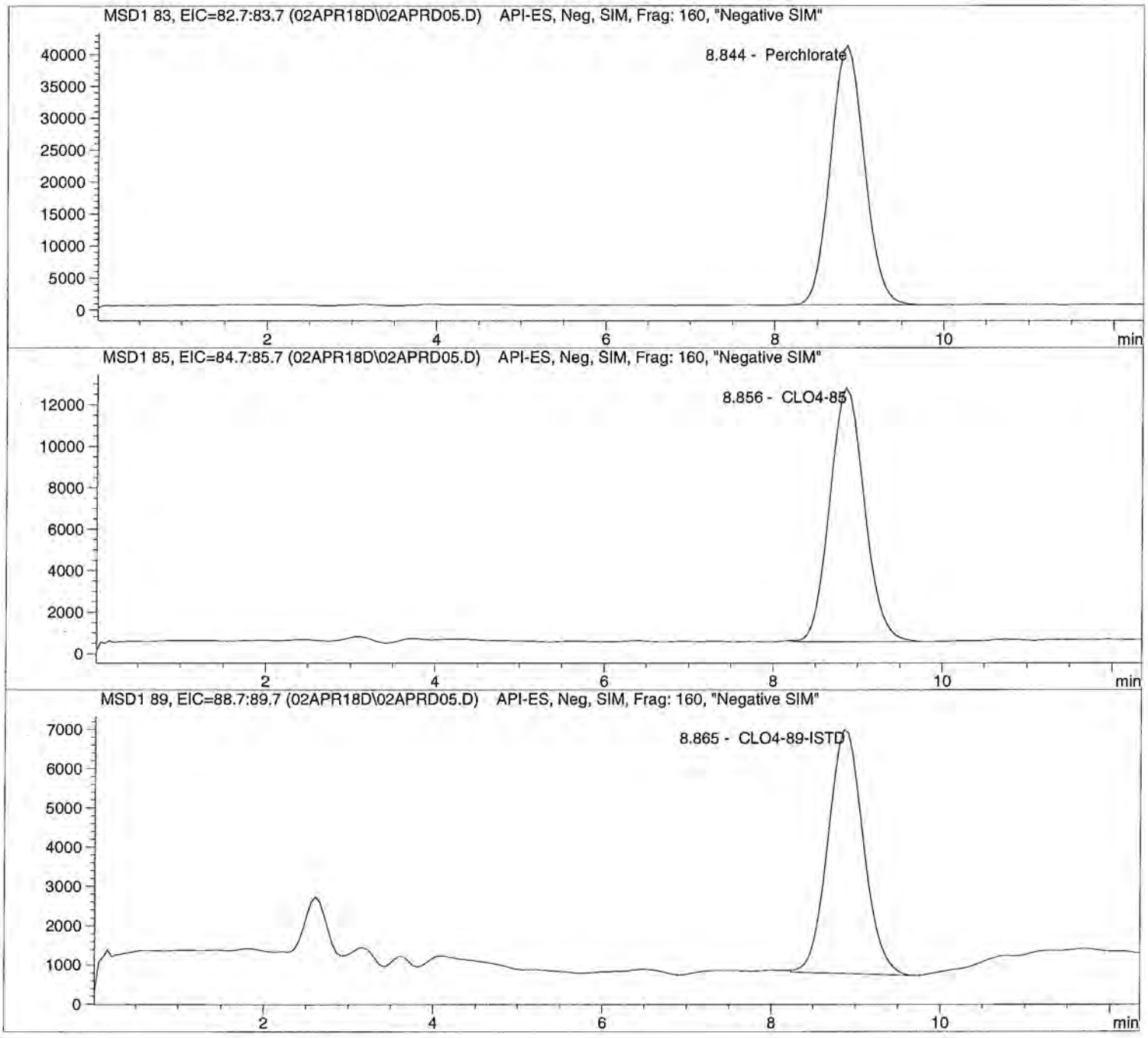
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD05.D Sample Name: ICAL5@ 25.ug/L

Injection Date:	4/02/2018 10:05:03	Seq Line:	5
Sample Name:	ICAL5@ 25.ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD05.D Sample Name: ICAL5@ 25.ug/L

Injection Date:	4/02/2018 10:05:03	Seq Line:	5
Sample Name:	ICAL5@ 25.ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.844	BBA	1133393.5	25.4448	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.856	BBA	349808.1	25.2734	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.865	BBA	181916.8	5.0000	CLO4-89-ISTD

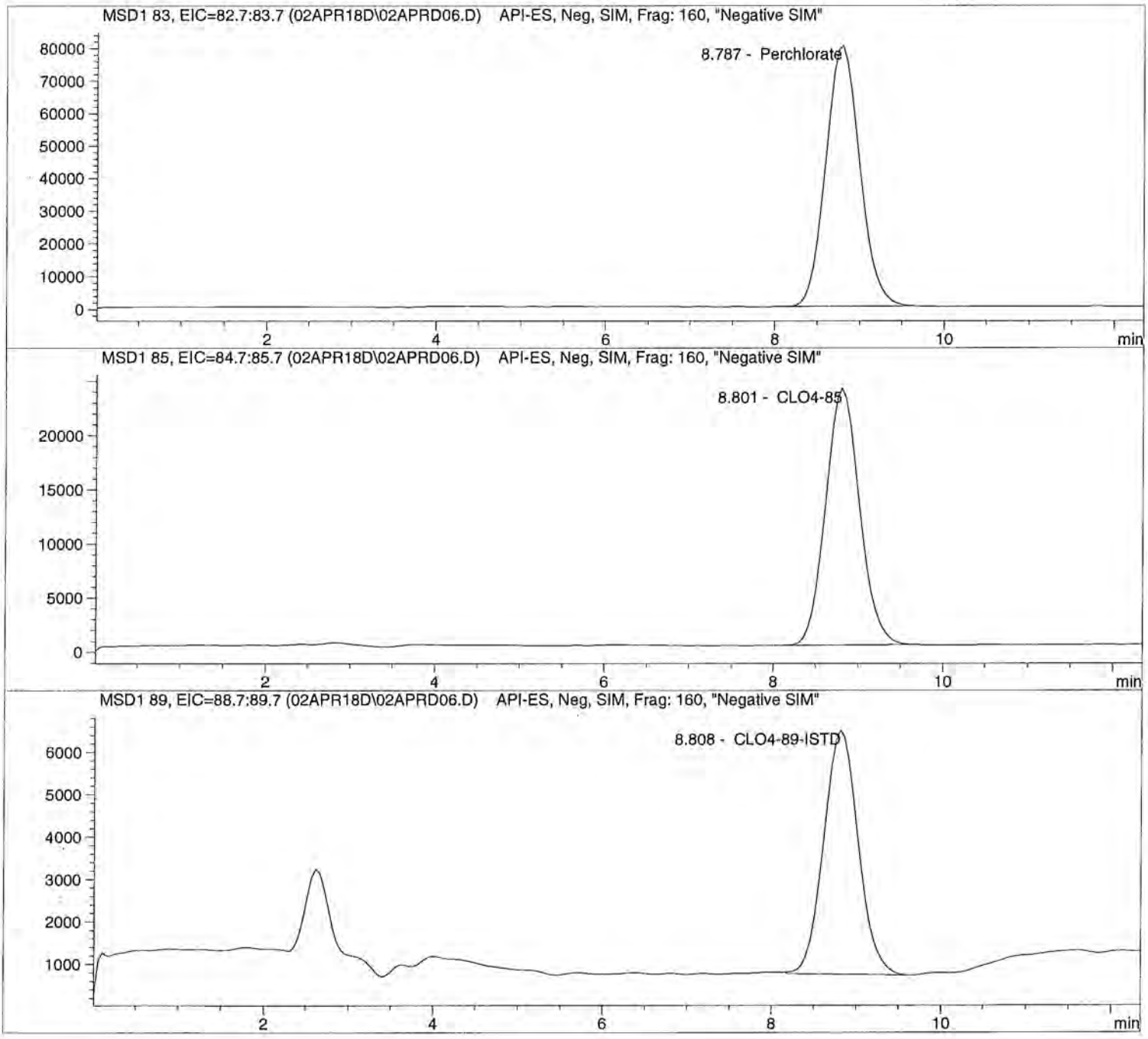
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD06.D Sample Name: ICAL6@ 50.ug/L

Injection Date:	4/02/2018 10:19:12	Seq Line:	6
Sample Name:	ICAL6@ 50.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD06.D Sample Name: ICAL6@ 50.ug/L

Injection Date:	4/02/2018 10:19:12	Seq Line:	6
Sample Name:	ICAL6@ 50.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.787	BBA	2223467.0	49.4714	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.801	BBA	658628.2	48.6037	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.808	BBA	162537.8	5.0000	CLO4-89-ISTD

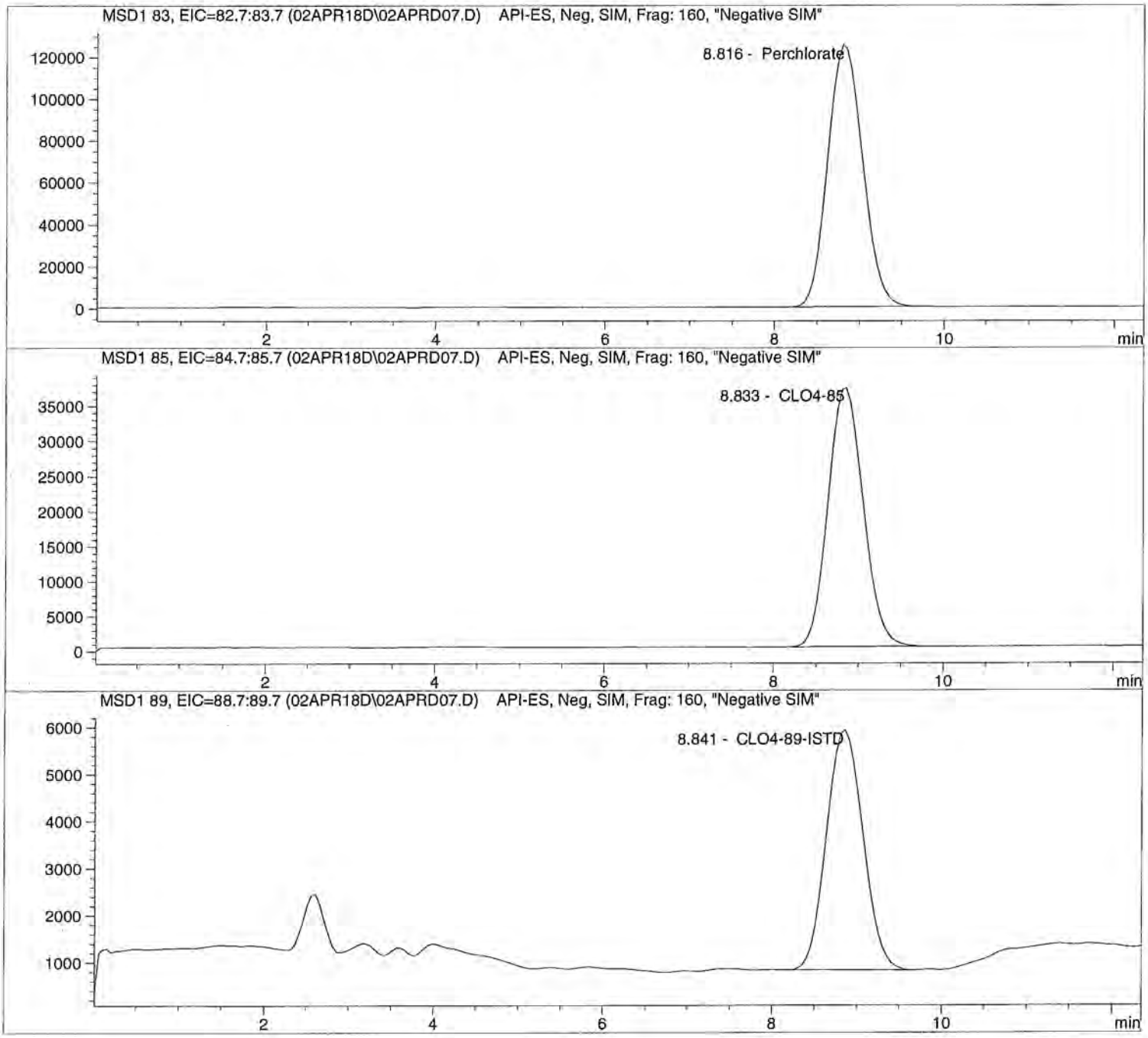
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD07.D Sample Name: ICAL7@ 75.ug/L

Injection Date:	4/02/2018 10:33:24	Seq Line:	7
Sample Name:	ICAL7@ 75.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD07.D Sample Name: ICAL7@ 75.ug/L

Injection Date:	4/02/2018 10:33:24	Seq Line:	7
Sample Name:	ICAL7@ 75.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.816	PBA	3564322.2	75.2010	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.833	BBA	1062944.2	75.7001	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.841	PBA	152621.4	5.0000	CLO4-89-ISTD

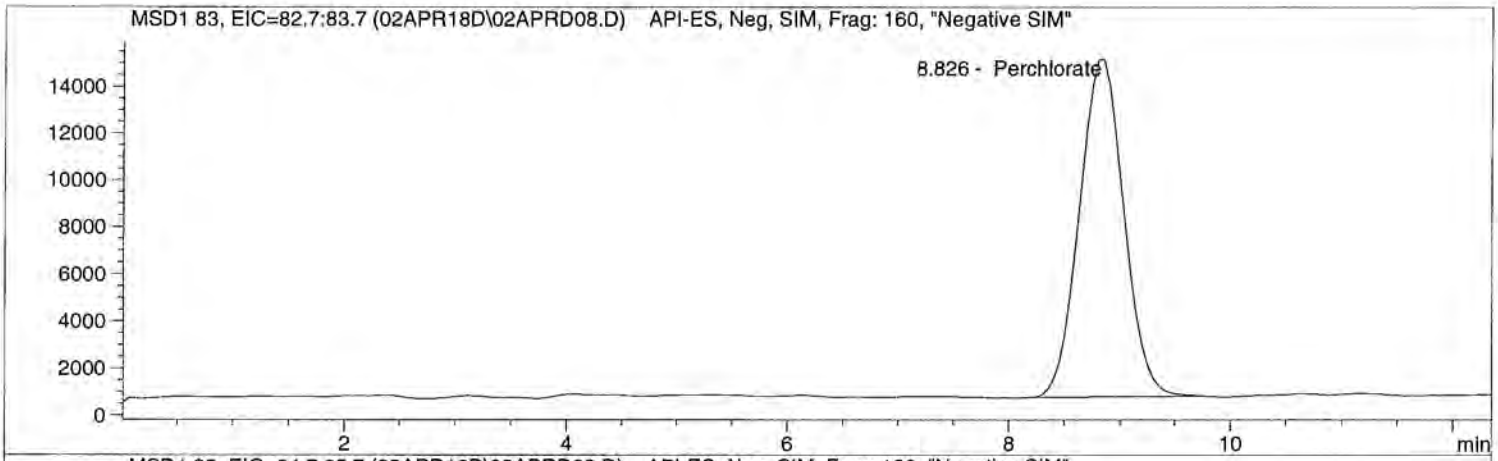
*** End of Report ***

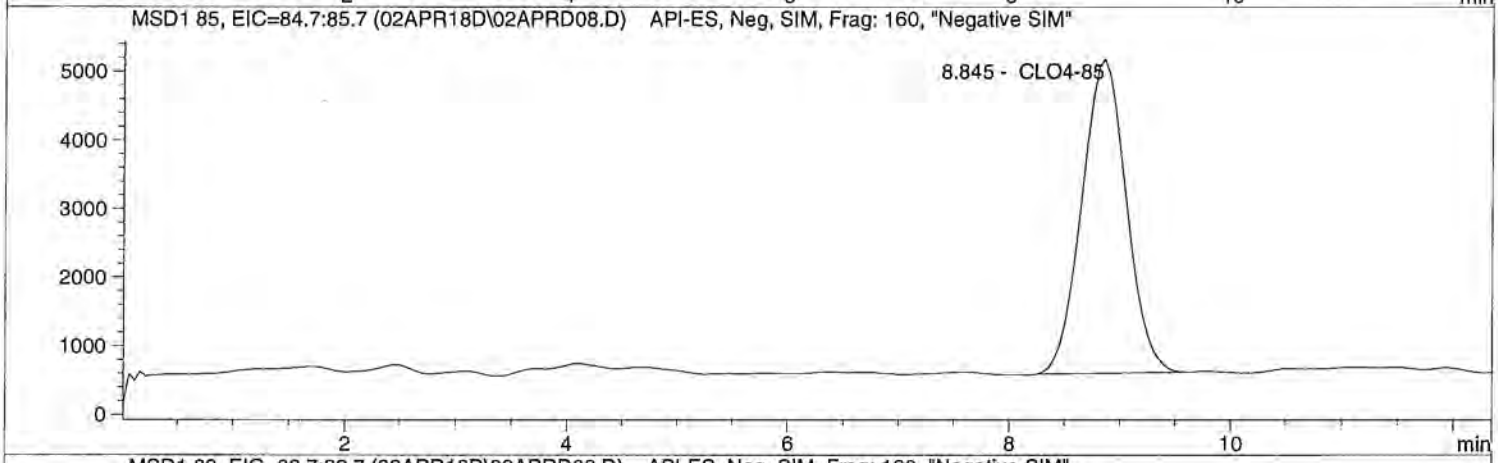
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD08.D Sample Name: ICAL Verf@10ug/L

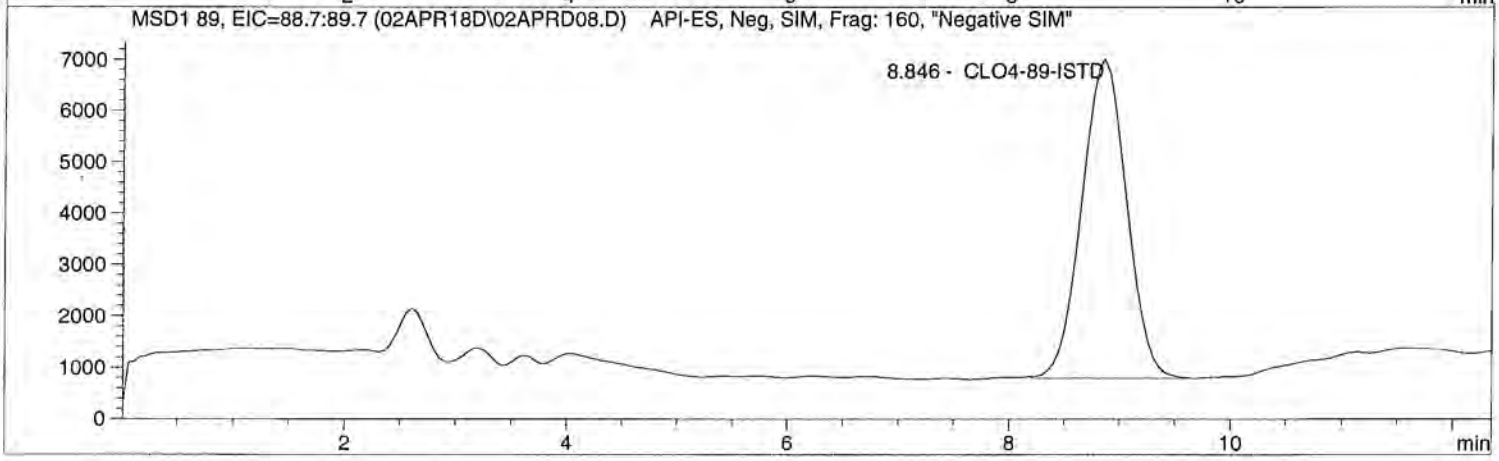
Injection Date:	4/02/2018 10:47:33	Seq Line:	8
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD08.D Sample Name: ICAL Verf@10ug/L

Injection Date:	4/02/2018 10:47:33	Seq Line:	8
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.826	BBA	399587.8	10.1698	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.845	PBA	127530.4	10.1657	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.846	BBA	174490.2	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

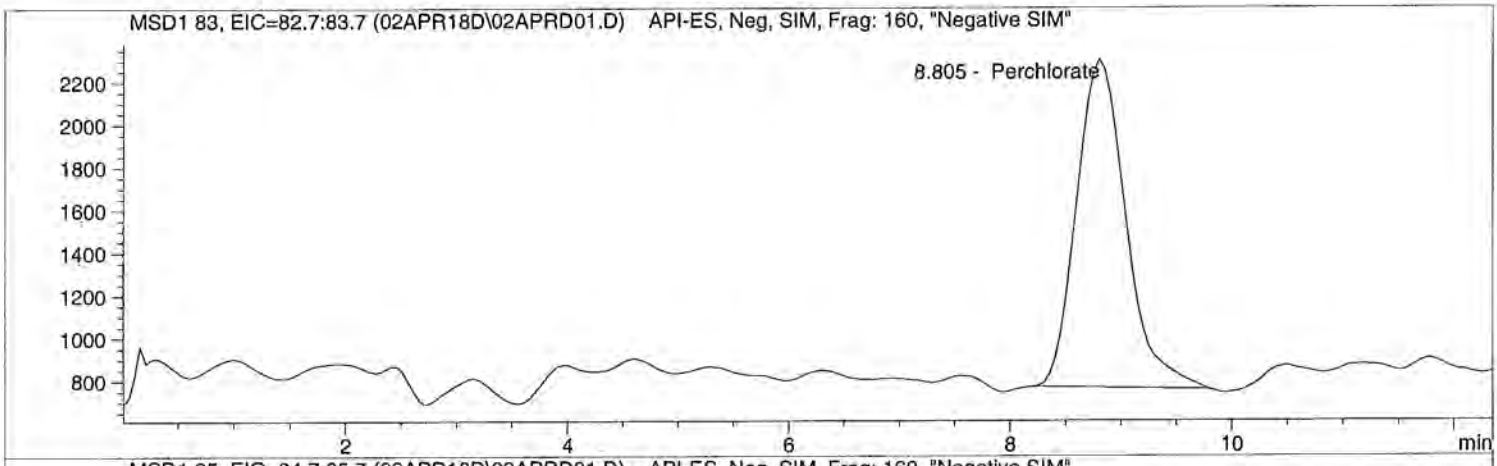
Unmodified

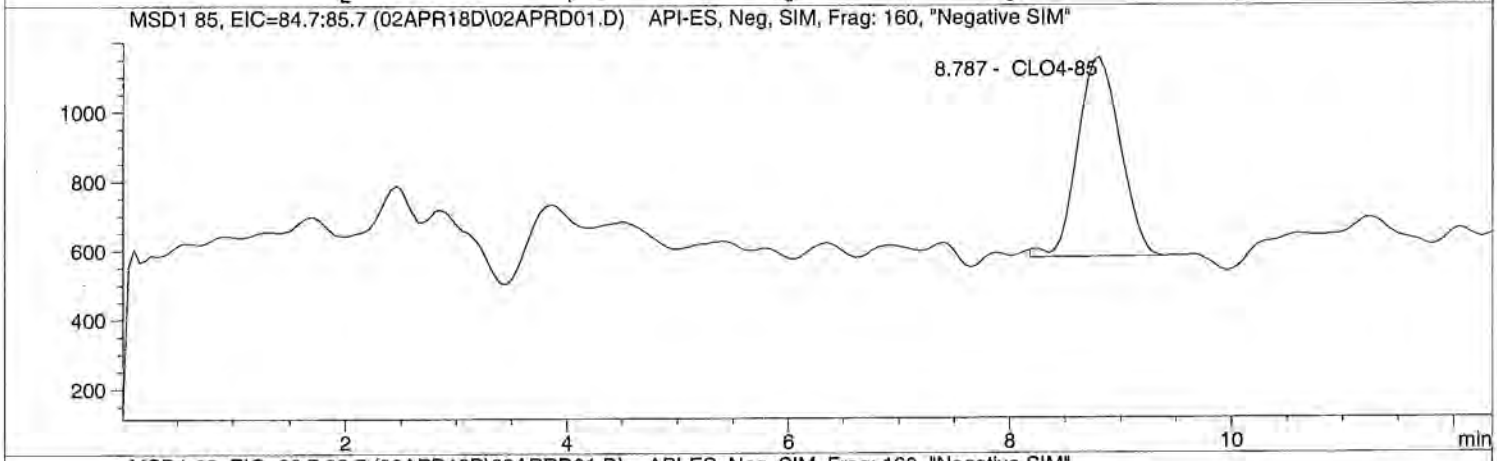
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD01.D Sample Name: ICAL1@ 1.0ug/L

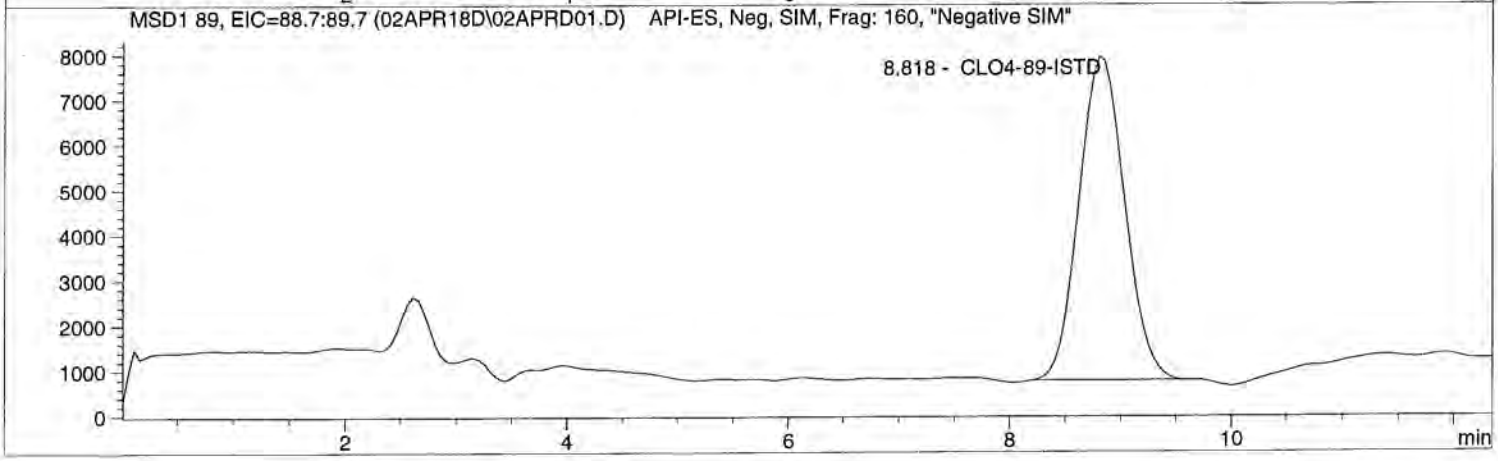
Injection Date:	4/02/2018 09:08:19	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD01.D Sample Name: ICAL1@ 1.0ug/L

Injection Date:	4/02/2018 09:08:19	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By: Signal
Calib. Data Modified: Mon, 2. Apr. 2018, 11:32:41 am
Multiplier: 1.000000
Dilution: 1.000000
Sample Amount: 1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.805	PBA	47521.7	1.0438	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.787	BBA	15364.8	0.9338	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.818	PBA	205633.2	5.0000	CLO4-89-ISTD

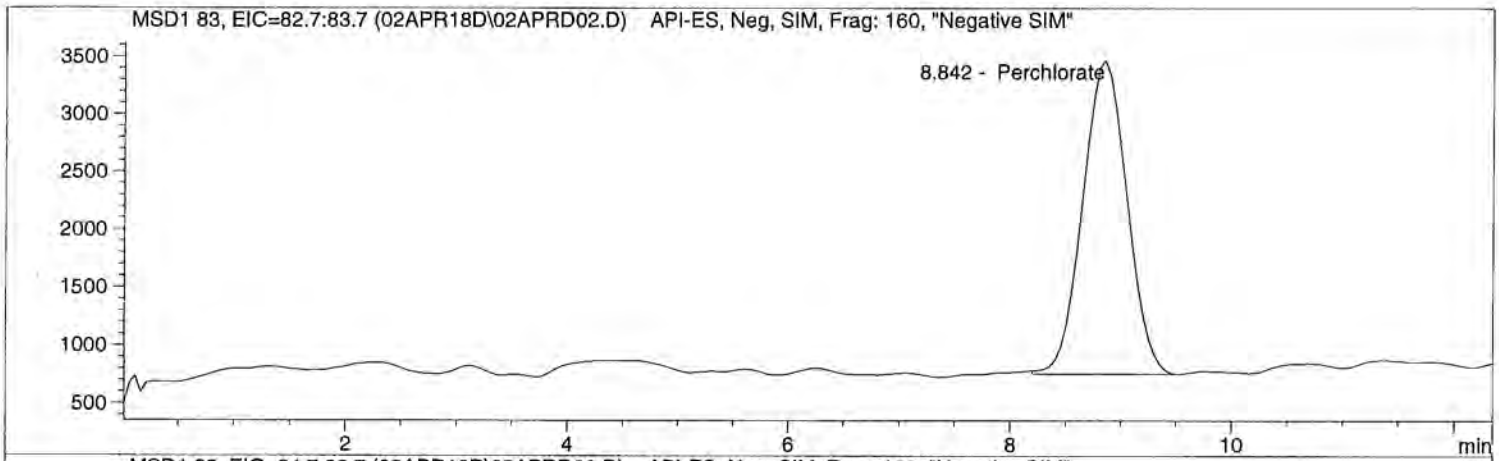
*** End of Report ***

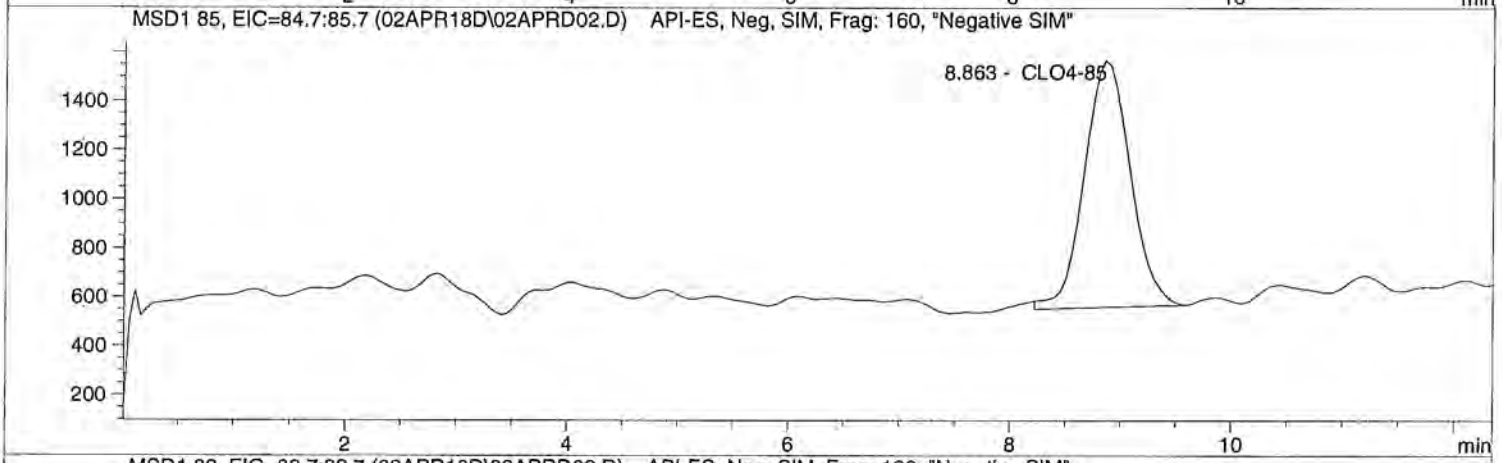
Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

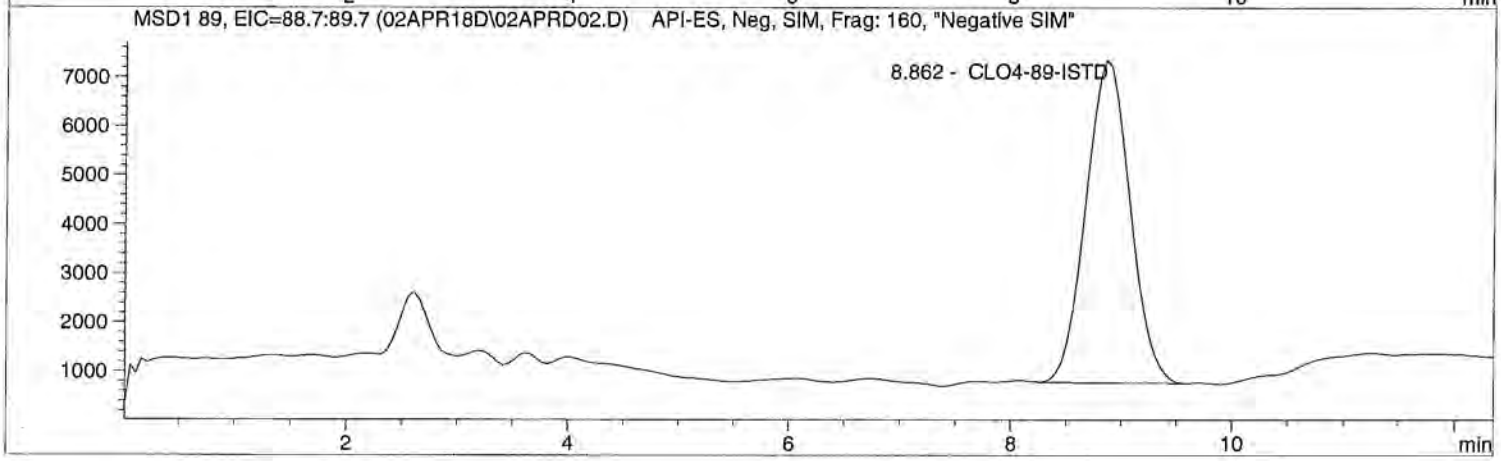
Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\02APR18D\02APRD02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	4/02/2018 09:22:28	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	25 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 4/2/2018 11:32:43

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Mon, 2. Apr. 2018, 11:32:41 am
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.842	BBA	75767.3	1.8858	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.863	BBA	29265.6	2.1651	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.862	BBA	183981.5	5.0000	CLO4-89-ISTD

*** End of Report ***

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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June 19, 2018

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS18060306**

Laboratory Results for: **Longhorn GW Treatment Plant**

Dear Marcia,

ALS Environmental received 2 sample(s) on Jun 07, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Work Order: HS18060306

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18060306-01	LH18/24-SP650_060618	Water		06-Jun-2018 14:00	07-Jun-2018 08:37	☐
HS18060306-02	Trip Blank	Water	ALS-051418-69	06-Jun-2018 00:00	07-Jun-2018 08:37	☐

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant
Work Order: HS18060306

Work Order Comments

• The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

GCMS Semivolatiles by Method SW8270SIM

Batch ID: 129171

Sample ID: HS18060281-01MS

• MS and MSD are for an unrelated sample

Sample ID: LH18/24-SP650_060618 (HS18060306-01)

• The GCMS semi-volatile extract of this sample was run at a dilution due to a high level of matrix interference.

GCMS Volatiles by Method SW8260

Batch ID: R317691

Sample ID: HS18060281-01MS

• MS and MSD are for an unrelated sample

Batch ID: R317765

Sample ID: HS18060425-05MS

• MS and MSD are for an unrelated sample

Metals by Method SW6020

Batch ID: 129155

Sample ID: HS18060281-03MS

• MS/MSD and DUPs are for an unrelated sample

WetChemistry by Method SW7196

Batch ID: R317832

• The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: LH18/24-SP650_060618
Collection Date: 06-Jun-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18060306
Lab ID:HS18060306-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	11-Jun-2018 07:28
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	11-Jun-2018 07:28
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	11-Jun-2018 07:28
Acetone	**9.7**		**0.40**	**1.0**	**2.0**	**ug/L**	1	11-Jun-2018 07:28
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	11-Jun-2018 07:28
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: LH18/24-SP650_060618
Collection Date: 06-Jun-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18060306
Lab ID:HS18060306-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
cis-1,2-Dichloroethene	**4.4**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Jun-2018 07:28
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	11-Jun-2018 07:28
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	11-Jun-2018 07:28
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	11-Jun-2018 07:28
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Toluene	**0.36**	J	**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Jun-2018 07:28
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Trichloroethene	**4.2**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Jun-2018 17:10
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	11-Jun-2018 07:28
Vinyl chloride	**1.5**		**0.20**	**0.50**	**1.0**	**ug/L**	1	11-Jun-2018 07:28
Surr: 1,2-Dichloroethane-d4	*84.3*			**0**	*81-118*	*%REC*	*1*	*11-Jun-2018 07:28*
Surr: 1,2-Dichloroethane-d4	*86.1*			**0**	*81-118*	*%REC*	*1*	*11-Jun-2018 17:10*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*11-Jun-2018 07:28*
Surr: 4-Bromofluorobenzene	*101*			**0**	*85-114*	*%REC*	*1*	*11-Jun-2018 17:10*
Surr: Dibromofluoromethane	*102*			**0**	*80-119*	*%REC*	*1*	*11-Jun-2018 07:28*
Surr: Dibromofluoromethane	*103*			**0**	*80-119*	*%REC*	*1*	*11-Jun-2018 17:10*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*11-Jun-2018 07:28*
Surr: Toluene-d8	*111*			**0**	*89-112*	*%REC*	*1*	*11-Jun-2018 17:10*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: LH18/24-SP650_060618
Collection Date: 06-Jun-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18060306
Lab ID:HS18060306-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
SEMIVOLATILES SIM		**Method:SW8270SIM**				Prep:SW3510 / 07-Jun-2018		Analyst: ACN
1,4-Dioxane	**4.8**		**0.10**	**0.10**	**0.10**	**ug/L**	10	08-Jun-2018 15:34
Surr: 2-Fluorobiphenyl	*110*			**0**	*40-140*	*%REC*	*10*	*08-Jun-2018 15:34*
Surr: 4-Terphenyl-d14	*86.6*			**0**	*40-140*	*%REC*	*10*	*08-Jun-2018 15:34*
Surr: Nitrobenzene-d5	*87.4*			**0**	*40-140*	*%REC*	*10*	*08-Jun-2018 15:34*
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 07-Jun-2018		Analyst: JDE
Barium	**0.0999**		**0.00190**	**0.00250**	**0.00400**	**mg/L**	1	08-Jun-2018 21:41
Lead	0.00100	U	0.000600	0.00100	0.00200	mg/L	1	08-Jun-2018 21:41
Selenium	**0.00111**	J	**0.00110**	**0.00200**	**0.00200**	**mg/L**	1	08-Jun-2018 21:41
Silver	0.00100	U	0.000200	0.00100	0.00200	mg/L	1	08-Jun-2018 21:41
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**				Prep:SW7196		Analyst: MZD
Chromium, Hexavalent	0.0100	U	0.00600	0.0100	0.0100	mg/L	1	07-Jun-2018 11:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2018 10:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: Trip Blank
Collection Date: 06-Jun-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18060306
Lab ID:HS18060306-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: AKP
1,1,1,2-Tetrachloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,1,1-Trichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,1,2,2-Tetrachloroethane	0.50	U	0.50	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,1,2-Trichloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,1-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,1-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,1-Dichloropropene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2,3-Trichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2,3-Trichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2,4-Trichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2,4-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2-Dibromo-3-chloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2-Dibromoethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2-Dichlorobenzene	0.50	U	0.50	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2-Dichloroethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,2-Dichloropropane	0.50	U	0.50	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,3,5-Trimethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,3-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,3-Dichloropropane	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
1,4-Dichlorobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
2,2-Dichloropropane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
2-Butanone	1.0	U	0.50	1.0	2.0	ug/L	1	10-Jun-2018 23:11
2-Chlorotoluene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
2-Hexanone	1.0	U	1.0	1.0	2.0	ug/L	1	10-Jun-2018 23:11
4-Chlorotoluene	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
4-Isopropyltoluene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
4-Methyl-2-pentanone	1.0	U	0.70	1.0	2.0	ug/L	1	10-Jun-2018 23:11
Acetone	1.0	U	0.40	1.0	2.0	ug/L	1	10-Jun-2018 23:11
Benzene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Bromobenzene	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Bromochloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Bromodichloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Bromoform	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Bromomethane	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Carbon disulfide	1.0	U	0.60	1.0	2.0	ug/L	1	10-Jun-2018 23:11
Carbon tetrachloride	0.50	U	0.50	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Chlorobenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Chloroethane	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: Trip Blank
Collection Date: 06-Jun-2018 00:00

ANALYTICAL REPORT
WorkOrder:HS18060306
Lab ID:HS18060306-02
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES ORGANICS BY METHOD 8260C	**Method:SW8260**							Analyst: AKP
Chloroform	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Chloromethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
cis-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
cis-1,3-Dichloropropene	0.50	U	0.10	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Dibromochloromethane	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Dibromomethane	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Dichlorodifluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Ethylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Hexachlorobutadiene	0.50	U	1.0	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Isopropylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
m,p-Xylene	1.0	U	0.50	1.0	2.0	ug/L	1	10-Jun-2018 23:11
Methylene chloride	1.0	U	0.40	1.0	2.0	ug/L	1	10-Jun-2018 23:11
n-Butylbenzene	0.50	U	0.40	0.50	1.0	ug/L	1	10-Jun-2018 23:11
n-Propylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Naphthalene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
o-Xylene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
sec-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Styrene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
tert-Butylbenzene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Tetrachloroethene	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Toluene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
trans-1,2-Dichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
trans-1,3-Dichloropropene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Trichloroethene	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Trichlorofluoromethane	0.50	U	0.30	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Vinyl chloride	0.50	U	0.20	0.50	1.0	ug/L	1	10-Jun-2018 23:11
Surr: 1,2-Dichloroethane-d4	*84.4*			**0**	*81-118*	*%REC*	*1*	*10-Jun-2018 23:11*
Surr: 4-Bromofluorobenzene	*99.0*			**0**	*85-114*	*%REC*	*1*	*10-Jun-2018 23:11*
Surr: Dibromofluoromethane	*102*			**0**	*80-119*	*%REC*	*1*	*10-Jun-2018 23:11*
Surr: Toluene-d8	*112*			**0**	*89-112*	*%REC*	*1*	*10-Jun-2018 23:11*

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WEIGHT LOG

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

Batch ID: 129155 **Method:** ICP-MS METALS BY SW6020A **Prep:** 3010A

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18060306-01	1	10	10 (mL)	1

Batch ID: 129171 **Method:** SEMIVOLATILES SIM **Prep:** 3510_B_SIM

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18060306-01	1	1000	1 (mL)	0.001

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 129155	**Test Name :** ICP-MS METALS BY SW6020A			**Matrix:** Water		
HS18060306-01	LH18/24-SP650_060618	06 Jun 2018 14:00		07 Jun 2018 12:00	08 Jun 2018 21:41	1
Batch ID 129171	**Test Name :** SEMIVOLATILES SIM			**Matrix:** Water		
HS18060306-01	LH18/24-SP650_060618	06 Jun 2018 14:00		07 Jun 2018 12:44	08 Jun 2018 15:34	10
Batch ID R317691	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C			**Matrix:** Water		
HS18060306-01	LH18/24-SP650_060618	06 Jun 2018 14:00			11 Jun 2018 07:28	1
HS18060306-02	Trip Blank	06 Jun 2018 00:00			10 Jun 2018 23:11	1
Batch ID R317765	**Test Name :** VOLATILES ORGANICS BY METHOD 8260C			**Matrix:** Water		
HS18060306-01	LH18/24-SP650_060618	06 Jun 2018 14:00			11 Jun 2018 17:10	1
Batch ID R317832	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A			**Matrix:** Water		
HS18060306-01	LH18/24-SP650_060618	06 Jun 2018 14:00			07 Jun 2018 11:55	1
Batch ID R318211	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			**Matrix:** Water		
HS18060306-01	LH18/24-SP650_060618	06 Jun 2018 14:00			19 Jun 2018 10:45	1

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: 129155 **Instrument: ICPMS05** **Method: SW6020**

MBLK Sample ID: **MBLK-129155** Units: **mg/L** Analysis Date: **08-Jun-2018 21:17**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593680** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.00250	0.00400								U
Lead	0.00100	0.00200								U
Selenium	0.00200	0.00200								U
Silver	0.00100	0.00200								U

LCS Sample ID: **LCS-129155** Units: **mg/L** Analysis Date: **08-Jun-2018 21:19**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593681** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.04551	0.00400	0.05	0	91.0	80 - 120				
Lead	0.04962	0.00200	0.05	0	99.2	80 - 120				
Selenium	0.04654	0.00200	0.05	0	93.1	80 - 120				
Silver	0.04457	0.00200	0.05	0	89.1	80 - 120				

MS Sample ID: **HS18060281-03MS** Units: **mg/L** Analysis Date: **08-Jun-2018 21:31**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593687** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	7.27	0.00400	0.05	7.07	399	80 - 120				SEO
Lead	0.04489	0.00200	0.05	0.000446	88.9	80 - 120				
Selenium	0.05099	0.00200	0.05	0.00481	92.4	80 - 120				
Silver	0.04131	0.00200	0.05	0.000022	82.6	80 - 120				

MSD Sample ID: **HS18060281-03MSD** Units: **mg/L** Analysis Date: **08-Jun-2018 21:33**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593688** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	6.987	0.00400	0.05	7.07	-167	80 - 120	7.27	3.97	20	SEO
Lead	0.04457	0.00200	0.05	0.000446	88.2	80 - 120	0.04489	0.731	20	
Selenium	0.05045	0.00200	0.05	0.00481	91.3	80 - 120	0.05099	1.08	20	
Silver	0.04077	0.00200	0.05	0.000022	81.5	80 - 120	0.04131	1.34	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: 129155 **Instrument: ICPMS05** **Method: SW6020**

PDS Sample ID: **HS18060281-03PDS** Units: **mg/L** Analysis Date: **11-Jun-2018 13:29**
Client ID: Run ID: **ICPMS05_317709** SeqNo: **4595238** PrepDate: **07-Jun-2018** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	6.535	0.0400	1	6.4	13.5	75 - 125				SO

PDS Sample ID: **HS18060281-03PDS** Units: **mg/L** Analysis Date: **08-Jun-2018 21:35**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593689** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Lead	0.08453	0.00200	0.1	0.000446	84.1	75 - 125				
Selenium	0.09665	0.00200	0.1	0.00481	91.8	75 - 125				
Silver	0.08071	0.00200	0.1	0.000022	80.7	75 - 125				

SD Sample ID: **HS18060281-03SD** Units: **mg/L** Analysis Date: **11-Jun-2018 13:27**
Client ID: Run ID: **ICPMS05_317709** SeqNo: **4595237** PrepDate: **07-Jun-2018** DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Barium	5.956	0.200					6.4	6.94	10	

SD Sample ID: **HS18060281-03SD** Units: **mg/L** Analysis Date: **08-Jun-2018 21:29**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593686** PrepDate: **07-Jun-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Lead	0.00500	0.0100					0.000446	0	10	U
Selenium	0.0100	0.0100					0.00481	0	10	U
Silver	0.00500	0.0100					0.000022	0	10	U

The following samples were analyzed in this batch: HS18060306-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: 129171 **Instrument: SV-5** **Method: SW8270SIM**

MBLK Sample ID: **MBLK-129171** Units: **ug/L** Analysis Date: **08-Jun-2018 10:40**
Client ID: Run ID: **SV-5_317881** SeqNo: **4598739** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.010	0.010								U
Surr: 2-Fluorobiphenyl	*0.08314*	*0*	*0.08*	*0*	*104*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.05047*	*0*	*0.08*	*0*	*63.1*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.07082*	*0*	*0.08*	*0*	*88.5*	*40 - 140*				

LCS Sample ID: **LCS-129171** Units: **ug/L** Analysis Date: **08-Jun-2018 11:01**
Client ID: Run ID: **SV-5_317881** SeqNo: **4598740** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	0.0598	0.010	0.08	0	74.7	40 - 140				
Surr: 2-Fluorobiphenyl	*0.09162*	*0*	*0.08*	*0*	*115*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.04763*	*0*	*0.08*	*0*	*59.5*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.05496*	*0*	*0.08*	*0*	*68.7*	*40 - 140*				

MS Sample ID: **HS18060281-01MS** Units: **ug/L** Analysis Date: **13-Jun-2018 13:33**
Client ID: Run ID: **SV-5_317881** SeqNo: **4607562** PrepDate: **07-Jun-2018** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	3.079	0.10	0.08	2.161	1150	40 - 140				SO
Surr: 2-Fluorobiphenyl	*0.1012*	*0*	*0.08*	*0*	*126*	*40 - 140*				
Surr: 4-Terphenyl-d14	*0.07564*	*0*	*0.08*	*0*	*94.6*	*40 - 140*				
Surr: Nitrobenzene-d5	*0.05855*	*0*	*0.08*	*0*	*73.2*	*40 - 140*				

MSD Sample ID: **HS18060281-01MSD** Units: **ug/L** Analysis Date: **13-Jun-2018 13:54**
Client ID: Run ID: **SV-5_317881** SeqNo: **4607563** PrepDate: **07-Jun-2018** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,4-Dioxane	3.247	0.10	0.08	2.161	1360	40 - 140	3.079	5.32	20	SO
Surr: 2-Fluorobiphenyl	*0.09627*	*0*	*0.08*	*0*	*120*	*40 - 140*	*0.1012*	*4.98*	*20*	
Surr: 4-Terphenyl-d14	*0.06874*	*0*	*0.08*	*0*	*85.9*	*40 - 140*	*0.07564*	*9.56*	*20*	
Surr: Nitrobenzene-d5	*0.05346*	*0*	*0.08*	*0*	*66.8*	*40 - 140*	*0.05855*	*9.09*	*20*	

The following samples were analyzed in this batch: HS18060306-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument:** VOA2 **Method:** SW8260

MBLK Sample ID: **VBLKW-180610** Units: **ug/L** Analysis Date: **10-Jun-2018 22:47**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594473** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	0.50	1.0								U
1,1,1-Trichloroethane	0.50	1.0								U
1,1,2,2-Tetrachloroethane	0.50	1.0								U
1,1,2-Trichloroethane	0.50	1.0								U
1,1-Dichloroethane	0.50	1.0								U
1,1-Dichloroethene	0.50	1.0								U
1,1-Dichloropropene	0.50	1.0								U
1,2,3-Trichlorobenzene	0.50	1.0								U
1,2,3-Trichloropropane	0.50	1.0								U
1,2,4-Trichlorobenzene	0.50	1.0								U
1,2,4-Trimethylbenzene	0.50	1.0								U
1,2-Dibromo-3-chloropropane	0.50	1.0								U
1,2-Dibromoethane	0.50	1.0								U
1,2-Dichlorobenzene	0.50	1.0								U
1,2-Dichloroethane	0.50	1.0								U
1,2-Dichloropropane	0.50	1.0								U
1,3,5-Trimethylbenzene	0.50	1.0								U
1,3-Dichlorobenzene	0.50	1.0								U
1,3-Dichloropropane	0.50	1.0								U
1,4-Dichlorobenzene	0.50	1.0								U
2,2-Dichloropropane	0.50	1.0								U
2-Butanone	1.0	2.0								U
2-Chlorotoluene	0.50	1.0								U
2-Hexanone	1.0	2.0								U
4-Chlorotoluene	0.50	1.0								U
4-Isopropyltoluene	0.50	1.0								U
4-Methyl-2-pentanone	1.0	2.0								U
Acetone	1.0	2.0								U
Benzene	0.50	1.0								U
Bromobenzene	0.50	1.0								U
Bromochloromethane	0.50	1.0								U
Bromodichloromethane	0.50	1.0								U
Bromoform	0.50	1.0								U
Bromomethane	0.50	1.0								U

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument:** VOA2 **Method:** SW8260

MBLK Sample ID: **VBLKW-180610** Units: **ug/L** Analysis Date: **10-Jun-2018 22:47**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594473** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	1.0	2.0								U
Carbon tetrachloride	0.50	1.0								U
Chlorobenzene	0.50	1.0								U
Chloroethane	0.50	1.0								U
Chloroform	0.50	1.0								U
Chloromethane	0.50	1.0								U
cis-1,2-Dichloroethene	0.50	1.0								U
cis-1,3-Dichloropropene	0.50	1.0								U
Dibromochloromethane	0.50	1.0								U
Dibromomethane	0.50	1.0								U
Dichlorodifluoromethane	0.50	1.0								U
Ethylbenzene	0.50	1.0								U
Hexachlorobutadiene	0.50	1.0								U
Isopropylbenzene	0.50	1.0								U
m,p-Xylene	1.0	2.0								U
Methylene chloride	1.0	2.0								U
Naphthalene	0.50	1.0								U
n-Butylbenzene	0.50	1.0								U
n-Propylbenzene	0.50	1.0								U
o-Xylene	0.50	1.0								U
sec-Butylbenzene	0.50	1.0								U
Styrene	0.50	1.0								U
tert-Butylbenzene	0.50	1.0								U
Tetrachloroethene	0.50	1.0								U
Toluene	0.50	1.0								U
trans-1,2-Dichloroethene	0.50	1.0								U
trans-1,3-Dichloropropene	0.50	1.0								U
Trichloroethene	0.50	1.0								U
Trichlorofluoromethane	0.50	1.0								U
Vinyl chloride	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.9*	*1.0*	*50*	*0*	*83.8*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.7*	*1.0*	*50*	*0*	*101*	*85 - 114*				
Surr: Dibromofluoromethane	*50.54*	*1.0*	*50*	*0*	*101*	*80 - 119*				
Surr: Toluene-d8	*55.75*	*1.0*	*50*	*0*	*111*	*89 - 112*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180610** Units: **ug/L** Analysis Date: **10-Jun-2018 21:58**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594472** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	45.07	1.0	50	0	90.1	78 - 124				
1,1,1-Trichloroethane	44.45	1.0	50	0	88.9	74 - 131				
1,1,2,2-Tetrachloroethane	39.57	1.0	50	0	79.1	71 - 121				
1,1,2-Trichloroethane	44.12	1.0	50	0	88.2	80 - 119				
1,1-Dichloroethane	44.31	1.0	50	0	88.6	77 - 125				
1,1-Dichloroethene	45.3	1.0	50	0	90.6	71 - 131				
1,1-Dichloropropene	41.53	1.0	50	0	83.1	78 - 125				
1,2,3-Trichlorobenzene	43.54	1.0	50	0	87.1	69 - 129				
1,2,3-Trichloropropane	41.46	1.0	50	0	82.9	73 - 122				
1,2,4-Trichlorobenzene	43.17	1.0	50	0	86.3	69 - 130				
1,2,4-Trimethylbenzene	39.03	1.0	50	0	78.1	76 - 124				
1,2-Dibromo-3-chloropropane	43.93	1.0	50	0	87.9	62 - 128				
1,2-Dibromoethane	46.73	1.0	50	0	93.5	77 - 121				
1,2-Dichlorobenzene	41.65	1.0	50	0	83.3	80 - 119				
1,2-Dichloroethane	47.64	1.0	50	0	95.3	73 - 128				
1,2-Dichloropropane	44.29	1.0	50	0	88.6	78 - 122				
1,3,5-Trimethylbenzene	46.4	1.0	50	0	92.8	75 - 124				
1,3-Dichlorobenzene	41.11	1.0	50	0	82.2	80 - 119				
1,3-Dichloropropane	44.58	1.0	50	0	89.2	80 - 119				
1,4-Dichlorobenzene	41.76	1.0	50	0	83.5	79 - 118				
2,2-Dichloropropane	38.86	1.0	50	0	77.7	60 - 139				
2-Butanone	93.55	2.0	100	0	93.5	56 - 143				
2-Chlorotoluene	46.25	1.0	50	0	92.5	79 - 122				
2-Hexanone	92.12	2.0	100	0	92.1	57 - 139				
4-Chlorotoluene	46.53	1.0	50	0	93.1	78 - 122				
4-Isopropyltoluene	39.96	1.0	50	0	79.9	77 - 127				
4-Methyl-2-pentanone	89.14	2.0	100	0	89.1	67 - 130				
Acetone	95.88	2.0	100	0	95.9	39 - 160				
Benzene	43.36	1.0	50	0	86.7	79 - 120				
Bromobenzene	40.21	1.0	50	0	80.4	80 - 120				
Bromochloromethane	47.64	1.0	50	0	95.3	78 - 123				
Bromodichloromethane	45.41	1.0	50	0	90.8	79 - 125				
Bromoform	47.2	1.0	50	0	94.4	66 - 130				
Bromomethane	48.17	1.0	50	0	96.3	53 - 141				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument: VOA2** **Method: SW8260**

LCS Sample ID: **VLCSW-180610** Units: **ug/L** Analysis Date: **10-Jun-2018 21:58**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594472** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	87.89	2.0	100	0	87.9	64 - 133				
Carbon tetrachloride	48.21	1.0	50	0	96.4	72 - 136				
Chlorobenzene	43.48	1.0	50	0	87.0	82 - 118				
Chloroethane	47.37	1.0	50	0	94.7	60 - 138				
Chloroform	43.61	1.0	50	0	87.2	79 - 124				
Chloromethane	43.19	1.0	50	0	86.4	50 - 139				
cis-1,2-Dichloroethene	45.2	1.0	50	0	90.4	78 - 123				
cis-1,3-Dichloropropene	47.26	1.0	50	0	94.5	75 - 124				
Dibromochloromethane	46.08	1.0	50	0	92.2	74 - 126				
Dibromomethane	49.19	1.0	50	0	98.4	79 - 123				
Dichlorodifluoromethane	46.64	1.0	50	0	93.3	32 - 152				
Ethylbenzene	42.33	1.0	50	0	84.7	79 - 121				
Hexachlorobutadiene	41.25	1.0	50	0	82.5	66 - 134				
Isopropylbenzene	43.14	1.0	50	0	86.3	72 - 131				
m,p-Xylene	83.77	2.0	100	0	83.8	80 - 121				
Methylene chloride	42.94	2.0	50	0	85.9	74 - 124				
Naphthalene	46.08	1.0	50	0	92.2	61 - 128				
n-Butylbenzene	42.46	1.0	50	0	84.9	75 - 128				
n-Propylbenzene	46.02	1.0	50	0	92.0	76 - 126				
o-Xylene	42.96	1.0	50	0	85.9	78 - 122				
sec-Butylbenzene	39.81	1.0	50	0	79.6	77 - 126				
Styrene	45.2	1.0	50	0	90.4	78 - 123				
tert-Butylbenzene	45.73	1.0	50	0	91.5	78 - 124				
Tetrachloroethene	41.78	1.0	50	0	83.6	74 - 129				
Toluene	41.99	1.0	50	0	84.0	80 - 121				
trans-1,2-Dichloroethene	45.17	1.0	50	0	90.3	75 - 124				
trans-1,3-Dichloropropene	49.76	1.0	50	0	99.5	73 - 127				
Trichloroethene	45.5	1.0	50	0	91.0	79 - 123				
Trichlorofluoromethane	44.91	1.0	50	0	89.8	65 - 141				
Vinyl chloride	44.07	1.0	50	0	88.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*43.44*	*1.0*	*50*	*0*	*86.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.44*	*1.0*	*50*	*0*	*105*	*85 - 114*				
Surr: Dibromofluoromethane	*48.11*	*1.0*	*50*	*0*	*96.2*	*80 - 119*				
Surr: Toluene-d8	*53.41*	*1.0*	*50*	*0*	*107*	*89 - 112*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18060281-01MS** Units: **ug/L** Analysis Date: **11-Jun-2018 00:25**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594477** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	43.69	1.0	50	0	87.4	78 - 124				
1,1,1-Trichloroethane	44.39	1.0	50	0	88.8	74 - 131				
1,1,2,2-Tetrachloroethane	37.75	1.0	50	0	75.5	71 - 121				
1,1,2-Trichloroethane	42.46	1.0	50	0	84.9	80 - 119				
1,1-Dichloroethane	43.83	1.0	50	0	87.7	77 - 125				
1,1-Dichloroethene	44.78	1.0	50	0	89.6	71 - 131				
1,1-Dichloropropene	40.6	1.0	50	0	81.2	78 - 125				
1,2,3-Trichlorobenzene	39.1	1.0	50	0	78.2	69 - 129				
1,2,3-Trichloropropane	37.97	1.0	50	0	75.9	73 - 122				
1,2,4-Trichlorobenzene	37.73	1.0	50	0	75.5	69 - 130				
1,2,4-Trimethylbenzene	38.2	1.0	50	0	76.4	76 - 124				
1,2-Dibromo-3-chloropropane	41.13	1.0	50	0	82.3	62 - 128				
1,2-Dibromoethane	43.77	1.0	50	0	87.5	77 - 121				
1,2-Dichlorobenzene	39.63	1.0	50	0	79.3	80 - 119				S
1,2-Dichloroethane	48.89	1.0	50	3.774	90.2	73 - 128				
1,2-Dichloropropane	42.25	1.0	50	0	84.5	78 - 122				
1,3,5-Trimethylbenzene	46.31	1.0	50	0	92.6	75 - 124				
1,3-Dichlorobenzene	39.64	1.0	50	0	79.3	80 - 119				S
1,3-Dichloropropane	42.66	1.0	50	0	85.3	80 - 119				
1,4-Dichlorobenzene	39.46	1.0	50	0	78.9	79 - 118				S
2,2-Dichloropropane	34.3	1.0	50	0	68.6	60 - 139				
2-Butanone	88.8	2.0	100	0	88.8	56 - 143				
2-Chlorotoluene	45.35	1.0	50	0	90.7	79 - 122				
2-Hexanone	81.92	2.0	100	0	81.9	57 - 139				
4-Chlorotoluene	45.51	1.0	50	0	91.0	78 - 122				
4-Isopropyltoluene	38.63	1.0	50	0	77.3	77 - 127				
4-Methyl-2-pentanone	85.95	2.0	100	0	85.9	67 - 130				
Acetone	85.53	2.0	100	0	85.5	39 - 160				
Benzene	42.75	1.0	50	0.4514	84.6	79 - 120				
Bromobenzene	39.17	1.0	50	0	78.3	80 - 120				S
Bromochloromethane	46.26	1.0	50	0	92.5	78 - 123				
Bromodichloromethane	44.33	1.0	50	0	88.7	79 - 125				
Bromoform	44.2	1.0	50	0	88.4	66 - 130				
Bromomethane	48.54	1.0	50	0	97.1	53 - 141				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument: VOA2** **Method: SW8260**

MS Sample ID: **HS18060281-01MS** Units: **ug/L** Analysis Date: **11-Jun-2018 00:25**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594477** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Carbon disulfide	88.3	2.0	100	0	88.3	64 - 133				
Carbon tetrachloride	47.37	1.0	50	0	94.7	72 - 136				
Chlorobenzene	42.03	1.0	50	0	84.1	82 - 118				
Chloroethane	47.85	1.0	50	0	95.7	60 - 138				
Chloroform	43.39	1.0	50	0	86.8	79 - 124				
Chloromethane	37.75	1.0	50	0	75.5	50 - 139				
cis-1,2-Dichloroethene	50.72	1.0	50	6.82	87.8	78 - 123				
cis-1,3-Dichloropropene	43.67	1.0	50	0	87.3	75 - 124				
Dibromochloromethane	43.81	1.0	50	0	87.6	74 - 126				
Dibromomethane	46.73	1.0	50	0	93.5	79 - 123				
Dichlorodifluoromethane	34.23	1.0	50	0	68.5	32 - 152				
Ethylbenzene	42.15	1.0	50	0	84.3	79 - 121				
Hexachlorobutadiene	36.48	1.0	50	0	73.0	66 - 134				
Isopropylbenzene	43.03	1.0	50	0	86.1	72 - 131				
m,p-Xylene	81.94	2.0	100	0	81.9	80 - 121				
Methylene chloride	41.4	2.0	50	0	82.8	74 - 124				
Naphthalene	40.39	1.0	50	0	80.8	61 - 128				
n-Butylbenzene	40.33	1.0	50	0	80.7	75 - 128				
n-Propylbenzene	46.3	1.0	50	0	92.6	76 - 126				
o-Xylene	41.96	1.0	50	0	83.9	78 - 122				
sec-Butylbenzene	38.86	1.0	50	0	77.7	77 - 126				
Styrene	43.15	1.0	50	0	86.3	78 - 123				
tert-Butylbenzene	45.24	1.0	50	0	90.5	78 - 124				
Tetrachloroethene	40.97	1.0	50	0	81.9	74 - 129				
Toluene	41.14	1.0	50	0	82.3	80 - 121				
trans-1,2-Dichloroethene	44.55	1.0	50	0	89.1	75 - 124				
trans-1,3-Dichloropropene	44.67	1.0	50	0	89.3	73 - 127				
Trichloroethene	239.2	1.0	50	192.6	93.2	79 - 123				E
Trichlorofluoromethane	43.57	1.0	50	0	87.1	65 - 141				
Vinyl chloride	43.05	1.0	50	0	86.1	58 - 137				
Surr: 1,2-Dichloroethane-d4	*43.16*	*1.0*	*50*	*0*	*86.3*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*51.82*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*48.37*	*1.0*	*50*	*0*	*96.7*	*80 - 119*				
Surr: Toluene-d8	*53.27*	*1.0*	*50*	*0*	*107*	*89 - 112*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18060281-01MSD** Units: **ug/L** Analysis Date: **11-Jun-2018 00:50**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594478** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	43.65	1.0	50	0	87.3	78 - 124	43.69	0.0794	20	
1,1,1-Trichloroethane	44.04	1.0	50	0	88.1	74 - 131	44.39	0.783	20	
1,1,2,2-Tetrachloroethane	38.48	1.0	50	0	77.0	71 - 121	37.75	1.93	20	
1,1,2-Trichloroethane	42.99	1.0	50	0	86.0	80 - 119	42.46	1.23	20	
1,1-Dichloroethane	44.01	1.0	50	0	88.0	77 - 125	43.83	0.416	20	
1,1-Dichloroethene	43.94	1.0	50	0	87.9	71 - 131	44.78	1.88	20	
1,1-Dichloropropene	40.87	1.0	50	0	81.7	78 - 125	40.6	0.659	20	
1,2,3-Trichlorobenzene	39.33	1.0	50	0	78.7	69 - 129	39.1	0.598	20	
1,2,3-Trichloropropane	38.88	1.0	50	0	77.8	73 - 122	37.97	2.38	20	
1,2,4-Trichlorobenzene	39.73	1.0	50	0	79.5	69 - 130	37.73	5.15	20	
1,2,4-Trimethylbenzene	38.85	1.0	50	0	77.7	76 - 124	38.2	1.69	20	
1,2-Dibromo-3-chloropropane	41.14	1.0	50	0	82.3	62 - 128	41.13	0.0304	20	
1,2-Dibromoethane	44.01	1.0	50	0	88.0	77 - 121	43.77	0.545	20	
1,2-Dichlorobenzene	40.18	1.0	50	0	80.4	80 - 119	39.63	1.37	20	
1,2-Dichloroethane	49.44	1.0	50	3.774	91.3	73 - 128	48.89	1.14	20	
1,2-Dichloropropane	42.48	1.0	50	0	85.0	78 - 122	42.25	0.55	20	
1,3,5-Trimethylbenzene	46.33	1.0	50	0	92.7	75 - 124	46.31	0.0288	20	
1,3-Dichlorobenzene	40.08	1.0	50	0	80.2	80 - 119	39.64	1.09	20	
1,3-Dichloropropane	42.95	1.0	50	0	85.9	80 - 119	42.66	0.683	20	
1,4-Dichlorobenzene	40.22	1.0	50	0	80.4	79 - 118	39.46	1.9	20	
2,2-Dichloropropane	34.21	1.0	50	0	68.4	60 - 139	34.3	0.272	20	
2-Butanone	91.02	2.0	100	0	91.0	56 - 143	88.8	2.47	20	
2-Chlorotoluene	45.65	1.0	50	0	91.3	79 - 122	45.35	0.675	20	
2-Hexanone	84.62	2.0	100	0	84.6	57 - 139	81.92	3.24	20	
4-Chlorotoluene	45.63	1.0	50	0	91.3	78 - 122	45.51	0.256	20	
4-Isopropyltoluene	38.98	1.0	50	0	78.0	77 - 127	38.63	0.908	20	
4-Methyl-2-pentanone	87.29	2.0	100	0	87.3	67 - 130	85.95	1.54	20	
Acetone	90.76	2.0	100	0	90.8	39 - 160	85.53	5.93	20	
Benzene	43.02	1.0	50	0.4514	85.1	79 - 120	42.75	0.623	20	
Bromobenzene	39.41	1.0	50	0	78.8	80 - 120	39.17	0.607	20	S
Bromochloromethane	46.64	1.0	50	0	93.3	78 - 123	46.26	0.819	20	
Bromodichloromethane	44.98	1.0	50	0	90.0	79 - 125	44.33	1.46	20	
Bromoform	44.13	1.0	50	0	88.3	66 - 130	44.2	0.153	20	
Bromomethane	48.13	1.0	50	0	96.3	53 - 141	48.54	0.848	20	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317691 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18060281-01MSD** Units: **ug/L** Analysis Date: **11-Jun-2018 00:50**
Client ID: Run ID: **VOA2_317691** SeqNo: **4594478** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Carbon disulfide	89.22	2.0	100	0	89.2	64 - 133	88.3	1.03	20	
Carbon tetrachloride	46.96	1.0	50	0	93.9	72 - 136	47.37	0.871	20	
Chlorobenzene	42	1.0	50	0	84.0	82 - 118	42.03	0.063	20	
Chloroethane	47.15	1.0	50	0	94.3	60 - 138	47.85	1.48	20	
Chloroform	43.27	1.0	50	0	86.5	79 - 124	43.39	0.27	20	
Chloromethane	38.82	1.0	50	0	77.6	50 - 139	37.75	2.79	20	
cis-1,2-Dichloroethene	51.13	1.0	50	6.82	88.6	78 - 123	50.72	0.817	20	
cis-1,3-Dichloropropene	44.08	1.0	50	0	88.2	75 - 124	43.67	0.935	20	
Dibromochloromethane	44.45	1.0	50	0	88.9	74 - 126	43.81	1.47	20	
Dibromomethane	46.65	1.0	50	0	93.3	79 - 123	46.73	0.181	20	
Dichlorodifluoromethane	34.33	1.0	50	0	68.7	32 - 152	34.23	0.29	20	
Ethylbenzene	42.51	1.0	50	0	85.0	79 - 121	42.15	0.848	20	
Hexachlorobutadiene	38.22	1.0	50	0	76.4	66 - 134	36.48	4.65	20	
Isopropylbenzene	42.84	1.0	50	0	85.7	72 - 131	43.03	0.454	20	
m,p-Xylene	82.4	2.0	100	0	82.4	80 - 121	81.94	0.552	20	
Methylene chloride	41.12	2.0	50	0	82.2	74 - 124	41.4	0.685	20	
Naphthalene	41.88	1.0	50	0	83.8	61 - 128	40.39	3.64	20	
n-Butylbenzene	40.61	1.0	50	0	81.2	75 - 128	40.33	0.697	20	
n-Propylbenzene	46.41	1.0	50	0	92.8	76 - 126	46.3	0.223	20	
o-Xylene	42.05	1.0	50	0	84.1	78 - 122	41.96	0.233	20	
sec-Butylbenzene	38.98	1.0	50	0	78.0	77 - 126	38.86	0.29	20	
Styrene	43.42	1.0	50	0	86.8	78 - 123	43.15	0.632	20	
tert-Butylbenzene	45.43	1.0	50	0	90.9	78 - 124	45.24	0.421	20	
Tetrachloroethene	41.03	1.0	50	0	82.1	74 - 129	40.97	0.158	20	
Toluene	41.34	1.0	50	0	82.7	80 - 121	41.14	0.483	20	
trans-1,2-Dichloroethene	45.13	1.0	50	0	90.3	75 - 124	44.55	1.29	20	
trans-1,3-Dichloropropene	45.76	1.0	50	0	91.5	73 - 127	44.67	2.42	20	
Trichloroethene	239.9	1.0	50	192.6	94.5	79 - 123	239.2	0.268	20	E
Trichlorofluoromethane	42.68	1.0	50	0	85.4	65 - 141	43.57	2.07	20	
Vinyl chloride	42.69	1.0	50	0	85.4	58 - 137	43.05	0.847	20	
Surr: 1,2-Dichloroethane-d4	*43.9*	*1.0*	*50*	*0*	*87.8*	*81 - 118*	*43.16*	*1.69*	*20*	
Surr: 4-Bromofluorobenzene	*52.21*	*1.0*	*50*	*0*	*104*	*85 - 114*	*51.82*	*0.755*	*20*	
Surr: Dibromofluoromethane	*48.31*	*1.0*	*50*	*0*	*96.6*	*80 - 119*	*48.37*	*0.125*	*20*	
Surr: Toluene-d8	*53.31*	*1.0*	*50*	*0*	*107*	*89 - 112*	*53.27*	*0.0892*	*20*	

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client:	Bhate Environmental Associates, Inc.
Project:	Longhorn GW Treatment Plant
WorkOrder:	HS18060306

QC BATCH REPORT

Batch ID:	**R317691**	**Instrument:**	**VOA2**	**Method:**	**SW8260**

The following samples were analyzed in this batch:	HS18060306-01	HS18060306-02

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317765 **Instrument: VOA2** **Method: SW8260**

MBLK Sample ID: **MBLK-180611** Units: **ug/L** Analysis Date: **11-Jun-2018 11:56**
Client ID: Run ID: **VOA2_317765** SeqNo: **4596446** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Trichloroethene	0.50	1.0								U
Surr: 1,2-Dichloroethane-d4	*41.95*	*1.0*	*50*	*0*	*83.9*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*50.08*	*1.0*	*50*	*0*	*100*	*85 - 114*				
Surr: Dibromofluoromethane	*50.4*	*1.0*	*50*	*0*	*101*	*80 - 119*				
Surr: Toluene-d8	*55.89*	*1.0*	*50*	*0*	*112*	*89 - 112*				

LCS Sample ID: **VLCSW-180611** Units: **ug/L** Analysis Date: **11-Jun-2018 10:41**
Client ID: Run ID: **VOA2_317765** SeqNo: **4596445** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Trichloroethene	45.4	1.0	50	0	90.8	79 - 123				
Surr: 1,2-Dichloroethane-d4	*42.53*	*1.0*	*50*	*0*	*85.1*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.24*	*1.0*	*50*	*0*	*104*	*85 - 114*				
Surr: Dibromofluoromethane	*48.05*	*1.0*	*50*	*0*	*96.1*	*80 - 119*				
Surr: Toluene-d8	*53.64*	*1.0*	*50*	*0*	*107*	*89 - 112*				

MS Sample ID: **HS18060425-05MS** Units: **ug/L** Analysis Date: **11-Jun-2018 15:24**
Client ID: Run ID: **VOA2_317765** SeqNo: **4596454** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Trichloroethene	290.4	1.0	50	248.7	83.4	79 - 123				EO
Surr: 1,2-Dichloroethane-d4	*43.24*	*1.0*	*50*	*0*	*86.5*	*81 - 118*				
Surr: 4-Bromofluorobenzene	*52.38*	*1.0*	*50*	*0*	*105*	*85 - 114*				
Surr: Dibromofluoromethane	*47.69*	*1.0*	*50*	*0*	*95.4*	*80 - 119*				
Surr: Toluene-d8	*53.41*	*1.0*	*50*	*0*	*107*	*89 - 112*				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317765 **Instrument: VOA2** **Method: SW8260**

MSD Sample ID: **HS18060425-05MSD** Units: **ug/L** Analysis Date: **11-Jun-2018 15:50**
Client ID: Run ID: **VOA2_317765** SeqNo: **4596455** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Trichloroethene	283.8	1.0	50	248.7	70.0	79 - 123	290.4	2.33	20	SEO
Surr: 1,2-Dichloroethane-d4	*43.76*	*1.0*	*50*	*0*	*87.5*	*81 - 118*	*43.24*	*1.18*	*20*	
Surr: 4-Bromofluorobenzene	*52.22*	*1.0*	*50*	*0*	*104*	*85 - 114*	*52.38*	*0.307*	*20*	
Surr: Dibromofluoromethane	*47.91*	*1.0*	*50*	*0*	*95.8*	*80 - 119*	*47.69*	*0.453*	*20*	
Surr: Toluene-d8	*53.6*	*1.0*	*50*	*0*	*107*	*89 - 112*	*53.41*	*0.351*	*20*	

The following samples were analyzed in this batch: HS18060306-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060306

QC BATCH REPORT

Batch ID: R317832 **Instrument: UV-2450** **Method: SW7196**

MBLK Sample ID: **MBLK-317832** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: Run ID: **UV-2450_317832** SeqNo: **4597749** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.0100	0.0100								U

LCS Sample ID: **LCS-317832** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: Run ID: **UV-2450_317832** SeqNo: **4597750** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.243	0.0100	0.25	0	97.2	80 - 120				

MS Sample ID: **HS18060308-01MS** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: Run ID: **UV-2450_317832** SeqNo: **4597752** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.216	0.0100	0.25	0.003	85.2	75 - 125				

MSD Sample ID: **HS18060308-01MSD** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: Run ID: **UV-2450_317832** SeqNo: **4597753** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.22	0.0100	0.25	0.003	86.8	75 - 125	0.216	1.83	20	

The following samples were analyzed in this batch: HS18060306-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: **HS18060306**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919 2016-2018	31-Jul-2018
Oklahoma	2017-088	31-Aug-2018
North Carolina	624-2018	31-Dec-2018
Louisiana	03087 2017-2018	30-Jun-2018
Arkansas	88-0356	27-Mar-2019
Kansas	E-10352 2017-218	31-Jul-2018
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193	30-Apr-2019

Date: 19-Jun-18

Sample Receipt Checklist

Client Name:	Bhate Environmental	Date/Time Received:	**07-Jun-2018 08:37**
Work Order:	HS18060306	Received by:	**NDR**

Checklist completed by: *Paresh M. Giga* eSignature — 7-Jun-2018 Date

Reviewed by: *RJ Modashia* eSignature — 7-Jun-2018 Date

Matrices: **Water**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c/1.6c U/c	IR11	
Cooler(s)/Kit(s):	43085		
Date/Time sample(s) sent to storage:	6/7/18 10:20		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, TX 77099 (281) 530 – 5656 ATTN: SONIA WEST

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. NWO1312.0150.0 16.0001

Job:
GROUNDWATER TREATMENT PLANT MONTHLY EFFLUENT SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS18060306
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	VOLATILES	SILVER, SELENIUM, LEAD, BARIUM	HEXAVALENT CHROMIUM	1, 4 - DIOXANE	PERCHLORATE						Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_060618	Water	06/06/18 / 14:00		3	X										HCL	
LH18/24-SP650_060618	Water	06/06/18 / 14:00		3			X	X	X						NONE	
LH18/24-SP650_060618	Water	06/06/18 / 14:00		1		X									HNO3	
Trip Blank	Water	06/06/18		2	X										HCL	

Additional Remarks: **STANDARD TURN AROUND TIME**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	06/06/18	14:30	NR	6/7/18	08:37						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

OIC.

43085 2.1°
#11
c1f -0.5°

(Word) S:\1-ccs\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

43085

CUSTODY SEAL

Date: 6/6/18 Time: 11:10
Name: Scott Bessinger
Company: BVAPE

Seal Broken By: SM
Date: 06/07/18

43085 JUN 0 7 2018

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-6856
REF: LHAAP-58-RJ
RMA:

43085

FedEx Express

E

RETURNS MON-SAT
PRIORITY OVERNIGHT

TRK# 0221 7376 9752 9259

THU - 07 JUN 10:30A 99
PRIORITY OVERNIGHT

FedEx
TRK# 0221 7376 9752 9259

77099
TX-US
IAH

AB SGRA

FID 162 95JUN18 GGGA 546C1/48C5/8C8A

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 1815740; 1815988; 1815991; 1815992; 1815993; 1816534

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2101 (216711)

General Set Information: There were fourteen field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: The following samples were analyzed and reported at various dilutions. 1815740001/1815988001-05/1815992001 - 1:1,000. 1815740002/05 – 1:100. 1815740003 – 10,000. Samples 1815991001/1815993001/1816534001 failed the 50-150% method requirement for ISTD recoveries. These samples were re-analyzed and reported from 1:5 dilutions. The reporting limits have been adjusted accordingly.

Method QC data: The method blank (LMB 605275) was less than 1/2 the CRDL. The recovery for the LCS (605276) was within acceptable parameters.

MS/MSD Analysis: The matrix spike and matrix spike duplicate (MS/MSD) was performed on samples 1815988004/05 (Client ID: MW8-060518). The parent sample and the MS/MSD were analyzed at 1:1,000 dilutions. The effective spike target was 5,000.µg/L. The Matrix Spike and duplicate (MS/MSD) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected. The MS/MSD relative percent difference (RPD) was within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1. Manual Integrations was performed for datafiles 14JUND18/19/21-23/33/35/36 and 15JUND03/05.

Thomas Bosch June 18, 2018
Analyst Date

ANALYTICAL REPORT

Report Date: June 18, 2018

RJ Masahisa
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-1815991**
Project ID: HS18060306 060618
Purchase Order: HS18060306
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
LH18/24-SP650_060618	1815991001	06/06/18	06/08/18	

ANALYTICAL REPORT

Workorder: 34-1815991
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **LH18/24-SP650_060618**	Sampling Site: NA	Collected: 06/06/2018
Lab ID: 1815991001	Media: 125 mL Nalgene	Received: 06/08/2018
Matrix: Water	Sampling Parameter: NA	

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable	**Analysis:** EPA 6850, DoD QSM Water	**Instrument ID:** LCMS04
	Batch: ELMS/2101 (HBN: 216711)	**Percent Solid:** NA
	Analyzed: 06/15/2018 11:05	**Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	5.0	10	20	5	U

Comments

Workorder: 1815991

Sample 1815991001 failed the 50-150% method requirement for ISTD recovery. The sample was re-analyzed and reported from a 1:5 dilution. The reporting limit has been adjusted accordingly.

Quality Control: EPA 6850, DoD QSM - (HBN: 216711)

The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 06/17/2018 13:08	/S/ Stephen Brose 06/18/2018 15:12

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

ANALYTICAL REPORT

Workorder: 34-1815991
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body	Certificate Number	Website
Environmental	PJLA (DoD ELAP)		
	Utah (TNI)		
	Nevada		
	Oklahoma		
	Iowa		

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< This testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 1815991

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2101 (HBN: 216711)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 605275
Analyzed: 06/14/2018 12:28
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 605276
Analyzed: 06/14/2018 12:42
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	5.26	5.00	105	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample: 1815988001	**MS:** 1815988004	**MSD:** 1815988005
Analyzed: 06/14/2018 17:13	**Analyzed:** 06/14/2018 18:25	**Analyzed:** 06/14/2018 18:39
Dilution: 1000	**Dilution:** 1000	**Dilution:** 1000
Units: ug/L	**Units:** ug/L	**Units:** ug/L

Analyte	Result	Result	Target	% Rec		QC Limits		Result	% Rec		RPD	QC Limits	
Perchlorate	8800	16400	5000	#	152	78.8	123.8	16400	#	152	0.018	0.0	20.0

Continuing Calibration Verification

CCV: 605272				**CCV:** 605277			**CCV:** 605342		
Analyzed: 06/14/2018 11:45				**Analyzed:** 06/14/2018 17:27			**Analyzed:** 06/14/2018 20:33		
Units: ug/L				**Units:** ug/L			**Units:** ug/L		
Criteria: ± 15%				**Criteria:** ± 15%			**Criteria:** ± 15%		

Analyte	Result	Target	% Rec.	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	25.7	25.0	103	28.0	25.0	112	27.9	25.0	112

CCV: 605457				**CCV:** 605459		
Analyzed: 06/15/2018 10:37				**Analyzed:** 06/15/2018 12:03		
Units: ug/L				**Units:** ug/L		
Criteria: ± 15%				**Criteria:** ± 15%		

Analyte	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	27.6	25.0	110	27.9	25.0	112

Interference Check Sample

ICSA: 605274
Analyzed: 06/14/2018 13:13
Units: ug/L
Criteria: ± 30%

Analyte	Result	Target	% Rec.
Perchlorate	1.09	1.00	109

Quality Control Sample Batch Report

Analysis Information

Workorder: 1815991

Limits:	Client SOW/Contract Specified	**Preparation:**	NA
Basis:	DoD QSM	**Batch:**	NA
		Prepared By:	NA
Analysis:	EPA 6850		
Batch:	ELMS/2101 (HBN: 216711)		
Analyzed By:	Thomas Bosch		

Limit of Detection Verification

LODV: 605273 Analyzed: 06/14/2018 11:59 Units: ug/L Criteria: ± 50%				LODV: 605278 Analyzed: 06/14/2018 17:56 Units: ug/L Criteria: ± 50%			LODV: 605343 Analyzed: 06/14/2018 20:48 Units: ug/L Criteria: ± 50%		
Analyte	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**
Perchlorate	1.03	1.00	103	1.18	1.00	118	1.20	1.00	120

LODV: 605458 Analyzed: 06/15/2018 10:51 Units: ug/L Criteria: ± 50%				LODV: 605460 Analyzed: 06/15/2018 12:17 Units: ug/L Criteria: ± 50%		
Analyte	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**
Perchlorate	0.895	1.00	89.5	0.868	1.00	86.8

Comments

The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
06/17/2018 13:08	06/18/2018 15:12

Symbols and Definitions

- * - Analyte above reporting limit or outside of control limits
- ▲ - Sample result is greater than 4 times the spike added
- ◓ - Sample and Matrix Duplicate less than 5 times the reporting limit
- ● - Result is above the calibration range
- # - The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

1815991

18698/#2

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 9240

1815991

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS18060306
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS18060306-01**	**LH18/24-SP650_060618**	**Water**	**06 Jun 2018 14:00**
	SUB_Perch-6850			15 Jun 2018

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 6/7/18 1800

Received By: _____ Date/Time: 06-08-18 0940

Cooler ID(s): _____ Temperature(s): _____

ALS-SALT LAKE CITY-RELATED INFORMATION REPORT (CRIR)

COOLER OR CONTAINER INFORMATION CHECKLIST (Fill In or Circle)

Client Name: ALS Houston — Project/Task/Site: 1815991

Date/Time of Receipt: 06-08-18 9:40 — Number of Coolers Received: 1

Condition of Coolers:	(Acceptable)/Unacceptable	Temperature Control:	(Present)/Not Included
Cooler Custody Seals:	(Present)/Absent/NA		
	(Intact)/Broken/NA	Location Temp Taken:	(Control)/Between Samples
Container Custody Seals:	(Present)/Absent/NA		
	(Intact)/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/(NA)
Ice Present:	(Yes)/No/NA	VOA Headspace Present?	Yes/No/(NA)
	(Frozen)/Melted/NA		

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.
1	C18 8593	3 °C	4	C18	°C	7	C18	°C
2	C18	°C	5	C18	°C	8	C18	°C
3	C18	°C	6	C18	°C	9	C18	°C

Taken By: Tami VanTassell (Signature) — Tami VanTassell (Printed Name) — 06-08-18 (Date)

CLIENT-RELATED INFORMATION

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

BRIEFLY DESCRIBE THE PROBLEM AND THE ACTION TAKEN:

NO Paperwork
TM 06-08-18

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

PROJECT MANAGEMENT

PROJECT MANAGER COMMENTS:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Part # 159469-435

Must Deliver Next Business Day
Time and Tempature Sensitive!

ALS

ORIGIN ID:SGRA (281) 530-5656
CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 07JUN18
ACTWGT: 17.30 LB
CAD: 300130/CAFE3111
DIMS: 14x11x10 IN.

BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS18060281/306/08/10/52 - RJ

546E1/4BE5/53C1

FedEx
Express

E

J171018102001uv

FRI - 08 JUN 3:00P
STANDARD OVERNIGHT

TRK# 0201 4380 9529 8878

AX BTFA

84123
UT-US SLC

00902646

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS18060306	Split:	Workorder ID: 1815991	Level: ENV_LVL4	Requested Analysis
Client: ALS Environmental (Houston)		Account: 8101	Type: 125Poly	
Comments:			Preservatives	
			COOL	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	EPA 6850, DoD QSM											
1	06/06/2018 14:00	LH18/24-SP650_060618	1815991001		Water	A	1	A											
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

41 of 59

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	06/08/2018 09:40	ALS Sample Receiving	Sample Login
Julie Warath 6/8/18 1400		15C	storage
R.33.1 6.14.18/12:50		T. Bush	6850

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

Batch Worklist

Batch: ELMS/ 2101
Rule: EPA 6850, DoD QSM Water
Created: 6/14/2018 08:55
Analyst: T. Bosch
Instrument: LCMS04
Status: WP
HBN: 216711

Workorder: 1815740 [ENV_LVL4]
Workorder: 1815988 [ENV_LVL4]
Workorder: 1815991 [ENV_LVL4]
Workorder: 1815992 [ENV_LVL4]
Workorder: 1815993 [ENV_LVL4]
Workorder: 1816534 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	605272	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
2	605273	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
3	605275	LMB for HBN 216711 [ELMS/2101]				LMB	3		E6850Q413Q	5311		6/19/2018	6/14/2018
4	605276	LCS for HBN 216711 [ELMS/2101]				LCS	3		E6850Q413Q	5311		6/19/2018	6/14/2018
5	1815740001	MW5_060418				SAMPLE	3	1815740001-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
6	605274	ICS for HBN 216711 [ELMS/2101]				ICS	3		E6850..D3Q	5311		6/19/2018	6/14/2018
7	1815740004	18CPTMW23SW-060418				SAMPLE	3	1815740004-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
8	1815740006	18WW24_060418				SAMPLE	3	1815740006-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
9	1815740007	18WW25_060418				SAMPLE	3	1815740007-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
10	1815988002	MW21_060518				SAMPLE	3	1815988002-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
11	1815988003	MW21_060518-a				SAMPLE	3	1815988003-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
12	1815988001	MW8_060518				SAMPLE	3	1815988001-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
13	605277	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
14	605278	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
15	1815988004	MW8_060518MS				MS	3	1815988004-A	E6850Q413Q	5480		6/19/2018	6/14/2018
16	1815988005	MW8_060518MSD				MSD	3	1815988005-A	E6850Q413Q	5480		6/19/2018	6/14/2018
17	1815992001	LH18/24-SP140_060618				SAMPLE	3	1815992001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/14/2018
18	1815740002	18CPTMW08DW-060418				SAMPLE	3	1815740002-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
19	1815740003	18CPTMW08SW-060418				SAMPLE	3	1815740003-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
20	1815740005	18CPTMW23-060418				SAMPLE	3	1815740005-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
21	605342	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
22	605343	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
23	605457	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/15/2018
24	605458	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/15/2018

Batch Worklist

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
25	1815991001	LH18/24-SP650_060618				SAMPLE	3	1815991001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/15/2018
26	1815993001	LH18/24-SP650_060618				SAMPLE	3	1815993001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/15/2018
27	1816534001	LH18/24-SP650_061218				SAMPLE	3	1816534001-A	E6850Q41.3	5480	7/10/2018	6/15/2018	6/15/2018
28	605459	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/15/2018
29	605460	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/15/2018

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

ALS Work Order #'s & Sample #( )'s: 1815740 (001-07); 1815988 (001-05); 1815991 (001); 1815992 (001); 1815993 (001); 1816534 (001) ELMS Batch/HBN ID: 2101 (216711)
Prep Date: 06/14/2018 Analysis Date: 06/14,15/2018 Analyst: T. Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2018\JUN\14JUN18D.s & 15JUN18D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by TNB. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/ 5% ACN (B&J Lot DI735)/0.1% glacial acetic acid (JT-Baker Lot 04802).
Eluent B1: 95% ACN (B&J Lot DI735)/ 5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 04802).

STANDARDS: Internal Standard Spiking Solution Horizon# 41827. Dilutions of Working Standard Solution ID 41829 used for CCV's, LODV's, RLVS and IPC.

CALIBRATION CURVE: Used curve from 06/14/2018, sequence 14JU18D.s Offline Quantitation Method: CLO4-DPR.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-DOD.M Fragmentor: 160 Output Gain: 3 Injection Volume: 25µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.80
4.0	0.80
5.0	0.25
10.0	0.25
10.5	0.80
13.0	0.80

QC DATA: 5.0µL of QC Solution Horizon ID 41830 was used for LCS 605276; Target = 5.0µg/L. ASTM type II water was used for LMB 605275.

MS/MSD: MS/MSD was performed on samples 1815988004/05 (Client ID: MW8_060518). 5.0µl of Working Standard Solution Horizon ID 41828 was added to 10.0mL of sample preparation. Spike target = 5.0µg/L. The parent sample and the MS/MSD were analyzed at 1:1,000 dilutions. The effective spike target was 5,000.µg/L.

COMMENTS:

1) Results reported in µg/L. The following samples were analyzed and reported at various dilutions. 1815740001/1815988001-05/1815992001 - 1:1,000. 1815740002/05 – 1:100. 1815740003 – 10,000. Samples 1815991001/1815993001/1816534001 failed the 50-150% method requirement for ISTD recoveries. These samples were re-analyzed and reported from 1:5 dilutions. The reporting limits have been adjusted accordingly.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters, except for the following. The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2018\JUN\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations was performed for datafiles 14JUND18/19/21-23/33/35/36 and 15JUND03/05.
5) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2018\216711-DOD-ALS-HSTN-LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK — **Description - 6850 WKG Std 100.ug/L**

Standard: 41829
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
41828	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	10/04/2018

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK	Description - 6850 Stock AccStd 1,000ug/mL

Standard: 36733
MFG: AccuStandard
MFG Lot: 216095148
Part ID: IC-PER-10X-1

Created By: Thomas Bosch
Create Date: 05/10/2017 11:05AM

Amount: 100 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 41828
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36733	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	10/04/2018

ALS

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		Description - ASTM Type II Water
Standard: 109	Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House	Create Date: 10/06/2005 09:10AM	Expires: 11/07/2025
MFG Lot: Not Provided		Usable: Yes
Part ID: Not Provided		Lab Lot: LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

ALS

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 41827	Created By: Thomas Bosch	Amount: 10 mL
MFG: ALS/SLC	Create Date: 05/09/2018 10:05AM	Expires: 05/09/2019
MFG Lot: TNB: 05/09/2018	Verified By: Thomas Bosch	Usable: Yes
Pipette ID: Not Provided	Verify Date:	Lab Lot: CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
23118	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.1 mL	02/27/2024

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 23118	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 04/04/2014 03:04PM	**Expires:** 02/27/2024
MFG Lot: SDDG-013	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:** 02/05/2009 12:02AM	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK		Description - 6850 QC WKG STD 100ug/L
Standard: 41831	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 05/09/2018 10:05AM	**Expires:** 05/09/2019
MFG Lot: TNB: 05/09/2018		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
41830	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	05/09/2019

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT	Description - 6850 QC Intrmdt Std-QC 10ug/mL

Standard: 41830
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 05/09/2019
Usable: Yes
Lab Lot: CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			Description - ASTM Type II Water
Standard: 109		Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House		Create Date: 10/06/2005 09:10AM	Expires: 11/07/2025
MFG Lot: Not Provided			Usable: Yes
Part ID: Not Provided			Lab Lot: LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK	Description - 6850 QC Stock STD 1,000ug/mL

Standard: 36748	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG: Ultra Scientific	**Create Date:** 05/11/2017 01:05PM	**Expires:** 03/31/2020
MFG Lot: CP-0860		**Usable:** Yes
Part ID: ICC-013		**Lab Lot:** CLO4 QC STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

125 Market Street
New Haven, CT 06513
USA

AccuStandard,® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 216095148
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: Warning

Date Certified: Oct 4, 2016
Expiration: Oct 4, 2018
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)
Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.2%. See reverse side for details.
The final solution was checked against an independent standard to verify its concentration.
We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.
All solutions are filtered through a 0.2 µm filter prior to being bottled.
All glassware used in preparation is Class A and calibrated regularly.
All weights are traceable through NIST, Test No. 822-275872-11
All bottles are triple rinsed with deionized water prior to use.
Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.
We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

Quality Standards:
ISO Guide 34 • ISO/IEC 17025 • ISO 13485 • cGMP

23118

Product Name: (Isotopic Label & Enrichment Specification)	PERCHLORIC ACID, SODIUM SALT (18O4, 90%+) 100 UG/ML IN WATER
Lot Number:	SDDG-013
Catalog Number:	OLM-7310-S

Product Information

Chemical Purity Specification:	≥98%
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
MW*:	130.4
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

* *For isotopically labeled compounds, MW listed is for the fully enriched product.*

Approved by: T. J. Eckersley

Timothy J. Eckersley, Ph.D., Quality Assurance

Quality Control Tests and Results

QC Release Date	2/27/2014
Expiration Date	2/27/2024
Concentration Based on Gravimetry	102 µg/mL
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	109.4 ± 2.8 µg/mL (k=2)

50 Frontage Road, Andover, MA 01810-5413, USA • 1.800.322.1174 (North America) • 1.978.749.8000 (International) • isotope.com

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

WorkOrder: HS18060308

Longhorn GW Treatment Plant

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

29-Jun-2018

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

June 19, 2018

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS18060308**

Laboratory Results for: **Longhorn GW Treatment Plant**

Dear Marcia,

ALS Environmental received 1 sample(s) on Jun 07, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Work Order: HS18060308

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18060308-01	LH18/24-SP140_060618	Water		06-Jun-2018 14:00	07-Jun-2018 08:37	☐

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant
Work Order: HS18060308

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

Metals by Method SW6020

Batch ID: 129155

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW7196

Batch ID: R317832

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: LH18/24-SP140_060618
Collection Date: 06-Jun-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18060308
Lab ID:HS18060308-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
ICP-MS METALS BY SW6020A		**Method:SW6020**				Prep:SW3010A / 07-Jun-2018		Analyst: JDE
Selenium	0.00200	U	0.00110	0.00200	0.00200	mg/L	1	08-Jun-2018 21:43
Silver	0.00100	U	0.000200	0.00100	0.00200	mg/L	1	08-Jun-2018 21:43
HEXAVALENT CHROMIUM BY SW7196A		**Method:SW7196**				Prep:SW7196		Analyst: MZD
Chromium, Hexavalent	0.0100	U	0.00600	0.0100	0.0100	mg/L	1	07-Jun-2018 11:55
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2018 10:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

WEIGHT LOG

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Batch ID: 129155 **Method:** ICP-MS METALS BY SW6020A **Prep:** 3010A

SampID	Container	Sample Wt/Vol	Final Volume	Prep Factor
HS18060308-01	1	10	10 (mL)	1

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID 129155	**Test Name :** ICP-MS METALS BY SW6020A			**Matrix:** Water		
HS18060308-01	LH18/24-SP140_060618	06 Jun 2018 14:00		07 Jun 2018 12:00	08 Jun 2018 21:43	1
Batch ID R317832	**Test Name :** HEXAVALENT CHROMIUM BY SW7196A			**Matrix:** Water		
HS18060308-01	LH18/24-SP140_060618	06 Jun 2018 14:00			07 Jun 2018 11:55	1
Batch ID R318211	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			**Matrix:** Water		
HS18060308-01	LH18/24-SP140_060618	06 Jun 2018 14:00			19 Jun 2018 10:45	1

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

QC BATCH REPORT

Batch ID: 129155 **Instrument: ICPMS05** **Method: SW6020**

MBLK Sample ID: **MBLK-129155** Units: **mg/L** Analysis Date: **08-Jun-2018 21:17**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593680** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.00200	0.00200								U
Silver	0.00100	0.00200								U

LCS Sample ID: **LCS-129155** Units: **mg/L** Analysis Date: **08-Jun-2018 21:19**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593681** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04654	0.00200	0.05	0	93.1	80 - 120				
Silver	0.04457	0.00200	0.05	0	89.1	80 - 120				

MS Sample ID: **HS18060281-03MS** Units: **mg/L** Analysis Date: **08-Jun-2018 21:31**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593687** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.05099	0.00200	0.05	0.00481	92.4	80 - 120				
Silver	0.04131	0.00200	0.05	0.000022	82.6	80 - 120				

MSD Sample ID: **HS18060281-03MSD** Units: **mg/L** Analysis Date: **08-Jun-2018 21:33**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593688** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.05045	0.00200	0.05	0.00481	91.3	80 - 120	0.05099	1.08	20	
Silver	0.04077	0.00200	0.05	0.000022	81.5	80 - 120	0.04131	1.34	20	

PDS Sample ID: **HS18060281-03PDS** Units: **mg/L** Analysis Date: **08-Jun-2018 21:35**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593689** PrepDate: **07-Jun-2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.09665	0.00200	0.1	0.00481	91.8	75 - 125				
Silver	0.08071	0.00200	0.1	0.000022	80.7	75 - 125				

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

QC BATCH REPORT

Batch ID: 129155 **Instrument: ICPMS05** **Method: SW6020**

SD Sample ID: **HS18060281-03SD** Units: **mg/L** Analysis Date: **08-Jun-2018 21:29**
Client ID: Run ID: **ICPMS05_317649** SeqNo: **4593686** PrepDate: **07-Jun-2018** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%D	%D Limit	Qual
Selenium	0.0100	0.0100					0.00481	0	10	U
Silver	0.00500	0.0100					0.000022	0	10	U

The following samples were analyzed in this batch: HS18060308-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

QC BATCH REPORT

Batch ID: R317832 **Instrument: UV-2450** **Method: SW7196**

MBLK Sample ID: **MBLK-317832** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: Run ID: **UV-2450_317832** SeqNo: **4597749** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.0100	0.0100								U

LCS Sample ID: **LCS-317832** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: Run ID: **UV-2450_317832** SeqNo: **4597750** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.243	0.0100	0.25	0	97.2	80 - 120				

MS Sample ID: **HS18060308-01MS** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: **LH18/24-SP140_060618** Run ID: **UV-2450_317832** SeqNo: **4597752** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.216	0.0100	0.25	0.003	85.2	75 - 125				

MSD Sample ID: **HS18060308-01MSD** Units: **mg/L** Analysis Date: **07-Jun-2018 11:55**
Client ID: **LH18/24-SP140_060618** Run ID: **UV-2450_317832** SeqNo: **4597753** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	0.22	0.0100	0.25	0.003	86.8	75 - 125	0.216	1.83	20	

The following samples were analyzed in this batch: HS18060308-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: **HS18060308**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919 2016-2018	31-Jul-2018
Oklahoma	2017-088	31-Aug-2018
North Carolina	624-2018	31-Dec-2018
Louisiana	03087 2017-2018	30-Jun-2018
Arkansas	88-0356	27-Mar-2019
Kansas	E-10352 2017-218	31-Jul-2018
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193	30-Apr-2019

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Work Order: HS18060308

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS18060308-01	LH18/24-SP140_060618	Login	6/7/2018 10:17:45 AM	PMG	Sub
HS18060308-01	LH18/24-SP140_060618	Login	6/7/2018 10:17:45 AM	PMG	EXT024
HS18060308-01	LH18/24-SP140_060618	Login	6/7/2018 10:17:45 AM	PMG	WET082
HS18060308-01	LH18/24-SP140_060618	Login	6/7/2018 10:17:45 AM	PMG	MET050
HS18060308-01	LH18/24-SP140_060618	Login	6/7/2018 10:17:45 AM	PMG	VOA154

Date: 19-Jun-18

Sample Receipt Checklist

Client Name: Bhate Environmental
Work Order: HS18060308
Date/Time Received: **07-Jun-2018 08:37**
Received by: **NDR**

Checklist completed by: *Paresh M. Giga* eSignature — 7-Jun-2018 Date
Reviewed by: *RJ Modashia* eSignature — 7-Jun-2018 Date

Matrices: **Water**
Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c/1.6c U/c	IR11	
Cooler(s)/Kit(s):	43085		
Date/Time sample(s) sent to storage:	6/7/18 10:30		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd., Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: SONIA WEST

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No. NWO1312.0150.0 16.0001

Job:
GROUNDWATER TREATMENT PLANT MONTHLY INFLUENT SAMPLES

Prepared By: Scott Beesinger

P.O. Number

HS18060308
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	SILVER & SELENIUM	HEXAVALENT CHROMIUM	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP140_060618	Water	06/06/18 / 14:00		1	X			HNO3	
LH18/24-SP140_060618	Water	06/06/18 / 14:00		2		X	X	NONE	

Additional Remarks: **STANDARD TURN AROUND TIME**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger	06/06/18	14:30	NR	6/7/18	08:37						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

43085 UIC. 2.1° #11 c/f-0.5° 1

(Word) S:\I-ces\Forms\Chain of Custody - BiWeekly

ALS 10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887 43085	CUSTODY SEAL Date: 6/6/18 Time: 1420 Name: Scott Bessinger Company: B&HTE	Seal Broken By: Date: 06/07/18

43085 JUN 0 7 2018

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP-50-RJ
RMA:

43085

FedEx Express

E

RETURNS MON-SAT
PRIORITY OVERNIGHT

TRK# 0221 7376 9752 9259

THU - 07 JUN 10:30A
PRIORITY OVERNIGHT

99

FedEx
TRK# 0221 7376 9752 9259

77099
TX-US
IAH

AB SGRA

F10 162 06JUN18 SGGA 546C1/40IS/0C8A

Metals Raw Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT PLANT
ALS WO# HS18060308

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Run ID: ICPMS05_317649
Instrument: ICPMS05
Method: SW6020

ICV	Date: 08-Jun-2018 15:12		Seq: 4593135	ICV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	99.335	99	90-110	
Silver	100	92.179	92	90-110	

CCV1	Date: 08-Jun-2018 17:00		Seq: 4593608	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	95.159	95	90-110	
Silver	100	93.684	94	90-110	

CCV2	Date: 08-Jun-2018 17:23		Seq: 4593620	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	101.992	102	90-110	
Silver	100	96.336	96	90-110	

CCV3	Date: 08-Jun-2018 17:47		Seq: 4593632	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	100.331	100	90-110	
Silver	100	96.514	97	90-110	

CCV4	Date: 08-Jun-2018 18:11		Seq: 4593644	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	94.929	95	90-110	
Silver	100	92.973	93	90-110	

CCV5	Date: 08-Jun-2018 18:29		Seq: 4593653	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	97.098	97	90-110	
Silver	100	97.462	98	90-110	

CCV6	Date: 08-Jun-2018 21:13		Seq: 4593678	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	98.437	98	90-110	
Silver	100	96.182	96	90-110	

CCV7	Date: 08-Jun-2018 21:37		Seq: 4593690	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	96.917	97	90-110	
Silver	100	91.039	91	90-110	

CCV8	Date: 08-Jun-2018 21:47		Seq: 4593695	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	93.665	94	90-110	
Silver	100	90.7	91	90-110	

CCV9	Date: 08-Jun-2018 22:11		Seq: 4593978	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	100.017	100	90-110	
Silver	100	97.654	98	90-110	

CCV10	Date: 08-Jun-2018 22:35		Seq: 4593990	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	96.366	96	90-110	
Silver	100	92.62	93	90-110	

CCV11	Date: 08-Jun-2018 22:52		Seq: 4593999	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	96.224	96	90-110	
Silver	100	92.244	92	90-110	

ALS Group Houston, Corp Date: 18-Jun-18

Form 2 - Initial and Continuing Calibration Verification

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Run ID: ICPMS05_317649
Instrument: ICPMS05
Method: SW6020

CCV12	Date: 08-Jun-2018 23:16		Seq: 4594011	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	95.741	96	90-110	
Silver	100	91.595	92	90-110	

CCV13	Date: 08-Jun-2018 23:34		Seq: 4594020	CCV	Units: ug/L
Analyte	**True**	**Found**	**%R**	**Control Limits**	**Flag**
Selenium	100	97.493	98	90-110	
Silver	100	94.115	94	90-110	

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Run ID: ICPMS05_317649
Instrument: ICPMS05
Method: SW6020

ICB	Date: 08-Jun-2018 15:10		Seq: 4593134	ICB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	5	1.1	5	U	
Silver	5	0.2	5	U	
ICCB1	Date: 08-Jun-2018 16:36		Seq: 4593596	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	5	1.1	5	U	
Silver	5	0.2	5	U	
CCB2	Date: 08-Jun-2018 17:01		Seq: 4593609	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB3	Date: 08-Jun-2018 17:25		Seq: 4593621	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB4	Date: 08-Jun-2018 17:49		Seq: 4593633	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB5	Date: 08-Jun-2018 18:13		Seq: 4593645	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB6	Date: 08-Jun-2018 18:31		Seq: 4593654	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB7	Date: 08-Jun-2018 21:15		Seq: 4593679	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
MBLK-129155	Date: 08-Jun-2018 21:17		Seq: 4593680	MBLK	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB8	Date: 08-Jun-2018 21:39		Seq: 4593691	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB9	Date: 08-Jun-2018 21:49		Seq: 4593696	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	
CCB10	Date: 08-Jun-2018 22:13		Seq: 4593979	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	

Form 3 - BLANKS

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Run ID: ICPMS05_317649
Instrument: ICPMS05
Method: SW6020

CCB11	Date: 08-Jun-2018 22:37		Seq: 4593991	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	

CCB12	Date: 08-Jun-2018 22:54		Seq: 4594000	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	

CCB13	Date: 08-Jun-2018 23:18		Seq: 4594012	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	

CCB14	Date: 08-Jun-2018 23:36		Seq: 4594021	CCB	Units: ug/L
Analyte	**Result**	**MDL**	**Report Limit**	**Qual**	
Selenium	2	1.1	2	U	
Silver	2	0.2	2	U	

Form 4 - ICP Interference Check Sample

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Run ID: ICPMS05_317649
Instrument: ICPMS05
Method: SW6020

ICSA	Date: 08-Jun-2018 15:14	Seq: 4593136	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Selenium		-0.115	0	
Silver		0.095	0	
ICSAB	Date: 08-Jun-2018 15:16	Seq: 4593137	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Selenium	100	94.42	94.4	
Silver	100	86.84	86.8	
ICSA	Date: 08-Jun-2018 23:42	Seq: 4594024	ICSA	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Selenium		0.471	0	
Silver		0.029	0	
ICSAB	Date: 08-Jun-2018 23:44	Seq: 4594025	ICSAB	Units: ug/L
Analyte	**True**	**Found**	**%R**	
Selenium	100	96.67	96.7	
Silver	100	85.95	86.0	

ALS Group Houston, Corp Date: 18-Jun-18

Form 5A - Matrix Spike/Matrix Spike Duplicate Recovery

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Date Analyzed: 08-Jun-2018 21:33
Date Extracted: 07-Jun-2018 09:10
Units: ug/L

Matrix Spike: HS18060281-03MS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	MS Result	Spike Amount	% Rec	MSD Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Selenium	4.810	50.99	50.00	92.4	50.45	50.00	91.3	80-120	1.08	20
Silver	2.000	41.31	50.00	82.6	40.77	50.00	81.5	80-120	1.34	20

ALS Group Houston, Corp Date: 18-Jun-18

Form 5B - Post Digest Sample Recovery

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Date Analyzed: 08-Jun-2018 21:35
Date Extracted: 07-Jun-2018 09:10
Units: ug/L

Lab Sample ID: HS18060281-03PDS
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	PDS Result	Spike Amount	% Rec	% Rec Limits
Selenium	4.81	96.65	100	92	75-125
Silver	0	80.71	100	81	75-125

ALS Group Houston, Corp Date: 18-Jun-18

Form 7 - Laboratory Control Sample

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Date Analyzed: 08-Jun-2018 21:19
Date Extracted: 07-Jun-2018 09:10
Units: ug/L

Lab Sample ID: LCS-129155 Analysis Method: SW6020

Analyte	Spike Amount	LCS Result	% Rec	% Rec Limits
Selenium	50	46.54	93	80-120
Silver	50	44.57	89	80-120

ALS Group Houston, Corp Date: 18-Jun-18

Form 8 - ICP Serial Dilutions

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Date Analyzed: 08-Jun-2018 21:29
Date Extracted: 07-Jun-2018 09:10
Units: ug/L

Lab Sample ID: HS18060281-03SD
Client Sample ID:

Analysis Method: SW6020

Analyte	Sample Result	C	SD Result	C	RPD	Q
Selenium	4.81		0	U	0	
Silver	0	U	0	U	0	

ALS Group Houston, Corp Date: 18-Jun-18

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Bhate Environmental Associates, Inc. Instrument:ICPMS05
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

ALS Group Houston, Corp Date: 18-Jun-18

FORM 12 - PREPARATION LOG

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308
Start Date: 07-Jun-2018 12:00 End Date: 07-Jun-2018 16:00

Batch ID: 129155
Prep Code: 3010A
Method: SW3010A
Technician:

SampID	ClientID	Matrix	Init Wt	Init Vol	FinalVol (mL)	PrepFac
HS18060281-03MS				10	10	1
HS18060281-03MSD				10	10	1
HS18060281-03PDS				10	10	1
HS18060281-03SD				10	10	1
HS18060308-01	LH18/24-SP140_060618	Water		10	10	1
LCS-129155				10	10	1
MBLK-129155				10	10	1

ALS Group Houston, Corp Date: 18-Jun-18

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc. Run ID:ICPMS05_317649
Project: Longhorn GW Treatment Plant Instrument:ICPMS05
WorkOrder: HS18060308 Method:
Start Date: 08-Jun-2018 End Date: 08-Jun-2018

Sample No.	D/F	Time	FileID	Analytes
ICPMS05_317649_Tune	1	08-Jun-2018 00:00	ICPMS05_317649_Tune_1	
CAL BLK	1	08-Jun-2018 14:51	004CALB.d_4593124	AG SE
2/10/200	1	08-Jun-2018 14:53	005CALS.d_4593125	AG SE
5/25/500	1	08-Jun-2018 14:55	006CALS.d_4593126	AG SE
10/50/1000	1	08-Jun-2018 14:56	007CALS.d_4593127	AG SE
100/500/10K	1	08-Jun-2018 14:58	008CALS.d_4593128	AG SE
200/1000/20K	1	08-Jun-2018 15:00	009CALS.d_4593129	AG SE
LLICV2	1	08-Jun-2018 15:07	012SMPL.d_4593132	AG SE
LLICV5	1	08-Jun-2018 15:09	013LICV.d_4593133	AG SE
ICB	1	08-Jun-2018 15:10	014_ICB.d_4593134	AG SE
ICV	1	08-Jun-2018 15:12	015_ICV.d_4593135	AG SE
ICSA	1	08-Jun-2018 15:14	016ICSA.d_4593136	AG SE
ICSAB	1	08-Jun-2018 15:16	017ICSB.d_4593137	AG SE
CAL BLK	1	08-Jun-2018 16:16	042CALB.d_4593586	AG SE
2/10/200	1	08-Jun-2018 16:18	043CALS.d_4593587	AG SE
5/25/500	1	08-Jun-2018 16:20	044CALS.d_4593588	AG SE
10/50/1000	1	08-Jun-2018 16:22	045CALS.d_4593589	AG SE
100/500/10K	1	08-Jun-2018 16:24	046CALS.d_4593590	AG SE
200/1000/20K	1	08-Jun-2018 16:26	047CALS.d_4593591	AG SE
LLCCV2	1	08-Jun-2018 16:32	050SMPL.d_4593594	AG SE
LLCCV5	1	08-Jun-2018 16:34	051LICV.d_4593595	AG SE
ICCB 1	1	08-Jun-2018 16:36	052_ICB.d_4593596	AG SE
CCV 1	1	08-Jun-2018 17:00	064_CCV.d_4593608	AG SE
CCB 2	1	08-Jun-2018 17:01	065_CCB.d_4593609	AG SE
CCV 2	1	08-Jun-2018 17:23	076_CCV.d_4593620	AG SE
CCB 3	1	08-Jun-2018 17:25	077_CCB.d_4593621	AG SE
CCV 3	1	08-Jun-2018 17:47	088_CCV.d_4593632	AG SE
CCB 4	1	08-Jun-2018 17:49	089_CCB.d_4593633	AG SE
CCV 4	1	08-Jun-2018 18:11	100_CCV.d_4593644	AG SE
CCB 5	1	08-Jun-2018 18:13	101_CCB.d_4593645	AG SE
CCV 5	1	08-Jun-2018 18:29	109_CCV.d_4593653	AG SE
CCB 6	1	08-Jun-2018 18:31	110_CCB.d_4593654	AG SE
CCV 6	1	08-Jun-2018 21:13	113_CCV.d_4593678	AG SE
CCB 7	1	08-Jun-2018 21:15	114_CCB.d_4593679	AG SE
MBLK-129155	1	08-Jun-2018 21:17	115SMPL.d_4593680	AG SE
LCS-129155	1	08-Jun-2018 21:19	116SMPL.d_4593681	AG SE
ZZZZZZSD	5	08-Jun-2018 21:29	121SMPL.d_4593686	AG SE
ZZZZZZMS	1	08-Jun-2018 21:31	122SMPL.d_4593687	AG SE
ZZZZZZMSD	1	08-Jun-2018 21:33	123SMPL.d_4593688	AG SE
ZZZZZZPDS	1	08-Jun-2018 21:35	124SMPL.d_4593689	AG SE
CCV 7	1	08-Jun-2018 21:37	125_CCV.d_4593690	AG SE
CCB 8	1	08-Jun-2018 21:39	126_CCB.d_4593691	AG SE
LH18/24-SP140_060618	1	08-Jun-2018 21:43	128SMPL.d_4593693	AG SE
CCV 8	1	08-Jun-2018 21:47	130_CCV.d_4593695	AG SE
CCB 9	1	08-Jun-2018 21:49	131_CCB.d_4593696	AG SE
CCV 9	1	08-Jun-2018 22:11	142_CCV.d_4593978	AG SE
CCB 10	1	08-Jun-2018 22:13	143_CCB.d_4593979	AG SE
CCV 10	1	08-Jun-2018 22:35	154_CCV.d_4593990	AG SE
CCB 11	1	08-Jun-2018 22:37	155_CCB.d_4593991	AG SE
CCV 11	1	08-Jun-2018 22:52	163_CCV.d_4593999	AG SE
CCB 12	1	08-Jun-2018 22:54	164_CCB.d_4594000	AG SE
CCV 12	1	08-Jun-2018 23:16	175_CCV.d_4594011	AG SE
CCB 13	1	08-Jun-2018 23:18	176_CCB.d_4594012	AG SE
13	1	08-Jun-2018 23:34	184_CCV.d_4594020	AG SE

ALS Group Houston, Corp Date: 18-Jun-18

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308
Start Date: 08-Jun-2018 End Date: 08-Jun-2018

Run ID:ICPMS05_317649
Instrument:ICPMS05
Method:

Sample No.	D/F	Time	FileID	Analytes
CCB 14	1	08-Jun-2018 23:36	185_CCB.d_4594021	AG SE
LLCCV5	1	08-Jun-2018 23:38	186LICV.d_4594022	AG SE
LLCCV2	1	08-Jun-2018 23:40	187SMPL.d_4594023	AG SE
ICSA	1	08-Jun-2018 23:42	188ICSA.d_4594024	AG SE
ICSAB	1	08-Jun-2018 23:44	189ICSB.d_4594025	AG SE

Tune Report

Batch Folder C:\Agilent\ICPMH\1\DATA\060818A.b
Report Comment
Instrument Name G3281A JP11080910

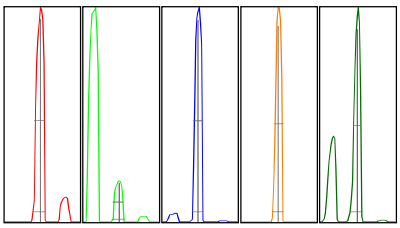
[nogas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		10907				NaN	-	
24		26991				NaN	-	
59		32400				NaN	-	
115		31759				NaN	-	
208		14763				NaN	-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	1.30	5.00				
24	0.79	5.00				
59	0.67	5.00				
115	0.47	5.00				
208	1.07	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	10774	11022	10894	10766	11079
24	27234	26761	26970	27180	26810
59	32151	32280	32349	32706	32514
115	31584	31637	31952	31847	31774
208	14630	14899	14883	14843	14558

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	2997.26	8.95	8.9 - 9.1		0.38	0.475	0.750	
24	7379.50	23.95	23.9 - 24.1		0.38	0.457	0.750	
59	9586.22	58.95	58.9 - 59.1		0.34	0.440	0.750	
115	10015.70	115.00	114.9 - 115.1		0.30	0.437	0.750	
208	4450.49	208.00	207.9 - 208.1		0.32	0.496	0.750	

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 168.5 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.45 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.40 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	15.0 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-58 V		

Cell Parameters

OctP Bias	-8.0 V	He Flow	0.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

[He]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		225				NaN	-	
24		1864				NaN	-	
59		13848				NaN	-	

Tune Report

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	7.50	5.00	[F]			
24	1.54	5.00				
59	1.63	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	200	232	216	242	236
24	1849	1846	1865	1848	1914
59	13651	13565	14011	13947	14067

Integration Time [sec] 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	60.80	8.90	8.9 - 9.1		0.37	0.483	0.750	
24	515.32	23.90	23.9 - 24.1		0.38	0.446	0.750	
59	4254.95	58.95	58.9 - 59.1		0.32	0.435	0.750	

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 100.6 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.45 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.40 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	2.0 V
Extract 2	-200.0 V	Cell Entrance	-32 V	Plate Bias	-60 V
Omega Bias	-100 V	Cell Exit	-70 V		

Cell Parameters

OctP Bias	-18.0 V	He Flow	4.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	004CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T14:51:02-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	37	154.83
Na	23	1	nogas	797533	0.00
Mg	24	1	nogas	54452	0.01
Al	27	1	nogas	18726	0.01
K	39	1	nogas	4721046	0.00
Ti	47	1	nogas	427	3.74
V	51	1	nogas	253777	0.00
Cr	52	1	nogas	19844	0.00
Mn	55	1	nogas	17021	0.02
Co	59	1	nogas	547	2.73
Ni	60	1	nogas	373	4.14
Cu	63	1	nogas	11510	0.02
Zn	66	1	nogas	903	1.31
As	75	1	nogas	48485	0.00
Sr	88	1	nogas	3417	0.10
Ag	107	1	nogas	40	108.25
Cd	111	1	nogas	30	111.11
Sb	121	1	nogas	527	2.05
Tl	205	1	nogas	80	56.34
Pb	208	1	nogas	247	9.05
[Pb]	206	1	nogas	60	27.78
[Pb]	207	1	nogas	83	46.29
Na	23	2	He	95682	0.00
Mg	24	2	He	3827	0.08
Al	27	2	He	557	1.66
K	39	2	He	141601	0.00
Ca	43	2	He	50	105.83
Ca	44	2	He	1317	0.82
V	51	2	He	4357	0.07
Cr	52	2	He	2467	0.58
Mn	55	2	He	1647	0.15
Fe	56	2	He	26172	0.01
Co	59	2	He	113	46.93
Ni	60	2	He	183	3.44
Cu	63	2	He	4321	0.17
Zn	66	2	He	280	7.10
As	75	2	He	273	4.72
Se	78	2	He	372	0.66
B	11	1	nogas	50173	0.00
Si	28	1	nogas	2508358	0.00
Ca	43	1	nogas	937	0.96
Ca	44	1	nogas	53192	0.00

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	1846430	0.00
Se	77	1	nogas	15627	0.01
Se	82	1	nogas	350	1.41
Mo	95	1	nogas	103	10.81
Sn	118	1	nogas	663	1.44
Ba	137	1	nogas	333	0.52
Sb	121	2	He	177	8.06
Li	7	1	nogas	34375	0.01
P	31	1	nogas	28552	0.01
La	139	1	nogas	63	80.14

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	6	1	nogas	377819	0.94
Ge	72	1	nogas	1841117	0.66
In	115	1	nogas	1679059	0.43
Bi	209	1	nogas	1089822	3.56
Ge	72	2	He	506025	3.04

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	005CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T14:53:00-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	6304	0.01
Na	23	1	nogas	15744290	0.00
Mg	24	1	nogas	1960797	0.00
Al	27	1	nogas	43534	0.01
K	39	1	nogas	7524429	0.00
Ti	47	1	nogas	2874	0.05
V	51	1	nogas	283648	0.00
Cr	52	1	nogas	48022	0.00
Mn	55	1	nogas	54346	0.01
Co	59	1	nogas	30339	0.01
Ni	60	1	nogas	6938	0.03
Cu	63	1	nogas	27174	0.01
Zn	66	1	nogas	5581	0.07
As	75	1	nogas	54291	0.00
Sr	88	1	nogas	43974	0.00
Ag	107	1	nogas	18750	0.02
Cd	111	1	nogas	4004	0.06
Sb	121	1	nogas	18026	0.02
Tl	205	1	nogas	23097	0.01
Pb	208	1	nogas	34728	0.01
[Pb]	206	1	nogas	8589	0.04
[Pb]	207	1	nogas	7965	0.08
Na	23	2	He	302079	0.00
Mg	24	2	He	122334	0.00
Al	27	2	He	1330	0.41
K	39	2	He	282703	0.00
Ca	43	2	He	403	1.88
Ca	44	2	He	7942	0.01
V	51	2	He	13100	0.01
Cr	52	2	He	11287	0.02
Mn	55	2	He	8716	0.02
Fe	56	2	He	854521	0.00
Co	59	2	He	12925	0.04
Ni	60	2	He	3467	0.16
Cu	63	2	He	12584	0.02
Zn	66	2	He	2037	0.22
As	75	2	He	2183	0.05
Se	78	2	He	539	0.22
B	11	1	nogas	66516	0.00
Si	28	1	nogas	3095623	0.00

Calibration Standard Report

Ca	43	1	nogas	5941	0.06
Ca	44	1	nogas	129558	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	5004105	0.00
Se	77	1	nogas	16024	0.01
Se	82	1	nogas	560	1.39
Mo	95	1	nogas	7192	0.11
Sn	118	1	nogas	11154	0.06
Ba	137	1	nogas	5808	0.04
Sb	121	2	He	7228	0.09
P	31	1	nogas	38700	0.01
La	139	1	nogas	77	25.99

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	370472	1.16	377819	98.06	70	125	
Ge	72	1	nogas	1862703	4.79	1841117	101.17	70	125	
In	115	1	nogas	1622175	1.09	1679059	96.61	70	125	
Bi	209	1	nogas	1107083	3.15	1089822	101.58	70	125	
Ge	72	2	He	500911	0.77	506025	98.99	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	006CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T14:55:00-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	15687	0.02
Na	23	1	nogas	7837938	0.00
Mg	24	1	nogas	4749860	0.00
Al	27	1	nogas	77087	0.00
K	39	1	nogas	11831892	0.00
Ti	47	1	nogas	6301	0.08
V	51	1	nogas	333396	0.00
Cr	52	1	nogas	92054	0.00
Mn	55	1	nogas	109221	0.00
Co	59	1	nogas	74778	0.00
Ni	60	1	nogas	17222	0.01
Cu	63	1	nogas	50710	0.00
Zn	66	1	nogas	13775	0.02
As	75	1	nogas	64741	0.00
Sr	88	1	nogas	102903	0.00
Ag	107	1	nogas	46114	0.01
Cd	111	1	nogas	9076	0.05
Sb	121	1	nogas	44096	0.00
Tl	205	1	nogas	60526	0.01
Pb	208	1	nogas	84587	0.00
[Pb]	206	1	nogas	21174	0.02
[Pb]	207	1	nogas	18741	0.01
Na	23	2	He	612149	0.00
Mg	24	2	He	300606	0.00
Al	27	2	He	2567	0.25
K	39	2	He	501801	0.00
Ca	43	2	He	943	0.53
Ca	44	2	He	17749	0.02
V	51	2	He	26433	0.00
Cr	52	2	He	24730	0.02
Mn	55	2	He	19167	0.01
Fe	56	2	He	2213438	0.00
Co	59	2	He	31581	0.00
Ni	60	2	He	8215	0.08
Cu	63	2	He	24129	0.01
Zn	66	2	He	4857	0.09
As	75	2	He	5167	0.08
Se	78	2	He	745	1.40
B	11	1	nogas	94541	0.00
Si	28	1	nogas	4112988	0.00

Calibration Standard Report

Ca	43	1	nogas	13642	0.02
Ca	44	1	nogas	250060	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	9733786	0.00
Se	77	1	nogas	16134	0.02
Se	82	1	nogas	1093	0.42
Mo	95	1	nogas	18393	0.01
Sn	118	1	nogas	26213	0.02
Ba	137	1	nogas	14283	0.04
Sb	121	2	He	18477	0.01
P	31	1	nogas	52637	0.00
La	139	1	nogas	87	38.43

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	371446	0.38	377819	98.31	70	125	
Ge	72	1	nogas	1851450	0.98	1841117	100.56	70	125	
In	115	1	nogas	1573222	2.07	1679059	93.70	70	125	
Bi	209	1	nogas	1090456	2.31	1089822	100.06	70	125	
Ge	72	2	He	505991	0.83	506025	99.99	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	007CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T14:56:58-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	33166	0.00
Na	23	1	nogas	14842554	0.00
Mg	24	1	nogas	9474699	0.00
Al	27	1	nogas	135075	0.00
K	39	1	nogas	18869632	0.00
Ti	47	1	nogas	13122	0.01
V	51	1	nogas	408447	0.00
Cr	52	1	nogas	162628	0.00
Mn	55	1	nogas	197878	0.00
Co	59	1	nogas	151442	0.00
Ni	60	1	nogas	34005	0.01
Cu	63	1	nogas	93152	0.00
Zn	66	1	nogas	27241	0.01
As	75	1	nogas	82081	0.00
Sr	88	1	nogas	204982	0.00
Ag	107	1	nogas	94522	0.00
Cd	111	1	nogas	19705	0.01
Sb	121	1	nogas	87732	0.00
Tl	205	1	nogas	123070	0.00
Pb	208	1	nogas	173764	0.00
[Pb]	206	1	nogas	42085	0.00
[Pb]	207	1	nogas	38366	0.00
Na	23	2	He	1173608	0.00
Mg	24	2	He	596768	0.00
Al	27	2	He	4187	0.07
K	39	2	He	859118	0.00
Ca	43	2	He	1940	0.25
Ca	44	2	He	35070	0.01
V	51	2	He	49086	0.00
Cr	52	2	He	48671	0.00
Mn	55	2	He	36319	0.00
Fe	56	2	He	4450004	0.00
Co	59	2	He	63105	0.01
Ni	60	2	He	15937	0.01
Cu	63	2	He	44397	0.00
Zn	66	2	He	9863	0.03
As	75	2	He	10301	0.01
Se	78	2	He	1121	0.43
B	11	1	nogas	141647	0.00
Si	28	1	nogas	5694061	0.00

Calibration Standard Report

Ca	43	1	nogas	26346	0.00
Ca	44	1	nogas	454215	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	18083083	0.00
Se	77	1	nogas	17062	0.01
Se	82	1	nogas	1877	0.40
Mo	95	1	nogas	36337	0.00
Sn	118	1	nogas	54682	0.00
Ba	137	1	nogas	28537	0.01
Sb	121	2	He	37163	0.00
P	31	1	nogas	80387	0.00
La	139	1	nogas	133	14.16

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	360469	1.46	377819	95.41	70	125	
Ge	72	1	nogas	1869226	1.87	1841117	101.53	70	125	
In	115	1	nogas	1554161	2.17	1679059	92.56	70	125	
Bi	209	1	nogas	1105379	1.10	1089822	101.43	70	125	
Ge	72	2	He	503545	0.79	506025	99.51	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	008CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T14:58:57-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	307725	0.00
Na	23	1	nogas	131213790	0.00
Mg	24	1	nogas	88364814	0.00
Al	27	1	nogas	1105251	0.00
K	39	1	nogas	139279828	0.00
Ti	47	1	nogas	117449	0.00
V	51	1	nogas	1898464	0.00
Cr	52	1	nogas	1450093	0.00
Mn	55	1	nogas	1844804	0.00
Co	59	1	nogas	1477821	0.00
Ni	60	1	nogas	318059	0.00
Cu	63	1	nogas	785171	0.00
Zn	66	1	nogas	248079	0.00
As	75	1	nogas	360839	0.00
Sr	88	1	nogas	1986576	0.00
Ag	107	1	nogas	887975	0.00
Cd	111	1	nogas	186563	0.00
Sb	121	1	nogas	826581	0.00
Tl	205	1	nogas	1179172	0.00
Pb	208	1	nogas	1651280	0.00
[Pb]	206	1	nogas	405711	0.00
[Pb]	207	1	nogas	364616	0.00
Na	23	2	He	10053114	0.00
Mg	24	2	He	5627883	0.00
Al	27	2	He	33266	0.00
K	39	2	He	7149872	0.00
Ca	43	2	He	19030	0.01
Ca	44	2	He	310865	0.00
V	51	2	He	425896	0.00
Cr	52	2	He	448699	0.00
Mn	55	2	He	329799	0.00
Fe	56	2	He	40107256	0.00
Co	59	2	He	583221	0.00
Ni	60	2	He	147663	0.00
Cu	63	2	He	376738	0.00
Zn	66	2	He	90218	0.00
As	75	2	He	95503	0.00
Se	78	2	He	7589	0.03
B	11	1	nogas	951865	0.00
Si	28	1	nogas	32837655	0.00

Calibration Standard Report

Ca	43	1	nogas	239380	0.00
Ca	44	1	nogas	3908806	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	154408362	0.00
Se	77	1	nogas	27434	0.01
Se	82	1	nogas	16588	0.00
Mo	95	1	nogas	353877	0.00
Sn	118	1	nogas	520202	0.00
Ba	137	1	nogas	273933	0.00
Sb	121	2	He	348686	0.00
P	31	1	nogas	503290	0.00
La	139	1	nogas	437	1.60

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	342610	2.13	377819	90.68	70	125	
Ge	72	1	nogas	1859110	3.46	1841117	100.98	70	125	
In	115	1	nogas	1560103	1.53	1679059	92.92	70	125	
Bi	209	1	nogas	1080958	0.93	1089822	99.19	70	125	
Ge	72	2	He	498515	1.20	506025	98.52	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	009CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T15:00:53-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	611949	0.00
Na	23	1	nogas	260172589	0.00
Mg	24	1	nogas	172598104	0.00
Al	27	1	nogas	2210781	0.00
K	39	1	nogas	262365881	0.00
Ti	47	1	nogas	232675	0.00
V	51	1	nogas	3457120	0.00
Cr	52	1	nogas	2752338	0.00
Mn	55	1	nogas	3528110	0.00
Co	59	1	nogas	2855752	0.00
Ni	60	1	nogas	613741	0.00
Cu	63	1	nogas	1556634	0.00
Zn	66	1	nogas	482725	0.00
As	75	1	nogas	675952	0.00
Sr	88	1	nogas	3943216	0.00
Ag	107	1	nogas	1833963	0.00
Cd	111	1	nogas	361252	0.00
Sb	121	1	nogas	1684567	0.00
Tl	205	1	nogas	2555179	0.00
Pb	208	1	nogas	3431632	0.00
[Pb]	206	1	nogas	800144	0.00
[Pb]	207	1	nogas	729839	0.00
Na	23	2	He	19354253	0.00
Mg	24	2	He	10976194	0.00
Al	27	2	He	63125	0.00
K	39	2	He	13765000	0.00
Ca	43	2	He	37030	0.01
Ca	44	2	He	608895	0.00
V	51	2	He	842546	0.00
Cr	52	2	He	869550	0.00
Mn	55	2	He	642493	0.00
Fe	56	2	He	79013145	0.00
Co	59	2	He	1145687	0.00
Ni	60	2	He	284841	0.00
Cu	63	2	He	734348	0.00
Zn	66	2	He	175417	0.00
As	75	2	He	186188	0.00
Se	78	2	He	14424	0.02
B	11	1	nogas	1903551	0.00
Si	28	1	nogas	60382119	0.00

Calibration Standard Report

Ca	43	1	nogas	467658	0.00
Ca	44	1	nogas	7746349	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	305601599	0.00
Se	77	1	nogas	40696	0.01
Se	82	1	nogas	31331	0.01
Mo	95	1	nogas	699301	0.00
Sn	118	1	nogas	1012998	0.00
Ba	137	1	nogas	544762	0.00
Sb	121	2	He	689129	0.00
P	31	1	nogas	936242	0.00
La	139	1	nogas	667	3.95

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	310125	2.54	377819	82.08	70	125	
Ge	72	1	nogas	1778673	3.33	1841117	96.61	70	125	
In	115	1	nogas	1532184	4.86	1679059	91.25	70	125	
Bi	209	1	nogas	1048236	2.42	1089822	96.18	70	125	
Ge	72	2	He	481895	0.29	506025	95.23	70	125	

Sample Report

Sample Table

Sample Name	LLICV2
Data File Name	012SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T15:07:01-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	2.009	2.009	2.21	6521	0.03	2000	
Na	23	1	nogas	199.738	199.738	7.74	3555773	0.01	200000	
Mg	24	1	nogas	206.191	206.191	7.82	1959953	0.01	200000	
Al	27	1	nogas	2.092	2.092	8.85	43052	0.00	2000	
K	39	1	nogas	200.844	200.844	8.49	7548403	0.00	200000	
Ti	47	1	nogas	2.079	2.079	2.15	2970	0.07	2000	
V	51	1	nogas	-3.581	-3.581	-28.39	198213	0.00	2000	
Cr	52	1	nogas	1.725	1.725	7.54	45139	0.00	2000	
Mn	55	1	nogas	2.075	2.075	7.62	55794	0.00	2000	
Co	59	1	nogas	2.012	2.012	4.05	30826	0.01	2000	
Ni	60	1	nogas	1.951	1.951	7.51	7005	0.03	2000	
Cu	63	1	nogas	1.849	1.849	2.88	26726	0.01	2000	
Zn	66	1	nogas	2.071	2.071	8.35	5968	0.03	2000	
As	75	1	nogas	-1.128	-1.128	-16.31	43726	0.00	2000	
Sr	88	1	nogas	1.960	1.960	4.68	43944	0.00	2000	
Ag	107	1	nogas	1.955	1.955	6.35	18690	0.01	2000	
Cd	111	1	nogas	2.007	2.007	4.30	3894	0.05	2000	
Sb	121	1	nogas	1.942	1.942	4.95	17592	0.01	2000	
Tl	205	1	nogas	2.280	2.280	3.21	27577	0.01	2000	
Pb	208	1	nogas	2.132	2.132	6.86	36557	0.01	2000	
U	238	1	nogas	2.058	2.058	3.70	35864	0.01	2000	
[Pb]	206	1	nogas	2.161	2.161	6.77	9153	0.02	2000	
[Pb]	207	1	nogas	2.094	2.094	5.78	8096	0.03	2000	
Na	23	2	He	204.106	204.106	0.68	296849	0.07	200000	
Mg	24	2	He	206.964	206.964	1.06	120684	0.17	200000	
Al	27	2	He	1.184	1.184	17.09	1163	0.10	2000	
K	39	2	He	208.385	208.385	3.05	284384	0.07	200000	
Ca	43	2	He	221.491	221.491	21.03	470	47.12	200000	
Ca	44	2	He	209.545	209.545	5.22	7842	2.67	200000	
V	51	2	He	2.002	2.002	1.33	12050	0.02	2000	
Cr	52	2	He	2.066	2.066	6.16	11661	0.02	2000	
Mn	55	2	He	2.113	2.113	3.81	8589	0.02	2000	
Fe	56	2	He	203.757	203.757	2.14	852719	0.02	200000	
Co	59	2	He	2.184	2.184	0.71	12975	0.02	2000	
Ni	60	2	He	1.749	1.749	6.00	3180	0.05	2000	
Cu	63	2	He	1.921	1.921	6.09	11754	0.02	2000	
Zn	66	2	He	1.991	1.991	2.49	2090	0.10	2000	
As	75	2	He	2.041	2.041	3.34	2221	0.09	2000	
Se	78	2	He	2.543	2.543	6.03	555	0.46	2000	
B	11	1	nogas	21.092	21.092	12.39	87784	0.02	2000	

Sample Report

Si	28	1	nogas	83.220	83.220	22.74	3067182	0.00	2000	
Ca	43	1	nogas	213.243	213.243	4.58	6188	3.45	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ca	44	1	nogas	166.078	166.078	5.96	121176	0.14	200000	
Fe	56	1	nogas	195.956	195.956	2.80	5006059	0.00	200000	
Se	77	1	nogas	-30.857	-30.857	-29.23	11864	-0.26	2000	
Se	82	1	nogas	2.134	2.134	30.58	707	0.30	2000	
Mo	95	1	nogas	2.239	2.239	8.00	8309	0.03	2000	
Sn	118	1	nogas	2.216	2.216	4.16	12588	0.02	2000	
Ba	137	1	nogas	2.029	2.029	2.67	6178	0.03	2000	
Sb	121	2	He	2.105	2.105	4.84	7618	0.03	2000	
La	139	1	nogas	6.492	6.492	29.10	83	7.79	2000	
Au	197	1	nogas	3.668	3.668	21.83	24616	0.01	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	359470	2.52	377819	95.14	70	125	
Ge	72	1	nogas	1878865	3.69	1841117	102.05	70	125	
In	115	1	nogas	1627419	1.99	1679059	96.92	70	125	
Bi	209	1	nogas	1105106	2.32	1089822	101.40	70	125	
Ge	72	2	He	497065	0.69	506025	98.23	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLICV5
Data File Name	013LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T15:09:00-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	4.697	4.449	15196	4.87	5	93.9	70	130	
Na	23	1	nogas	493.569	3.620	7673334	0.74	500	98.7	70	130	
Mg	24	1	nogas	502.101	3.543	4725190	1.06	500	100.4	70	130	
Al	27	1	nogas	5.365	1.675	78443	2.12	5	107.3	70	130	
K	39	1	nogas	529.806	4.716	11702587	0.96	500	106.0	70	130	
Ti	47	1	nogas	4.965	6.575	6305	4.33	5	99.3	70	130	
V	51	1	nogas	1.137	42.690	270583	3.02	5	22.7	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	4.777	4.107	86837	2.33	5	95.5	70	130	
Mn	55	1	nogas	5.078	3.360	108473	1.23	5	101.6	70	130	
Co	59	1	nogas	5.195	1.473	76633	0.76	5	103.9	70	130	
Ni	60	1	nogas	5.424	4.663	17739	2.64	5	108.5	70	130	
Cu	63	1	nogas	5.042	2.020	51144	0.49	5	100.8	70	130	
Zn	66	1	nogas	5.281	3.337	13735	1.46	5	105.6	70	130	
As	75	1	nogas	3.252	21.965	56581	2.24	5	65.0	70	130	LLICV Main CR1 Failed
Sr	88	1	nogas	5.088	2.213	105612	0.95	5	101.8	70	130	
Ag	107	1	nogas	5.002	2.693	46512	1.30	5	100.0	70	130	
Cd	111	1	nogas	4.896	3.400	9473	4.56	5	97.9	70	130	
Sb	121	1	nogas	4.948	5.869	42806	4.02	5	99.0	70	130	
Tl	205	1	nogas	5.190	4.240	61426	2.15	5	103.8	70	130	
Pb	208	1	nogas	5.058	0.877	86371	0.87	5	101.2	70	130	
U	238	1	nogas	4.941	2.105	84404	0.30	5	98.8	70	130	
[Pb]	206	1	nogas	5.169	3.938	21371	2.26	5	103.4	70	130	
[Pb]	207	1	nogas	5.055	4.481	19035	2.47	5	101.1	70	130	
Na	23	2	He	528.833	2.084	610901	0.69	500	105.8	70	130	
Mg	24	2	He	527.980	0.657	297887	0.91	500	105.6	70	130	
Al	27	2	He	5.434	4.336	2497	1.98	5	108.7	70	130	
K	39	2	He	515.148	1.151	494573	0.82	500	103.0	70	130	
Ca	43	2	He	493.062	7.883	973	6.19	500	98.6	70	130	
Ca	44	2	He	545.410	3.252	18082	2.03	500	109.1	70	130	
V	51	2	He	5.183	4.733	25383	2.69	5	103.7	70	130	
Cr	52	2	He	5.120	1.764	24960	1.43	5	102.4	70	130	
Mn	55	2	He	5.265	3.275	18733	4.32	5	105.3	70	130	
Fe	56	2	He	540.178	1.381	2187849	1.42	500	108.0	70	130	
Co	59	2	He	5.472	3.536	31898	3.56	5	109.4	70	130	
Ni	60	2	He	5.282	6.016	8242	4.46	5	105.6	70	130	
Cu	63	2	He	5.219	2.025	23802	1.70	5	104.4	70	130	
Zn	66	2	He	5.287	0.389	4994	1.62	5	105.7	70	130	
As	75	2	He	5.223	3.470	5193	1.93	5	104.5	70	130	
Se	78	2	He	5.631	8.013	767	2.79	5	112.6	70	130	
B	11	1	nogas	27.284	8.768	99507	2.61	25	109.1	70	130	
Si	28	1	nogas	247.239	5.304	3962613	0.17	25	989.0	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	523.214	3.421	13425	2.55	500	104.6	70	130	
Ca	44	1	nogas	490.965	3.102	245352	1.19	500	98.2	70	130	
Fe	56	1	nogas	513.429	2.113	9787935	0.19	500	102.7	70	130	
Se	77	1	nogas	-16.096	-26.507	13442	2.23	5	-321.9	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	5.129	17.348	1163	11.05	5	102.6	70	130	
Mo	95	1	nogas	5.198	2.276	18660	1.45	5	104.0	70	130	
Sn	118	1	nogas	5.023	8.167	27719	3.27	5	100.5	70	130	
Ba	137	1	nogas	4.867	3.867	14386	1.03	5	97.3	70	130	
Sb	121	2	He	5.467	3.102	19247	3.34	5	109.3	70	130	
Li	7	1	nogas	4.821	3.762	67412	0.77	5	96.4	70	130	
P	31	1	nogas	27.132	4.745	53676	1.69	25	108.5	70	130	
La	139	1	nogas	4.281	150.285	77	32.83	5	85.6	70	130	
Au	197	1	nogas	5.126	4.754	33464	2.82	5	102.5	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	359237	2.01	377819	95.08	70	125	
Ge	72	1	nogas	1827524	1.90	1841117	99.26	70	125	
In	115	1	nogas	1630576	4.88	1679059	97.11	70	125	
Bi	209	1	nogas	1084107	2.16	1089822	99.48	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	490259	1.39	506025	96.88	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICB
Data File Name	014_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T15:10:59-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.020	108.2	100	70.0	1	
Na	23	1	nogas	-7.786	-36.8	685938	1.2	100	
Mg	24	1	nogas	-3.630	-3.1	20448	5.0	100	
Al	27	1	nogas	0.213	20.5	21439	1.6	5	
K	39	1	nogas	-10.164	-83.2	4654890	0.5	100	
Ti	47	1	nogas	-0.187	-23.5	207	28.4	2.5	
V	51	1	nogas	-4.426	-12.6	183256	4.6	2.5	
Cr	52	1	nogas	-0.175	-11.3	17642	3.2	2.5	
Mn	55	1	nogas	-0.061	-35.8	16154	3.5	2.5	
Co	59	1	nogas	-0.001	-391.6	540	7.4	2.5	
Ni	60	1	nogas	-0.120	-15.8	313	16.4	2.5	
Cu	63	1	nogas	-0.233	-5.2	9813	2.0	2.5	
Zn	66	1	nogas	0.046	76.6	833	7.8	2.5	
As	75	1	nogas	-2.604	-10.4	38651	0.7	2.5	
Sr	88	1	nogas	-0.038	-19.1	2680	2.7	2.5	
Ag	107	1	nogas	0.016	16.3	193	13.0	2.5	
Cd	111	1	nogas	-0.001	-1036.0	27	78.1	1	
Sb	121	1	nogas	-0.010	-50.1	450	6.7	2.5	
Tl	205	1	nogas	0.040	30.8	557	28.0	1	
Pb	208	1	nogas	0.037	5.6	870	4.0	2.5	
U	238	1	nogas	0.007	22.7	177	16.3	2.5	
[Pb]	206	1	nogas	0.042	8.9	237	6.5	2.5	
[Pb]	207	1	nogas	0.029	17.0	193	7.9	2.5	
Na	23	2	He	-6.314	-15.9	87842	1.2	100	
Mg	24	2	He	-3.921	-8.9	1547	13.8	100	
Al	27	2	He	-0.100	-153.5	750	7.4	5	
K	39	2	He	-4.669	-53.9	138402	1.2	100	
Ca	43	2	He	-6.241	-195.3	37	63.0	100	
Ca	44	2	He	-4.805	-49.8	1143	5.6	100	
V	51	2	He	-0.013	-100.0	3374	0.4	2.5	
Cr	52	2	He	-0.035	-125.1	2274	7.8	2.5	
Mn	55	2	He	-0.098	-43.7	1297	11.7	2.5	
Fe	56	2	He	-1.032	-4.7	21553	1.7	100	
Co	59	2	He	0.007	108.3	153	29.4	2.5	
Ni	60	2	He	-0.309	-7.6	163	19.7	2.5	
Cu	63	2	He	-0.221	-32.0	3714	7.3	2.5	
Zn	66	2	He	-0.065	-80.0	237	20.8	2.5	
As	75	2	He	0.009	365.0	277	11.6	2.5	
Se	78	2	He	0.183	217.5	384	8.1	2.5	
B	11	1	nogas	2.030	36.2	52242	2.2	10	

Initial Calibration Blank (ICB) Report

Si	28	1	nogas	-29.852	-42.4	2364334	0.8	5	
Ca	43	1	nogas	1.709	60.3	993	4.5	100	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ca	44	1	nogas	-33.085	-18.2	40701	3.1	100	
Fe	56	1	nogas	-15.375	-28.7	1630171	1.4	100	
Se	77	1	nogas	-26.887	-2.1	12344	2.3	2.5	
Se	82	1	nogas	-0.176	-341.3	327	30.7	2.5	
Mo	95	1	nogas	0.034	58.4	227	28.4	2.5	
Sn	118	1	nogas	-0.011	-136.2	577	11.8	5	
Ba	137	1	nogas	0.016	110.8	363	12.4	2.5	
Sb	121	2	He	-0.001	-876.8	170	20.4	2.5	
P	31	1	nogas	-1.387	-57.5	27664	2.2	10	
La	139	1	nogas	-8.186	-74.8	33	62.4	2.5	
Au	197	1	nogas	0.120	29.4	1257	20.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	363989	0.61	377819	96.34	70	125	
Ge	72	1	nogas	1869891	2.89	1841117	101.56	70	125	
In	115	1	nogas	1603239	1.50	1679059	95.48	70	125	
Bi	209	1	nogas	1097199	1.84	1089822	100.68	70	125	
Ge	72	2	He	497322	1.23	506025	98.28	70	125	

Initial Calibration Verification (ICV) Report

Sample Table

Sample Name	ICV
Data File Name	015_ICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T15:12:58-05:00
Sample Type	ICV
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	99.621	2.748	303174	1.50	100	99.6	90	110	
Na	23	1	nogas	9624.805	2.773	132029549	1.67	10000	96.2	90	110	
Mg	24	1	nogas	9582.613	2.091	87265317	1.52	10000	95.8	90	110	
Al	27	1	nogas	94.608	3.912	1089948	2.51	100	94.6	90	110	
K	39	1	nogas	9741.916	2.617	135767220	0.62	10000	97.4	90	110	
Ti	47	1	nogas	96.140	2.497	116111	1.24	100	96.1	90	110	
V	51	1	nogas	93.313	3.457	1811978	1.47	100	93.3	90	110	
Cr	52	1	nogas	98.199	3.162	1421115	1.49	100	98.2	90	110	
Mn	55	1	nogas	97.173	3.354	1796270	1.52	100	97.2	90	110	
Co	59	1	nogas	99.674	3.151	1482524	1.72	100	99.7	90	110	
Ni	60	1	nogas	96.073	3.737	307391	1.77	100	96.1	90	110	
Cu	63	1	nogas	94.353	1.686	766207	0.35	100	94.4	90	110	
Zn	66	1	nogas	99.581	0.603	250276	2.04	100	99.6	90	110	
As	75	1	nogas	94.157	3.041	353908	0.93	100	94.2	90	110	
Sr	88	1	nogas	98.711	3.263	2016388	1.72	100	98.7	90	110	
Ag	107	1	nogas	92.179	1.401	869558	0.62	100	92.2	90	110	
Cd	111	1	nogas	98.992	2.825	184738	0.76	100	99.0	90	110	
Sb	121	1	nogas	95.228	3.769	826963	1.93	100	95.2	90	110	
Tl	205	1	nogas	101.397	1.932	1191947	2.32	100	101.4	90	110	
Pb	208	1	nogas	96.255	0.961	1639303	0.96	100	96.3	90	110	
U	238	1	nogas	102.464	4.332	1738528	3.73	100	102.5	90	110	
[Pb]	206	1	nogas	98.450	0.828	403611	0.56	100	98.4	90	110	
[Pb]	207	1	nogas	98.294	0.899	366487	0.85	100	98.3	90	110	
Na	23	2	He	9842.485	1.571	9850219	2.25	10000	98.4	90	110	
Mg	24	2	He	10030.153	2.144	5656038	0.84	10000	100.3	90	110	
Al	27	2	He	100.260	0.573	33006	1.86	100	100.3	90	110	
K	39	2	He	10125.273	1.084	7079289	1.06	10000	101.3	90	110	
Ca	43	2	He	9594.127	1.387	18279	2.96	10000	95.9	90	110	
Ca	44	2	He	9761.353	1.360	305622	1.71	10000	97.6	90	110	
V	51	2	He	98.072	1.769	424640	0.22	100	98.1	90	110	
Cr	52	2	He	98.260	1.004	440417	1.29	100	98.3	90	110	
Mn	55	2	He	99.323	0.697	328556	1.86	100	99.3	90	110	
Fe	56	2	He	9956.557	0.257	40349034	1.88	10000	99.6	90	110	
Co	59	2	He	100.660	2.571	591490	0.95	100	100.7	90	110	
Ni	60	2	He	100.932	3.317	148199	1.83	100	100.9	90	110	
Cu	63	2	He	100.310	2.593	380182	1.32	100	100.3	90	110	
Zn	66	2	He	98.124	1.016	88590	0.90	100	98.1	90	110	
As	75	2	He	97.734	1.322	93583	0.32	100	97.7	90	110	
Se	78	2	He	99.660	3.116	7574	4.43	100	99.7	90	110	
B	11	1	nogas	499.425	1.079	940185	1.01	500	99.9	90	110	
Si	28	1	nogas	4872.639	3.401	31997511	1.51	5000	97.5	90	110	
Ca	43	1	nogas	9808.303	2.872	238718	1.14	10000	98.1	90	110	
Ca	44	1	nogas	9746.621	2.878	3934265	1.48	10000	97.5	90	110	
Fe	56	1	nogas	9530.351	3.109	151749741	1.17	10000	95.3	90	110	
Se	77	1	nogas	79.980	6.648	26142	0.89	100	80.0	90	110	ICV Main CR1 Failed
Se	82	1	nogas	99.335	1.712	16418	0.61	100	99.3	90	110	
Mo	95	1	nogas	96.291	2.721	349057	0.78	100	96.3	90	110	
Sn	118	1	nogas	97.859	0.276	512292	3.56	100	97.9	90	110	
Ba	137	1	nogas	97.667	2.927	273477	1.26	100	97.7	90	110	
Sb	121	2	He	97.887	1.225	345662	0.61	100	97.9	90	110	
Li	7	1	nogas	98.817	3.572	702257	1.76	100	98.8	90	110	
P	31	1	nogas	485.989	2.925	489466	0.81	500	97.2	90	110	
La	139	1	nogas	114.376	20.287	437	20.78	100	114.4	90	110	ICV Main CR1 Failed
Au	197	1	nogas	95.285	5.149	610261	4.18	100	95.3	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	338796	2.02	377819	89.67	70	125	
Ge	72	1	nogas	1855319	1.98	1841117	100.77	70	125	
In	115	1	nogas	1577563	3.51	1679059	93.96	70	125	
Bi	209	1	nogas	1077339	1.19	1089822	98.85	70	125	

Initial Calibration Verification (ICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	495931	1.63	506025	98.01	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	016ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T15:14:54-05:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.049	23.0	177	17.3	0	ICSA Main CR1 Failed
Na	23	1	nogas	96406.546	4.7	1238226228	1.2	0	
Mg	24	1	nogas	95401.137	4.4	817367552	1.6	0	
Al	27	1	nogas	93531.670	3.0	1003410092	2.3	0	
K	39	1	nogas	97978.489	1.5	1253120828	1.5	0	
Ti	47	1	nogas	2015.103	1.3	2298187	2.1	0	
V	51	1	nogas	-3.140	-21.7	192648	5.5	0	ICSA Main CR1 Failed
Cr	52	1	nogas	1.011	4.5	32619	1.8	0	ICSA Main CR1 Failed
Mn	55	1	nogas	0.486	18.6	24673	5.7	0	ICSA Main CR1 Failed
Co	59	1	nogas	0.157	13.6	2737	10.2	0	ICSA Main CR1 Failed
Ni	60	1	nogas	0.832	10.6	3177	8.8	0	ICSA Main CR1 Failed
Cu	63	1	nogas	0.507	11.9	14833	3.9	0	ICSA Main CR1 Failed
Zn	66	1	nogas	1.720	10.6	4757	8.5	0	ICSA Main CR1 Failed
As	75	1	nogas	2.120	16.3	50941	1.9	0	ICSA Main CR1 Failed
Sr	88	1	nogas	0.898	6.9	20612	4.9	0	ICSA Main CR1 Failed
Ag	107	1	nogas	0.095	21.7	890	20.3	0	ICSA Main CR1 Failed
Cd	111	1	nogas	0.808	16.3	1467	12.3	0	ICSA Main CR1 Failed
Sb	121	1	nogas	0.125	15.2	1527	10.0	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.276	77.7	3254	77.9	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.243	11.9	4387	11.3	0	ICSA Main CR1 Failed
[Pb]	206	1	nogas	0.226	11.0	957	10.7	0	ICSA Main CR1 Failed
[Pb]	207	1	nogas	0.229	6.6	910	7.7	0	ICSA Main CR1 Failed
Na	23	2	He	97559.322	0.1	92140222	2.1	0	
Mg	24	2	He	97707.259	0.4	52422256	1.6	0	
Al	27	2	He	97488.777	1.2	29827091	2.4	0	
K	39	2	He	96412.459	0.8	66201997	0.8	0	
Ca	43	2	He	93247.635	1.5	168653	1.1	0	
Ca	44	2	He	96216.697	2.7	2857637	4.6	0	
V	51	2	He	0.122	19.9	3756	2.3	0	ICSA Main CR1 Failed
Cr	52	2	He	0.256	17.1	3394	3.9	0	ICSA Main CR1 Failed
Mn	55	2	He	0.406	11.9	2810	6.9	0	ICSA Main CR1 Failed
Fe	56	2	He	97355.780	0.8	375275888	1.2	0	
Co	59	2	He	0.049	42.6	380	31.6	0	ICSA Main CR1 Failed
Ni	60	2	He	-0.052	-31.0	513	4.5	0	ICSA Main CR1 Failed
Cu	63	2	He	-0.216	-11.2	3540	1.6	0	ICSA Main CR1 Failed
Zn	66	2	He	0.867	13.0	1023	11.0	0	ICSA Main CR1 Failed
As	75	2	He	0.130	36.5	373	12.7	0	ICSA Main CR1 Failed
Se	78	2	He	0.714	43.7	401	3.5	0	ICSA Main CR1 Failed
B	11	1	nogas	11.053	20.1	62850	4.8	0	ICSA Main CR1 Failed
Si	28	1	nogas	35.884	24.2	2600213	1.1	0	
Ca	43	1	nogas	100289.106	2.4	2305163	3.2	0	
Ca	44	1	nogas	95518.150	2.0	36092168	2.5	0	
Fe	56	1	nogas	95979.431	0.3	1432381399	1.2	0	
Se	77	1	nogas	10.565	34.1	16221	3.2	0	
Se	82	1	nogas	-0.115	-213.3	317	12.8	0	ICSA Main CR1 Failed
Mo	95	1	nogas	2043.931	1.3	7019967	2.1	0	
Sn	118	1	nogas	0.224	25.2	1710	12.9	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.162	21.0	733	11.0	0	ICSA Main CR1 Failed
Sb	121	2	He	0.107	17.3	523	10.9	0	ICSA Main CR1 Failed

Interference Check Solution A (ICS-A) Report

P	31	1	nogas	98685.758	2.2	88674852	1.7	0	
La	139	1	nogas	96.460	24.5	360	19.4	0	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	328767	1.80	377819	87.02	70	125	
Ge	72	1	nogas	1757596	0.87	1841117	95.46	70	125	
In	115	1	nogas	1511644	4.44	1679059	90.03	70	125	
Bi	209	1	nogas	1044919	2.13	1089822	95.88	70	125	
Ge	72	2	He	472055	2.00	506025	93.29	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	017ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T15:16:57-05:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	004CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	96.575	3.560	272711	1.60	100	96.6	80	120	
Na	23	1	nogas	107831.731	2.669	1369599364	1.40	100	107831.7	80	120	
Mg	24	1	nogas	106311.890	4.099	900381653	1.58	100	106311.9	80	120	
Al	27	1	nogas	93460.999	3.119	1001475878	1.11	100	93461.0	80	120	ICSB Main CR1 Failed
K	39	1	nogas	109148.101	3.198	1393578098	0.42	100	109148.1	80	120	
Ti	47	1	nogas	2169.603	2.118	2471526	1.87	100	2169.6	80	120	ICSB Main CR1 Failed
V	51	1	nogas	96.684	1.860	1769493	4.24	100	96.7	80	120	
Cr	52	1	nogas	90.959	4.119	1247264	3.01	100	91.0	80	120	
Mn	55	1	nogas	95.160	3.577	1665045	0.84	100	95.2	80	120	
Co	59	1	nogas	93.794	2.746	1321649	5.34	100	93.8	80	120	
Ni	60	1	nogas	95.382	3.070	288869	0.82	100	95.4	80	120	
Cu	63	1	nogas	91.329	3.681	702071	0.95	100	91.3	80	120	
Zn	66	1	nogas	97.059	3.823	230782	2.03	100	97.1	80	120	
As	75	1	nogas	99.538	2.784	351574	0.53	100	99.5	80	120	
Sr	88	1	nogas	97.782	0.731	1891288	2.36	100	97.8	80	120	
Ag	107	1	nogas	86.844	3.466	775114	0.60	100	86.8	80	120	
Cd	111	1	nogas	97.527	2.707	170727	0.47	100	97.5	80	120	
Sb	121	1	nogas	92.701	1.551	762273	2.34	100	92.7	80	120	
Tl	205	1	nogas	97.406	4.273	1082625	1.68	100	97.4	80	120	
Pb	208	1	nogas	88.173	0.829	1501667	0.83	100	88.2	80	120	
U	238	1	nogas	108.613	3.420	1743207	1.85	100	108.6	80	120	
[Pb]	206	1	nogas	95.896	2.578	371849	0.11	100	95.9	80	120	
[Pb]	207	1	nogas	94.703	3.084	333958	1.20	100	94.7	80	120	
Na	23	2	He	112285.303	0.167	104646325	0.43	100	112285.3	80	120	ICSB Main CR1 Failed
Mg	24	2	He	111248.371	1.604	58907774	1.40	100	111248.4	80	120	ICSB Main CR1 Failed
Al	27	2	He	101205.231	0.884	30558366	0.75	100	101205.2	80	120	ICSB Main CR1 Failed
K	39	2	He	106568.277	2.272	73160614	2.27	100	106568.3	80	120	
Ca	43	2	He	104879.584	0.686	187238	1.04	100	104879.6	80	120	
Ca	44	2	He	112954.956	4.243	3309615	4.26	100	112955.0	80	120	ICSB Main CR1 Failed
V	51	2	He	95.478	1.447	388515	1.51	100	95.5	80	120	
Cr	52	2	He	95.376	1.256	401674	1.07	100	95.4	80	120	
Mn	55	2	He	96.052	1.066	298522	0.71	100	96.1	80	120	
Fe	56	2	He	111289.491	1.214	423402914	0.85	100	111289.5	80	120	ICSB Main CR1 Failed
Co	59	2	He	97.291	1.876	537184	1.65	100	97.3	80	120	
Ni	60	2	He	95.327	1.642	131569	1.98	100	95.3	80	120	
Cu	63	2	He	95.167	2.002	339152	2.34	100	95.2	80	120	
Zn	66	2	He	98.228	0.398	83319	0.69	100	98.2	80	120	
As	75	2	He	97.136	2.325	87385	2.08	100	97.1	80	120	
Se	78	2	He	96.108	2.247	6871	1.86	100	96.1	80	120	
B	11	1	nogas	490.276	4.941	856819	2.20	100	490.3	80	120	
Si	28	1	nogas	4776.458	3.434	29733880	1.60	100	4776.5	80	120	ICSB Main CR1 Failed
Ca	43	1	nogas	110494.225	1.371	2536711	1.48	100	110494.2	80	120	
Ca	44	1	nogas	107112.304	2.391	40418035	1.47	100	107112.3	80	120	
Fe	56	1	nogas	105461.670	2.823	1571636468	0.35	100	105461.7	80	120	
Se	77	1	nogas	130.353	2.347	30953	2.40	100	130.4	80	120	
Se	82	1	nogas	94.421	2.290	14786	1.39	100	94.4	80	120	
Mo	95	1	nogas	2227.819	3.236	7640708	1.10	100	2227.8	80	120	ICSB Main CR1 Failed
Sn	118	1	nogas	95.664	0.819	469654	2.27	100	95.7	80	120	
Ba	137	1	nogas	96.933	2.373	254613	0.08	100	96.9	80	120	
Sb	121	2	He	96.084	0.160	318778	0.24	100	96.1	80	120	
La	139	1	nogas	225.184	24.794	747	21.02	100	225.2	80	120	ICSB Main CR1 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	314446	2.59	377819	83.23	70	125	
Ge	72	1	nogas	1756229	2.84	1841117	95.39	70	125	
In	115	1	nogas	1479492	2.48	1679059	88.11	70	125	
Bi	209	1	nogas	1019395	2.64	1089822	93.54	70	125	
Ge	72	2	He	465879	0.37	506025	92.07	70	125	

Calibration Blank Report

Sample Table

Sample Name	CAL BLK
Data File Name	042CALB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:16:19-05:00
Sample Type	CalBlk
Level	1
Dilution	1
Comment	

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	40	165.36
Na	23	1	nogas	829764	0.00
Mg	24	1	nogas	20847	0.03
Al	27	1	nogas	26214	0.11
K	39	1	nogas	5274066	0.00
Ti	47	1	nogas	247	8.11
V	51	1	nogas	299961	0.00
Cr	52	1	nogas	22057	0.02
Mn	55	1	nogas	14709	0.01
Co	59	1	nogas	493	2.48
Ni	60	1	nogas	510	5.97
Cu	63	1	nogas	3777	0.09
Zn	66	1	nogas	790	0.58
As	75	1	nogas	53863	0.00
Sr	88	1	nogas	2017	0.27
Ag	107	1	nogas	110	37.87
Cd	111	1	nogas	13	649.52
Sb	121	1	nogas	337	9.43
Tl	205	1	nogas	90	24.69
Pb	208	1	nogas	310	6.33
[Pb]	206	1	nogas	67	79.02
[Pb]	207	1	nogas	47	147.61
Na	23	2	He	96396	0.00
Mg	24	2	He	1597	0.08
Al	27	2	He	627	2.86
K	39	2	He	155571	0.00
Ca	43	2	He	53	73.18
Ca	44	2	He	977	1.79
V	51	2	He	4948	0.04
Cr	52	2	He	2217	0.35
Mn	55	2	He	763	3.73
Fe	56	2	He	17999	0.01
Co	59	2	He	120	6.94
Ni	60	2	He	190	18.17
Cu	63	2	He	1437	0.20
Zn	66	2	He	287	3.91
As	75	2	He	290	4.18
Se	78	2	He	347	1.92
B	11	1	nogas	57346	0.00
Si	28	1	nogas	2305952	0.00
Ca	43	1	nogas	870	0.61
Ca	44	1	nogas	34111	0.00

Calibration Blank Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	2143556	0.00
Se	77	1	nogas	16745	0.03
Se	82	1	nogas	270	4.11
Mo	95	1	nogas	110	16.53
Sn	118	1	nogas	807	1.24
Ba	137	1	nogas	333	3.75
Sb	121	2	He	170	9.15
Li	7	1	nogas	37093	0.01
P	31	1	nogas	36462	0.00
La	139	1	nogas	67	56.62

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Li	6	1	nogas	422169	1.79
Ge	72	1	nogas	2074093	0.93
In	115	1	nogas	1830149	3.43
Bi	209	1	nogas	1294991	7.53
Ge	72	2	He	560222	2.56

Calibration Standard Report

Sample Table

Sample Name	2/10/200
Data File Name	043CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:18:18-05:00
Sample Type	CalStd
Level	2
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	7008	0.03
Na	23	1	nogas	4001469	0.00
Mg	24	1	nogas	2167703	0.00
Al	27	1	nogas	47082	0.00
K	39	1	nogas	8468704	0.00
Ti	47	1	nogas	3160	0.20
V	51	1	nogas	334214	0.00
Cr	52	1	nogas	53605	0.00
Mn	55	1	nogas	55296	0.00
Co	59	1	nogas	33317	0.00
Ni	60	1	nogas	8032	0.04
Cu	63	1	nogas	21863	0.02
Zn	66	1	nogas	6698	0.05
As	75	1	nogas	61905	0.00
Sr	88	1	nogas	47744	0.00
Ag	107	1	nogas	21270	0.01
Cd	111	1	nogas	4617	0.05
Sb	121	1	nogas	19865	0.01
Tl	205	1	nogas	28358	0.01
Pb	208	1	nogas	40070	0.00
[Pb]	206	1	nogas	9760	0.01
[Pb]	207	1	nogas	9076	0.01
Na	23	2	He	330222	0.00
Mg	24	2	He	134400	0.00
Al	27	2	He	1330	0.67
K	39	2	He	316842	0.00
Ca	43	2	He	520	4.54
Ca	44	2	He	8475	0.05
V	51	2	He	14710	0.01
Cr	52	2	He	12341	0.04
Mn	55	2	He	8555	0.04
Fe	56	2	He	947562	0.00
Co	59	2	He	14132	0.03
Ni	60	2	He	3824	0.19
Cu	63	2	He	10396	0.01
Zn	66	2	He	2217	0.43
As	75	2	He	2591	0.25
Se	78	2	He	471	2.16
B	11	1	nogas	79301	0.00
Si	28	1	nogas	2942663	0.00

Calibration Standard Report

Ca	43	1	nogas	6638	0.05
Ca	44	1	nogas	123489	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	5785625	0.00
Se	77	1	nogas	18440	0.01
Se	82	1	nogas	727	1.92
Mo	95	1	nogas	8059	0.04
Sn	118	1	nogas	12905	0.03
Ba	137	1	nogas	6841	0.07
Sb	121	2	He	8472	0.08
P	31	1	nogas	47971	0.01
La	139	1	nogas	57	47.57

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	402424	2.75	422169	95.32	70	125	
Ge	72	1	nogas	2122992	1.36	2074093	102.36	70	125	
In	115	1	nogas	1854486	2.46	1830149	101.33	70	125	
Bi	209	1	nogas	1396840	3.25	1294991	107.86	70	125	
Ge	72	2	He	561308	1.85	560222	100.19	70	125	

Calibration Standard Report

Sample Table

Sample Name	5/25/500
Data File Name	044CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:20:18-05:00
Sample Type	CalStd
Level	3
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	17905	0.02
Na	23	1	nogas	8694095	0.00
Mg	24	1	nogas	5347474	0.00
Al	27	1	nogas	86183	0.00
K	39	1	nogas	13334396	0.00
Ti	47	1	nogas	7428	0.02
V	51	1	nogas	397133	0.00
Cr	52	1	nogas	100867	0.00
Mn	55	1	nogas	117760	0.00
Co	59	1	nogas	84357	0.00
Ni	60	1	nogas	19194	0.02
Cu	63	1	nogas	49032	0.01
Zn	66	1	nogas	14833	0.03
As	75	1	nogas	74589	0.00
Sr	88	1	nogas	115548	0.00
Ag	107	1	nogas	52983	0.00
Cd	111	1	nogas	11507	0.02
Sb	121	1	nogas	49384	0.00
Tl	205	1	nogas	70603	0.00
Pb	208	1	nogas	101334	0.00
[Pb]	206	1	nogas	25230	0.01
[Pb]	207	1	nogas	22476	0.01
Na	23	2	He	676743	0.00
Mg	24	2	He	329484	0.00
Al	27	2	He	2644	0.12
K	39	2	He	552843	0.00
Ca	43	2	He	1097	1.33
Ca	44	2	He	18963	0.00
V	51	2	He	29607	0.00
Cr	52	2	He	27694	0.01
Mn	55	2	He	19440	0.02
Fe	56	2	He	2477986	0.00
Co	59	2	He	34583	0.00
Ni	60	2	He	8706	0.06
Cu	63	2	He	24029	0.01
Zn	66	2	He	5568	0.07
As	75	2	He	5729	0.05
Se	78	2	He	765	0.35
B	11	1	nogas	108708	0.00
Si	28	1	nogas	4005392	0.00

Calibration Standard Report

Ca	43	1	nogas	15317	0.02
Ca	44	1	nogas	258188	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	11213130	0.00
Se	77	1	nogas	18723	0.02
Se	82	1	nogas	1193	0.35
Mo	95	1	nogas	21306	0.02
Sn	118	1	nogas	30888	0.01
Ba	137	1	nogas	16391	0.03
Sb	121	2	He	20916	0.02
P	31	1	nogas	65283	0.00
La	139	1	nogas	77	9.82

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	409275	3.20	422169	96.95	70	125	
Ge	72	1	nogas	2093258	1.84	2074093	100.92	70	125	
In	115	1	nogas	1844281	1.07	1830149	100.77	70	125	
Bi	209	1	nogas	1381240	4.94	1294991	106.66	70	125	
Ge	72	2	He	572626	0.84	560222	102.21	70	125	

Calibration Standard Report

Sample Table

Sample Name	10/50/1000
Data File Name	045CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:22:17-05:00
Sample Type	CalStd
Level	4
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	36903	0.01
Na	23	1	nogas	16311307	0.00
Mg	24	1	nogas	10595367	0.00
Al	27	1	nogas	152760	0.00
K	39	1	nogas	20896850	0.00
Ti	47	1	nogas	14252	0.01
V	51	1	nogas	502815	0.00
Cr	52	1	nogas	179175	0.00
Mn	55	1	nogas	221228	0.00
Co	59	1	nogas	170554	0.00
Ni	60	1	nogas	38915	0.01
Cu	63	1	nogas	96138	0.00
Zn	66	1	nogas	30262	0.01
As	75	1	nogas	96330	0.00
Sr	88	1	nogas	231604	0.00
Ag	107	1	nogas	107607	0.00
Cd	111	1	nogas	22725	0.01
Sb	121	1	nogas	97917	0.00
Tl	205	1	nogas	143149	0.00
Pb	208	1	nogas	202024	0.00
[Pb]	206	1	nogas	49666	0.00
[Pb]	207	1	nogas	45056	0.00
Na	23	2	He	1315192	0.00
Mg	24	2	He	669824	0.00
Al	27	2	He	4344	0.23
K	39	2	He	944793	0.00
Ca	43	2	He	2167	0.27
Ca	44	2	He	38243	0.00
V	51	2	He	54591	0.00
Cr	52	2	He	54501	0.00
Mn	55	2	He	39890	0.00
Fe	56	2	He	4845031	0.00
Co	59	2	He	70676	0.00
Ni	60	2	He	17949	0.01
Cu	63	2	He	46757	0.00
Zn	66	2	He	10747	0.02
As	75	2	He	11578	0.01
Se	78	2	He	1257	0.40
B	11	1	nogas	161880	0.00
Si	28	1	nogas	5919058	0.00

Calibration Standard Report

Ca	43	1	nogas	29574	0.00
Ca	44	1	nogas	482603	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	20421271	0.00
Se	77	1	nogas	20178	0.02
Se	82	1	nogas	2140	0.29
Mo	95	1	nogas	42284	0.01
Sn	118	1	nogas	61960	0.00
Ba	137	1	nogas	32791	0.00
Sb	121	2	He	41754	0.00
P	31	1	nogas	93979	0.00
La	139	1	nogas	140	13.50

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	417260	1.83	422169	98.84	70	125	
Ge	72	1	nogas	2017646	0.91	2074093	97.28	70	125	
In	115	1	nogas	1875473	1.23	1830149	102.48	70	125	
Bi	209	1	nogas	1294831	5.16	1294991	99.99	70	125	
Ge	72	2	He	547296	0.39	560222	97.69	70	125	

Calibration Standard Report

Sample Table

Sample Name	100/500/10K
Data File Name	046CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:24:15-05:00
Sample Type	CalStd
Level	5
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	355637	0.00
Na	23	1	nogas	147737528	0.00
Mg	24	1	nogas	97374517	0.00
Al	27	1	nogas	1263951	0.00
K	39	1	nogas	153976449	0.00
Ti	47	1	nogas	127298	0.00
V	51	1	nogas	2138482	0.00
Cr	52	1	nogas	1558302	0.00
Mn	55	1	nogas	1981593	0.00
Co	59	1	nogas	1614409	0.00
Ni	60	1	nogas	346554	0.00
Cu	63	1	nogas	838718	0.00
Zn	66	1	nogas	274791	0.00
As	75	1	nogas	413099	0.00
Sr	88	1	nogas	2244924	0.00
Ag	107	1	nogas	987963	0.00
Cd	111	1	nogas	209290	0.00
Sb	121	1	nogas	941632	0.00
Tl	205	1	nogas	1479971	0.00
Pb	208	1	nogas	1909873	0.00
[Pb]	206	1	nogas	466803	0.00
[Pb]	207	1	nogas	424749	0.00
Na	23	2	He	11059194	0.00
Mg	24	2	He	6283244	0.00
Al	27	2	He	35771	0.01
K	39	2	He	7815262	0.00
Ca	43	2	He	20418	0.01
Ca	44	2	He	333087	0.00
V	51	2	He	468248	0.00
Cr	52	2	He	486359	0.00
Mn	55	2	He	358825	0.00
Fe	56	2	He	44853614	0.00
Co	59	2	He	653959	0.00
Ni	60	2	He	163992	0.00
Cu	63	2	He	417250	0.00
Zn	66	2	He	100602	0.00
As	75	2	He	105294	0.00
Se	78	2	He	8158	0.03
B	11	1	nogas	1132063	0.00
Si	28	1	nogas	36027475	0.00

Calibration Standard Report

Ca	43	1	nogas	263674	0.00
Ca	44	1	nogas	4346455	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	169956500	0.00
Se	77	1	nogas	32696	0.00
Se	82	1	nogas	18977	0.00
Mo	95	1	nogas	398302	0.00
Sn	118	1	nogas	583345	0.00
Ba	137	1	nogas	304733	0.00
Sb	121	2	He	386206	0.00
P	31	1	nogas	560106	0.00
La	139	1	nogas	357	7.55

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	386818	1.89	422169	91.63	70	125	
Ge	72	1	nogas	2014735	2.26	2074093	97.14	70	125	
In	115	1	nogas	1773541	1.42	1830149	96.91	70	125	
Bi	209	1	nogas	1291192	2.38	1294991	99.71	70	125	
Ge	72	2	He	538696	1.03	560222	96.16	70	125	

Calibration Standard Report

Sample Table

Sample Name	200/1000/20K
Data File Name	047CALS.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:26:11-05:00
Sample Type	CalStd
Level	6
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Be	9	1	nogas	674731	0.00
Na	23	1	nogas	287836990	0.00
Mg	24	1	nogas	191147313	0.00
Al	27	1	nogas	2369937	0.00
K	39	1	nogas	289850698	0.00
Ti	47	1	nogas	248751	0.00
V	51	1	nogas	3845037	0.00
Cr	52	1	nogas	3000789	0.00
Mn	55	1	nogas	3916962	0.00
Co	59	1	nogas	3136513	0.00
Ni	60	1	nogas	670781	0.00
Cu	63	1	nogas	1712815	0.00
Zn	66	1	nogas	538308	0.00
As	75	1	nogas	759565	0.00
Sr	88	1	nogas	4399581	0.00
Ag	107	1	nogas	2073452	0.00
Cd	111	1	nogas	416037	0.00
Sb	121	1	nogas	1932049	0.00
Tl	205	1	nogas	3008582	0.00
Pb	208	1	nogas	4022206	0.00
[Pb]	206	1	nogas	945546	0.00
[Pb]	207	1	nogas	859295	0.00
Na	23	2	He	21426796	0.00
Mg	24	2	He	12137008	0.00
Al	27	2	He	68812	0.00
K	39	2	He	14820769	0.00
Ca	43	2	He	38827	0.01
Ca	44	2	He	649463	0.00
V	51	2	He	915062	0.00
Cr	52	2	He	952313	0.00
Mn	55	2	He	693131	0.00
Fe	56	2	He	86802639	0.00
Co	59	2	He	1333488	0.00
Ni	60	2	He	316215	0.00
Cu	63	2	He	808163	0.00
Zn	66	2	He	193623	0.00
As	75	2	He	204876	0.00
Se	78	2	He	15774	0.02
B	11	1	nogas	2174473	0.00
Si	28	1	nogas	67686126	0.00

Calibration Standard Report

Ca	43	1	nogas	505918	0.00
Ca	44	1	nogas	8244680	0.00
Name	Mass	Tune Step	Tune Mode	CPS	%RSD
Fe	56	1	nogas	330156407	0.00
Se	77	1	nogas	47816	0.00
Se	82	1	nogas	36380	0.01
Mo	95	1	nogas	778493	0.00
Sn	118	1	nogas	1146025	0.00
Ba	137	1	nogas	603416	0.00
Sb	121	2	He	762313	0.00
P	31	1	nogas	1042495	0.00
La	139	1	nogas	757	0.66

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	365155	0.92	422169	86.49	70	125	
Ge	72	1	nogas	1996236	2.39	2074093	96.25	70	125	
In	115	1	nogas	1724485	3.16	1830149	94.23	70	125	
Bi	209	1	nogas	1227320	1.52	1294991	94.77	70	125	
Ge	72	2	He	522290	0.40	560222	93.23	70	125	

Sample Report

Sample Table

Sample Name	LLCCV2
Data File Name	050SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:32:06-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	2.019	2.019	0.51	7648	0.03	2000	
Na	23	1	nogas	204.503	204.503	3.26	3900276	0.01	200000	
Mg	24	1	nogas	206.738	206.738	1.96	2089427	0.01	200000	
Al	27	1	nogas	1.596	1.596	9.99	46755	0.00	2000	
K	39	1	nogas	195.026	195.026	13.06	8333193	0.00	200000	
Ti	47	1	nogas	2.190	2.190	5.01	3140	0.07	2000	
V	51	1	nogas	-3.481	-3.481	-14.74	239655	0.00	2000	
Cr	52	1	nogas	1.666	1.666	8.96	48852	0.00	2000	
Mn	55	1	nogas	1.928	1.928	2.91	54822	0.00	2000	
Co	59	1	nogas	2.037	2.037	4.00	34456	0.01	2000	
Ni	60	1	nogas	1.435	1.435	4.99	7845	0.02	2000	
Cu	63	1	nogas	2.062	2.062	3.53	22387	0.01	2000	
Zn	66	1	nogas	1.622	1.622	1.33	6298	0.03	2000	
As	75	1	nogas	-1.358	-1.358	-57.26	52349	0.00	2000	
Sr	88	1	nogas	1.907	1.907	4.71	46547	0.00	2000	
Ag	107	1	nogas	1.993	1.993	2.41	21754	0.01	2000	
Cd	111	1	nogas	1.898	1.898	2.15	4267	0.04	2000	
Sb	121	1	nogas	1.874	1.874	3.53	19374	0.01	2000	
Tl	205	1	nogas	2.033	2.033	5.27	33839	0.01	2000	
Pb	208	1	nogas	2.137	2.137	1.96	42843	0.00	2000	
U	238	1	nogas	1.846	1.846	5.66	40883	0.00	2000	
[Pb]	206	1	nogas	2.033	2.033	7.14	10650	0.02	2000	
[Pb]	207	1	nogas	1.914	1.914	9.70	9089	0.02	2000	
Na	23	2	He	204.447	204.447	3.66	322952	0.06	200000	
Mg	24	2	He	201.851	201.851	3.63	130103	0.16	200000	
Al	27	2	He	2.444	2.444	9.60	1547	0.16	2000	
K	39	2	He	202.746	202.746	4.55	305589	0.07	200000	
Ca	43	2	He	193.315	193.315	7.36	447	43.28	200000	
Ca	44	2	He	200.213	200.213	7.50	7755	2.58	200000	
V	51	2	He	1.808	1.808	1.66	13277	0.01	2000	
Cr	52	2	He	2.049	2.049	3.20	12358	0.02	2000	
Mn	55	2	He	2.060	2.060	4.24	8245	0.02	2000	
Fe	56	2	He	202.908	202.908	0.63	941987	0.02	200000	
Co	59	2	He	2.007	2.007	5.57	14006	0.01	2000	
Ni	60	2	He	1.978	1.978	3.29	3847	0.05	2000	
Cu	63	2	He	1.852	1.852	1.88	10110	0.02	2000	
Zn	66	2	He	1.839	1.839	9.15	2240	0.08	2000	
As	75	2	He	2.000	2.000	4.07	2428	0.08	2000	
Se	78	2	He	2.205	2.205	10.21	517	0.43	2000	
B	11	1	nogas	17.382	17.382	12.82	96388	0.02	2000	

Sample Report

Si	28	1	nogas	82.364	82.364	16.56	2923467	0.00	2000	
Ca	43	1	nogas	201.722	201.722	6.57	6314	3.19	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ca	44	1	nogas	200.404	200.404	2.80	122661	0.16	200000	
Fe	56	1	nogas	170.473	170.473	7.06	5152927	0.00	200000	
Se	77	1	nogas	-14.442	-14.442	-39.73	14609	-0.10	2000	
Se	82	1	nogas	2.006	2.006	21.29	663	0.30	2000	
Mo	95	1	nogas	2.222	2.222	7.45	9323	0.02	2000	
Sn	118	1	nogas	2.148	2.148	0.73	14109	0.02	2000	
Ba	137	1	nogas	1.964	1.964	2.89	6725	0.03	2000	
Sb	121	2	He	2.054	2.054	1.01	8352	0.02	2000	
La	139	1	nogas	6.853	6.853	123.00	93	7.34	2000	
Au	197	1	nogas	3.327	3.327	23.65	29348	0.01	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	408356	2.06	422169	96.73	70	125	
Ge	72	1	nogas	2114856	3.61	2074093	101.97	70	125	
In	115	1	nogas	1865200	1.55	1830149	101.92	70	125	
Bi	209	1	nogas	1372384	7.55	1294991	105.98	70	125	
Ge	72	2	He	547992	2.49	560222	97.82	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLCCV5
Data File Name	051LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:34:05-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	4.797	2.521	17678	1.51	5	95.9	70	130	
Na	23	1	nogas	501.366	4.724	8425381	1.57	500	100.3	70	130	
Mg	24	1	nogas	527.672	1.713	5341265	1.44	500	105.5	70	130	
Al	27	1	nogas	5.184	1.783	87809	2.31	5	103.7	70	130	
K	39	1	nogas	534.437	4.368	12909979	1.80	500	106.9	70	130	
Ti	47	1	nogas	5.350	1.855	6998	2.94	5	107.0	70	130	
V	51	1	nogas	1.546	33.351	320470	1.79	5	30.9	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	5.081	2.348	98548	0.83	5	101.6	70	130	
Mn	55	1	nogas	5.142	3.375	115961	2.29	5	102.8	70	130	
Co	59	1	nogas	5.104	2.711	81902	2.27	5	102.1	70	130	
Ni	60	1	nogas	4.692	4.708	18576	3.18	5	93.8	70	130	
Cu	63	1	nogas	5.218	2.718	48578	1.31	5	104.4	70	130	
Zn	66	1	nogas	4.848	7.683	14803	5.70	5	97.0	70	130	
As	75	1	nogas	3.733	12.158	68344	1.54	5	74.7	70	130	
Sr	88	1	nogas	4.988	1.308	113356	0.90	5	99.8	70	130	
Ag	107	1	nogas	5.128	2.320	53395	2.02	5	102.6	70	130	
Cd	111	1	nogas	4.975	4.883	10740	4.70	5	99.5	70	130	
Sb	121	1	nogas	4.959	3.305	48514	2.13	5	99.2	70	130	
Tl	205	1	nogas	4.377	8.230	72508	2.80	5	87.5	70	130	
Pb	208	1	nogas	5.049	2.788	100818	2.78	5	101.0	70	130	
U	238	1	nogas	4.488	6.602	99281	1.31	5	89.8	70	130	
[Pb]	206	1	nogas	4.805	7.171	25076	0.80	5	96.1	70	130	
[Pb]	207	1	nogas	4.609	7.564	21845	0.42	5	92.2	70	130	
Na	23	2	He	508.398	0.941	671572	1.37	500	101.7	70	130	
Mg	24	2	He	502.307	0.517	325702	1.04	500	100.5	70	130	
Al	27	2	He	4.832	3.702	2430	3.21	5	96.6	70	130	
K	39	2	He	517.898	1.326	538780	0.94	500	103.6	70	130	
Ca	43	2	He	495.545	14.197	1077	13.01	500	99.1	70	130	
Ca	44	2	He	516.511	2.788	18746	3.21	500	103.3	70	130	
V	51	2	He	4.824	2.226	27998	1.81	5	96.5	70	130	
Cr	52	2	He	5.017	1.941	27467	1.21	5	100.3	70	130	
Mn	55	2	He	5.222	1.009	19984	1.35	5	104.4	70	130	
Fe	56	2	He	522.783	0.989	2429336	1.17	500	104.6	70	130	
Co	59	2	He	4.975	2.050	35014	1.99	5	99.5	70	130	
Ni	60	2	He	4.936	3.502	8862	2.70	5	98.7	70	130	
Cu	63	2	He	4.913	2.786	23345	2.61	5	98.3	70	130	
Zn	66	2	He	4.687	1.569	5198	1.73	5	93.7	70	130	
As	75	2	He	4.957	2.081	5671	2.36	5	99.1	70	130	
Se	78	2	He	5.191	5.580	767	3.50	5	103.8	70	130	
B	11	1	nogas	26.159	2.741	114309	1.85	25	104.6	70	130	
Si	28	1	nogas	261.863	2.019	3994897	1.39	25	1047.5	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	535.102	2.345	14636	3.19	500	107.0	70	130	
Ca	44	1	nogas	528.573	2.001	255028	1.24	500	105.7	70	130	
Fe	56	1	nogas	519.435	3.715	10748814	2.17	500	103.9	70	130	
Se	77	1	nogas	-2.323	-101.277	15954	1.55	5	-46.5	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	4.965	19.318	1177	14.63	5	99.3	70	130	
Mo	95	1	nogas	5.254	3.108	20902	4.12	5	105.1	70	130	
Sn	118	1	nogas	5.040	6.816	30747	4.33	5	100.8	70	130	
Ba	137	1	nogas	5.002	3.338	15978	5.43	5	100.0	70	130	
Sb	121	2	He	4.861	0.871	19781	1.03	5	97.2	70	130	
Li	7	1	nogas	4.711	2.630	74133	0.51	5	94.2	70	130	
P	31	1	nogas	28.466	4.149	64811	1.14	25	113.9	70	130	
La	139	1	nogas	4.017	210.079	80	37.50	5	80.3	70	130	
Au	197	1	nogas	4.310	6.888	37680	3.30	5	86.2	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	398538	1.26	422169	94.40	70	125	
Ge	72	1	nogas	2022594	1.22	2074093	97.52	70	125	
In	115	1	nogas	1794357	2.26	1830149	98.04	70	125	
Bi	209	1	nogas	1372903	7.71	1294991	106.02	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	554925	0.58	560222	99.05	70	125	

Initial Calibration Blank (ICB) Report

Sample Table

Sample Name	ICCB
Data File Name	052_ICB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T16:36:04-05:00
Sample Type	ICB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.029	58.3	150	43.7	1	
Na	23	1	nogas	-5.509	-23.6	745789	0.9	100	
Mg	24	1	nogas	-0.285	-53.6	17911	5.5	100	
Al	27	1	nogas	-0.057	-193.8	24827	4.0	5	
K	39	1	nogas	3.827	55.9	5180543	1.3	100	
Ti	47	1	nogas	0.016	291.7	260	24.0	2.5	
V	51	1	nogas	-3.326	-20.9	231366	5.3	2.5	
Cr	52	1	nogas	-0.143	-14.8	19270	1.1	2.5	
Mn	55	1	nogas	0.017	113.6	14629	1.1	2.5	
Co	59	1	nogas	0.003	161.5	530	16.8	2.5	
Ni	60	1	nogas	-0.700	-3.2	250	30.2	2.5	
Cu	63	1	nogas	-0.011	-99.0	3574	2.1	2.5	
Zn	66	1	nogas	-0.285	-19.4	823	18.3	2.5	
As	75	1	nogas	-2.199	-9.3	46944	1.3	2.5	
Sr	88	1	nogas	0.004	95.5	2047	4.1	2.5	
Ag	107	1	nogas	0.013	4.8	237	2.4	2.5	
Cd	111	1	nogas	0.006	174.1	27	86.6	1	
Sb	121	1	nogas	0.005	46.8	377	6.1	2.5	
Tl	205	1	nogas	0.029	16.1	537	10.9	1	
Pb	208	1	nogas	0.015	25.3	607	12.4	2.5	
U	238	1	nogas	0.007	46.8	220	34.3	2.5	
[Pb]	206	1	nogas	0.021	55.7	167	30.2	2.5	
[Pb]	207	1	nogas	0.015	73.1	110	39.6	2.5	
Na	23	2	He	-1.744	-107.4	91642	0.9	100	
Mg	24	2	He	-0.103	-220.1	1483	7.9	100	
Al	27	2	He	0.461	43.6	830	9.1	5	
K	39	2	He	-2.231	-111.7	153920	1.2	100	
Ca	43	2	He	4.004	532.2	60	72.6	100	
Ca	44	2	He	5.463	71.3	1133	10.6	100	
V	51	2	He	-0.109	-21.6	4108	2.1	2.5	
Cr	52	2	He	0.014	143.1	2223	5.6	2.5	
Mn	55	2	He	-0.049	-31.5	567	8.3	2.5	
Fe	56	2	He	0.386	67.3	19220	6.2	100	
Co	59	2	He	0.000	784.7	120	22.0	2.5	
Ni	60	2	He	-0.217	-16.4	210	29.0	2.5	
Cu	63	2	He	-0.205	-9.3	1407	5.3	2.5	
Zn	66	2	He	-0.088	-20.9	283	8.2	2.5	
As	75	2	He	0.020	66.5	303	5.0	2.5	
Se	78	2	He	0.187	62.9	351	4.4	2.5	
B	11	1	nogas	1.192	107.6	58821	2.4	10	
Si	28	1	nogas	-5.849	-166.5	2201432	1.5	5	
Ca	43	1	nogas	7.807	52.6	1047	11.5	100	
Ca	44	1	nogas	3.855	110.8	34746	4.0	100	
Fe	56	1	nogas	-14.549	-2.4	1841563	1.8	100	

Initial Calibration Blank (ICB) Report

Se	77	1	nogas	-6.609	-51.1	15207	3.6	2.5	
Se	82	1	nogas	-0.283	-122.5	210	29.0	2.5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Mo	95	1	nogas	0.052	16.4	313	10.3	2.5	
Sn	118	1	nogas	-0.006	-117.9	763	7.7	5	
Ba	137	1	nogas	0.040	36.1	457	12.5	2.5	
Sb	121	2	He	-0.006	-346.4	143	52.8	2.5	
P	31	1	nogas	2.009	21.4	37484	0.4	10	
La	139	1	nogas	3.990	97.1	80	12.5	2.5	ICB Main CR1 Failed
Au	197	1	nogas	0.133	17.9	1357	14.1	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	412667	4.77	422169	97.75	70	125	
Ge	72	1	nogas	2015449	1.53	2074093	97.17	70	125	
In	115	1	nogas	1806377	4.40	1830149	98.70	70	125	
Bi	209	1	nogas	1273462	3.04	1294991	98.34	70	125	
Ge	72	2	He	543662	1.82	560222	97.04	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	064_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T17:00:03-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	96.383	1.132	352721	1.10	100	96.4	90	110	
Na	23	1	nogas	9915.138	2.535	147442045	1.70	10000	99.2	90	110	
Mg	24	1	nogas	9775.362	1.442	96188079	0.62	10000	97.8	90	110	
Al	27	1	nogas	104.581	3.074	1259025	3.62	100	104.6	90	110	
K	39	1	nogas	10011.412	2.227	148172516	2.40	10000	100.1	90	110	
Ti	47	1	nogas	100.005	1.680	124437	1.26	100	100.0	90	110	
V	51	1	nogas	104.082	3.590	2143019	2.52	100	104.1	90	110	
Cr	52	1	nogas	101.105	2.111	1528679	1.50	100	101.1	90	110	
Mn	55	1	nogas	97.824	1.628	1915387	1.17	100	97.8	90	110	
Co	59	1	nogas	101.553	1.381	1593992	2.02	100	101.6	90	110	
Ni	60	1	nogas	99.785	0.849	336207	0.86	100	99.8	90	110	
Cu	63	1	nogas	94.661	1.999	804641	1.88	100	94.7	90	110	
Zn	66	1	nogas	98.752	2.149	266111	1.87	100	98.8	90	110	
As	75	1	nogas	101.014	1.736	409699	0.86	100	101.0	90	110	
Sr	88	1	nogas	95.701	1.942	2103761	2.15	100	95.7	90	110	
Ag	107	1	nogas	93.684	2.840	957405	2.23	100	93.7	90	110	
Cd	111	1	nogas	97.844	0.751	203523	1.65	100	97.8	90	110	
Sb	121	1	nogas	95.283	0.873	911091	1.31	100	95.3	90	110	
Tl	205	1	nogas	90.701	3.710	1440223	3.25	100	90.7	90	110	
Pb	208	1	nogas	93.936	0.642	1870320	0.64	100	93.9	90	110	
U	238	1	nogas	98.467	2.995	2087938	2.30	100	98.5	90	110	
[Pb]	206	1	nogas	92.119	5.109	459799	1.58	100	92.1	90	110	
[Pb]	207	1	nogas	91.278	4.986	414044	0.36	100	91.3	90	110	
Na	23	2	He	10499.649	0.395	11097452	0.83	10000	105.0	90	110	
Mg	24	2	He	10227.824	1.826	6108300	0.97	10000	102.3	90	110	
Al	27	2	He	103.792	2.514	35407	1.97	100	103.8	90	110	
K	39	2	He	10133.867	0.276	7653953	0.27	10000	101.3	90	110	
Ca	43	2	He	10442.047	3.778	20024	2.55	10000	104.4	90	110	
Ca	44	2	He	10455.359	1.060	333859	0.96	10000	104.6	90	110	
V	51	2	He	100.466	2.242	453015	1.13	100	100.5	90	110	
Cr	52	2	He	99.655	1.728	466600	2.63	100	99.7	90	110	
Mn	55	2	He	100.314	2.197	342461	2.88	100	100.3	90	110	
Fe	56	2	He	10027.483	1.233	42820139	0.66	10000	100.3	90	110	
Co	59	2	He	97.098	2.130	630305	1.04	100	97.1	90	110	
Ni	60	2	He	100.793	2.218	157070	1.00	100	100.8	90	110	
Cu	63	2	He	101.291	2.565	403344	1.39	100	101.3	90	110	
Zn	66	2	He	100.263	2.282	95723	2.05	100	100.3	90	110	
As	75	2	He	101.673	1.110	102449	0.69	100	101.7	90	110	
Se	78	2	He	102.387	3.313	8068	2.18	100	102.4	90	110	
B	11	1	nogas	496.959	0.437	1191041	0.80	500	99.4	90	110	
Si	28	1	nogas	5186.541	1.890	36217784	1.35	5000	103.7	90	110	
Ca	43	1	nogas	10088.053	2.848	256422	3.07	10000	100.9	90	110	
Ca	44	1	nogas	10054.021	2.045	4181252	2.15	10000	100.5	90	110	
Fe	56	1	nogas	10048.500	1.918	166792091	1.28	10000	100.5	90	110	
Se	77	1	nogas	109.551	7.190	33524	3.79	100	109.6	90	110	
Se	82	1	nogas	95.159	0.560	17482	0.53	100	95.2	90	110	
Mo	95	1	nogas	97.234	1.376	378476	1.68	100	97.2	90	110	
Sn	118	1	nogas	98.416	0.438	565467	1.16	100	98.4	90	110	
Ba	137	1	nogas	99.088	1.373	299231	2.28	100	99.1	90	110	
Sb	121	2	He	101.675	0.417	379813	0.98	100	101.7	90	110	
Li	7	1	nogas	93.284	1.759	805502	2.34	100	93.3	90	110	
P	31	1	nogas	511.516	0.933	552066	0.59	500	102.3	90	110	
La	139	1	nogas	106.036	14.523	420	12.60	100	106.0	90	110	
Au	197	1	nogas	84.774	3.303	705332	2.20	100	84.8	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	396517	0.75	422169	93.92	70	125	
Ge	72	1	nogas	1988987	0.65	2074093	95.90	70	125	
In	115	1	nogas	1730689	1.58	1830149	94.57	70	125	
Bi	209	1	nogas	1313945	5.20	1294991	101.46	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	513565	1.21	560222	91.67	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	065_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T17:01:58-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.057	44.7	263	40.2	1	
Na	23	1	nogas	53.934	7.3	1619560	2.1	100	
Mg	24	1	nogas	4.222	18.3	62382	13.2	100	
Al	27	1	nogas	0.239	8.5	28128	1.4	5	
K	39	1	nogas	38.400	22.9	5631327	0.2	100	
Ti	47	1	nogas	0.013	420.5	253	26.3	2.5	
V	51	1	nogas	0.365	185.7	295559	4.9	2.5	
Cr	52	1	nogas	0.085	62.2	22521	1.7	2.5	
Mn	55	1	nogas	0.099	43.4	16101	3.7	2.5	
Co	59	1	nogas	0.049	39.4	1240	23.3	2.5	
Ni	60	1	nogas	-0.618	-2.1	523	8.0	2.5	
Cu	63	1	nogas	0.046	58.8	4031	3.7	2.5	
Zn	66	1	nogas	-0.292	-32.3	797	30.6	2.5	
As	75	1	nogas	0.137	289.8	54792	0.7	2.5	
Sr	88	1	nogas	0.088	8.5	3880	5.4	2.5	
Ag	107	1	nogas	0.058	18.4	700	17.8	2.5	
Cd	111	1	nogas	0.037	29.7	93	27.0	1	
Sb	121	1	nogas	0.226	15.2	2490	13.0	2.5	
Tl	205	1	nogas	0.276	67.2	4834	70.7	1	
Pb	208	1	nogas	0.086	59.7	2017	50.5	2.5	
U	238	1	nogas	0.079	31.3	1864	35.7	2.5	
[Pb]	206	1	nogas	0.076	40.6	483	39.8	2.5	
[Pb]	207	1	nogas	0.071	55.4	397	53.3	2.5	
Na	23	2	He	52.780	3.3	148751	0.6	100	
Mg	24	2	He	3.378	7.4	3604	4.9	100	
Al	27	2	He	0.429	7.0	800	1.2	5	
K	39	2	He	12.825	8.8	165060	0.5	100	
Ca	43	2	He	26.823	48.6	103	24.4	100	
Ca	44	2	He	35.150	8.3	2087	4.0	100	
V	51	2	He	0.079	26.0	4887	2.1	2.5	
Cr	52	2	He	0.004	1186.3	2127	12.0	2.5	
Mn	55	2	He	0.036	41.9	857	6.6	2.5	
Fe	56	2	He	3.914	7.7	34366	3.2	100	
Co	59	2	He	0.022	42.8	260	24.0	2.5	
Ni	60	2	He	-0.197	-28.4	237	38.1	2.5	
Cu	63	2	He	-0.167	-9.8	1530	4.7	2.5	
Zn	66	2	He	-0.156	-13.9	210	9.5	2.5	
As	75	2	He	0.023	27.4	299	2.8	2.5	
Se	78	2	He	0.036	1570.9	331	12.7	2.5	
B	11	1	nogas	14.619	6.5	93079	4.5	10	CCB Main CR1 Failed
Si	28	1	nogas	19.188	74.8	2346921	1.9	5	CCB Main CR1 Failed
Ca	43	1	nogas	35.249	12.2	1737	8.4	100	
Ca	44	1	nogas	25.341	10.1	43367	2.7	100	
Fe	56	1	nogas	3.761	74.6	2126965	1.5	100	
Se	77	1	nogas	9.919	1.8	17725	2.3	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.308	59.9	317	12.8	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.317	56.5	1340	51.2	2.5	
Sn	118	1	nogas	0.260	23.5	2327	16.9	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	-0.004	-211.6	313	9.7	2.5	
Sb	121	2	He	0.200	13.4	933	10.7	2.5	
P	31	1	nogas	2.405	52.3	37554	1.5	10	
La	139	1	nogas	1.263	373.1	70	24.7	2.5	
Au	197	1	nogas	1.469	49.1	13470	53.2	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	422611	3.34	422169	100.10	70	125	
Ge	72	1	nogas	1998295	2.15	2074093	96.35	70	125	
In	115	1	nogas	1781580	1.60	1830149	97.35	70	125	
Bi	209	1	nogas	1388315	6.16	1294991	107.21	70	125	
Ge	72	2	He	531417	0.67	560222	94.86	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	076_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T17:23:41-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	102.025	4.490	331462	1.85	100	102.0	90	110	
Na	23	1	nogas	9651.152	4.765	142667882	0.34	10000	96.5	90	110	
Mg	24	1	nogas	9676.677	4.840	94631565	0.49	10000	96.8	90	110	
Al	27	1	nogas	101.240	7.441	1205170	3.51	100	101.2	90	110	
K	39	1	nogas	10238.580	2.402	149839078	2.22	10000	102.4	90	110	
Ti	47	1	nogas	104.584	3.716	128724	1.00	100	104.6	90	110	
V	51	1	nogas	103.198	4.413	2104804	2.51	100	103.2	90	110	
Cr	52	1	nogas	104.175	3.794	1557595	1.54	100	104.2	90	110	
Mn	55	1	nogas	101.010	3.556	1956035	0.23	100	101.0	90	110	
Co	59	1	nogas	105.462	3.207	1637517	1.08	100	105.5	90	110	
Ni	60	1	nogas	102.969	5.250	342988	1.91	100	103.0	90	110	
Cu	63	1	nogas	99.816	3.415	839158	0.69	100	99.8	90	110	
Zn	66	1	nogas	104.497	2.764	278526	1.00	100	104.5	90	110	
As	75	1	nogas	98.584	3.236	396916	1.31	100	98.6	90	110	
Sr	88	1	nogas	104.662	5.302	2274729	1.81	100	104.7	90	110	
Ag	107	1	nogas	96.336	2.494	974232	1.26	100	96.3	90	110	
Cd	111	1	nogas	99.638	1.146	208997	0.71	100	99.6	90	110	
Sb	121	1	nogas	99.167	3.632	937934	0.62	100	99.2	90	110	
Tl	205	1	nogas	99.135	9.993	1485205	4.52	100	99.1	90	110	
Pb	208	1	nogas	96.020	1.495	1911812	1.49	100	96.0	90	110	
U	238	1	nogas	104.804	4.797	2101314	2.20	100	104.8	90	110	
[Pb]	206	1	nogas	100.503	7.192	474134	1.61	100	100.5	90	110	
[Pb]	207	1	nogas	99.205	5.680	425607	1.25	100	99.2	90	110	
Na	23	2	He	9823.680	0.872	10775929	0.95	10000	98.2	90	110	
Mg	24	2	He	9788.830	0.807	6064593	0.53	10000	97.9	90	110	
Al	27	2	He	101.637	0.677	35981	0.96	100	101.6	90	110	
K	39	2	He	10152.905	0.695	7668039	0.68	10000	101.5	90	110	
Ca	43	2	He	10215.909	1.262	20328	1.57	10000	102.2	90	110	
Ca	44	2	He	10024.067	1.419	332066	1.48	10000	100.2	90	110	
V	51	2	He	98.827	0.562	462364	0.28	100	98.8	90	110	
Cr	52	2	He	99.259	0.605	482030	0.96	100	99.3	90	110	
Mn	55	2	He	99.175	1.290	351179	1.59	100	99.2	90	110	
Fe	56	2	He	9823.369	2.652	43516221	2.86	10000	98.2	90	110	
Co	59	2	He	95.114	0.405	640524	0.32	100	95.1	90	110	
Ni	60	2	He	99.650	1.441	161104	1.22	100	99.6	90	110	
Cu	63	2	He	100.527	1.406	415300	1.12	100	100.5	90	110	
Zn	66	2	He	100.781	1.772	99808	1.86	100	100.8	90	110	
As	75	2	He	98.299	2.049	102754	1.98	100	98.3	90	110	
Se	78	2	He	98.634	1.930	8076	2.21	100	98.6	90	110	
B	11	1	nogas	497.148	4.412	1058028	3.15	500	99.4	90	110	
Si	28	1	nogas	5199.673	3.865	35915148	1.50	5000	104.0	90	110	
Ca	43	1	nogas	10339.785	2.911	259997	1.12	10000	103.4	90	110	
Ca	44	1	nogas	10591.999	3.737	4355567	0.86	10000	105.9	90	110	
Fe	56	1	nogas	10280.276	3.595	168767679	1.11	10000	102.8	90	110	
Se	77	1	nogas	88.332	7.583	29825	2.98	100	88.3	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	101.992	6.693	18503	3.06	100	102.0	90	110	
Mo	95	1	nogas	103.684	2.679	399358	2.48	100	103.7	90	110	
Sn	118	1	nogas	100.236	0.983	580804	1.35	100	100.2	90	110	
Ba	137	1	nogas	102.048	2.769	310695	1.72	100	102.0	90	110	
Sb	121	2	He	98.400	0.964	381285	1.10	100	98.4	90	110	
Li	7	1	nogas	97.637	2.064	747341	1.84	100	97.6	90	110	
P	31	1	nogas	503.152	3.461	537790	0.55	500	100.6	90	110	
La	139	1	nogas	187.787	15.173	700	13.09	100	187.8	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	90.436	5.948	711158	1.74	100	90.4	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	352285	2.72	422169	83.45	70	125	
Ge	72	1	nogas	1969204	3.70	2074093	94.94	70	125	
In	115	1	nogas	1745406	1.55	1830149	95.37	70	125	
Bi	209	1	nogas	1243760	6.82	1294991	96.04	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	532691	0.36	560222	95.09	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	077_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T17:25:37-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.063	15.5	260	13.9	1	
Na	23	1	nogas	24.326	19.7	1173920	2.4	100	
Mg	24	1	nogas	8.711	10.3	106350	3.9	100	
Al	27	1	nogas	0.787	22.3	34782	6.0	5	
K	39	1	nogas	9.249	29.4	5236776	0.6	100	
Ti	47	1	nogas	-0.023	-68.7	210	9.5	2.5	
V	51	1	nogas	-3.908	-16.3	219916	5.0	2.5	
Cr	52	1	nogas	-0.013	-266.2	21156	2.2	2.5	
Mn	55	1	nogas	0.068	16.0	15573	1.2	2.5	
Co	59	1	nogas	0.032	21.3	990	11.2	2.5	
Ni	60	1	nogas	-0.612	-0.3	543	1.1	2.5	
Cu	63	1	nogas	-0.016	-85.3	3520	3.5	2.5	
Zn	66	1	nogas	-0.147	-37.8	1193	12.7	2.5	
As	75	1	nogas	-2.703	-10.5	44956	2.0	2.5	
Sr	88	1	nogas	0.128	11.0	4784	6.3	2.5	
Ag	107	1	nogas	0.031	18.8	423	13.8	2.5	
Cd	111	1	nogas	0.038	31.0	97	23.9	1	
Sb	121	1	nogas	0.258	2.0	2817	1.7	2.5	
Tl	205	1	nogas	0.239	53.9	3654	49.9	1	
Pb	208	1	nogas	0.130	17.2	2900	15.3	2.5	
U	238	1	nogas	0.064	28.4	1353	24.2	2.5	
[Pb]	206	1	nogas	0.146	31.6	753	26.1	2.5	
[Pb]	207	1	nogas	0.145	21.2	667	16.5	2.5	
Na	23	2	He	23.585	8.7	121332	0.3	100	
Mg	24	2	He	8.401	0.7	6951	1.4	100	
Al	27	2	He	1.462	12.0	1200	3.6	5	
K	39	2	He	-2.072	-172.3	154038	1.7	100	
Ca	43	2	He	21.537	65.5	97	31.6	100	
Ca	44	2	He	38.664	23.3	2280	11.8	100	
V	51	2	He	-0.113	-18.0	4143	2.1	2.5	
Cr	52	2	He	-0.021	-105.3	2077	7.0	2.5	
Mn	55	2	He	0.148	10.9	1297	6.2	2.5	
Fe	56	2	He	7.966	3.1	54166	1.1	100	
Co	59	2	He	0.032	30.0	343	20.7	2.5	
Ni	60	2	He	-0.226	-8.6	197	16.3	2.5	
Cu	63	2	He	-0.178	-11.8	1537	4.1	2.5	
Zn	66	2	He	0.085	26.6	463	5.0	2.5	
As	75	2	He	0.028	66.3	316	6.0	2.5	
Se	78	2	He	0.815	54.0	406	7.9	2.5	
B	11	1	nogas	10.580	18.1	76032	4.6	10	CCB Main CR1 Failed
Si	28	1	nogas	36.772	24.5	2474756	2.6	5	CCB Main CR1 Failed
Ca	43	1	nogas	31.769	25.6	1653	12.3	100	
Ca	44	1	nogas	22.692	25.0	42452	5.4	100	
Fe	56	1	nogas	-4.882	-82.3	1993493	3.1	100	
Se	77	1	nogas	-10.585	-26.9	14503	2.9	2.5	
Se	82	1	nogas	0.614	29.3	373	8.6	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.213	54.8	943	48.8	2.5	
Sn	118	1	nogas	0.153	33.0	1720	14.8	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	-0.006	-491.8	313	25.8	2.5	
Sb	121	2	He	0.209	23.5	1007	21.1	2.5	
P	31	1	nogas	-1.983	-17.8	33256	0.9	10	
La	139	1	nogas	22.617	20.2	147	7.9	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.385	53.1	11078	49.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	386256	1.14	422169	91.49	70	125	
Ge	72	1	nogas	2006856	0.24	2074093	96.76	70	125	
In	115	1	nogas	1822191	3.62	1830149	99.57	70	125	
Bi	209	1	nogas	1244961	3.71	1294991	96.14	70	125	
Ge	72	2	He	550824	1.71	560222	98.32	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	088_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T17:47:37-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	98.274	2.350	392396	2.30	100	98.3	90	110	
Na	23	1	nogas	10321.531	3.469	162457745	1.90	10000	103.2	90	110	
Mg	24	1	nogas	10099.860	0.716	105249498	2.10	10000	101.0	90	110	
Al	27	1	nogas	114.366	6.898	1406072	5.19	100	114.4	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10459.867	3.147	158203337	0.68	10000	104.6	90	110	
Ti	47	1	nogas	104.625	1.654	133276	1.81	100	104.6	90	110	
V	51	1	nogas	136.326	3.396	2782007	1.37	100	136.3	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	106.187	2.928	1642514	2.23	100	106.2	90	110	
Mn	55	1	nogas	100.282	0.961	2010580	3.36	100	100.3	90	110	
Co	59	1	nogas	102.062	3.638	1639852	3.42	100	102.1	90	110	
Ni	60	1	nogas	102.387	3.433	352977	1.04	100	102.4	90	110	
Cu	63	1	nogas	98.555	2.872	857298	0.98	100	98.6	90	110	
Zn	66	1	nogas	103.012	1.084	284132	1.34	100	103.0	90	110	
As	75	1	nogas	120.003	3.137	487785	0.87	100	120.0	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	101.826	1.656	2291587	2.24	100	101.8	90	110	
Ag	107	1	nogas	96.514	1.456	1009995	2.44	100	96.5	90	110	
Cd	111	1	nogas	101.633	1.238	213628	4.00	100	101.6	90	110	
Sb	121	1	nogas	99.391	3.661	972520	1.30	100	99.4	90	110	
Tl	205	1	nogas	95.047	4.081	1515861	3.60	100	95.0	90	110	
Pb	208	1	nogas	100.986	0.507	2010683	0.51	100	101.0	90	110	
U	238	1	nogas	102.886	0.323	2191639	1.52	100	102.9	90	110	
[Pb]	206	1	nogas	96.679	0.838	485063	1.06	100	96.7	90	110	
[Pb]	207	1	nogas	98.149	0.661	447545	1.23	100	98.1	90	110	
Na	23	2	He	10583.295	3.462	11970278	1.34	10000	105.8	90	110	
Mg	24	2	He	10354.702	2.727	6619444	0.58	10000	103.5	90	110	
Al	27	2	He	104.320	4.590	38106	5.18	100	104.3	90	110	
K	39	2	He	10530.641	1.265	7947539	1.24	10000	105.3	90	110	
Ca	43	2	He	9736.905	2.533	19994	0.29	10000	97.4	90	110	
Ca	44	2	He	10153.848	2.679	347072	1.02	10000	101.5	90	110	
V	51	2	He	100.399	2.418	484638	0.76	100	100.4	90	110	
Cr	52	2	He	99.573	3.431	498957	2.44	100	99.6	90	110	
Mn	55	2	He	99.368	1.196	363137	1.04	100	99.4	90	110	
Fe	56	2	He	9862.012	0.958	45091829	1.97	10000	98.6	90	110	
Co	59	2	He	94.317	0.665	655589	1.63	100	94.3	90	110	
Ni	60	2	He	99.079	2.905	165284	0.68	100	99.1	90	110	
Cu	63	2	He	98.327	2.932	419194	0.77	100	98.3	90	110	
Zn	66	2	He	99.922	3.049	102108	1.20	100	99.9	90	110	
As	75	2	He	98.466	2.119	106216	0.39	100	98.5	90	110	
Se	78	2	He	99.914	2.252	8438	1.95	100	99.9	90	110	
B	11	1	nogas	473.418	0.896	1240718	0.87	500	94.7	90	110	
Si	28	1	nogas	5507.169	3.320	39220491	0.96	5000	110.1	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	10534.904	3.118	274015	1.04	10000	105.3	90	110	
Ca	44	1	nogas	10715.547	3.133	4558610	0.90	10000	107.2	90	110	
Fe	56	1	nogas	10394.961	2.386	176559054	1.32	10000	103.9	90	110	
Se	77	1	nogas	233.557	7.145	54525	2.72	100	233.6	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.331	2.447	18860	3.54	100	100.3	90	110	
Mo	95	1	nogas	101.793	3.137	405497	0.98	100	101.8	90	110	
Sn	118	1	nogas	103.038	2.698	597804	0.34	100	103.0	90	110	
Ba	137	1	nogas	104.264	4.830	317782	1.82	100	104.3	90	110	
Sb	121	2	He	99.293	3.999	396930	2.12	100	99.3	90	110	
Li	7	1	nogas	98.840	2.088	928842	1.87	100	98.8	90	110	
P	31	1	nogas	524.799	3.633	578738	1.12	500	105.0	90	110	
La	139	1	nogas	160.910	13.653	610	11.36	100	160.9	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	91.079	3.302	761191	2.91	100	91.1	90	110	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	432622	0.27	422169	102.48	70	125	
Ge	72	1	nogas	2036605	2.40	2074093	98.19	70	125	
In	115	1	nogas	1748562	3.00	1830149	95.54	70	125	
Bi	209	1	nogas	1318606	1.55	1294991	101.82	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	549872	2.23	560222	98.15	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	089_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T17:49:33-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.073	2.2	340	2.9	1	
Na	23	1	nogas	104.560	7.4	2462050	3.0	100	CCB Main CR1 Failed
Mg	24	1	nogas	11.019	5.3	134528	3.1	100	
Al	27	1	nogas	0.447	7.7	31719	1.2	5	
K	39	1	nogas	15.998	55.6	5504415	0.4	100	
Ti	47	1	nogas	-0.043	-128.5	190	36.8	2.5	
V	51	1	nogas	11.894	5.6	520608	4.4	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.354	13.6	27524	1.1	2.5	
Mn	55	1	nogas	0.094	26.2	16588	1.3	2.5	
Co	59	1	nogas	0.045	18.2	1233	10.8	2.5	
Ni	60	1	nogas	-0.566	-6.0	723	15.2	2.5	
Cu	63	1	nogas	0.121	38.2	4837	6.4	2.5	
Zn	66	1	nogas	-0.182	-29.3	1137	14.8	2.5	
As	75	1	nogas	8.094	3.1	86005	2.6	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.125	2.7	4871	3.6	2.5	
Ag	107	1	nogas	0.041	20.4	543	14.3	2.5	
Cd	111	1	nogas	0.041	7.7	107	5.4	1	
Sb	121	1	nogas	0.131	20.8	1637	14.5	2.5	
Tl	205	1	nogas	0.211	49.1	3747	48.0	1	
Pb	208	1	nogas	0.093	48.1	2167	41.2	2.5	
U	238	1	nogas	0.062	31.9	1503	30.1	2.5	
[Pb]	206	1	nogas	0.088	36.0	553	31.4	2.5	
[Pb]	207	1	nogas	0.081	48.3	453	43.1	2.5	
Na	23	2	He	99.818	1.4	207428	1.5	100	
Mg	24	2	He	11.881	8.4	9196	7.2	100	
Al	27	2	He	0.797	16.6	963	5.7	5	
K	39	2	He	11.135	24.0	163809	1.2	100	
Ca	43	2	He	18.333	131.5	90	55.6	100	
Ca	44	2	He	31.242	13.6	2033	7.5	100	
V	51	2	He	0.741	7.1	8245	2.3	2.5	
Cr	52	2	He	-0.007	-838.7	2150	13.0	2.5	
Mn	55	2	He	0.035	26.9	883	3.3	2.5	
Fe	56	2	He	5.556	3.1	43211	2.0	100	
Co	59	2	He	0.026	35.6	297	21.7	2.5	
Ni	60	2	He	-0.222	-14.3	203	25.2	2.5	
Cu	63	2	He	-0.036	-120.4	2147	7.9	2.5	
Zn	66	2	He	-0.085	-44.1	290	12.4	2.5	
As	75	2	He	0.197	9.1	499	3.4	2.5	
Se	78	2	He	0.141	398.1	352	13.0	2.5	
B	11	1	nogas	9.120	22.0	83616	7.3	10	
Si	28	1	nogas	20.171	64.0	2439948	1.7	5	CCB Main CR1 Failed
Ca	43	1	nogas	39.835	18.0	1920	10.3	100	
Ca	44	1	nogas	16.283	9.8	41065	2.0	100	
Fe	56	1	nogas	13.044	15.3	2363977	2.4	100	
Se	77	1	nogas	64.599	5.5	27458	3.6	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.324	108.7	330	18.4	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.241	43.7	1080	37.6	2.5	
Sn	118	1	nogas	0.148	15.2	1767	9.7	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.007	238.1	370	16.4	2.5	
Sb	121	2	He	0.088	11.6	520	8.4	2.5	
P	31	1	nogas	0.087	833.3	36509	2.9	10	
La	139	1	nogas	16.537	73.2	130	33.5	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.271	54.3	11849	53.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	443403	1.10	422169	105.03	70	125	
Ge	72	1	nogas	2071586	2.02	2074093	99.88	70	125	
In	115	1	nogas	1891888	1.90	1830149	103.37	70	125	
Bi	209	1	nogas	1428913	1.88	1294991	110.34	70	125	
Ge	72	2	He	551696	0.80	560222	98.48	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	100_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T18:11:24-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	96.511	0.798	402515	1.49	100	96.5	90	110	
Na	23	1	nogas	10511.907	1.640	168524679	0.65	10000	105.1	90	110	
Mg	24	1	nogas	10254.667	0.674	108820882	0.85	10000	102.5	90	110	
Al	27	1	nogas	124.397	0.589	1621975	2.19	100	124.4	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10073.733	3.866	161898516	1.91	10000	100.7	90	110	
Ti	47	1	nogas	101.525	3.274	137226	1.83	100	101.5	90	110	
V	51	1	nogas	113.058	3.534	2501899	1.28	100	113.1	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	99.976	1.712	1642621	0.51	100	100.0	90	110	
Mn	55	1	nogas	95.265	0.494	2027490	2.34	100	95.3	90	110	
Co	59	1	nogas	97.379	2.082	1660385	0.53	100	97.4	90	110	
Ni	60	1	nogas	97.272	1.818	356126	0.32	100	97.3	90	110	
Cu	63	1	nogas	94.085	2.095	868853	0.51	100	94.1	90	110	
Zn	66	1	nogas	98.151	1.820	287364	0.59	100	98.2	90	110	
As	75	1	nogas	106.796	2.922	467191	0.76	100	106.8	90	110	
Sr	88	1	nogas	99.763	3.584	2382029	2.27	100	99.8	90	110	
Ag	107	1	nogas	92.973	2.709	1032227	0.87	100	93.0	90	110	
Cd	111	1	nogas	97.032	2.530	220478	1.02	100	97.0	90	110	
Sb	121	1	nogas	94.731	2.623	983935	0.76	100	94.7	90	110	
Tl	205	1	nogas	91.338	2.131	1665784	2.68	100	91.3	90	110	
Pb	208	1	nogas	109.775	3.783	2185651	3.78	100	109.8	90	110	
U	238	1	nogas	96.169	2.150	2341613	0.75	100	96.2	90	110	
[Pb]	206	1	nogas	91.856	3.319	526724	1.04	100	91.9	90	110	
[Pb]	207	1	nogas	92.279	3.003	480925	0.92	100	92.3	90	110	
Na	23	2	He	10663.126	2.071	12171945	1.71	10000	106.6	90	110	
Mg	24	2	He	10464.054	0.213	6751158	0.47	10000	104.6	90	110	
Al	27	2	He	112.384	1.088	41359	0.85	100	112.4	90	110	CCV Main CR1-2 Failed
K	39	2	He	10597.422	0.870	7996952	0.85	10000	106.0	90	110	
Ca	43	2	He	10251.775	0.873	21242	0.57	10000	102.5	90	110	
Ca	44	2	He	10237.109	2.215	353106	1.68	10000	102.4	90	110	
V	51	2	He	101.085	2.266	492407	2.45	100	101.1	90	110	
Cr	52	2	He	99.887	1.481	505161	2.04	100	99.9	90	110	
Mn	55	2	He	102.432	0.820	377675	0.13	100	102.4	90	110	
Fe	56	2	He	10086.487	1.140	46526589	0.48	10000	100.9	90	110	
Co	59	2	He	95.687	2.084	670999	1.57	100	95.7	90	110	
Ni	60	2	He	100.748	3.430	169594	2.82	100	100.7	90	110	
Cu	63	2	He	100.555	2.000	432603	1.81	100	100.6	90	110	
Zn	66	2	He	100.665	0.779	103816	0.59	100	100.7	90	110	
As	75	2	He	100.140	0.724	109006	0.97	100	100.1	90	110	
Se	78	2	He	100.396	0.695	8554	1.35	100	100.4	90	110	
B	11	1	nogas	482.560	3.140	1319570	2.29	500	96.5	90	110	
Si	28	1	nogas	5360.193	2.064	40586004	0.92	5000	107.2	90	110	
Ca	43	1	nogas	10153.079	3.542	280295	1.70	10000	101.5	90	110	
Ca	44	1	nogas	10173.848	3.546	4595277	1.85	10000	101.7	90	110	
Fe	56	1	nogas	9657.532	2.801	174231362	1.09	10000	96.6	90	110	
Se	77	1	nogas	159.751	2.526	45120	1.72	100	159.8	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	94.929	1.502	18950	1.97	100	94.9	90	110	
Mo	95	1	nogas	99.050	1.071	418887	1.16	100	99.0	90	110	
Sn	118	1	nogas	98.286	3.123	616840	0.92	100	98.3	90	110	
Ba	137	1	nogas	99.557	1.926	328432	1.08	100	99.6	90	110	
Sb	121	2	He	101.234	1.282	408480	1.12	100	101.2	90	110	
Li	7	1	nogas	98.943	5.131	971644	6.37	100	98.9	90	110	
P	31	1	nogas	511.914	1.437	600242	0.54	500	102.4	90	110	
La	139	1	nogas	204.365	28.874	820	26.75	100	204.4	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	80.816	3.448	772014	1.07	100	80.8	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	451892	1.44	422169	107.04	70	125	
Ge	72	1	nogas	2161278	1.86	2074093	104.20	70	125	
In	115	1	nogas	1891177	2.18	1830149	103.33	70	125	
Bi	209	1	nogas	1507732	2.46	1294991	116.43	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	554737	0.68	560222	99.02	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	101_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T18:13:19-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.078	39.2	413	35.9	1	
Na	23	1	nogas	150.287	5.1	3209653	2.2	100	CCB Main CR1 Failed
Mg	24	1	nogas	10.277	5.2	128586	5.0	100	
Al	27	1	nogas	1.089	17.4	41031	5.2	5	
K	39	1	nogas	9.242	61.4	5599604	0.9	100	
Ti	47	1	nogas	0.001	5453.0	257	32.7	2.5	
V	51	1	nogas	12.694	4.7	554629	2.9	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.489	5.5	30702	2.0	2.5	
Mn	55	1	nogas	0.052	29.6	16307	2.2	2.5	
Co	59	1	nogas	0.038	14.7	1153	8.7	2.5	
Ni	60	1	nogas	-0.538	-1.8	850	5.1	2.5	
Cu	63	1	nogas	0.163	5.6	5394	1.0	2.5	
Zn	66	1	nogas	-0.268	-15.6	927	12.5	2.5	
As	75	1	nogas	8.917	5.1	92229	2.7	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.095	5.0	4337	1.7	2.5	
Ag	107	1	nogas	0.045	16.2	607	13.3	2.5	
Cd	111	1	nogas	0.053	15.1	140	12.4	1	
Sb	121	1	nogas	0.179	15.1	2194	11.9	2.5	
Tl	205	1	nogas	0.210	54.3	4164	51.6	1	
Pb	208	1	nogas	0.086	34.9	2030	29.6	2.5	
U	238	1	nogas	0.058	31.3	1573	28.2	2.5	
[Pb]	206	1	nogas	0.064	26.7	470	20.5	2.5	
[Pb]	207	1	nogas	0.076	50.0	477	42.4	2.5	
Na	23	2	He	145.961	3.0	265943	1.0	100	CCB Main CR1 Failed
Mg	24	2	He	10.762	6.2	8689	4.0	100	
Al	27	2	He	1.770	45.3	1343	20.3	5	
K	39	2	He	4.932	58.3	159220	1.3	100	
Ca	43	2	He	33.341	90.0	123	49.5	100	
Ca	44	2	He	24.259	12.4	1840	6.3	100	
V	51	2	He	0.788	4.8	8688	0.6	2.5	
Cr	52	2	He	-0.012	-275.0	2177	6.2	2.5	
Mn	55	2	He	0.032	25.1	893	3.4	2.5	
Fe	56	2	He	5.492	2.1	44006	0.6	100	
Co	59	2	He	0.026	18.7	307	10.0	2.5	
Ni	60	2	He	-0.247	-4.9	167	13.9	2.5	
Cu	63	2	He	-0.023	-272.2	2260	13.2	2.5	
Zn	66	2	He	-0.137	-26.5	243	16.6	2.5	
As	75	2	He	0.141	9.9	449	5.2	2.5	
Se	78	2	He	0.311	62.8	375	5.9	2.5	
B	11	1	nogas	8.836	7.8	94791	4.6	10	
Si	28	1	nogas	0.565	1174.5	2389923	1.0	5	
Ca	43	1	nogas	34.212	32.0	1833	15.5	100	
Ca	44	1	nogas	11.738	13.2	40524	2.1	100	
Fe	56	1	nogas	-1.251	-316.4	2196337	3.7	100	
Se	77	1	nogas	72.505	0.7	29801	1.0	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.225	321.3	323	43.4	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.230	56.5	1077	49.9	2.5	
Sn	118	1	nogas	0.165	36.8	1933	19.1	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.013	184.6	400	18.9	2.5	
Sb	121	2	He	0.137	12.5	737	11.1	2.5	
P	31	1	nogas	1.920	47.3	39815	1.6	10	
La	139	1	nogas	16.202	68.3	133	30.3	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.203	49.4	12489	46.7	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	507152	2.84	422169	120.13	70	125	
Ge	72	1	nogas	2146107	0.93	2074093	103.47	70	125	
In	115	1	nogas	1960090	1.37	1830149	107.10	70	125	
Bi	209	1	nogas	1596724	2.34	1294991	123.30	70	125	
Ge	72	2	He	565731	1.78	560222	100.98	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	109_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T18:29:19-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	98.722	2.196	417171	0.66	100	98.7	90	110	
Na	23	1	nogas	10032.135	5.709	168272600	1.39	10000	100.3	90	110	
Mg	24	1	nogas	9972.729	6.204	110672157	2.01	10000	99.7	90	110	
Al	27	1	nogas	111.159	2.960	1437675	3.19	100	111.2	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10394.800	4.054	165262470	3.60	10000	103.9	90	110	
Ti	47	1	nogas	103.652	1.159	138736	1.40	100	103.7	90	110	
V	51	1	nogas	126.145	0.898	2728565	0.67	100	126.1	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	104.375	0.691	1696919	0.47	100	104.4	90	110	
Mn	55	1	nogas	99.886	2.338	2103432	2.01	100	99.9	90	110	
Co	59	1	nogas	99.934	0.991	1687192	1.23	100	99.9	90	110	
Ni	60	1	nogas	102.358	2.513	370891	2.24	100	102.4	90	110	
Cu	63	1	nogas	97.994	2.990	895835	2.65	100	98.0	90	110	
Zn	66	1	nogas	101.814	2.595	295066	2.25	100	101.8	90	110	
As	75	1	nogas	116.149	2.227	498032	1.74	100	116.1	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	98.381	0.996	2326287	1.32	100	98.4	90	110	
Ag	107	1	nogas	97.462	1.219	1071487	1.12	100	97.5	90	110	
Cd	111	1	nogas	102.961	0.954	229490	1.91	100	103.0	90	110	
Sb	121	1	nogas	96.753	1.939	995089	1.61	100	96.8	90	110	
Tl	205	1	nogas	89.834	2.543	1621474	0.49	100	89.8	90	110	CCV Main CR1-2 Failed
Pb	208	1	nogas	107.513	0.966	2140611	0.97	100	107.5	90	110	
U	238	1	nogas	95.316	3.047	2298487	4.08	100	95.3	90	110	
[Pb]	206	1	nogas	92.460	3.122	524910	1.28	100	92.5	90	110	
[Pb]	207	1	nogas	92.156	2.948	475484	0.89	100	92.2	90	110	
Na	23	2	He	10375.707	2.329	12268726	2.51	10000	103.8	90	110	
Mg	24	2	He	10375.499	0.521	6932062	0.32	10000	103.8	90	110	
Al	27	2	He	105.726	1.534	40333	1.14	100	105.7	90	110	
K	39	2	He	11287.452	1.424	8507528	1.40	10000	112.9	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10468.848	4.383	22460	3.98	10000	104.7	90	110	
Ca	44	2	He	10277.261	0.267	367121	0.15	10000	102.8	90	110	
V	51	2	He	101.266	1.300	510830	1.68	100	101.3	90	110	
Cr	52	2	He	100.522	1.199	526417	1.50	100	100.5	90	110	
Mn	55	2	He	101.371	0.826	387067	0.43	100	101.4	90	110	
Fe	56	2	He	10098.688	1.149	48243046	1.51	10000	101.0	90	110	
Co	59	2	He	96.284	0.646	699252	0.80	100	96.3	90	110	
Ni	60	2	He	101.481	0.511	176922	0.50	100	101.5	90	110	
Cu	63	2	He	101.295	0.446	451281	0.35	100	101.3	90	110	
Zn	66	2	He	101.028	0.783	107897	0.98	100	101.0	90	110	
As	75	2	He	101.310	0.775	114200	1.06	100	101.3	90	110	
Se	78	2	He	99.518	0.818	8783	0.67	100	99.5	90	110	
B	11	1	nogas	487.354	2.481	1349845	0.49	500	97.5	90	110	
Si	28	1	nogas	5517.273	1.442	41294414	1.65	5000	110.3	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	10239.738	2.573	279935	2.24	10000	102.4	90	110	
Ca	44	1	nogas	10412.770	2.539	4656611	2.19	10000	104.1	90	110	
Fe	56	1	nogas	10193.536	1.200	181983271	1.11	10000	101.9	90	110	
Se	77	1	nogas	207.433	3.650	52843	2.28	100	207.4	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	97.098	3.426	19184	3.68	100	97.1	90	110	
Mo	95	1	nogas	101.925	2.912	426716	2.58	100	101.9	90	110	
Sn	118	1	nogas	102.518	2.933	631050	2.40	100	102.5	90	110	
Ba	137	1	nogas	103.228	0.336	333992	1.19	100	103.2	90	110	
Sb	121	2	He	101.204	1.572	422896	1.70	100	101.2	90	110	
Li	7	1	nogas	95.654	4.995	952217	2.39	100	95.7	90	110	
P	31	1	nogas	537.716	0.967	622335	0.58	500	107.5	90	110	
La	139	1	nogas	125.434	14.039	520	12.61	100	125.4	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	84.505	3.791	799289	2.85	100	84.5	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	458025	2.67	422169	108.49	70	125	
Ge	72	1	nogas	2139492	0.33	2074093	103.15	70	125	
In	115	1	nogas	1854390	0.99	1830149	101.32	70	125	
Bi	209	1	nogas	1492563	2.09	1294991	115.26	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	574463	0.42	560222	102.54	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	110_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T18:31:14-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.099	18.4	503	17.4	1	
Na	23	1	nogas	61.308	4.8	1905961	1.3	100	
Mg	24	1	nogas	11.833	4.5	151823	2.7	100	
Al	27	1	nogas	0.308	35.7	31871	4.8	5	
K	39	1	nogas	3.194	68.1	5643547	0.4	100	
Ti	47	1	nogas	0.019	218.8	287	19.2	2.5	
V	51	1	nogas	13.281	5.7	580022	3.5	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.412	10.5	30185	1.4	2.5	
Mn	55	1	nogas	-0.038	-57.9	14783	3.1	2.5	
Co	59	1	nogas	0.044	51.1	1287	29.3	2.5	
Ni	60	1	nogas	-0.613	-5.8	593	21.7	2.5	
Cu	63	1	nogas	-0.012	-221.5	3890	5.5	2.5	
Zn	66	1	nogas	-0.273	-23.9	933	19.6	2.5	
As	75	1	nogas	9.407	8.1	96444	4.0	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.076	12.4	3987	4.8	2.5	
Ag	107	1	nogas	0.037	29.5	530	22.9	2.5	
Cd	111	1	nogas	0.034	23.5	100	20.0	1	
Sb	121	1	nogas	0.122	13.3	1650	9.5	2.5	
Tl	205	1	nogas	0.264	60.7	5245	62.7	1	
Pb	208	1	nogas	0.110	54.5	2493	47.8	2.5	
U	238	1	nogas	0.075	28.7	2010	31.0	2.5	
[Pb]	206	1	nogas	0.094	31.9	657	31.4	2.5	
[Pb]	207	1	nogas	0.081	54.0	503	51.2	2.5	
Na	23	2	He	55.257	5.0	169992	1.7	100	
Mg	24	2	He	11.150	6.6	9436	5.7	100	
Al	27	2	He	0.776	29.0	1033	9.0	5	
K	39	2	He	12.188	2.2	164589	0.1	100	
Ca	43	2	He	9.083	124.3	77	32.8	100	
Ca	44	2	He	22.260	23.8	1867	11.0	100	
V	51	2	He	0.762	6.0	9026	2.7	2.5	
Cr	52	2	He	-0.029	-66.0	2207	4.8	2.5	
Mn	55	2	He	-0.030	-97.6	700	16.1	2.5	
Fe	56	2	He	4.423	3.3	41103	1.3	100	
Co	59	2	He	0.034	15.2	383	9.9	2.5	
Ni	60	2	He	-0.246	-14.6	177	36.0	2.5	
Cu	63	2	He	-0.177	-8.4	1673	3.8	2.5	
Zn	66	2	He	-0.146	-28.8	247	18.3	2.5	
As	75	2	He	0.130	12.3	461	4.0	2.5	
Se	78	2	He	-0.176	-89.2	353	3.3	2.5	
B	11	1	nogas	6.760	22.5	87175	4.6	10	
Si	28	1	nogas	1.731	599.6	2458162	3.3	5	
Ca	43	1	nogas	30.975	4.8	1790	1.9	100	
Ca	44	1	nogas	5.966	41.9	38891	2.0	100	
Fe	56	1	nogas	-1.747	-85.3	2241616	0.3	100	
Se	77	1	nogas	76.189	6.7	31194	3.3	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.185	37.5	323	4.7	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.260	72.1	1230	64.4	2.5	
Sn	118	1	nogas	0.153	45.5	1933	21.0	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.017	146.9	433	17.5	2.5	
Sb	121	2	He	0.085	6.7	550	4.8	2.5	
P	31	1	nogas	3.995	4.0	43133	1.4	10	
La	139	1	nogas	8.730	134.4	110	41.7	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.370	51.6	14258	53.7	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	498577	1.03	422169	118.10	70	125	
Ge	72	1	nogas	2199490	0.96	2074093	106.05	70	125	
In	115	1	nogas	2049167	3.92	1830149	111.97	70	125	
Bi	209	1	nogas	1583062	3.52	1294991	122.24	70	125	
Ge	72	2	He	596520	0.59	560222	106.48	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	113_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:13:33-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	95.510	0.907	408984	1.40	100	95.5	90	110	
Na	23	1	nogas	10942.616	11.081	167215066	1.36	10000	109.4	90	110	
Mg	24	1	nogas	10892.705	10.767	110211340	0.23	10000	108.9	90	110	
Al	27	1	nogas	113.969	5.964	1448987	8.89	100	114.0	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10376.526	4.579	161927549	1.36	10000	103.8	90	110	
Ti	47	1	nogas	105.084	6.129	137976	2.63	100	105.1	90	110	
V	51	1	nogas	113.593	9.866	2439524	5.44	100	113.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	105.799	10.126	1686635	7.75	100	105.8	90	110	
Mn	55	1	nogas	100.661	5.247	2081096	4.56	100	100.7	90	110	
Co	59	1	nogas	104.826	6.466	1741013	9.71	100	104.8	90	110	
Ni	60	1	nogas	102.026	3.011	363029	2.65	100	102.0	90	110	
Cu	63	1	nogas	97.397	3.401	874093	0.60	100	97.4	90	110	
Zn	66	1	nogas	99.813	4.176	283949	0.72	100	99.8	90	110	
As	75	1	nogas	106.360	5.016	452404	1.20	100	106.4	90	110	
Sr	88	1	nogas	102.190	5.712	2376173	8.72	100	102.2	90	110	
Ag	107	1	nogas	96.182	4.772	1037702	1.73	100	96.2	90	110	
Cd	111	1	nogas	98.349	10.363	217509	1.62	100	98.3	90	110	
Sb	121	1	nogas	96.401	2.748	973478	1.54	100	96.4	90	110	
Tl	205	1	nogas	91.176	5.388	1674067	5.60	100	91.2	90	110	
Pb	208	1	nogas	104.046	2.125	2071587	2.12	100	104.0	90	110	
U	238	1	nogas	95.731	1.261	2347158	1.65	100	95.7	90	110	
[Pb]	206	1	nogas	88.412	1.891	510546	1.05	100	88.4	90	110	CCV Main CR1-2 Failed
[Pb]	207	1	nogas	87.021	1.744	456725	1.75	100	87.0	90	110	CCV Main CR1-2 Failed
Na	23	2	He	10644.614	0.820	12146178	1.22	10000	106.4	90	110	
Mg	24	2	He	10447.601	0.413	6737512	0.89	10000	104.5	90	110	
Al	27	2	He	107.082	4.351	39415	3.56	100	107.1	90	110	
K	39	2	He	10930.259	1.354	8243229	1.33	10000	109.3	90	110	
Ca	43	2	He	10142.478	2.341	21012	3.56	10000	101.4	90	110	
Ca	44	2	He	10367.683	0.861	357457	0.91	10000	103.7	90	110	
V	51	2	He	100.240	0.872	488092	1.01	100	100.2	90	110	
Cr	52	2	He	100.666	1.281	508833	1.73	100	100.7	90	110	
Mn	55	2	He	101.932	1.161	375710	2.18	100	101.9	90	110	
Fe	56	2	He	10086.393	2.031	46503193	1.48	10000	100.9	90	110	
Co	59	2	He	94.786	1.558	664363	0.39	100	94.8	90	110	
Ni	60	2	He	97.916	1.065	164781	0.36	100	97.9	90	110	
Cu	63	2	He	97.040	2.233	417326	1.06	100	97.0	90	110	
Zn	66	2	He	98.169	2.219	101192	0.93	100	98.2	90	110	
As	75	2	He	99.688	1.432	108471	1.99	100	99.7	90	110	
Se	78	2	He	99.682	2.449	8490	1.06	100	99.7	90	110	
B	11	1	nogas	484.921	5.220	1360836	3.67	500	97.0	90	110	
Si	28	1	nogas	5568.042	4.541	40880004	1.60	5000	111.4	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	10330.498	5.524	277135	2.95	10000	103.3	90	110	
Ca	44	1	nogas	10424.463	6.332	4573522	3.06	10000	104.2	90	110	
Fe	56	1	nogas	10153.363	3.050	177958883	0.44	10000	101.5	90	110	
Se	77	1	nogas	141.056	10.113	40686	3.50	100	141.1	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	98.437	6.277	19074	2.70	100	98.4	90	110	
Mo	95	1	nogas	100.507	3.902	413031	0.71	100	100.5	90	110	
Sn	118	1	nogas	97.296	9.269	594790	1.01	100	97.3	90	110	
Ba	137	1	nogas	101.879	12.057	326734	2.36	100	101.9	90	110	
Sb	121	2	He	99.420	1.447	400980	1.38	100	99.4	90	110	
Li	7	1	nogas	97.604	2.584	950707	1.49	100	97.6	90	110	
P	31	1	nogas	539.722	5.002	612866	1.24	500	107.9	90	110	
La	139	1	nogas	97.950	2.816	420	8.58	100	98.0	90	110	
Au	197	1	nogas	80.367	3.481	772997	1.89	100	80.4	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	464015	2.20	422169	109.91	70	125	
Ge	72	1	nogas	2101765	3.39	2074093	101.33	70	125	
In	115	1	nogas	1851753	9.20	1830149	101.18	70	125	
Bi	209	1	nogas	1517778	1.58	1294991	117.20	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	554501	1.28	560222	98.98	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	114_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:15:28-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.058	49.8	320	41.3	1	
Na	23	1	nogas	28.124	21.8	1343110	3.3	100	
Mg	24	1	nogas	5.637	16.2	83065	10.3	100	
Al	27	1	nogas	0.255	5.7	30461	2.6	5	
K	39	1	nogas	8.272	153.5	5588673	1.1	100	
Ti	47	1	nogas	-0.010	-397.5	243	24.1	2.5	
V	51	1	nogas	6.339	2.2	432936	3.7	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.305	19.2	27751	0.8	2.5	
Mn	55	1	nogas	-0.007	-573.8	15076	2.5	2.5	
Co	59	1	nogas	0.045	22.2	1273	11.2	2.5	
Ni	60	1	nogas	-0.605	-5.0	607	15.6	2.5	
Cu	63	1	nogas	-0.091	-57.3	3077	12.8	2.5	
Zn	66	1	nogas	-0.297	-11.0	843	12.8	2.5	
As	75	1	nogas	5.132	9.2	77942	3.6	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.034	43.1	2887	9.4	2.5	
Ag	107	1	nogas	0.038	19.8	537	12.7	2.5	
Cd	111	1	nogas	0.029	45.5	87	40.5	1	
Sb	121	1	nogas	0.117	29.5	1553	20.0	2.5	
Tl	205	1	nogas	0.318	64.4	5908	67.0	1	
Pb	208	1	nogas	0.110	31.4	2500	27.5	2.5	
U	238	1	nogas	0.084	34.9	2107	37.2	2.5	
[Pb]	206	1	nogas	0.098	33.6	637	33.1	2.5	
[Pb]	207	1	nogas	0.105	21.8	593	21.7	2.5	
Na	23	2	He	22.464	6.8	123037	0.6	100	
Mg	24	2	He	4.965	2.8	4867	1.9	100	
Al	27	2	He	1.048	34.0	1077	11.2	5	
K	39	2	He	8.076	4.4	161546	0.2	100	
Ca	43	2	He	0.027	61802.1	53	65.8	100	
Ca	44	2	He	30.448	30.3	2050	14.8	100	
V	51	2	He	0.473	9.0	7120	1.9	2.5	
Cr	52	2	He	0.109	51.1	2794	10.6	2.5	
Mn	55	2	He	-0.020	-168.0	697	17.9	2.5	
Fe	56	2	He	4.761	5.0	40471	2.1	100	
Co	59	2	He	0.041	21.5	413	16.1	2.5	
Ni	60	2	He	-0.231	-9.3	193	19.6	2.5	
Cu	63	2	He	-0.245	-9.0	1287	7.3	2.5	
Zn	66	2	He	-0.101	-84.7	280	31.1	2.5	
As	75	2	He	0.140	53.7	447	17.6	2.5	
Se	78	2	He	0.078	376.0	355	5.9	2.5	
B	11	1	nogas	-1.705	-72.0	64145	5.3	10	
Si	28	1	nogas	7.646	235.8	2441455	3.3	5	CCB Main CR1 Failed
Ca	43	1	nogas	17.195	43.4	1373	16.3	100	
Ca	44	1	nogas	3.739	42.6	36997	1.3	100	
Fe	56	1	nogas	-7.589	-25.3	2086104	1.5	100	
Se	77	1	nogas	46.739	8.5	25411	5.2	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.121	-128.0	257	14.7	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.307	59.4	1390	52.2	2.5	
Sn	118	1	nogas	0.124	60.4	1700	28.9	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.002	970.1	373	22.5	2.5	
Sb	121	2	He	0.089	22.0	537	14.1	2.5	
P	31	1	nogas	6.074	9.2	44402	2.4	10	
La	139	1	nogas	4.351	268.7	90	50.9	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.123	44.3	11028	46.7	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	509135	2.46	422169	120.60	70	125	
Ge	72	1	nogas	2148967	3.15	2074093	103.61	70	125	
In	115	1	nogas	2000284	6.29	1830149	109.30	70	125	
Bi	209	1	nogas	1488514	3.81	1294991	114.94	70	125	
Ge	72	2	He	564359	1.08	560222	100.74	70	125	

Sample Report

Sample Table

Sample Name	MBLK-129155
Data File Name	115SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:17:28-05:00
Sample Type	Sample
Dilution	1
Comment	TW B129155
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.014	0.014	35.92	113	0.01	2000	
Na	23	1	nogas	19.626	19.626	26.00	1172029	0.00	200000	
Mg	24	1	nogas	15.179	15.179	14.04	180212	0.01	200000	
Al	27	1	nogas	3.973	3.973	14.69	80016	0.00	2000	
K	39	1	nogas	0.177	0.177	15147.02	5623561	0.00	200000	
Ti	47	1	nogas	-0.036	-0.036	-128.92	213	-0.02	2000	
V	51	1	nogas	5.335	5.335	9.93	426239	0.00	2000	
Cr	52	1	nogas	0.259	0.259	13.49	27871	0.00	2000	
Mn	55	1	nogas	-0.297	-0.297	-9.22	9262	0.00	2000	
Co	59	1	nogas	-0.003	-0.003	-86.43	477	0.00	2000	
Ni	60	1	nogas	-0.664	-0.664	-2.98	407	-0.16	2000	
Cu	63	1	nogas	0.485	0.485	18.91	8579	0.01	2000	
Zn	66	1	nogas	0.037	0.037	171.14	1860	0.00	2000	
As	75	1	nogas	3.930	3.930	11.74	75627	0.01	2000	
Sr	88	1	nogas	-0.041	-0.041	-11.53	1157	0.00	2000	
Ag	107	1	nogas	0.005	0.005	2.48	180	0.00	2000	
Cd	111	1	nogas	0.016	0.016	80.62	50	0.03	2000	
Sb	121	1	nogas	0.021	0.021	52.73	590	0.00	2000	
Tl	205	1	nogas	0.016	0.016	43.20	403	0.00	2000	
Pb	208	1	nogas	0.056	0.056	16.99	1433	0.00	2000	
U	238	1	nogas	0.004	0.004	30.27	167	0.00	2000	
[Pb]	206	1	nogas	0.043	0.043	13.17	333	0.01	2000	
[Pb]	207	1	nogas	0.046	0.046	27.64	297	0.02	2000	
Na	23	2	He	7.812	7.812	21.86	111219	0.01	200000	
Mg	24	2	He	14.398	14.398	2.54	11587	0.12	200000	
Al	27	2	He	4.370	4.370	10.30	2410	0.18	2000	
K	39	2	He	9.503	9.503	12.25	162602	0.01	200000	
Ca	43	2	He	-13.280	-13.280	-52.42	27	-49.80	200000	
Ca	44	2	He	3.885	3.885	92.01	1177	0.33	200000	
V	51	2	He	0.309	0.309	2.85	6619	0.00	2000	
Cr	52	2	He	0.127	0.127	66.55	3020	0.00	2000	
Mn	55	2	He	-0.082	-0.082	-22.70	490	-0.02	2000	
Fe	56	2	He	0.174	0.174	24.08	19861	0.00	200000	
Co	59	2	He	0.001	0.001	619.75	133	0.00	2000	
Ni	60	2	He	-0.250	-0.250	-19.10	170	-0.15	2000	
Cu	63	2	He	0.365	0.365	4.20	4131	0.01	2000	
Zn	66	2	He	0.109	0.109	84.32	523	0.02	2000	
As	75	2	He	0.047	0.047	20.12	361	0.01	2000	
Se	78	2	He	0.312	0.312	99.25	392	0.08	2000	
B	11	1	nogas	-5.486	-5.486	-22.07	51934	-0.01	2000	

Sample Report

Si	28	1	nogas	46.040	46.040	44.65	2795666	0.00	2000	
Ca	43	1	nogas	-4.657	-4.657	-130.29	793	-0.59	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ca	44	1	nogas	-16.148	-16.148	-19.71	28997	-0.06	200000	
Fe	56	1	nogas	-14.579	-14.579	-38.62	2021331	0.00	200000	
Se	77	1	nogas	38.187	38.187	4.40	24677	0.15	2000	
Se	82	1	nogas	-0.035	-0.035	-1340.21	280	-0.01	2000	
Mo	95	1	nogas	0.022	0.022	55.64	210	0.01	2000	
Sn	118	1	nogas	0.002	0.002	2134.45	837	0.00	2000	
Ba	137	1	nogas	0.062	0.062	25.40	553	0.01	2000	
Sb	121	2	He	0.010	0.010	214.85	223	0.00	2000	
La	139	1	nogas	-5.533	-5.533	-219.66	47	-11.86	2000	
Au	197	1	nogas	0.073	0.073	12.19	1053	0.01	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	499630	5.58	422169	118.35	70	125	
Ge	72	1	nogas	2217117	6.11	2074093	106.90	70	125	
In	115	1	nogas	1900212	9.41	1830149	103.83	70	125	
Bi	209	1	nogas	1536782	4.53	1294991	118.67	70	125	
Ge	72	2	He	591298	1.09	560222	105.55	70	125	

Sample Report

Sample Table

Sample Name	LCS-129155
Data File Name	116SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:19:29-05:00
Sample Type	Sample
Dilution	1
Comment	TW B129155
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	46.642	46.642	4.90	194338	0.02	2000	
Na	23	1	nogas	4917.737	4917.737	1.24	80678729	0.01	200000	
Mg	24	1	nogas	4930.430	4930.430	2.50	53221400	0.01	200000	
Al	27	1	nogas	109.397	109.397	0.92	1450989	0.01	2000	
K	39	1	nogas	4715.558	4715.558	1.05	79919414	0.01	200000	
Ti	47	1	nogas	140.540	140.540	1.20	192764	0.07	2000	
V	51	1	nogas	54.471	54.471	2.44	1388285	0.00	2000	
Cr	52	1	nogas	45.095	45.095	3.30	764906	0.01	2000	
Mn	55	1	nogas	44.075	44.075	0.86	960349	0.00	2000	
Co	59	1	nogas	45.242	45.242	0.62	783376	0.01	2000	
Ni	60	1	nogas	46.972	46.972	1.03	176044	0.03	2000	
Cu	63	1	nogas	45.543	45.543	0.42	429016	0.01	2000	
Zn	66	1	nogas	46.636	46.636	0.66	139515	0.03	2000	
As	75	1	nogas	48.406	48.406	1.26	247593	0.02	2000	
Sr	88	1	nogas	94.376	94.376	3.03	2288158	0.00	2000	
Ag	107	1	nogas	44.571	44.571	0.74	502461	0.01	2000	
Cd	111	1	nogas	45.603	45.603	0.44	106156	0.04	2000	
Sb	121	1	nogas	43.491	43.491	1.09	458787	0.01	2000	
Tl	205	1	nogas	34.842	34.842	4.50	673848	0.01	2000	
Pb	208	1	nogas	49.619	49.619	1.67	988090	0.01	2000	
U	238	1	nogas	81.218	81.218	2.52	2097925	0.00	2000	
[Pb]	206	1	nogas	40.190	40.190	4.58	244539	0.02	2000	
[Pb]	207	1	nogas	39.012	39.012	4.41	215721	0.02	2000	
Na	23	2	He	4870.477	4870.477	2.07	5846302	0.08	200000	
Mg	24	2	He	4959.072	4959.072	1.74	3334049	0.15	200000	
Al	27	2	He	105.811	105.811	1.07	40611	0.26	2000	
K	39	2	He	5388.988	5388.988	2.17	4143060	0.13	200000	
Ca	43	2	He	4866.189	4866.189	4.02	10533	46.20	200000	
Ca	44	2	He	4872.112	4872.112	0.49	175623	2.77	200000	
V	51	2	He	46.082	46.082	0.95	236534	0.02	2000	
Cr	52	2	He	46.689	46.689	1.36	247192	0.02	2000	
Mn	55	2	He	46.506	46.506	1.09	179077	0.03	2000	
Fe	56	2	He	4693.541	4693.541	0.44	22566612	0.02	200000	
Co	59	2	He	44.269	44.269	1.05	323509	0.01	2000	
Ni	60	2	He	46.171	46.171	0.88	81310	0.06	2000	
Cu	63	2	He	47.109	47.109	1.11	212436	0.02	2000	
Zn	66	2	He	48.439	48.439	0.70	52251	0.09	2000	
As	75	2	He	46.067	46.067	1.37	52404	0.09	2000	
Se	78	2	He	48.490	48.490	1.11	4489	1.08	2000	
B	11	1	nogas	468.098	468.098	6.65	1280267	0.04	2000	
Si	28	1	nogas	5138.985	5138.985	2.89	39601791	0.01	2000	>LDR
Ca	43	1	nogas	4705.001	4705.001	2.03	132379	3.55	200000	
Ca	44	1	nogas	4811.792	4811.792	0.83	2225745	0.22	200000	
Fe	56	1	nogas	4716.394	4716.394	1.69	87550625	0.01	200000	

Sample Report

Se	77	1	nogas	75.485	75.485	7.65	30983	0.24	2000	
Se	82	1	nogas	46.543	46.543	3.80	9576	0.49	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	45.440	45.440	1.07	195122	0.02	2000	
Sn	118	1	nogas	89.163	89.163	3.40	573116	0.02	2000	
Ba	137	1	nogas	45.509	45.509	0.92	153982	0.03	2000	
Sb	121	2	He	46.001	46.001	1.84	193481	0.02	2000	
La	139	1	nogas	62.461	62.461	22.99	307	20.37	2000	
Au	197	1	nogas	0.020	0.020	9.48	557	0.00	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	451881	3.35	422169	107.04	70	125	
Ge	72	1	nogas	2193510	0.49	2074093	105.76	70	125	
In	115	1	nogas	1936660	2.39	1830149	105.82	70	125	
Bi	209	1	nogas	1599608	2.46	1294991	123.52	70	125	
Ge	72	2	He	577933	0.42	560222	103.16	70	125	

Sample Report

Sample Table

Sample Name	HS18060281-03SD
Data File Name	121SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:29:21-05:00
Sample Type	Sample
Dilution	5
Comment	TW B129155
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.043	0.217	71.77	247	0.02	2000	
Na	23	1	nogas	97080.793	485403.966	1.47	1684976204	0.01	200000	
Mg	24	1	nogas	28350.323	141751.613	1.46	327147891	0.01	200000	
Al	27	1	nogas	10.189	50.947	3.43	168144	0.01	2000	
K	39	1	nogas	423.319	2116.596	3.73	12846303	0.00	200000	
Ti	47	1	nogas	0.538	2.689	27.23	1043	0.05	2000	
V	51	1	nogas	27.708	138.540	3.22	904321	0.00	2000	
Cr	52	1	nogas	109.495	547.473	1.37	1912817	0.01	2000	
Mn	55	1	nogas	369.169	1845.844	1.26	8315083	0.00	2000	
Co	59	1	nogas	14.079	70.393	2.14	256017	0.01	2000	
Ni	60	1	nogas	147.641	738.206	0.83	573961	0.03	2000	
Cu	63	1	nogas	9.320	46.598	3.34	95384	0.01	2000	
Zn	66	1	nogas	4.858	24.292	3.07	16878	0.03	2000	
As	75	1	nogas	16.812	84.060	5.65	131041	0.01	2000	
Sr	88	1	nogas	677.185	3385.927	1.04	17206968	0.00	2000	
Ag	107	1	nogas	0.005	0.023	70.87	177	0.00	2000	
Cd	111	1	nogas	0.161	0.806	31.22	397	0.04	2000	
Sb	121	1	nogas	0.029	0.143	24.07	690	0.00	2000	
Tl	205	1	nogas	0.007	0.037	22.16	240	0.00	2000	
Pb	208	1	nogas	0.118	0.588	6.38	2650	0.00	2000	
U	238	1	nogas	0.035	0.174	8.46	930	0.00	2000	
[Pb]	206	1	nogas	0.117	0.583	31.42	753	0.02	2000	
[Pb]	207	1	nogas	0.119	0.597	21.67	677	0.02	2000	
Na	23	2	He	99382.130	496910.652	1.31	122864385	0.08	200000	
Mg	24	2	He	29209.858	146049.288	2.16	20547632	0.14	200000	
Al	27	2	He	10.668	53.342	7.40	4951	0.22	2000	
K	39	2	He	498.943	2494.717	2.21	524755	0.10	200000	
Ca	43	2	He	37510.010	187550.052	1.28	84625	44.32	200000	
Ca	44	2	He	38223.016	191115.081	1.80	1435453	2.66	200000	
V	51	2	He	2.389	11.943	1.42	17714	0.01	2000	
Cr	52	2	He	108.996	544.981	1.03	601008	0.02	2000	
Mn	55	2	He	410.204	2051.021	1.17	1647320	0.02	2000	
Fe	56	2	He	846.850	4234.248	0.53	4278433	0.02	200000	
Co	59	2	He	13.682	68.410	3.73	104750	0.01	2000	
Ni	60	2	He	142.659	713.294	3.27	261656	0.05	2000	
Cu	63	2	He	8.628	43.139	5.85	42777	0.02	2000	
Zn	66	2	He	5.233	26.164	5.76	6278	0.08	2000	
As	75	2	He	0.309	1.543	1.19	679	0.05	2000	
Se	78	2	He	0.102	0.512	190.54	383	0.03	2000	
B	11	1	nogas	-5.094	-25.468	-11.24	53144	-0.01	2000	
Si	28	1	nogas	5083.441	25417.207	3.10	41097852	0.01	2000	>LDR
Ca	43	1	nogas	35930.341	179651.704	1.50	1053699	3.41	200000	
Ca	44	1	nogas	36317.336	181586.681	0.11	17371717	0.21	200000	
Fe	56	1	nogas	849.181	4245.903	2.74	18476074	0.00	200000	

Sample Report

Se	77	1	nogas	127.690	638.449	4.23	42126	0.30	2000	
Se	82	1	nogas	1.020	5.101	19.66	513	0.20	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	2.056	10.281	1.79	9379	0.02	2000	
Sn	118	1	nogas	0.031	0.154	66.78	1077	0.00	2000	
Ba	137	1	nogas	1342.202	6711.009	2.49	4638516	0.03	2000	
Sb	121	2	He	0.023	0.113	45.56	283	0.01	2000	
La	139	1	nogas	2885.266	14426.328	4.76	11177	25.81	2000	>LDR
Au	197	1	nogas	-0.012	-0.058	-39.91	227	-0.01	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	499343	2.00	422169	118.28	70	125	
Ge	72	1	nogas	2300734	2.41	2074093	110.93	70	125	
In	115	1	nogas	1983660	3.35	1830149	108.39	70	125	
Bi	209	1	nogas	1512740	2.74	1294991	116.81	70	125	
Ge	72	2	He	605047	1.42	560222	108.00	70	125	

Sample Report

Sample Table

Sample Name	HS18060281-03MS
Data File Name	122SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:31:21-05:00
Sample Type	Sample
Dilution	1
Comment	TW B129155
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	50.523	50.523	3.05	185867	0.03	2000	
Na	23	1	nogas	OR	OR	#VALUE!	OR	#VALUE!	200000	
Mg	24	1	nogas	146862.369	146862.369	4.93	1601162269	0.01	200000	
Al	27	1	nogas	268.455	268.455	1.75	3373280	0.01	2000	
K	39	1	nogas	6883.854	6883.854	4.91	109302498	0.01	200000	
Ti	47	1	nogas	148.310	148.310	0.24	194950	0.08	2000	
V	51	1	nogas	74.136	74.136	1.48	1700830	0.00	2000	
Cr	52	1	nogas	625.842	625.842	2.33	9888711	0.01	2000	
Mn	55	1	nogas	1972.108	1972.108	1.63	40523057	0.00	2000	>LDR
Co	59	1	nogas	122.951	122.951	0.47	2039471	0.01	2000	
Ni	60	1	nogas	830.796	830.796	3.62	2937598	0.03	2000	
Cu	63	1	nogas	87.868	87.868	3.04	789476	0.01	2000	
Zn	66	1	nogas	67.686	67.686	1.64	193287	0.04	2000	
As	75	1	nogas	67.267	67.267	3.08	307403	0.02	2000	
Sr	88	1	nogas	3645.681	3645.681	1.43	84632332	0.00	2000	>LDR
Ag	107	1	nogas	41.314	41.314	0.97	446418	0.01	2000	
Cd	111	1	nogas	46.706	46.706	5.84	99372	0.05	2000	
Sb	121	1	nogas	43.730	43.730	2.68	442007	0.01	2000	
Tl	205	1	nogas	38.717	38.717	9.22	606845	0.01	2000	
Pb	208	1	nogas	44.895	44.895	1.52	894046	0.01	2000	
U	238	1	nogas	98.584	98.584	7.39	2065292	0.00	2000	
[Pb]	206	1	nogas	45.244	45.244	8.93	223093	0.02	2000	
[Pb]	207	1	nogas	43.557	43.557	9.22	195172	0.02	2000	
Na	23	2	He	518862.150	518862.150	1.33	589610005	0.09	200000	>LDR
Mg	24	2	He	154433.180	154433.180	1.99	99921149	0.15	200000	
Al	27	2	He	264.114	264.114	2.24	96589	0.27	2000	
K	39	2	He	7501.550	7501.550	0.62	5706214	0.13	200000	
Ca	43	2	He	198090.201	198090.201	1.53	410769	48.22	200000	>LDR
Ca	44	2	He	203578.362	203578.362	1.13	7026786	2.90	200000	>LDR
V	51	2	He	50.396	50.396	1.14	248641	0.02	2000	
Cr	52	2	He	654.415	654.415	2.99	3307201	0.02	2000	
Mn	55	2	He	2130.026	2130.026	1.49	7862923	0.03	2000	>LDR
Fe	56	2	He	8952.503	8952.503	1.96	41425499	0.02	200000	
Co	59	2	He	113.184	113.184	1.26	796198	0.01	2000	
Ni	60	2	He	797.275	797.275	2.97	1342911	0.06	2000	
Cu	63	2	He	88.074	88.074	2.28	380361	0.02	2000	
Zn	66	2	He	68.013	68.013	1.41	70486	0.10	2000	
As	75	2	He	47.210	47.210	2.46	51701	0.09	2000	
Se	78	2	He	49.236	49.236	1.12	4383	1.12	2000	
B	11	1	nogas	525.717	525.717	2.49	1263465	0.04	2000	
Si	28	1	nogas	31711.343	31711.343	0.84	222094950	0.01	2000	>LDR
Ca	43	1	nogas	195507.173	195507.173	3.98	5233813	3.74	200000	>LDR
Ca	44	1	nogas	190321.874	190321.874	3.67	83011390	0.23	200000	>LDR
Fe	56	1	nogas	8942.430	8942.430	1.41	157116895	0.01	200000	
Se	77	1	nogas	197.219	197.219	4.20	50196	0.39	2000	
Se	82	1	nogas	50.993	50.993	3.68	10026	0.51	2000	

Sample Report

Mo	95	1	nogas	57.018	57.018	1.74	234632	0.02	2000	
Sn	118	1	nogas	91.103	91.103	1.77	536106	0.02	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ba	137	1	nogas	7269.797	7269.797	5.49	22429571	0.03	2000	>LDR
Sb	121	2	He	45.647	45.647	1.34	184873	0.02	2000	
La	139	1	nogas	16433.338	16433.338	5.92	56547	29.06	2000	>LDR
Au	197	1	nogas	-0.011	-0.011	-38.90	197	-0.01	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	398726	3.12	422169	94.45	70	125	
Ge	72	1	nogas	2102279	1.71	2074093	101.36	70	125	
In	115	1	nogas	1772195	3.23	1830149	96.83	70	125	
Bi	209	1	nogas	1301780	7.97	1294991	100.52	70	125	
Ge	72	2	He	556514	1.27	560222	99.34	70	125	

Sample Report

Sample Table

Sample Name	HS18060281-03MSD
Data File Name	123SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:33:19-05:00
Sample Type	Sample
Dilution	1
Comment	TW B129155
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	50.748	50.748	2.48	185364	0.03	2000	
Na	23	1	nogas	OR	OR	#VALUE!	OR	#VALUE!	200000	
Mg	24	1	nogas	146219.735	146219.735	4.83	1558379635	0.01	200000	
Al	27	1	nogas	261.550	261.550	2.42	3265856	0.01	2000	
K	39	1	nogas	6793.975	6793.975	5.73	107178682	0.01	200000	
Ti	47	1	nogas	144.880	144.880	2.98	189115	0.08	2000	
V	51	1	nogas	74.709	74.709	6.56	1698946	0.00	2000	
Cr	52	1	nogas	614.359	614.359	2.99	9637083	0.01	2000	
Mn	55	1	nogas	1934.729	1934.729	3.45	39479953	0.00	2000	>LDR
Co	59	1	nogas	121.639	121.639	5.12	2002903	0.01	2000	
Ni	60	1	nogas	798.617	798.617	4.18	2804285	0.03	2000	
Cu	63	1	nogas	87.028	87.028	5.09	776526	0.01	2000	
Zn	66	1	nogas	66.807	66.807	3.69	189479	0.04	2000	
As	75	1	nogas	66.082	66.082	4.18	300975	0.02	2000	
Sr	88	1	nogas	3543.186	3543.186	1.60	81705465	0.00	2000	>LDR
Ag	107	1	nogas	40.766	40.766	3.17	437440	0.01	2000	
Cd	111	1	nogas	45.426	45.426	4.93	97935	0.05	2000	
Sb	121	1	nogas	43.472	43.472	4.59	436322	0.01	2000	
Tl	205	1	nogas	41.498	41.498	3.35	622833	0.01	2000	
Pb	208	1	nogas	44.568	44.568	2.29	887536	0.01	2000	
U	238	1	nogas	98.673	98.673	2.70	1977552	0.00	2000	
[Pb]	206	1	nogas	47.862	47.862	1.30	225997	0.02	2000	
[Pb]	207	1	nogas	45.640	45.640	1.90	195847	0.02	2000	
Na	23	2	He	511884.217	511884.217	1.96	575877845	0.09	200000	>LDR
Mg	24	2	He	151138.089	151138.089	1.74	96826112	0.16	200000	
Al	27	2	He	256.118	256.118	2.61	92747	0.28	2000	
K	39	2	He	7389.644	7389.644	0.55	5623412	0.13	200000	
Ca	43	2	He	192573.013	192573.013	1.07	395415	48.70	200000	>LDR
Ca	44	2	He	198014.639	198014.639	2.25	6767522	2.93	200000	>LDR
V	51	2	He	50.898	50.898	1.90	248564	0.02	2000	
Cr	52	2	He	639.352	639.352	1.24	3199650	0.02	2000	
Mn	55	2	He	2079.824	2079.824	2.16	7601784	0.03	2000	>LDR
Fe	56	2	He	8762.923	8762.923	2.56	40149363	0.02	200000	
Co	59	2	He	110.423	110.423	1.23	769141	0.01	2000	
Ni	60	2	He	779.255	779.255	4.42	1299161	0.06	2000	
Cu	63	2	He	87.974	87.974	0.44	376256	0.02	2000	
Zn	66	2	He	69.136	69.136	0.52	70940	0.10	2000	
As	75	2	He	47.027	47.027	1.59	50993	0.09	2000	
Se	78	2	He	47.081	47.081	2.96	4165	1.13	2000	
B	11	1	nogas	521.901	521.901	2.99	1245599	0.04	2000	
Si	28	1	nogas	31528.357	31528.357	2.25	219359437	0.01	2000	>LDR
Ca	43	1	nogas	188965.341	188965.341	6.19	5022794	3.76	200000	>LDR
Ca	44	1	nogas	185909.825	185909.825	5.74	80526854	0.23	200000	>LDR
Fe	56	1	nogas	8808.029	8808.029	2.49	153730516	0.01	200000	
Se	77	1	nogas	191.362	191.362	4.50	48872	0.39	2000	
Se	82	1	nogas	50.447	50.447	4.31	9859	0.51	2000	

Sample Report

Mo	95	1	nogas	56.844	56.844	2.36	232281	0.02	2000	
Sn	118	1	nogas	91.813	91.813	3.27	546827	0.02	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ba	137	1	nogas	6987.091	6987.091	4.38	21841618	0.03	2000	>LDR
Sb	121	2	He	46.507	46.507	0.58	186488	0.02	2000	
La	139	1	nogas	15878.728	15878.728	1.44	55389	28.67	2000	>LDR
Au	197	1	nogas	-0.020	-0.020	-10.61	120	-0.02	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	395752	0.51	422169	93.74	70	125	
Ge	72	1	nogas	2088678	3.16	2074093	100.70	70	125	
In	115	1	nogas	1794638	2.34	1830149	98.06	70	125	
Bi	209	1	nogas	1240790	0.89	1294991	95.81	70	125	
Ge	72	2	He	551027	1.39	560222	98.36	70	125	

Sample Report

Sample Table

Sample Name	HS18060281-03PDS
Data File Name	124SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:35:15-05:00
Sample Type	Sample
Dilution	1
Comment	TW B129155
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	99.419	99.419	0.73	360932	0.03	2000	
Na	23	1	nogas	OR	OR	#VALUE!	OR	#VALUE!	200000	
Mg	24	1	nogas	140799.457	140799.457	4.95	1552892501	0.01	200000	
Al	27	1	nogas	150.379	150.379	3.87	1826576	0.01	2000	
K	39	1	nogas	11258.497	11258.497	3.93	168457737	0.01	200000	
Ti	47	1	nogas	195.466	195.466	2.22	246702	0.08	2000	
V	51	1	nogas	118.520	118.520	2.60	2437103	0.00	2000	
Cr	52	1	nogas	654.041	654.041	1.36	9923363	0.01	2000	
Mn	55	1	nogas	1949.413	1949.413	1.77	38480460	0.01	2000	>LDR
Co	59	1	nogas	163.583	163.583	3.74	2606009	0.01	2000	
Ni	60	1	nogas	837.866	837.866	4.87	2845607	0.03	2000	
Cu	63	1	nogas	127.296	127.296	3.05	1097039	0.01	2000	
Zn	66	1	nogas	109.855	109.855	0.39	300446	0.04	2000	
As	75	1	nogas	109.378	109.378	2.75	445801	0.02	2000	
Sr	88	1	nogas	3491.594	3491.594	0.94	77887441	0.00	2000	>LDR
Ag	107	1	nogas	80.708	80.708	2.56	837352	0.01	2000	
Cd	111	1	nogas	87.573	87.573	1.69	184877	0.05	2000	
Sb	121	1	nogas	82.648	82.648	3.05	802143	0.01	2000	
Tl	205	1	nogas	82.867	82.867	3.69	1236292	0.01	2000	
Pb	208	1	nogas	84.534	84.534	0.22	1683163	0.01	2000	
U	238	1	nogas	96.581	96.581	3.92	1924041	0.01	2000	
[Pb]	206	1	nogas	90.169	90.169	2.80	423196	0.02	2000	
[Pb]	207	1	nogas	86.231	86.231	2.14	367857	0.02	2000	
Na	23	2	He	509014.144	509014.144	3.98	567180752	0.09	200000	>LDR
Mg	24	2	He	154090.188	154090.188	4.04	97770422	0.16	200000	
Al	27	2	He	147.498	147.498	4.27	53192	0.28	2000	
K	39	2	He	12085.182	12085.182	0.85	9097795	0.13	200000	
Ca	43	2	He	196378.913	196378.913	0.41	399541	49.15	200000	>LDR
Ca	44	2	He	200485.610	200485.610	1.14	6787981	2.95	200000	>LDR
V	51	2	He	94.260	94.260	2.95	452068	0.02	2000	
Cr	52	2	He	672.603	672.603	2.13	3334384	0.02	2000	
Mn	55	2	He	2074.058	2074.058	3.96	7508057	0.03	2000	>LDR
Fe	56	2	He	13044.537	13044.537	3.71	59190417	0.02	200000	
Co	59	2	He	150.463	150.463	2.97	1038074	0.01	2000	
Ni	60	2	He	824.274	824.274	3.30	1361168	0.06	2000	
Cu	63	2	He	127.799	127.799	1.49	540479	0.02	2000	
Zn	66	2	He	111.301	111.301	0.85	112926	0.10	2000	
As	75	2	He	91.973	91.973	2.21	98531	0.09	2000	
Se	78	2	He	93.439	93.439	3.00	7856	1.19	2000	
B	11	1	nogas	1061.223	1061.223	1.90	2462212	0.04	2000	
Si	28	1	nogas	35858.932	35858.932	2.93	240923783	0.01	2000	>LDR
Ca	43	1	nogas	189087.403	189087.403	3.90	4862360	3.89	200000	>LDR
Ca	44	1	nogas	187459.542	187459.542	3.81	78533502	0.24	200000	>LDR
Fe	56	1	nogas	13016.716	13016.716	2.20	218728572	0.01	200000	
Se	77	1	nogas	225.798	225.798	4.58	52833	0.43	2000	
Se	82	1	nogas	96.654	96.654	2.15	18023	0.54	2000	

Sample Report

Mo	95	1	nogas	102.037	102.037	1.24	403232	0.03	2000	
Sn	118	1	nogas	89.579	89.579	2.66	522377	0.02	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ba	137	1	nogas	6878.395	6878.395	1.71	21060690	0.03	2000	>LDR
Sb	121	2	He	85.949	85.949	1.75	341296	0.03	2000	
La	139	1	nogas	15109.348	15109.348	0.49	51607	29.28	2000	>LDR
Au	197	1	nogas	-0.020	-0.020	-40.81	120	-0.02	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	393373	1.26	422169	93.18	70	125	
Ge	72	1	nogas	2019837	2.64	2074093	97.38	70	125	
In	115	1	nogas	1756745	1.86	1830149	95.99	70	125	
Bi	209	1	nogas	1234004	2.65	1294991	95.29	70	125	
Ge	72	2	He	545983	2.19	560222	97.46	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	125_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:37:12-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	96.954	2.414	428062	1.83	100	97.0	90	110	
Na	23	1	nogas	11059.387	4.344	175970508	1.89	10000	110.6	90	110	CCV Main CR1-2 Failed
Mg	24	1	nogas	10938.199	4.696	115214273	2.29	10000	109.4	90	110	
Al	27	1	nogas	111.377	3.910	1509426	4.82	100	111.4	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10105.059	1.038	168499500	1.87	10000	101.1	90	110	
Ti	47	1	nogas	99.655	2.177	139732	0.78	100	99.7	90	110	
V	51	1	nogas	115.914	4.501	2652022	2.00	100	115.9	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	104.359	4.198	1776955	2.70	100	104.4	90	110	
Mn	55	1	nogas	99.740	4.023	2199639	1.68	100	99.7	90	110	
Co	59	1	nogas	104.076	1.430	1840766	1.10	100	104.1	90	110	
Ni	60	1	nogas	100.021	3.763	379626	1.44	100	100.0	90	110	
Cu	63	1	nogas	94.620	4.029	906029	1.88	100	94.6	90	110	
Zn	66	1	nogas	96.638	1.812	293512	1.47	100	96.6	90	110	
As	75	1	nogas	108.000	1.815	489418	0.74	100	108.0	90	110	
Sr	88	1	nogas	100.157	1.981	2480774	0.67	100	100.2	90	110	
Ag	107	1	nogas	91.039	2.832	1048337	0.74	100	91.0	90	110	
Cd	111	1	nogas	96.242	4.223	222834	1.52	100	96.2	90	110	
Sb	121	1	nogas	94.721	2.659	1020439	0.62	100	94.7	90	110	
Tl	205	1	nogas	91.143	2.835	1714171	3.08	100	91.1	90	110	
Pb	208	1	nogas	108.038	1.596	2151058	1.60	100	108.0	90	110	
U	238	1	nogas	95.486	3.876	2396874	0.72	100	95.5	90	110	
[Pb]	206	1	nogas	88.183	4.671	521371	2.29	100	88.2	90	110	CCV Main CR1-2 Failed
[Pb]	207	1	nogas	88.971	3.750	478176	2.12	100	89.0	90	110	CCV Main CR1-2 Failed
Na	23	2	He	10698.505	1.691	12874300	2.23	10000	107.0	90	110	
Mg	24	2	He	10365.485	2.673	7049293	2.58	10000	103.7	90	110	
Al	27	2	He	105.373	2.404	40931	3.49	100	105.4	90	110	
K	39	2	He	11611.072	2.074	8746985	2.04	10000	116.1	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10558.612	1.644	23065	2.78	10000	105.6	90	110	
Ca	44	2	He	10402.461	1.783	378201	0.67	10000	104.0	90	110	
V	51	2	He	100.158	1.019	514317	0.84	100	100.2	90	110	
Cr	52	2	He	99.450	0.305	530150	0.87	100	99.4	90	110	
Mn	55	2	He	100.513	0.814	390668	0.35	100	100.5	90	110	
Fe	56	2	He	9938.682	1.438	48324433	0.40	10000	99.4	90	110	
Co	59	2	He	95.222	1.370	703872	0.36	100	95.2	90	110	
Ni	60	2	He	99.306	2.992	176248	3.11	100	99.3	90	110	
Cu	63	2	He	99.143	0.761	449671	1.30	100	99.1	90	110	
Zn	66	2	He	98.401	2.098	106978	1.72	100	98.4	90	110	
As	75	2	He	99.652	0.695	114345	0.66	100	99.7	90	110	
Se	78	2	He	99.052	1.711	8901	1.88	100	99.1	90	110	
B	11	1	nogas	498.477	0.798	1441245	1.12	500	99.7	90	110	
Si	28	1	nogas	5517.474	0.901	43264939	1.48	5000	110.3	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	9982.291	1.443	285931	0.94	10000	99.8	90	110	
Ca	44	1	nogas	9930.848	2.861	4653593	0.89	10000	99.3	90	110	
Fe	56	1	nogas	9948.724	4.252	186051037	2.01	10000	99.5	90	110	
Se	77	1	nogas	182.095	3.328	50804	0.46	100	182.1	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	96.917	5.094	20048	2.74	100	96.9	90	110	
Mo	95	1	nogas	96.411	1.943	422855	0.62	100	96.4	90	110	
Sn	118	1	nogas	97.373	2.554	623060	1.97	100	97.4	90	110	
Ba	137	1	nogas	102.888	3.735	345844	0.38	100	102.9	90	110	
Sb	121	2	He	99.083	0.879	421439	0.62	100	99.1	90	110	
Li	7	1	nogas	99.485	0.166	998570	0.46	100	99.5	90	110	
P	31	1	nogas	515.636	1.351	626844	1.07	500	103.1	90	110	
La	139	1	nogas	110.377	10.918	483	7.27	100	110.4	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	79.003	5.756	777812	1.84	100	79.0	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	478414	0.61	422169	113.32	70	125	
Ge	72	1	nogas	2241863	2.33	2074093	108.09	70	125	
In	115	1	nogas	1928498	4.05	1830149	105.37	70	125	
Bi	209	1	nogas	1555720	4.69	1294991	120.13	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	584770	1.14	560222	104.38	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	126_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:39:08-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.094	22.9	497	18.3	1	
Na	23	1	nogas	154.564	2.2	3481550	1.1	100	CCB Main CR1 Failed
Mg	24	1	nogas	13.486	4.7	172094	4.5	100	
Al	27	1	nogas	-0.009	-357.0	27961	1.6	5	
K	39	1	nogas	0.651	778.5	5649280	1.5	100	
Ti	47	1	nogas	0.029	177.9	303	23.4	2.5	
V	51	1	nogas	12.137	10.7	561924	4.6	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.501	4.8	31914	1.3	2.5	
Mn	55	1	nogas	0.008	281.2	15897	3.0	2.5	
Co	59	1	nogas	0.044	26.4	1297	15.7	2.5	
Ni	60	1	nogas	-0.492	-9.1	1050	16.0	2.5	
Cu	63	1	nogas	0.218	5.4	6098	1.9	2.5	
Zn	66	1	nogas	-0.345	-7.5	727	10.5	2.5	
As	75	1	nogas	8.444	8.9	93428	3.1	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.143	2.9	5664	1.9	2.5	
Ag	107	1	nogas	0.045	31.0	630	25.2	2.5	
Cd	111	1	nogas	0.051	25.2	137	21.1	1	
Sb	121	1	nogas	0.285	6.8	3400	6.2	2.5	
Tl	205	1	nogas	0.320	58.7	6132	60.2	1	
Pb	208	1	nogas	0.108	45.2	2457	39.5	2.5	
U	238	1	nogas	0.081	32.2	2094	33.0	2.5	
[Pb]	206	1	nogas	0.092	34.4	627	32.6	2.5	
[Pb]	207	1	nogas	0.104	61.1	617	58.3	2.5	
Na	23	2	He	153.833	6.2	286101	3.6	100	CCB Main CR1 Failed
Mg	24	2	He	14.580	2.0	11654	1.1	100	
Al	27	2	He	0.404	66.8	877	12.0	5	
K	39	2	He	14.029	14.4	165951	0.9	100	
Ca	43	2	He	18.614	72.9	97	31.6	100	
Ca	44	2	He	19.231	21.6	1730	8.6	100	
V	51	2	He	0.749	1.5	8839	0.7	2.5	
Cr	52	2	He	0.117	19.1	2954	3.4	2.5	
Mn	55	2	He	0.102	31.2	1203	10.3	2.5	
Fe	56	2	He	4.165	7.6	39282	3.3	100	
Co	59	2	He	0.035	39.0	387	26.0	2.5	
Ni	60	2	He	-0.212	-14.1	237	23.3	2.5	
Cu	63	2	He	0.019	96.5	2540	3.1	2.5	
Zn	66	2	He	-0.128	-47.5	263	24.4	2.5	
As	75	2	He	0.151	23.8	479	8.0	2.5	
Se	78	2	He	-0.183	-183.7	347	8.1	2.5	
B	11	1	nogas	3.588	53.1	80945	4.0	10	
Si	28	1	nogas	8.481	49.4	2527529	1.3	5	CCB Main CR1 Failed
Ca	43	1	nogas	26.791	11.7	1687	5.4	100	
Ca	44	1	nogas	1.189	155.7	37017	2.2	100	
Fe	56	1	nogas	-11.310	-38.7	2085268	3.8	100	
Se	77	1	nogas	67.985	4.2	29988	1.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.255	217.5	340	32.8	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.382	53.3	1773	49.7	2.5	
Sn	118	1	nogas	0.182	20.0	2090	12.2	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.292	21.3	1383	16.8	2.5	
Sb	121	2	He	0.257	12.0	1277	9.9	2.5	
P	31	1	nogas	3.963	31.6	43447	3.1	10	
La	139	1	nogas	1.651	142.2	80	12.5	2.5	
Au	197	1	nogas	1.530	55.1	15416	56.4	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	517749	3.20	422169	122.64	70	125	
Ge	72	1	nogas	2217430	0.16	2074093	106.91	70	125	
In	115	1	nogas	1999969	1.21	1830149	109.28	70	125	
Bi	209	1	nogas	1541762	2.52	1294991	119.06	70	125	
Ge	72	2	He	588458	0.83	560222	105.04	70	125	

Sample Report

Sample Table

Sample Name	HS18060308-01
Data File Name	128SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:43:11-05:00
Sample Type	Sample
Dilution	1
Comment	TW B129155
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	0.169	0.169	10.07	770	0.02	2000	
Na	23	1	nogas	172809.184	172809.184	6.61	3011314801	0.01	200000	
Mg	24	1	nogas	23434.690	23434.690	9.72	271141373	0.01	200000	
Al	27	1	nogas	183.120	183.120	14.66	2451343	0.01	2000	
K	39	1	nogas	1359.688	1359.688	8.34	27565511	0.00	200000	
Ti	47	1	nogas	3.612	3.612	12.95	5308	0.07	2000	
V	51	1	nogas	33.693	33.693	27.59	1000953	0.00	2000	
Cr	52	1	nogas	5.540	5.540	8.66	116772	0.00	2000	
Mn	55	1	nogas	632.883	632.883	8.53	13848186	0.00	2000	
Co	59	1	nogas	14.668	14.668	6.21	259608	0.01	2000	
Ni	60	1	nogas	18.410	18.410	6.47	72199	0.03	2000	
Cu	63	1	nogas	11.584	11.584	4.82	114486	0.01	2000	
Zn	66	1	nogas	210.590	210.590	5.55	636947	0.03	2000	
As	75	1	nogas	18.430	18.430	11.61	133907	0.01	2000	
Sr	88	1	nogas	526.798	526.798	7.53	13017404	0.00	2000	
Ag	107	1	nogas	0.010	0.010	54.52	237	0.00	2000	
Cd	111	1	nogas	0.571	0.571	5.00	1397	0.04	2000	
Sb	121	1	nogas	0.206	0.206	5.43	2584	0.01	2000	
Tl	205	1	nogas	0.029	0.029	16.30	590	0.00	2000	
Pb	208	1	nogas	0.432	0.432	3.87	8911	0.00	2000	
U	238	1	nogas	0.162	0.162	7.11	3797	0.00	2000	
[Pb]	206	1	nogas	0.417	0.417	18.85	2314	0.02	2000	
[Pb]	207	1	nogas	0.388	0.388	16.80	1947	0.02	2000	
Na	23	2	He	184632.805	184632.805	2.08	216234697	0.09	200000	>LDR
Mg	24	2	He	25583.142	25583.142	1.73	17058086	0.15	200000	
Al	27	2	He	187.531	187.531	4.10	70855	0.26	2000	
K	39	2	He	1673.253	1673.253	2.38	1393665	0.12	200000	
Ca	43	2	He	29653.652	29653.652	3.61	63401	46.77	200000	
Ca	44	2	He	29361.133	29361.133	1.44	1045020	2.81	200000	
V	51	2	He	2.355	2.355	0.85	16623	0.01	2000	
Cr	52	2	He	5.201	5.201	2.24	29340	0.02	2000	
Mn	55	2	He	698.825	698.825	2.36	2658815	0.03	2000	
Fe	56	2	He	1818.252	1818.252	0.58	8685022	0.02	200000	
Co	59	2	He	14.556	14.556	2.16	105612	0.01	2000	
Ni	60	2	He	17.775	17.775	4.80	31417	0.06	2000	
Cu	63	2	He	11.162	11.162	1.17	51760	0.02	2000	
Zn	66	2	He	215.491	215.491	2.06	229255	0.09	2000	
As	75	2	He	1.269	1.269	9.55	1722	0.07	2000	
Se	78	2	He	0.600	0.600	17.07	405	0.15	2000	
B	11	1	nogas	39.904	39.904	3.03	170119	0.02	2000	
Si	28	1	nogas	23181.628	23181.628	6.62	173556851	0.01	2000	>LDR
Ca	43	1	nogas	27322.013	27322.013	6.73	779914	3.50	200000	
Ca	44	1	nogas	27624.403	27624.403	7.05	12865145	0.21	200000	
Fe	56	1	nogas	1783.879	1783.879	8.31	35210848	0.01	200000	

Sample Report

Se	77	1	nogas	134.868	134.868	9.78	42289	0.32	2000	
Se	82	1	nogas	1.062	1.062	27.94	507	0.21	2000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Mo	95	1	nogas	0.858	0.858	2.75	3884	0.02	2000	
Sn	118	1	nogas	0.015	0.015	136.05	983	0.00	2000	
Ba	137	1	nogas	337.707	337.707	10.26	1178021	0.03	2000	
Sb	121	2	He	0.224	0.224	14.26	1107	0.02	2000	
La	139	1	nogas	2133.188	2133.188	7.36	8376	25.47	2000	>LDR
Au	197	1	nogas	0.014	0.014	124.19	453	0.00	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	464585	0.78	422169	110.05	70	125	
Ge	72	1	nogas	2244624	6.33	2074093	108.22	70	125	
In	115	1	nogas	2012802	8.79	1830149	109.98	70	125	
Bi	209	1	nogas	1424373	8.52	1294991	109.99	70	125	
Ge	72	2	He	573425	0.84	560222	102.36	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	130_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:47:13-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	96.923	2.186	410843	1.83	100	96.9	90	110	
Na	23	1	nogas	10211.053	0.828	166794616	0.46	10000	102.1	90	110	
Mg	24	1	nogas	10096.293	0.606	109145298	1.26	10000	101.0	90	110	
Al	27	1	nogas	106.310	1.366	1429203	3.63	100	106.3	90	110	
K	39	1	nogas	10087.532	2.976	166644375	0.75	10000	100.9	90	110	
Ti	47	1	nogas	99.805	1.551	138726	2.85	100	99.8	90	110	
V	51	1	nogas	115.759	3.083	2625974	2.48	100	115.8	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	100.397	4.422	1695130	3.42	100	100.4	90	110	
Mn	55	1	nogas	96.799	1.976	2117048	2.37	100	96.8	90	110	
Co	59	1	nogas	99.651	1.632	1747025	2.88	100	99.7	90	110	
Ni	60	1	nogas	96.271	1.692	362330	0.88	100	96.3	90	110	
Cu	63	1	nogas	93.649	2.017	888957	0.52	100	93.6	90	110	
Zn	66	1	nogas	96.642	1.997	290855	0.71	100	96.6	90	110	
As	75	1	nogas	105.337	2.255	474522	0.91	100	105.3	90	110	
Sr	88	1	nogas	99.242	1.013	2437059	3.27	100	99.2	90	110	
Ag	107	1	nogas	90.700	3.752	1034869	1.58	100	90.7	90	110	
Cd	111	1	nogas	95.720	3.836	219632	2.54	100	95.7	90	110	
Sb	121	1	nogas	93.598	4.409	998949	1.94	100	93.6	90	110	
Tl	205	1	nogas	87.382	5.614	1597100	3.36	100	87.4	90	110	CCV Main CR1-2 Failed
Pb	208	1	nogas	102.734	1.050	2045470	1.05	100	102.7	90	110	
U	238	1	nogas	93.950	4.149	2293413	1.50	100	94.0	90	110	
[Pb]	206	1	nogas	86.190	4.951	495522	2.17	100	86.2	90	110	CCV Main CR1-2 Failed
[Pb]	207	1	nogas	87.416	4.881	456741	2.04	100	87.4	90	110	CCV Main CR1-2 Failed
Na	23	2	He	10380.519	1.957	12364045	0.78	10000	103.8	90	110	
Mg	24	2	He	10203.502	2.723	6867412	2.23	10000	102.0	90	110	
Al	27	2	He	104.857	2.612	40317	3.73	100	104.9	90	110	
K	39	2	He	11333.335	1.390	8541478	1.36	10000	113.3	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	9968.772	1.055	21556	2.68	10000	99.7	90	110	
Ca	44	2	He	10124.025	1.221	364342	0.60	10000	101.2	90	110	
V	51	2	He	98.474	1.080	500548	0.62	100	98.5	90	110	
Cr	52	2	He	99.124	2.593	522903	1.52	100	99.1	90	110	
Mn	55	2	He	101.025	0.795	388629	0.96	100	101.0	90	110	
Fe	56	2	He	9947.640	2.549	47866149	1.23	10000	99.5	90	110	
Co	59	2	He	93.663	1.636	685238	0.89	100	93.7	90	110	
Ni	60	2	He	98.259	0.983	172599	0.93	100	98.3	90	110	
Cu	63	2	He	96.825	1.530	434667	1.03	100	96.8	90	110	
Zn	66	2	He	99.049	1.635	106569	0.16	100	99.0	90	110	
As	75	2	He	98.113	1.537	111420	0.52	100	98.1	90	110	
Se	78	2	He	100.617	2.291	8942	1.84	100	100.6	90	110	
B	11	1	nogas	486.940	2.146	1353107	2.34	500	97.4	90	110	
Si	28	1	nogas	5197.273	2.757	40522797	1.66	5000	103.9	90	110	
Ca	43	1	nogas	10027.899	2.854	284650	2.71	10000	100.3	90	110	
Ca	44	1	nogas	10146.379	2.217	4711415	0.78	10000	101.5	90	110	
Fe	56	1	nogas	9648.996	1.359	178967454	1.21	10000	96.5	90	110	
Se	77	1	nogas	160.655	2.147	46553	3.44	100	160.7	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	93.665	2.829	19217	0.92	100	93.7	90	110	
Mo	95	1	nogas	94.417	1.821	410387	0.72	100	94.4	90	110	
Sn	118	1	nogas	97.381	2.387	617322	1.28	100	97.4	90	110	
Ba	137	1	nogas	98.092	3.386	326757	1.94	100	98.1	90	110	
Sb	121	2	He	97.138	3.409	408932	3.42	100	97.1	90	110	
Li	7	1	nogas	97.540	0.817	941169	3.91	100	97.5	90	110	
P	31	1	nogas	505.602	2.848	609742	0.78	500	101.1	90	110	
La	139	1	nogas	109.624	10.328	477	8.74	100	109.6	90	110	
Au	197	1	nogas	79.746	4.415	763883	1.92	100	79.7	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	459538	3.99	422169	108.85	70	125	
Ge	72	1	nogas	2221734	2.54	2074093	107.12	70	125	
In	115	1	nogas	1909772	1.51	1830149	104.35	70	125	
Bi	209	1	nogas	1512231	2.84	1294991	116.78	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	578790	1.66	560222	103.31	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	131_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T21:49:08-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.061	37.0	330	32.1	1	
Na	23	1	nogas	123.838	0.5	2876809	1.5	100	CCB Main CR1 Failed
Mg	24	1	nogas	7.562	14.9	103296	13.5	100	
Al	27	1	nogas	0.060	126.8	27847	2.6	5	
K	39	1	nogas	8.079	72.6	5563383	0.7	100	
Ti	47	1	nogas	-0.036	-130.7	207	31.1	2.5	
V	51	1	nogas	12.674	5.4	552308	1.7	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.475	13.9	30368	2.7	2.5	
Mn	55	1	nogas	-0.005	-508.3	15063	3.3	2.5	
Co	59	1	nogas	0.042	40.4	1220	23.8	2.5	
Ni	60	1	nogas	-0.577	-2.0	707	5.0	2.5	
Cu	63	1	nogas	0.004	671.1	3927	5.0	2.5	
Zn	66	1	nogas	-0.339	-5.1	720	6.1	2.5	
As	75	1	nogas	8.968	8.9	92102	2.8	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.059	13.3	3464	4.8	2.5	
Ag	107	1	nogas	0.041	45.6	563	36.4	2.5	
Cd	111	1	nogas	0.041	40.7	110	32.8	1	
Sb	121	1	nogas	0.094	16.3	1313	12.9	2.5	
Tl	205	1	nogas	0.272	61.0	5361	64.6	1	
Pb	208	1	nogas	0.100	48.4	2310	41.9	2.5	
U	238	1	nogas	0.079	38.1	2097	41.5	2.5	
[Pb]	206	1	nogas	0.083	52.1	583	50.0	2.5	
[Pb]	207	1	nogas	0.097	37.1	587	38.8	2.5	
Na	23	2	He	120.082	4.9	245664	1.1	100	CCB Main CR1 Failed
Mg	24	2	He	6.472	11.0	6104	5.8	100	
Al	27	2	He	0.310	77.9	840	10.2	5	
K	39	2	He	10.429	9.8	163287	0.5	100	
Ca	43	2	He	6.490	68.3	70	14.3	100	
Ca	44	2	He	9.415	28.9	1373	8.0	100	
V	51	2	He	0.717	9.1	8678	1.3	2.5	
Cr	52	2	He	0.002	2161.0	2344	10.6	2.5	
Mn	55	2	He	0.009	126.1	840	3.2	2.5	
Fe	56	2	He	3.369	3.7	35414	1.6	100	
Co	59	2	He	0.026	33.2	317	18.5	2.5	
Ni	60	2	He	-0.200	-22.4	257	31.5	2.5	
Cu	63	2	He	-0.189	-7.4	1597	6.5	2.5	
Zn	66	2	He	-0.219	-6.1	163	7.1	2.5	
As	75	2	He	0.096	19.7	416	5.8	2.5	
Se	78	2	He	0.019	1416.7	365	7.8	2.5	
B	11	1	nogas	0.498	216.4	69089	4.4	10	
Si	28	1	nogas	3.401	319.3	2401951	2.3	5	
Ca	43	1	nogas	12.010	49.9	1223	12.5	100	
Ca	44	1	nogas	-1.180	-60.8	34659	1.4	100	
Fe	56	1	nogas	-13.198	-22.4	1978125	2.2	100	
Se	77	1	nogas	70.847	7.3	29417	2.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	-0.076	-498.3	263	26.9	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.327	52.5	1480	48.4	2.5	
Sn	118	1	nogas	0.153	47.1	1823	21.9	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.067	38.1	577	12.3	2.5	
Sb	121	2	He	0.072	24.6	490	17.8	2.5	
P	31	1	nogas	4.055	8.5	42010	0.1	10	
La	139	1	nogas	3.055	335.2	83	50.0	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.489	51.8	15339	55.6	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	497990	0.54	422169	117.96	70	125	
Ge	72	1	nogas	2139105	0.91	2074093	103.13	70	125	
In	115	1	nogas	1934801	3.53	1830149	105.72	70	125	
Bi	209	1	nogas	1561388	5.05	1294991	120.57	70	125	
Ge	72	2	He	588919	2.62	560222	105.12	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	142_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T22:11:11-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	97.247	1.859	419162	2.36	100	97.2	90	110	
Na	23	1	nogas	10239.048	4.036	173006116	1.92	10000	102.4	90	110	
Mg	24	1	nogas	10184.174	6.471	113834790	4.32	10000	101.8	90	110	
Al	27	1	nogas	110.799	1.668	1432067	4.14	100	110.8	90	110	CCV Main CR1-2 Failed
K	39	1	nogas	10483.567	2.952	166404870	0.42	10000	104.8	90	110	
Ti	47	1	nogas	107.496	3.128	143683	2.31	100	107.5	90	110	
V	51	1	nogas	137.644	4.506	2944358	1.61	100	137.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	106.915	3.570	1735060	1.25	100	106.9	90	110	
Mn	55	1	nogas	103.696	4.687	2179511	2.33	100	103.7	90	110	
Co	59	1	nogas	106.562	2.823	1796617	1.41	100	106.6	90	110	
Ni	60	1	nogas	104.714	3.400	378821	1.30	100	104.7	90	110	
Cu	63	1	nogas	100.972	1.887	921885	1.37	100	101.0	90	110	
Zn	66	1	nogas	102.908	1.615	297895	1.64	100	102.9	90	110	
As	75	1	nogas	121.068	3.007	515960	0.35	100	121.1	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	104.969	2.422	2478783	1.69	100	105.0	90	110	
Ag	107	1	nogas	97.654	3.182	1072064	1.14	100	97.7	90	110	
Cd	111	1	nogas	98.608	2.769	228747	1.90	100	98.6	90	110	
Sb	121	1	nogas	98.484	1.721	1011685	0.78	100	98.5	90	110	
Tl	205	1	nogas	90.650	3.436	1693454	1.61	100	90.7	90	110	
Pb	208	1	nogas	107.078	1.140	2131957	1.14	100	107.1	90	110	
U	238	1	nogas	92.133	2.724	2299208	2.86	100	92.1	90	110	
[Pb]	206	1	nogas	89.136	2.499	523840	0.62	100	89.1	90	110	CCV Main CR1-2 Failed
[Pb]	207	1	nogas	89.340	2.132	477192	0.84	100	89.3	90	110	CCV Main CR1-2 Failed
Na	23	2	He	10608.256	1.470	12986054	0.34	10000	106.1	90	110	
Mg	24	2	He	10512.270	1.843	7272767	1.36	10000	105.1	90	110	
Al	27	2	He	106.119	1.530	41920	1.14	100	106.1	90	110	
K	39	2	He	11745.202	0.938	8846232	0.92	10000	117.5	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10116.016	3.993	22474	2.91	10000	101.2	90	110	
Ca	44	2	He	10153.765	1.471	375607	1.14	10000	101.5	90	110	
V	51	2	He	100.367	1.275	524350	1.83	100	100.4	90	110	
Cr	52	2	He	101.710	2.662	551458	1.68	100	101.7	90	110	
Mn	55	2	He	101.094	1.672	399713	0.79	100	101.1	90	110	
Fe	56	2	He	9914.496	2.011	49040426	0.89	10000	99.1	90	110	
Co	59	2	He	93.996	1.677	706845	0.68	100	94.0	90	110	
Ni	60	2	He	99.857	0.331	180294	0.86	100	99.9	90	110	
Cu	63	2	He	97.659	1.525	450607	0.49	100	97.7	90	110	
Zn	66	2	He	98.093	1.260	108510	2.22	100	98.1	90	110	
As	75	2	He	98.291	1.670	114733	0.63	100	98.3	90	110	
Se	78	2	He	100.385	2.064	9172	1.88	100	100.4	90	110	
B	11	1	nogas	479.437	5.193	1354866	3.41	500	95.9	90	110	
Si	28	1	nogas	5571.013	1.009	41626526	1.54	5000	111.4	90	110	CCV Main CR1-2 Failed
Ca	43	1	nogas	10476.504	1.890	286047	0.82	10000	104.8	90	110	
Ca	44	1	nogas	10804.414	4.593	4822813	2.46	10000	108.0	90	110	
Fe	56	1	nogas	10432.832	3.763	185914729	1.24	10000	104.3	90	110	
Se	77	1	nogas	230.675	6.426	56738	2.49	100	230.7	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	100.017	1.954	19728	1.73	100	100.0	90	110	
Mo	95	1	nogas	102.197	2.465	427313	0.84	100	102.2	90	110	
Sn	118	1	nogas	98.880	2.114	633753	2.63	100	98.9	90	110	
Ba	137	1	nogas	97.464	5.271	328041	2.44	100	97.5	90	110	
Sb	121	2	He	98.089	1.299	424473	1.80	100	98.1	90	110	
Li	7	1	nogas	99.146	2.114	971958	4.20	100	99.1	90	110	
P	31	1	nogas	542.291	2.200	626517	0.46	500	108.5	90	110	
La	139	1	nogas	135.791	23.263	577	16.39	100	135.8	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	80.808	3.577	791066	1.85	100	80.8	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	467139	3.20	422169	110.65	70	125	
Ge	72	1	nogas	2137477	2.50	2074093	103.06	70	125	
In	115	1	nogas	1931770	4.72	1830149	105.55	70	125	
Bi	209	1	nogas	1544900	1.94	1294991	119.30	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	594908	1.13	560222	106.19	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	143_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T22:13:07-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.081	36.6	423	32.2	1	
Na	23	1	nogas	122.303	9.3	3098102	3.6	100	CCB Main CR1 Failed
Mg	24	1	nogas	7.811	14.5	115336	14.2	100	
Al	27	1	nogas	0.000	26432.4	27901	3.8	5	
K	39	1	nogas	20.352	28.5	5923441	1.9	100	
Ti	47	1	nogas	-0.038	-6.3	210	4.8	2.5	
V	51	1	nogas	12.667	14.6	568017	3.1	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.470	11.4	31187	0.5	2.5	
Mn	55	1	nogas	-0.024	-95.1	15106	3.0	2.5	
Co	59	1	nogas	0.041	20.0	1247	14.8	2.5	
Ni	60	1	nogas	-0.567	-6.2	763	17.6	2.5	
Cu	63	1	nogas	0.282	13.6	6668	8.7	2.5	
Zn	66	1	nogas	-0.358	-3.4	683	7.5	2.5	
As	75	1	nogas	8.344	15.6	92339	2.6	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.098	3.7	4517	2.0	2.5	
Ag	107	1	nogas	0.039	22.9	557	15.0	2.5	
Cd	111	1	nogas	0.047	37.2	133	34.6	1	
Sb	121	1	nogas	0.066	22.0	1057	17.6	2.5	
Tl	205	1	nogas	0.298	71.6	6082	68.2	1	
Pb	208	1	nogas	0.110	66.8	2497	58.5	2.5	
U	238	1	nogas	0.078	42.6	2174	38.7	2.5	
[Pb]	206	1	nogas	0.077	92.9	573	76.5	2.5	
[Pb]	207	1	nogas	0.088	46.7	563	39.5	2.5	
Na	23	2	He	131.251	1.9	268645	0.6	100	CCB Main CR1 Failed
Mg	24	2	He	8.437	10.7	7732	8.9	100	
Al	27	2	He	0.207	153.0	830	14.7	5	
K	39	2	He	23.410	5.0	172892	0.5	100	
Ca	43	2	He	3.860	398.3	67	52.7	100	
Ca	44	2	He	21.761	18.2	1890	7.5	100	
V	51	2	He	0.686	4.6	8833	2.5	2.5	
Cr	52	2	He	-0.006	-341.0	2387	3.8	2.5	
Mn	55	2	He	-0.014	-153.8	780	11.2	2.5	
Fe	56	2	He	3.972	2.0	39773	0.5	100	
Co	59	2	He	0.032	24.4	380	15.8	2.5	
Ni	60	2	He	-0.218	-7.8	233	13.1	2.5	
Cu	63	2	He	0.001	1707.6	2550	4.1	2.5	
Zn	66	2	He	-0.143	-27.0	257	17.6	2.5	
As	75	2	He	0.108	50.6	446	15.0	2.5	
Se	78	2	He	-0.445	-98.3	337	11.4	2.5	
B	11	1	nogas	0.947	101.3	70885	3.6	10	
Si	28	1	nogas	12.542	80.4	2539445	1.2	5	CCB Main CR1 Failed
Ca	43	1	nogas	23.302	19.5	1577	7.1	100	
Ca	44	1	nogas	3.981	25.3	38049	2.2	100	
Fe	56	1	nogas	-3.358	-110.9	2217722	6.1	100	
Se	77	1	nogas	68.842	17.9	29902	4.0	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.316	19.1	350	2.9	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.340	53.8	1600	53.0	2.5	
Sn	118	1	nogas	0.131	28.2	1837	17.0	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.021	116.6	460	22.7	2.5	
Sb	121	2	He	0.051	18.0	413	10.1	2.5	
P	31	1	nogas	4.294	42.2	43497	1.3	10	
La	139	1	nogas	-1.399	-937.8	70	74.2	2.5	
Au	197	1	nogas	1.487	58.4	15976	55.0	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	501597	0.53	422169	118.81	70	125	
Ge	72	1	nogas	2203368	3.35	2074093	106.23	70	125	
In	115	1	nogas	2086441	3.14	1830149	114.00	70	125	
Bi	209	1	nogas	1667708	2.15	1294991	128.78	70	125	ISTD Failed
Ge	72	2	He	610387	0.64	560222	108.95	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	154_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T22:35:07-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	98.102	0.198	427487	1.58	100	98.1	90	110	
Na	23	1	nogas	10136.736	3.239	173049879	2.23	10000	101.4	90	110	
Mg	24	1	nogas	10085.628	0.762	113959123	0.88	10000	100.9	90	110	
Al	27	1	nogas	107.362	2.733	1470190	2.16	100	107.4	90	110	
K	39	1	nogas	10092.294	2.664	169953370	1.59	10000	100.9	90	110	
Ti	47	1	nogas	101.877	2.416	144295	2.11	100	101.9	90	110	
V	51	1	nogas	121.573	1.706	2794690	1.53	100	121.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	101.780	1.728	1751933	2.59	100	101.8	90	110	
Mn	55	1	nogas	99.805	0.817	2224443	1.89	100	99.8	90	110	
Co	59	1	nogas	99.276	2.151	1773468	1.20	100	99.3	90	110	
Ni	60	1	nogas	99.027	1.201	379848	1.77	100	99.0	90	110	
Cu	63	1	nogas	94.708	2.170	916478	2.66	100	94.7	90	110	
Zn	66	1	nogas	97.518	1.149	299175	1.48	100	97.5	90	110	
As	75	1	nogas	113.435	0.929	516171	0.85	100	113.4	90	110	CCV Main CR1-2 Failed
Sr	88	1	nogas	97.900	2.081	2449642	2.02	100	97.9	90	110	
Ag	107	1	nogas	92.620	0.929	1077536	0.27	100	92.6	90	110	
Cd	111	1	nogas	99.964	0.409	232019	1.77	100	100.0	90	110	
Sb	121	1	nogas	97.346	1.722	1059549	1.92	100	97.3	90	110	
Tl	205	1	nogas	88.722	4.286	1686500	1.36	100	88.7	90	110	CCV Main CR1-2 Failed
Pb	208	1	nogas	109.970	1.137	2189528	1.14	100	110.0	90	110	
U	238	1	nogas	96.309	0.110	2446843	3.04	100	96.3	90	110	
[Pb]	206	1	nogas	89.206	4.901	533314	1.84	100	89.2	90	110	CCV Main CR1-2 Failed
[Pb]	207	1	nogas	89.735	3.763	487698	1.54	100	89.7	90	110	CCV Main CR1-2 Failed
Na	23	2	He	10535.854	0.184	12900359	0.27	10000	105.4	90	110	
Mg	24	2	He	10381.655	1.886	7183556	1.88	10000	103.8	90	110	
Al	27	2	He	105.726	3.988	41773	3.89	100	105.7	90	110	
K	39	2	He	11732.502	0.659	8836835	0.65	10000	117.3	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10383.321	0.906	23075	1.07	10000	103.8	90	110	
Ca	44	2	He	10403.444	1.074	384870	1.09	10000	104.0	90	110	
V	51	2	He	101.315	1.006	529273	0.88	100	101.3	90	110	
Cr	52	2	He	100.183	1.847	543335	1.69	100	100.2	90	110	
Mn	55	2	He	102.426	2.528	405038	2.49	100	102.4	90	110	
Fe	56	2	He	10141.082	2.748	50171631	2.77	10000	101.4	90	110	
Co	59	2	He	95.216	1.318	716159	1.43	100	95.2	90	110	
Ni	60	2	He	100.992	1.416	182354	1.57	100	101.0	90	110	
Cu	63	2	He	99.989	1.019	461374	0.85	100	100.0	90	110	
Zn	66	2	He	100.063	2.095	110679	2.00	100	100.1	90	110	
As	75	2	He	99.601	0.536	116280	0.63	100	99.6	90	110	
Se	78	2	He	103.087	0.128	9410	0.04	100	103.1	90	110	
B	11	1	nogas	482.651	5.241	1378762	4.27	500	96.5	90	110	
Si	28	1	nogas	5361.452	2.273	42529876	1.11	5000	107.2	90	110	
Ca	43	1	nogas	10190.678	1.264	294821	0.14	10000	101.9	90	110	
Ca	44	1	nogas	10254.262	1.458	4853272	0.55	10000	102.5	90	110	
Fe	56	1	nogas	9928.389	1.191	187625788	0.54	10000	99.3	90	110	
Se	77	1	nogas	192.808	2.368	53264	0.53	100	192.8	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	96.366	2.735	20148	2.54	100	96.4	90	110	
Mo	95	1	nogas	97.647	0.972	432680	1.89	100	97.6	90	110	
Sn	118	1	nogas	100.829	2.914	646240	1.50	100	100.8	90	110	
Ba	137	1	nogas	101.337	0.208	341433	1.23	100	101.3	90	110	
Sb	121	2	He	101.329	0.539	438509	0.49	100	101.3	90	110	
Li	7	1	nogas	101.408	2.932	1003623	2.72	100	101.4	90	110	
P	31	1	nogas	515.373	1.212	632925	1.93	500	103.1	90	110	
La	139	1	nogas	116.174	16.133	507	14.00	100	116.2	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	81.152	5.941	808153	3.36	100	81.2	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	472144	1.71	422169	111.84	70	125	
Ge	72	1	nogas	2264159	1.13	2074093	109.16	70	125	
In	115	1	nogas	1931089	1.44	1830149	105.52	70	125	
Bi	209	1	nogas	1572671	3.05	1294991	121.44	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	594946	0.16	560222	106.20	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	155_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T22:37:03-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Fail

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.070	6.3	377	4.1	1	
Na	23	1	nogas	67.654	7.3	2137205	4.9	100	
Mg	24	1	nogas	8.586	18.1	123696	14.7	100	
Al	27	1	nogas	0.089	131.9	28242	4.8	5	
K	39	1	nogas	30.988	39.8	5920461	1.4	100	
Ti	47	1	nogas	-0.001	-2028.3	253	14.9	2.5	
V	51	1	nogas	12.991	6.8	559307	5.0	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.500	15.1	30799	2.1	2.5	
Mn	55	1	nogas	0.042	92.2	16050	3.7	2.5	
Co	59	1	nogas	0.048	53.8	1310	31.7	2.5	
Ni	60	1	nogas	-0.552	-4.6	797	8.5	2.5	
Cu	63	1	nogas	-0.001	-6449.2	3887	10.3	2.5	
Zn	66	1	nogas	-0.378	-10.7	607	18.5	2.5	
As	75	1	nogas	9.292	11.1	93421	3.5	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.088	22.3	4181	12.9	2.5	
Ag	107	1	nogas	0.048	29.1	643	24.9	2.5	
Cd	111	1	nogas	0.034	47.2	103	39.1	1	
Sb	121	1	nogas	0.506	10.0	5551	8.1	2.5	
Tl	205	1	nogas	0.285	68.8	6375	69.2	1	
Pb	208	1	nogas	0.115	54.0	2607	47.6	2.5	
U	238	1	nogas	0.069	36.5	2117	37.6	2.5	
[Pb]	206	1	nogas	0.077	76.8	627	66.9	2.5	
[Pb]	207	1	nogas	0.085	40.6	593	38.6	2.5	
Na	23	2	He	60.760	1.4	182728	1.3	100	
Mg	24	2	He	8.320	3.0	7728	3.5	100	
Al	27	2	He	0.267	36.2	863	3.3	5	
K	39	2	He	21.501	13.4	171480	1.2	100	
Ca	43	2	He	6.505	41.3	73	7.9	100	
Ca	44	2	He	14.697	12.4	1640	3.7	100	
V	51	2	He	0.670	1.3	8839	0.7	2.5	
Cr	52	2	He	-0.002	-1544.1	2430	7.0	2.5	
Mn	55	2	He	0.076	33.0	1157	10.1	2.5	
Fe	56	2	He	3.540	8.4	37983	4.4	100	
Co	59	2	He	0.026	38.7	333	22.5	2.5	
Ni	60	2	He	-0.227	-9.9	220	19.8	2.5	
Cu	63	2	He	-0.237	-12.5	1443	10.6	2.5	
Zn	66	2	He	-0.168	-50.8	230	41.5	2.5	
As	75	2	He	0.155	25.0	507	8.6	2.5	
Se	78	2	He	-0.292	-93.7	354	5.9	2.5	
B	11	1	nogas	2.505	53.4	76309	4.0	10	
Si	28	1	nogas	27.682	63.2	2575167	3.3	5	CCB Main CR1 Failed
Ca	43	1	nogas	24.352	35.9	1563	15.9	100	
Ca	44	1	nogas	7.258	47.3	38426	1.9	100	
Fe	56	1	nogas	-5.804	-50.2	2111597	4.0	100	
Se	77	1	nogas	69.814	7.2	29267	1.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.339	124.1	343	20.7	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.355	47.2	1597	43.7	2.5	
Sn	118	1	nogas	0.131	31.2	1887	15.8	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.064	42.1	633	14.3	2.5	
Sb	121	2	He	0.406	6.5	2007	6.4	2.5	
P	31	1	nogas	6.684	18.9	44903	0.5	10	
La	139	1	nogas	-4.575	-54.4	60	16.7	2.5	
Au	197	1	nogas	1.360	54.5	16010	55.2	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	507858	1.46	422169	120.30	70	125	
Ge	72	1	nogas	2141974	3.10	2074093	103.27	70	125	
In	115	1	nogas	2153662	2.01	1830149	117.68	70	125	
Bi	209	1	nogas	1792393	6.27	1294991	138.41	70	125	ISTD Failed
Ge	72	2	He	616865	1.21	560222	110.11	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	163_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T22:52:57-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	100.775	1.323	411932	3.91	100	100.8	90	110	
Na	23	1	nogas	10557.510	1.583	176123046	1.12	10000	105.6	90	110	
Mg	24	1	nogas	10088.706	1.617	111395127	0.94	10000	100.9	90	110	
Al	27	1	nogas	106.851	2.458	1440670	0.75	100	106.9	90	110	
K	39	1	nogas	10064.912	4.411	166832262	1.35	10000	100.6	90	110	
Ti	47	1	nogas	100.536	1.933	140214	1.94	100	100.5	90	110	
V	51	1	nogas	113.597	5.404	2590705	1.96	100	113.6	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	98.486	4.768	1669413	4.18	100	98.5	90	110	
Mn	55	1	nogas	98.644	2.756	2164478	2.12	100	98.6	90	110	
Co	59	1	nogas	101.792	1.581	1790689	2.01	100	101.8	90	110	
Ni	60	1	nogas	100.425	3.164	379141	2.01	100	100.4	90	110	
Cu	63	1	nogas	95.979	1.997	914257	1.03	100	96.0	90	110	
Zn	66	1	nogas	97.192	3.420	293471	0.64	100	97.2	90	110	
As	75	1	nogas	105.819	2.876	478082	0.87	100	105.8	90	110	
Sr	88	1	nogas	100.107	2.476	2465826	0.73	100	100.1	90	110	
Ag	107	1	nogas	92.244	0.848	1056909	2.76	100	92.2	90	110	
Cd	111	1	nogas	95.200	0.984	225230	2.24	100	95.2	90	110	
Sb	121	1	nogas	93.011	3.198	996667	2.71	100	93.0	90	110	
Tl	205	1	nogas	86.904	3.854	1618948	3.75	100	86.9	90	110	CCV Main CR1-2 Failed
Pb	208	1	nogas	104.702	2.375	2084655	2.37	100	104.7	90	110	
U	238	1	nogas	92.919	2.167	2312239	3.47	100	92.9	90	110	
[Pb]	206	1	nogas	86.046	6.792	503563	2.20	100	86.0	90	110	CCV Main CR1-2 Failed
[Pb]	207	1	nogas	87.169	8.220	463423	3.61	100	87.2	90	110	CCV Main CR1-2 Failed
Na	23	2	He	10425.178	0.559	12802704	0.73	10000	104.3	90	110	
Mg	24	2	He	10042.065	0.574	6968648	0.70	10000	100.4	90	110	
Al	27	2	He	104.474	0.722	41406	0.54	100	104.5	90	110	
K	39	2	He	11571.267	0.658	8717532	0.65	10000	115.7	90	110	CCV Main CR1-2 Failed
Ca	43	2	He	10156.745	1.267	22637	1.44	10000	101.6	90	110	
Ca	44	2	He	10237.265	1.353	379833	1.51	10000	102.4	90	110	
V	51	2	He	98.108	0.768	514158	0.61	100	98.1	90	110	
Cr	52	2	He	97.445	0.570	530082	0.70	100	97.4	90	110	
Mn	55	2	He	99.124	1.083	393139	1.15	100	99.1	90	110	
Fe	56	2	He	9916.071	1.878	49199228	1.79	10000	99.2	90	110	
Co	59	2	He	94.362	0.910	711760	0.74	100	94.4	90	110	
Ni	60	2	He	97.836	0.303	177180	0.18	100	97.8	90	110	
Cu	63	2	He	98.367	1.303	455248	1.46	100	98.4	90	110	
Zn	66	2	He	96.931	1.176	107537	1.25	100	96.9	90	110	
As	75	2	He	98.471	0.759	115295	0.92	100	98.5	90	110	
Se	78	2	He	99.474	0.395	9119	0.41	100	99.5	90	110	
B	11	1	nogas	580.895	1.137	1544224	1.55	500	116.2	90	110	CCV Main CR1-2 Failed
Si	28	1	nogas	5321.149	3.310	41570359	0.08	5000	106.4	90	110	
Ca	43	1	nogas	9992.023	2.351	284610	0.70	10000	99.9	90	110	
Ca	44	1	nogas	10142.034	3.784	4724857	0.84	10000	101.4	90	110	
Fe	56	1	nogas	9800.171	1.520	182396787	1.91	10000	98.0	90	110	
Se	77	1	nogas	154.653	3.977	45624	0.96	100	154.7	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	96.224	5.417	19798	3.16	100	96.2	90	110	
Mo	95	1	nogas	97.120	4.130	423469	1.27	100	97.1	90	110	
Sn	118	1	nogas	94.795	3.943	619160	0.83	100	94.8	90	110	
Ba	137	1	nogas	96.994	3.679	332953	0.56	100	97.0	90	110	
Sb	121	2	He	96.032	1.276	416800	1.45	100	96.0	90	110	
Li	7	1	nogas	102.437	1.903	950730	4.24	100	102.4	90	110	
P	31	1	nogas	508.463	3.431	615097	0.46	500	101.7	90	110	
La	139	1	nogas	125.483	24.276	550	18.45	100	125.5	90	110	CCV Main CR1-2 Failed
Au	197	1	nogas	78.692	5.928	767624	3.25	100	78.7	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	442787	2.59	422169	104.88	70	125	
Ge	72	1	nogas	2229882	2.99	2074093	107.51	70	125	
In	115	1	nogas	1968848	3.19	1830149	107.58	70	125	
Bi	209	1	nogas	1541023	4.44	1294991	119.00	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	596656	0.18	560222	106.50	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	164_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T22:54:52-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.070	11.7	367	9.6	1	
Na	23	1	nogas	272.441	4.3	5321155	1.3	100	CCB Main CR1 Failed
Mg	24	1	nogas	9.335	4.5	123349	2.6	100	
Al	27	1	nogas	0.738	178.7	37353	43.1	5	
K	39	1	nogas	-0.021	-52916.5	5614743	0.9	100	
Ti	47	1	nogas	-0.018	-361.1	240	39.7	2.5	
V	51	1	nogas	9.401	6.5	505607	2.9	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.260	20.2	27788	0.3	2.5	
Mn	55	1	nogas	-0.096	-36.6	13595	4.9	2.5	
Co	59	1	nogas	0.042	1.1	1257	2.8	2.5	
Ni	60	1	nogas	-0.402	-7.3	1380	6.2	2.5	
Cu	63	1	nogas	0.354	15.6	7348	5.2	2.5	
Zn	66	1	nogas	-0.322	-2.9	793	6.0	2.5	
As	75	1	nogas	6.894	7.3	87013	2.8	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.256	13.4	8392	10.3	2.5	
Ag	107	1	nogas	0.037	30.4	540	22.5	2.5	
Cd	111	1	nogas	0.058	8.1	150	6.7	1	
Sb	121	1	nogas	0.077	18.0	1173	9.9	2.5	
Tl	205	1	nogas	0.241	46.2	4574	46.3	1	
Pb	208	1	nogas	0.092	41.3	2147	35.3	2.5	
U	238	1	nogas	0.088	28.8	2260	28.3	2.5	
[Pb]	206	1	nogas	0.076	35.3	523	30.5	2.5	
[Pb]	207	1	nogas	0.084	50.7	500	47.0	2.5	
Na	23	2	He	270.880	0.9	432178	1.6	100	CCB Main CR1 Failed
Mg	24	2	He	9.690	3.6	8412	1.5	100	
Al	27	2	He	0.393	35.5	883	6.2	5	
K	39	2	He	12.201	18.6	164599	1.0	100	
Ca	43	2	He	4.552	142.3	67	22.9	100	
Ca	44	2	He	15.870	28.9	1627	9.4	100	
V	51	2	He	0.525	6.3	7790	0.8	2.5	
Cr	52	2	He	-0.011	-311.4	2300	6.6	2.5	
Mn	55	2	He	0.021	44.3	900	5.6	2.5	
Fe	56	2	He	4.022	5.1	39075	2.6	100	
Co	59	2	He	0.038	10.9	413	6.1	2.5	
Ni	60	2	He	-0.217	-9.5	230	15.7	2.5	
Cu	63	2	He	0.092	36.1	2907	5.7	2.5	
Zn	66	2	He	-0.212	-15.7	173	20.3	2.5	
As	75	2	He	0.114	32.2	442	11.2	2.5	
Se	78	2	He	-0.282	-130.5	343	10.6	2.5	
B	11	1	nogas	39.046	3.9	178515	1.5	10	CCB Main CR1 Failed
Si	28	1	nogas	8.484	86.4	2517362	1.2	5	CCB Main CR1 Failed
Ca	43	1	nogas	23.560	10.9	1590	6.1	100	
Ca	44	1	nogas	-2.579	-50.0	35147	1.9	100	
Fe	56	1	nogas	-11.903	-47.5	2064855	1.9	100	
Se	77	1	nogas	60.993	6.9	28630	1.8	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.328	24.3	353	1.6	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.356	28.8	1653	25.6	2.5	
Sn	118	1	nogas	0.127	26.1	1663	11.5	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.041	113.9	490	30.2	2.5	
Sb	121	2	He	0.068	19.1	477	11.9	2.5	
P	31	1	nogas	1.404	105.8	40387	1.8	10	
La	139	1	nogas	5.163	278.2	90	58.8	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.321	51.8	13143	51.8	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	494404	2.61	422169	117.11	70	125	
Ge	72	1	nogas	2209441	3.10	2074093	106.53	70	125	
In	115	1	nogas	1931109	1.96	1830149	105.52	70	125	
Bi	209	1	nogas	1530244	4.98	1294991	118.17	70	125	
Ge	72	2	He	595926	1.46	560222	106.37	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	175_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:16:33-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	98.260	1.572	371317	0.64	100	98.3	90	110	
Na	23	1	nogas	10278.961	4.731	157696674	1.58	10000	102.8	90	110	
Mg	24	1	nogas	10224.027	4.149	103828034	2.03	10000	102.2	90	110	
Al	27	1	nogas	108.424	5.174	1371210	2.13	100	108.4	90	110	
K	39	1	nogas	10179.300	1.150	158425937	1.79	10000	101.8	90	110	
Ti	47	1	nogas	100.388	4.608	131351	1.71	100	100.4	90	110	
V	51	1	nogas	111.004	2.741	2384518	1.42	100	111.0	90	110	CCV Main CR1-2 Failed
Cr	52	1	nogas	103.940	0.794	1653193	2.21	100	103.9	90	110	
Mn	55	1	nogas	101.481	2.225	2089913	1.57	100	101.5	90	110	
Co	59	1	nogas	103.766	6.409	1712700	5.33	100	103.8	90	110	
Ni	60	1	nogas	99.278	5.943	351670	3.28	100	99.3	90	110	
Cu	63	1	nogas	95.892	3.503	857221	0.64	100	95.9	90	110	
Zn	66	1	nogas	97.872	2.205	277479	1.16	100	97.9	90	110	
As	75	1	nogas	103.048	4.204	438447	1.44	100	103.0	90	110	
Sr	88	1	nogas	102.571	3.539	2371392	1.88	100	102.6	90	110	
Ag	107	1	nogas	91.595	3.268	984639	0.92	100	91.6	90	110	
Cd	111	1	nogas	97.152	2.939	213861	0.24	100	97.2	90	110	
Sb	121	1	nogas	94.026	3.590	945526	0.81	100	94.0	90	110	
Tl	205	1	nogas	95.285	9.471	1535263	2.28	100	95.3	90	110	
Pb	208	1	nogas	98.132	2.047	1953870	2.05	100	98.1	90	110	
U	238	1	nogas	104.035	10.523	2236724	1.84	100	104.0	90	110	
[Pb]	206	1	nogas	93.629	10.030	474311	1.82	100	93.6	90	110	
[Pb]	207	1	nogas	93.573	9.956	430845	2.19	100	93.6	90	110	
Na	23	2	He	10184.162	2.176	11728228	1.69	10000	101.8	90	110	
Mg	24	2	He	10096.539	1.518	6569244	1.10	10000	101.0	90	110	
Al	27	2	He	104.939	1.687	38997	2.38	100	104.9	90	110	
K	39	2	He	10903.603	0.955	8223506	0.94	10000	109.0	90	110	
Ca	43	2	He	10098.406	5.487	21099	4.80	10000	101.0	90	110	
Ca	44	2	He	10160.088	1.690	353474	1.94	10000	101.6	90	110	
V	51	2	He	99.292	0.746	487849	0.14	100	99.3	90	110	
Cr	52	2	He	99.516	1.742	507499	0.87	100	99.5	90	110	
Mn	55	2	He	99.461	1.495	369845	0.62	100	99.5	90	110	
Fe	56	2	He	9867.622	0.497	45906719	0.73	10000	98.7	90	110	
Co	59	2	He	93.769	0.576	663187	0.50	100	93.8	90	110	
Ni	60	2	He	97.746	2.094	165964	1.32	100	97.7	90	110	
Cu	63	2	He	97.296	0.815	422218	0.23	100	97.3	90	110	
Zn	66	2	He	99.866	1.295	103871	1.08	100	99.9	90	110	
As	75	2	He	98.602	1.608	108242	0.88	100	98.6	90	110	
Se	78	2	He	100.247	1.882	8613	0.94	100	100.2	90	110	
B	11	1	nogas	512.663	4.945	1266461	2.93	500	102.5	90	110	
Si	28	1	nogas	5295.307	2.873	38849489	0.96	5000	105.9	90	110	
Ca	43	1	nogas	10086.374	2.996	269653	0.16	10000	100.9	90	110	
Ca	44	1	nogas	10096.122	4.950	4414484	1.96	10000	101.0	90	110	
Fe	56	1	nogas	10035.681	2.884	175237612	1.21	10000	100.4	90	110	
Se	77	1	nogas	131.020	6.252	38862	2.09	100	131.0	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	95.741	2.701	18500	0.34	100	95.7	90	110	
Mo	95	1	nogas	96.799	3.543	396309	2.18	100	96.8	90	110	
Sn	118	1	nogas	96.869	2.893	589173	2.43	100	96.9	90	110	
Ba	137	1	nogas	99.823	1.507	319101	1.73	100	99.8	90	110	
Sb	121	2	He	96.822	0.694	394011	0.21	100	96.8	90	110	
Li	7	1	nogas	105.510	1.821	904173	0.64	100	105.5	90	110	
P	31	1	nogas	513.998	2.945	583347	0.30	500	102.8	90	110	
La	139	1	nogas	109.349	7.115	457	7.69	100	109.3	90	110	
Au	197	1	nogas	84.624	9.075	714636	1.32	100	84.6	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	409518	1.91	422169	97.00	70	125	
Ge	72	1	nogas	2093222	2.88	2074093	100.92	70	125	
In	115	1	nogas	1832672	3.17	1830149	100.14	70	125	
Bi	209	1	nogas	1339502	9.23	1294991	103.44	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	559462	0.88	560222	99.86	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	176_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:18:29-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.071	17.5	343	14.9	1	
Na	23	1	nogas	84.489	9.7	2227308	1.3	100	
Mg	24	1	nogas	6.975	19.4	96058	12.6	100	
Al	27	1	nogas	0.038	312.7	27865	1.7	5	
K	39	1	nogas	-10.473	-171.3	5335164	0.5	100	
Ti	47	1	nogas	0.045	190.3	313	32.0	2.5	
V	51	1	nogas	3.092	31.7	372788	3.8	2.5	CCB Main CR1 Failed
Cr	52	1	nogas	0.085	53.9	24403	3.4	2.5	
Mn	55	1	nogas	-0.099	-40.0	13235	1.9	2.5	
Co	59	1	nogas	0.042	25.4	1237	12.0	2.5	
Ni	60	1	nogas	-0.571	-4.8	737	11.5	2.5	
Cu	63	1	nogas	-0.110	-26.0	2920	3.6	2.5	
Zn	66	1	nogas	-0.364	-14.3	650	18.7	2.5	
As	75	1	nogas	2.698	21.2	69157	2.6	2.5	CCB Main CR1 Failed
Sr	88	1	nogas	0.083	22.8	4087	5.9	2.5	
Ag	107	1	nogas	0.042	19.1	577	10.5	2.5	
Cd	111	1	nogas	0.045	30.2	117	27.6	1	
Sb	121	1	nogas	0.065	35.7	1017	18.7	2.5	
Tl	205	1	nogas	0.229	49.5	4124	51.4	1	
Pb	208	1	nogas	0.089	43.9	2083	37.4	2.5	
U	238	1	nogas	0.078	29.0	1887	31.2	2.5	
[Pb]	206	1	nogas	0.079	34.0	513	32.1	2.5	
[Pb]	207	1	nogas	0.088	42.2	493	40.6	2.5	
Na	23	2	He	86.348	2.2	199001	0.3	100	
Mg	24	2	He	6.256	8.7	5781	5.3	100	
Al	27	2	He	0.356	67.4	833	11.7	5	
K	39	2	He	-0.386	-40.5	155285	0.1	100	
Ca	43	2	He	20.201	160.1	97	70.4	100	
Ca	44	2	He	12.004	6.5	1423	2.3	100	
V	51	2	He	0.235	11.4	6026	1.1	2.5	
Cr	52	2	He	-0.008	-948.3	2220	17.1	2.5	
Mn	55	2	He	0.000	6096.6	783	6.4	2.5	
Fe	56	2	He	4.061	4.3	37632	1.9	100	
Co	59	2	He	0.032	36.0	353	24.4	2.5	
Ni	60	2	He	-0.207	-16.8	237	24.8	2.5	
Cu	63	2	He	-0.313	-12.6	1000	18.3	2.5	
Zn	66	2	He	-0.136	-7.5	247	4.7	2.5	
As	75	2	He	0.063	86.3	367	16.7	2.5	
Se	78	2	He	0.147	287.6	365	8.6	2.5	
B	11	1	nogas	15.066	14.1	101839	4.7	10	CCB Main CR1 Failed
Si	28	1	nogas	-1.666	-1924.1	2388011	4.1	5	
Ca	43	1	nogas	20.417	8.6	1470	2.5	100	
Ca	44	1	nogas	-5.659	-59.3	33029	1.3	100	
Fe	56	1	nogas	-14.054	-26.2	1985686	2.4	100	
Se	77	1	nogas	26.608	12.1	22104	5.1	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.155	80.7	313	13.3	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.230	42.9	1080	34.6	2.5	
Sn	118	1	nogas	0.121	38.0	1590	16.5	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.031	13.2	447	1.3	2.5	
Sb	121	2	He	0.047	17.8	367	8.8	2.5	
P	31	1	nogas	-0.599	-291.8	37351	1.2	10	
La	139	1	nogas	6.535	209.2	93	52.9	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.359	47.4	12830	49.3	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	457204	0.86	422169	108.30	70	125	
Ge	72	1	nogas	2166306	5.75	2074093	104.45	70	125	
In	115	1	nogas	1891848	1.73	1830149	103.37	70	125	
Bi	209	1	nogas	1437080	3.45	1294991	110.97	70	125	
Ge	72	2	He	571126	1.10	560222	101.95	70	125	

Continuing Calibration Verification (CCV) Report

Sample Table

Sample Name	CCV
Data File Name	184_CCV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:34:17-05:00
Sample Type	CCV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High2	QC Flag
Be	9	1	nogas	100.832	4.683	373616	2.27	100	100.8	90	110	
Na	23	1	nogas	10485.394	7.264	156666516	3.23	10000	104.9	90	110	
Mg	24	1	nogas	10517.468	6.712	104010336	2.14	10000	105.2	90	110	
Al	27	1	nogas	108.599	0.189	1363659	1.87	100	108.6	90	110	
K	39	1	nogas	10151.391	3.069	156726283	2.08	10000	101.5	90	110	
Ti	47	1	nogas	101.667	3.477	132016	1.99	100	101.7	90	110	
V	51	1	nogas	106.517	4.134	2281775	1.80	100	106.5	90	110	
Cr	52	1	nogas	103.055	4.980	1625330	2.93	100	103.1	90	110	
Mn	55	1	nogas	100.470	1.766	2052940	0.81	100	100.5	90	110	
Co	59	1	nogas	104.203	1.821	1706963	0.49	100	104.2	90	110	
Ni	60	1	nogas	102.633	3.213	360782	1.26	100	102.6	90	110	
Cu	63	1	nogas	96.474	3.205	855695	1.27	100	96.5	90	110	
Zn	66	1	nogas	98.025	3.670	275659	1.82	100	98.0	90	110	
As	75	1	nogas	102.642	1.952	433622	0.43	100	102.6	90	110	
Sr	88	1	nogas	101.985	2.624	2339532	1.03	100	102.0	90	110	
Ag	107	1	nogas	94.115	1.282	1004076	1.36	100	94.1	90	110	
Cd	111	1	nogas	96.673	3.242	212650	0.26	100	96.7	90	110	
Sb	121	1	nogas	96.176	1.968	959784	0.18	100	96.2	90	110	
Tl	205	1	nogas	92.882	7.187	1514813	0.56	100	92.9	90	110	
Pb	208	1	nogas	98.189	1.279	1954987	1.28	100	98.2	90	110	
U	238	1	nogas	98.735	7.832	2150266	2.81	100	98.7	90	110	
[Pb]	206	1	nogas	92.635	6.816	475292	0.40	100	92.6	90	110	
[Pb]	207	1	nogas	92.987	6.903	433581	0.62	100	93.0	90	110	
Na	23	2	He	10096.465	2.249	11656979	2.41	10000	101.0	90	110	
Mg	24	2	He	10113.468	1.005	6596355	1.16	10000	101.1	90	110	
Al	27	2	He	103.003	4.267	38379	4.25	100	103.0	90	110	
K	39	2	He	10690.348	1.802	8065711	1.77	10000	106.9	90	110	
Ca	43	2	He	10125.694	4.179	21212	4.33	10000	101.3	90	110	
Ca	44	2	He	10007.426	0.645	349002	0.65	10000	100.1	90	110	
V	51	2	He	99.884	1.831	491917	1.87	100	99.9	90	110	
Cr	52	2	He	99.554	0.151	508949	0.29	100	99.6	90	110	
Mn	55	2	He	99.179	0.983	369712	1.16	100	99.2	90	110	
Fe	56	2	He	9793.205	1.175	45670143	1.34	10000	97.9	90	110	
Co	59	2	He	94.052	1.181	666795	1.31	100	94.1	90	110	
Ni	60	2	He	96.988	2.012	165090	1.90	100	97.0	90	110	
Cu	63	2	He	96.481	0.569	419718	0.74	100	96.5	90	110	
Zn	66	2	He	96.703	0.897	100837	1.05	100	96.7	90	110	
As	75	2	He	99.416	0.602	109401	0.50	100	99.4	90	110	
Se	78	2	He	95.810	1.532	8268	1.45	100	95.8	90	110	
B	11	1	nogas	513.836	6.966	1244641	4.27	500	102.8	90	110	
Si	28	1	nogas	5340.062	4.766	38839579	2.45	5000	106.8	90	110	
Ca	43	1	nogas	10047.358	1.887	266544	0.42	10000	100.5	90	110	
Ca	44	1	nogas	10115.593	1.996	4390460	0.62	10000	101.2	90	110	
Fe	56	1	nogas	10238.849	2.474	177337691	0.43	10000	102.4	90	110	
Se	77	1	nogas	126.890	8.513	37860	2.71	100	126.9	90	110	CCV Main CR1-2 Failed
Se	82	1	nogas	97.493	6.112	18677	3.98	100	97.5	90	110	
Mo	95	1	nogas	98.802	3.834	401272	1.80	100	98.8	90	110	
Sn	118	1	nogas	97.334	3.202	591449	0.54	100	97.3	90	110	
Ba	137	1	nogas	98.225	4.810	313560	1.43	100	98.2	90	110	
Sb	121	2	He	97.978	1.266	399678	1.40	100	98.0	90	110	
Li	7	1	nogas	105.686	2.247	888375	0.95	100	105.7	90	110	
P	31	1	nogas	514.086	4.181	578764	1.98	500	102.8	90	110	
La	139	1	nogas	90.594	19.596	390	17.95	100	90.6	90	110	
Au	197	1	nogas	85.809	8.843	732829	2.53	100	85.8	90	110	CCV Main CR1-2 Failed

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	401766	2.43	422169	95.17	70	125	
Ge	72	1	nogas	2076425	2.02	2074093	100.11	70	125	
In	115	1	nogas	1831511	3.36	1830149	100.07	70	125	
Bi	209	1	nogas	1352418	6.61	1294991	104.43	70	125	

Continuing Calibration Verification (CCV) Report

Ge	72	2	He	560790	0.18	560222	100.10	70	125	

Continuing Calibration Blank (CCB) Report

Sample Table

Sample Name	CCB
Data File Name	185_CCB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:36:11-05:00
Sample Type	CCB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.091	26.2	413	23.2	1	
Na	23	1	nogas	65.309	8.8	1901679	2.3	100	
Mg	24	1	nogas	6.584	24.9	91002	17.0	100	
Al	27	1	nogas	-0.147	-97.2	25197	3.1	5	
K	39	1	nogas	-13.743	-82.2	5230088	1.2	100	
Ti	47	1	nogas	0.050	244.1	327	55.7	2.5	
V	51	1	nogas	1.659	75.6	341572	7.9	2.5	
Cr	52	1	nogas	0.020	244.4	23085	2.7	2.5	
Mn	55	1	nogas	-0.120	-11.9	12678	2.9	2.5	
Co	59	1	nogas	0.039	33.7	1170	17.2	2.5	
Ni	60	1	nogas	-0.579	-4.0	700	12.5	2.5	
Cu	63	1	nogas	-0.131	-30.4	2707	13.3	2.5	
Zn	66	1	nogas	-0.346	-16.5	693	19.6	2.5	
As	75	1	nogas	1.974	25.9	65682	3.5	2.5	
Sr	88	1	nogas	0.056	21.8	3394	5.6	2.5	
Ag	107	1	nogas	0.048	16.3	640	9.5	2.5	
Cd	111	1	nogas	0.056	26.5	140	25.8	1	
Sb	121	1	nogas	0.295	15.2	3377	10.7	2.5	
Tl	205	1	nogas	0.326	76.4	5898	76.0	1	
Pb	208	1	nogas	0.108	48.5	2453	42.3	2.5	
U	238	1	nogas	0.084	47.1	2070	45.7	2.5	
[Pb]	206	1	nogas	0.074	57.3	493	48.9	2.5	
[Pb]	207	1	nogas	0.088	37.0	497	33.3	2.5	
Na	23	2	He	63.206	4.5	171160	1.7	100	
Mg	24	2	He	5.192	3.0	5051	1.8	100	
Al	27	2	He	0.036	651.3	710	12.5	5	
K	39	2	He	-2.908	-15.3	153419	0.2	100	
Ca	43	2	He	9.229	118.5	73	31.5	100	
Ca	44	2	He	11.259	22.0	1390	6.5	100	
V	51	2	He	0.129	45.3	5471	5.2	2.5	
Cr	52	2	He	-0.049	-81.3	2000	10.0	2.5	
Mn	55	2	He	-0.021	-178.9	700	19.8	2.5	
Fe	56	2	He	3.641	10.0	35461	4.8	100	
Co	59	2	He	0.035	25.9	377	17.7	2.5	
Ni	60	2	He	-0.195	-11.3	257	14.8	2.5	
Cu	63	2	He	-0.345	-3.2	857	5.8	2.5	
Zn	66	2	He	-0.170	-5.3	210	4.8	2.5	
As	75	2	He	0.033	86.1	331	9.5	2.5	
Se	78	2	He	-0.049	-814.6	347	9.9	2.5	
B	11	1	nogas	14.064	8.3	96429	2.8	10	CCB Main CR1 Failed
Si	28	1	nogas	7.101	263.8	2427713	1.0	5	CCB Main CR1 Failed
Ca	43	1	nogas	13.875	51.0	1273	12.6	100	
Ca	44	1	nogas	-6.057	-85.4	32469	2.8	100	
Fe	56	1	nogas	-19.684	-36.1	1863852	4.8	100	
Se	77	1	nogas	25.921	29.5	21717	4.1	2.5	CCB Main CR1 Failed
Se	82	1	nogas	0.331	40.6	343	8.9	2.5	

Continuing Calibration Blank (CCB) Report

Mo	95	1	nogas	0.341	48.6	1530	41.8	2.5	
Sn	118	1	nogas	0.151	40.5	1753	19.5	5	
Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Ba	137	1	nogas	0.022	91.0	413	14.2	2.5	
Sb	121	2	He	0.280	18.8	1330	16.6	2.5	
P	31	1	nogas	-1.240	-105.0	36269	2.7	10	
La	139	1	nogas	4.901	76.0	87	17.6	2.5	CCB Main CR1 Failed
Au	197	1	nogas	1.513	58.0	14411	57.4	2.5	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	444352	0.37	422169	105.25	70	125	
Ge	72	1	nogas	2141900	4.50	2074093	103.27	70	125	
In	115	1	nogas	1868651	2.18	1830149	102.10	70	125	
Bi	209	1	nogas	1467736	1.94	1294991	113.34	70	125	
Ge	72	2	He	568247	0.26	560222	101.43	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Sample Table

Sample Name	LLCCV5
Data File Name	186LICV.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:38:11-05:00
Sample Type	LLICV
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	4.791	2.759	19150	2.80	5	95.8	70	130	
Na	23	1	nogas	534.197	6.308	9732325	0.61	500	106.8	70	130	
Mg	24	1	nogas	489.107	6.668	5397399	1.38	500	97.8	70	130	
Al	27	1	nogas	5.281	7.187	90386	4.90	5	105.6	70	130	
K	39	1	nogas	556.717	18.334	13395783	1.02	500	111.3	70	130	
Ti	47	1	nogas	5.337	10.310	7071	0.88	5	106.7	70	130	
V	51	1	nogas	8.122	26.668	445726	1.18	5	162.4	70	130	LLICV Main CR1 Failed
Cr	52	1	nogas	5.206	11.654	101809	1.11	5	104.1	70	130	
Mn	55	1	nogas	4.985	11.711	114318	0.43	5	99.7	70	130	
Co	59	1	nogas	5.223	8.354	84986	2.35	5	104.5	70	130	
Ni	60	1	nogas	4.872	9.681	19461	1.70	5	97.4	70	130	
Cu	63	1	nogas	5.143	8.927	48615	1.81	5	102.9	70	130	
Zn	66	1	nogas	4.899	11.351	15153	5.41	5	98.0	70	130	
As	75	1	nogas	7.607	20.127	83460	3.32	5	152.1	70	130	LLICV Main CR1 Failed
Sr	88	1	nogas	5.064	9.951	116564	0.75	5	101.3	70	130	
Ag	107	1	nogas	5.039	8.120	53221	2.71	5	100.8	70	130	
Cd	111	1	nogas	4.561	5.740	10967	0.32	5	91.2	70	130	
Sb	121	1	nogas	5.139	8.532	50975	1.58	5	102.8	70	130	
Tl	205	1	nogas	4.277	12.285	73656	1.35	5	85.5	70	130	
Pb	208	1	nogas	5.199	0.117	103809	0.12	5	104.0	70	130	
U	238	1	nogas	4.482	13.821	102877	2.33	5	89.6	70	130	
[Pb]	206	1	nogas	4.788	11.904	25988	2.39	5	95.8	70	130	
[Pb]	207	1	nogas	4.727	13.231	23290	5.05	5	94.5	70	130	
Na	23	2	He	572.785	0.436	776678	0.60	500	114.6	70	130	
Mg	24	2	He	509.695	0.465	344744	0.53	500	101.9	70	130	
Al	27	2	He	5.103	8.270	2637	5.71	5	102.1	70	130	
K	39	2	He	549.753	0.042	562351	0.03	500	110.0	70	130	
Ca	43	2	He	519.919	7.828	1177	8.17	500	104.0	70	130	
Ca	44	2	He	522.485	3.128	19771	3.42	500	104.5	70	130	
V	51	2	He	5.151	0.654	30858	0.55	5	103.0	70	130	
Cr	52	2	He	4.907	1.741	28078	1.22	5	98.1	70	130	
Mn	55	2	He	5.032	1.487	20118	1.43	5	100.6	70	130	
Fe	56	2	He	521.126	0.604	2526309	0.40	500	104.2	70	130	
Co	59	2	He	4.931	2.393	36199	1.67	5	98.6	70	130	
Ni	60	2	He	4.931	2.270	9236	1.40	5	98.6	70	130	
Cu	63	2	He	4.778	4.823	23746	3.87	5	95.6	70	130	
Zn	66	2	He	4.885	1.835	5634	1.08	5	97.7	70	130	
As	75	2	He	4.965	3.015	5924	2.63	5	99.3	70	130	
Se	78	2	He	5.289	10.122	809	5.40	5	105.8	70	130	
B	11	1	nogas	33.800	1.899	143039	1.51	25	135.2	70	130	LLICV Main CR1 Failed
Si	28	1	nogas	304.779	29.127	4326026	4.26	25	1219.1	70	130	LLICV Main CR1 Failed
Ca	43	1	nogas	571.626	10.759	15774	0.22	500	114.3	70	130	
Ca	44	1	nogas	516.403	10.028	253382	1.82	500	103.3	70	130	
Fe	56	1	nogas	513.775	7.463	10821330	3.95	500	102.8	70	130	
Se	77	1	nogas	27.986	45.712	21139	0.92	5	559.7	70	130	LLICV Main CR1 Failed
Se	82	1	nogas	4.595	9.034	1127	6.54	5	91.9	70	130	
Mo	95	1	nogas	5.224	8.474	21066	2.04	5	104.5	70	130	
Sn	118	1	nogas	4.644	5.069	31662	1.71	5	92.9	70	130	
Ba	137	1	nogas	4.705	11.140	16718	5.13	5	94.1	70	130	
Sb	121	2	He	5.001	1.801	21223	1.42	5	100.0	70	130	
Li	7	1	nogas	7.827	2.893	105999	2.91	5	156.5	70	130	LLICV Main CR1 Failed
P	31	1	nogas	29.630	23.055	66838	0.48	25	118.5	70	130	
La	139	1	nogas	10.150	55.191	113	22.21	5	203.0	70	130	LLICV Main CR1 Failed
Au	197	1	nogas	3.970	13.171	36056	1.05	5	79.4	70	130	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	432252	1.21	422169	102.39	70	125	
Ge	72	1	nogas	2061775	9.59	2074093	99.41	70	125	
In	115	1	nogas	2002651	5.85	1830149	109.43	70	125	
Bi	209	1	nogas	1436929	12.95	1294991	110.96	70	125	

Low Level Initial Calibration Verification (LLICV) Report

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Ge	72	2	He	578915	0.76	560222	103.34	70	125	

Sample Report

Sample Table

Sample Name	LLCCV2
Data File Name	187SMPL.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:40:11-05:00
Sample Type	Sample
Dilution	1
Comment	
ISTD Ref FileName	042CALB.d
Sample QC Pass/Fail	Pass
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Be	9	1	nogas	1.876	1.876	8.49	7655	0.02	2000	
Na	23	1	nogas	274.042	274.042	12.27	4980182	0.01	200000	
Mg	24	1	nogas	222.501	222.501	9.36	2264493	0.01	200000	
Al	27	1	nogas	1.853	1.853	11.72	49943	0.00	2000	
K	39	1	nogas	196.888	196.888	15.35	8358334	0.00	200000	
Ti	47	1	nogas	2.143	2.143	12.63	3070	0.07	2000	
V	51	1	nogas	3.728	3.728	46.42	375574	0.00	2000	
Cr	52	1	nogas	2.028	2.028	9.17	54564	0.00	2000	
Mn	55	1	nogas	1.827	1.827	9.10	52652	0.00	2000	
Co	59	1	nogas	2.048	2.048	7.37	34600	0.01	2000	
Ni	60	1	nogas	1.439	1.439	7.52	7862	0.02	2000	
Cu	63	1	nogas	1.832	1.832	10.41	20282	0.01	2000	
Zn	66	1	nogas	1.648	1.648	4.26	6371	0.03	2000	
As	75	1	nogas	3.734	3.734	36.95	71336	0.01	2000	
Sr	88	1	nogas	1.985	1.985	3.92	48372	0.00	2000	
Ag	107	1	nogas	1.924	1.924	2.13	21013	0.01	2000	
Cd	111	1	nogas	2.182	2.182	5.63	4624	0.05	2000	
Sb	121	1	nogas	2.020	2.020	6.74	20833	0.01	2000	
Tl	205	1	nogas	1.689	1.689	6.41	29160	0.01	2000	
Pb	208	1	nogas	2.075	2.075	2.28	41621	0.00	2000	
U	238	1	nogas	1.743	1.743	5.95	40151	0.00	2000	
[Pb]	206	1	nogas	1.858	1.858	8.39	10130	0.02	2000	
[Pb]	207	1	nogas	1.900	1.900	6.71	9400	0.02	2000	
Na	23	2	He	264.833	264.833	1.06	406265	0.07	200000	
Mg	24	2	He	206.286	206.286	2.39	138291	0.15	200000	
Al	27	2	He	2.111	2.111	5.31	1483	0.14	2000	
K	39	2	He	213.566	213.566	2.63	313595	0.07	200000	
Ca	43	2	He	208.510	208.510	26.24	497	41.98	200000	
Ca	44	2	He	213.480	213.480	2.08	8542	2.50	200000	
V	51	2	He	2.129	2.129	4.99	15398	0.01	2000	
Cr	52	2	He	2.046	2.046	4.50	12845	0.02	2000	
Mn	55	2	He	1.956	1.956	2.32	8172	0.02	2000	
Fe	56	2	He	196.632	196.632	1.00	949719	0.02	200000	
Co	59	2	He	1.997	1.997	2.45	14503	0.01	2000	
Ni	60	2	He	1.889	1.889	2.84	3850	0.05	2000	
Cu	63	2	He	1.684	1.684	5.15	9773	0.02	2000	
Zn	66	2	He	1.797	1.797	6.41	2287	0.08	2000	
As	75	2	He	2.014	2.014	5.09	2540	0.08	2000	
Se	78	2	He	2.224	2.224	4.72	539	0.41	2000	
B	11	1	nogas	18.492	18.492	8.12	106761	0.02	2000	

Sample Report

Si	28	1	nogas	114.681	114.681	26.34	3144768	0.00	2000	
Ca	43	1	nogas	218.947	218.947	4.58	6781	3.23	200000	
Name	Mass	Tune Step	Tune Mode	Conc	FinalConc	Conc %RSD	CPS	%RSD	LDR	QC Flag
Ca	44	1	nogas	189.607	189.607	7.13	117813	0.16	200000	
Fe	56	1	nogas	195.620	195.620	8.30	5589815	0.00	200000	
Se	77	1	nogas	23.352	23.352	33.01	21022	0.11	2000	
Se	82	1	nogas	1.755	1.755	6.25	613	0.29	2000	
Mo	95	1	nogas	2.068	2.068	5.93	8676	0.02	2000	
Sn	118	1	nogas	2.129	2.129	3.27	13205	0.02	2000	
Ba	137	1	nogas	2.181	2.181	2.76	7015	0.03	2000	
Sb	121	2	He	2.160	2.160	3.57	9126	0.02	2000	
La	139	1	nogas	-1.247	-1.247	-521.40	60	-2.08	2000	
Au	197	1	nogas	1.648	1.648	4.12	15181	0.01	2000	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	440363	2.48	422169	104.31	70	125	
Ge	72	1	nogas	2116154	5.84	2074093	102.03	70	125	
In	115	1	nogas	1761112	3.80	1830149	96.23	70	125	
Bi	209	1	nogas	1425025	3.82	1294991	110.04	70	125	
Ge	72	2	He	569891	1.39	560222	101.73	70	125	

Interference Check Solution A (ICS-A) Report

Sample Table

Sample Name	ICSA
Data File Name	188ICSA.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:42:10-05:00
Sample Type	ICSA
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Upper Limit	QC Flag
Be	9	1	nogas	0.010	60.4	73	28.4	0	ICSA Main CR1 Failed
Na	23	1	nogas	102947.506	9.2	1460222866	2.0	0	
Mg	24	1	nogas	101283.935	7.7	955822955	0.8	0	
Al	27	1	nogas	100984.989	0.3	1175069182	1.8	0	
K	39	1	nogas	103721.530	3.7	1466813866	1.9	0	
Ti	47	1	nogas	2157.800	1.2	2643656	1.9	0	
V	51	1	nogas	3.570	23.9	346326	2.5	0	ICSA Main CR1 Failed
Cr	52	1	nogas	1.081	3.1	36773	2.2	0	ICSA Main CR1 Failed
Mn	55	1	nogas	0.156	18.7	16898	1.5	0	ICSA Main CR1 Failed
Co	59	1	nogas	0.142	10.6	2667	8.6	0	ICSA Main CR1 Failed
Ni	60	1	nogas	0.424	23.9	3947	7.0	0	ICSA Main CR1 Failed
Cu	63	1	nogas	0.939	9.4	11400	4.6	0	ICSA Main CR1 Failed
Zn	66	1	nogas	1.266	8.1	4901	5.6	0	ICSA Main CR1 Failed
As	75	1	nogas	6.776	11.1	76841	1.7	0	
Sr	88	1	nogas	0.947	3.0	22411	1.8	0	ICSA Main CR1 Failed
Ag	107	1	nogas	0.029	47.6	400	34.4	0	ICSA Main CR1 Failed
Cd	111	1	nogas	1.033	2.2	2123	5.4	0	ICSA Main CR1 Failed
Sb	121	1	nogas	0.152	9.3	1747	5.8	0	ICSA Main CR1 Failed
Tl	205	1	nogas	0.025	7.4	463	10.9	0	ICSA Main CR1 Failed
Pb	208	1	nogas	0.090	7.0	2097	5.9	0	ICSA Main CR1 Failed
[Pb]	206	1	nogas	0.110	1.0	587	7.9	0	ICSA Main CR1 Failed
[Pb]	207	1	nogas	0.089	23.2	423	14.2	0	ICSA Main CR1 Failed
Na	23	2	He	99011.557	0.6	109899112	0.9	0	
Mg	24	2	He	98341.160	0.6	62113617	1.0	0	
Al	27	2	He	98785.330	3.6	35012469	3.5	0	
K	39	2	He	103274.943	0.6	76572102	0.6	0	
Ca	43	2	He	97722.520	0.9	197830	0.5	0	
Ca	44	2	He	103599.378	0.5	3490643	0.9	0	
V	51	2	He	0.220	7.4	5658	1.2	0	ICSA Main CR1 Failed
Cr	52	2	He	0.201	22.6	3147	8.6	0	ICSA Main CR1 Failed
Mn	55	2	He	0.265	16.3	1700	10.6	0	ICSA Main CR1 Failed
Fe	56	2	He	97760.238	1.7	441394260	1.2	0	
Co	59	2	He	0.020	44.0	257	25.4	0	ICSA Main CR1 Failed
Ni	60	2	He	-0.031	-242.4	517	24.7	0	ICSA Main CR1 Failed
Cu	63	2	He	0.069	15.0	2554	0.9	0	ICSA Main CR1 Failed
Zn	66	2	He	0.607	20.3	983	14.0	0	ICSA Main CR1 Failed
As	75	2	He	0.117	20.8	406	7.8	0	ICSA Main CR1 Failed
Se	78	2	He	0.407	144.9	368	13.1	0	ICSA Main CR1 Failed
B	11	1	nogas	13.311	16.1	83492	3.8	0	ICSA Main CR1 Failed
Si	28	1	nogas	87.983	23.7	2749157	3.7	0	
Ca	43	1	nogas	105014.899	4.3	2624344	3.5	0	
Ca	44	1	nogas	103199.816	2.0	42024833	0.2	0	
Fe	56	1	nogas	99789.971	2.7	1615348869	1.2	0	
Se	77	1	nogas	55.814	11.1	24610	2.9	0	
Se	82	1	nogas	0.471	44.6	340	12.8	0	ICSA Main CR1 Failed
Mo	95	1	nogas	2113.311	3.1	8108611	1.2	0	
Sn	118	1	nogas	0.067	23.7	1127	3.7	0	ICSA Main CR1 Failed
Ba	137	1	nogas	0.110	8.8	637	3.3	0	ICSA Main CR1 Failed
Sb	121	2	He	0.133	11.6	690	8.8	0	ICSA Main CR1 Failed

Interference Check Solution A (ICS-A) Report

P	31	1	nogas	105830.632	1.8	105544565	0.3	0	
La	139	1	nogas	87.743	24.9	350	15.9	0	

QC ISTD Table

Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	392877	2.16	422169	93.06	70	125	
Ge	72	1	nogas	1961916	1.85	2074093	94.59	70	125	
In	115	1	nogas	1699678	4.60	1830149	92.87	70	125	
Bi	209	1	nogas	1246298	7.63	1294991	96.24	70	125	
Ge	72	2	He	543212	1.45	560222	96.96	70	125	

Interference Check Solution AB (ICS-AB) Report

Sample Table

Sample Name	ICSAB
Data File Name	189ICSB.d
Data Path Name	C:\Agilent\ICPMH\1\DATA\060
Acq Date Time	2018-06-08T23:44:15-05:00
Sample Type	ICSB
Dilution	1
Comment	
ISTD Ref File Name	042CALB.d
Sample QC Pass/Fail	Fail
ISTD Pass/Fail	Pass

QC Analyte Table

Name	Mass	Tune Step	Tune Mode	Conc	Conc %RSD	CPS	CPS %RSD	Exp Value	%Rec	%Low	%High	QC Flag
Be	9	1	nogas	99.095	2.809	334561	1.52	100	99.1	80	120	
Na	23	1	nogas	106540.771	3.126	1607315336	2.39	100	106540.8	80	120	ICSB Main CR1 Failed
Mg	24	1	nogas	107438.303	0.516	1077806124	1.00	100	107438.3	80	120	ICSB Main CR1 Failed
Al	27	1	nogas	101729.839	2.469	1207590942	2.63	100	101729.8	80	120	ICSB Main CR1 Failed
K	39	1	nogas	112624.583	2.665	1624749170	1.01	100	112624.6	80	120	
Ti	47	1	nogas	2290.813	1.654	2862955	0.21	100	2290.8	80	120	ICSB Main CR1 Failed
V	51	1	nogas	102.382	1.786	2126420	2.51	100	102.4	80	120	
Cr	52	1	nogas	98.737	2.426	1502893	2.71	100	98.7	80	120	
Mn	55	1	nogas	93.519	1.498	1843109	0.56	100	93.5	80	120	
Co	59	1	nogas	97.947	4.420	1546744	4.05	100	97.9	80	120	
Ni	60	1	nogas	95.815	1.881	324918	0.48	100	95.8	80	120	
Cu	63	1	nogas	91.271	1.185	780791	0.65	100	91.3	80	120	
Zn	66	1	nogas	95.623	1.320	259337	0.69	100	95.6	80	120	
As	75	1	nogas	103.064	2.217	419496	0.63	100	103.1	80	120	
Sr	88	1	nogas	98.587	3.692	2179938	1.98	100	98.6	80	120	
Ag	107	1	nogas	85.953	0.905	883995	0.93	100	86.0	80	120	
Cd	111	1	nogas	97.125	2.603	199114	1.51	100	97.1	80	120	
Sb	121	1	nogas	91.820	3.569	883206	2.07	100	91.8	80	120	
Tl	205	1	nogas	91.370	5.144	1337389	4.05	100	91.4	80	120	
Pb	208	1	nogas	89.900	0.817	1789988	0.82	100	89.9	80	120	
U	238	1	nogas	105.083	2.654	2054281	1.26	100	105.1	80	120	
[Pb]	206	1	nogas	95.223	3.146	438465	1.87	100	95.2	80	120	
[Pb]	207	1	nogas	94.748	2.326	396518	0.91	100	94.7	80	120	
Na	23	2	He	112321.344	0.838	121968268	1.23	100	112321.3	80	120	ICSB Main CR1 Failed
Mg	24	2	He	111642.454	0.958	68992174	1.35	100	111642.5	80	120	ICSB Main CR1 Failed
Al	27	2	He	102209.132	1.692	35445205	1.96	100	102209.1	80	120	ICSB Main CR1 Failed
K	39	2	He	115635.139	0.484	85717819	0.48	100	115635.1	80	120	ICSB Main CR1 Failed
Ca	43	2	He	111011.859	1.916	219865	1.46	100	111011.9	80	120	ICSB Main CR1 Failed
Ca	44	2	He	116863.414	1.320	3852185	0.86	100	116863.4	80	120	ICSB Main CR1 Failed
V	51	2	He	96.143	0.760	448878	0.64	100	96.1	80	120	
Cr	52	2	He	94.889	1.267	459831	1.68	100	94.9	80	120	
Mn	55	2	He	96.772	1.284	341866	0.92	100	96.8	80	120	
Fe	56	2	He	111093.025	1.615	490759033	1.16	100	111093.0	80	120	ICSB Main CR1 Failed
Co	59	2	He	91.297	1.157	613366	0.79	100	91.3	80	120	
Ni	60	2	He	94.964	0.423	153200	0.69	100	95.0	80	120	
Cu	63	2	He	93.053	1.633	383719	2.06	100	93.1	80	120	
Zn	66	2	He	96.927	0.868	95779	0.89	100	96.9	80	120	
As	75	2	He	96.588	1.418	100739	1.84	100	96.6	80	120	
Se	78	2	He	96.338	2.580	7877	2.85	100	96.3	80	120	
B	11	1	nogas	490.832	4.689	1085820	3.76	100	490.8	80	120	
Si	28	1	nogas	5132.097	1.485	36086323	1.32	100	5132.1	80	120	ICSB Main CR1 Failed
Ca	43	1	nogas	113888.443	0.865	2904335	1.50	100	113888.4	80	120	
Ca	44	1	nogas	111674.500	0.519	46404474	1.79	100	111674.5	80	120	
Fe	56	1	nogas	110609.246	1.940	1826663174	0.69	100	110609.2	80	120	
Se	77	1	nogas	147.269	6.902	39777	3.40	100	147.3	80	120	
Se	82	1	nogas	96.667	3.598	17862	2.59	100	96.7	80	120	
Mo	95	1	nogas	2245.330	1.832	8792856	2.64	100	2245.3	80	120	ICSB Main CR1 Failed
Sn	118	1	nogas	96.854	0.638	548661	2.20	100	96.9	80	120	
Ba	137	1	nogas	97.798	4.906	290951	2.65	100	97.8	80	120	
Sb	121	2	He	95.066	0.545	367512	0.97	100	95.1	80	120	
La	139	1	nogas	202.215	23.789	730	18.98	100	202.2	80	120	

QC ISTD Table

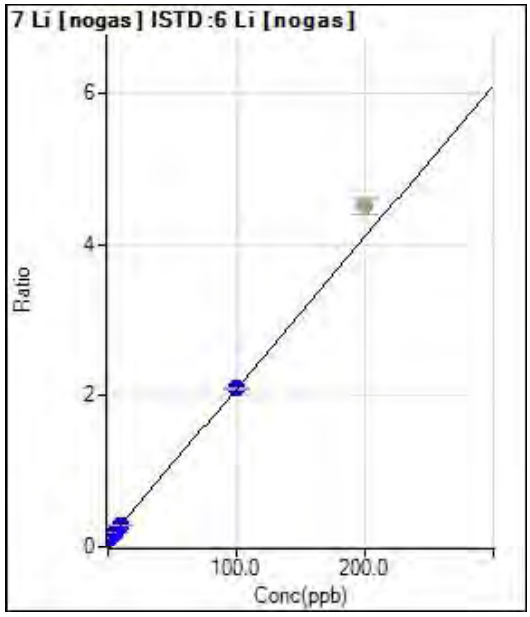
Name	Mass	Tune Step	Tune Mode	CPS	%RSD	Ref CPS	%Rec	%QC Low	%QC High	QC Flag
Li	6	1	nogas	365888	1.29	422169	86.67	70	125	
Ge	72	1	nogas	2001594	1.75	2074093	96.50	70	125	
In	115	1	nogas	1706378	2.67	1830149	93.24	70	125	
Bi	209	1	nogas	1210411	1.40	1294991	93.47	70	125	
Ge	72	2	He	531444	0.46	560222	94.86	70	125	

Calibration for 015_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\060818B.b\
Analysis File: 060818B.batch.bin
DA Date-Time: 2018-06-08 20:30:01
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	CAL BLK	2018-06-08 14:51:02
2	005CALS.d	2/10/200	2018-06-08 14:53:00
3	006CALS.d	5/25/500	2018-06-08 14:55:00
4	007CALS.d	10/50/1000	2018-06-08 14:56:58
5	008CALS.d	100/500/10K	2018-06-08 14:58:57
6	009CALS.d	200/1000/20K	2018-06-08 15:00:53
7			

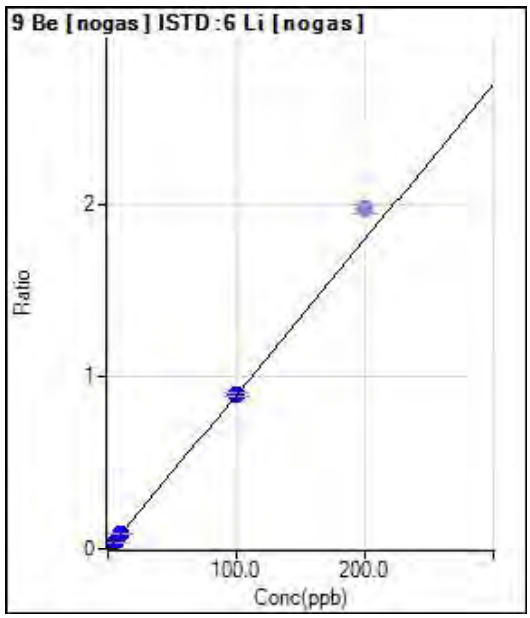
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34374.51	0.0910	P	2.0
2	☐	2.000	1.858	47512.59	0.1283	P	1.7
3	☐	5.000	4.653	68469.52	0.1843	P	0.4
4	☐	10.000	10.002	105161.75	0.2917	P	2.7
5	☐	100.000	100.020	718638.43	2.0978	P	1.4
6	☑	200.000		1400326.07	4.5170	A	4.9
7	☐	1.000					

y = 0.0201 * x + 0.0910
R = 1.0000
DL = 0.2653
BEC = 4.534

Weight: <None>
Min Conc: <None>

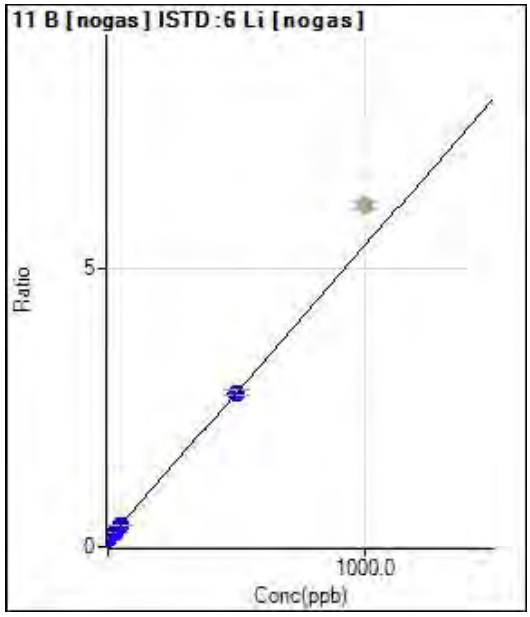


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36.67	0.0001	P	57.6
2	☐	2.000	1.883	6304.48	0.0170	P	1.3
3	☐	5.000	4.689	15686.65	0.0422	P	2.7
4	☐	10.000	10.232	33165.54	0.0920	P	2.4
5	☐	100.000	99.995	307725.04	0.8985	P	2.5
6	☑	200.000		611948.53	1.9741	P	2.6
7	☐	1.000					

y = 0.0090 * x + 9.7281E-005
R = 1.0000
DL = 0.0187
BEC = 0.01083

Weight: <None>
Min Conc: <None>

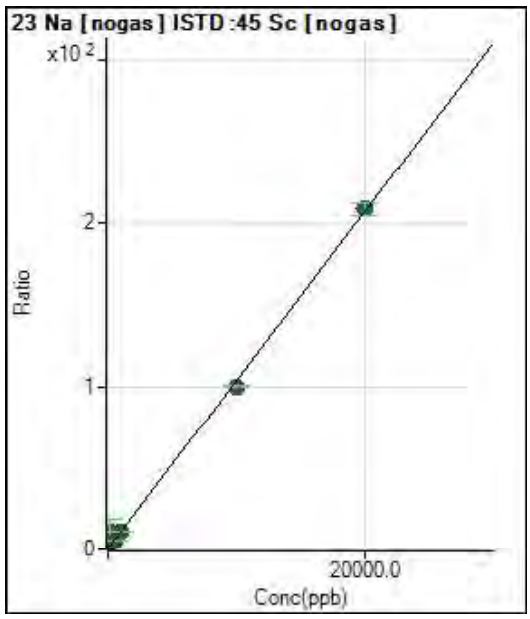
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50172.59	0.1328	P	0.6
2	☐	10.000	8.842	66515.62	0.1796	P	2.9
3	☐	25.000	23.005	94541.15	0.2545	P	1.1
4	☐	50.000	49.187	141646.78	0.3931	P	3.0
5	☐	500.000	500.204	951864.75	2.7796	P	3.3
6	☑	1000.000		1903550.75	6.1395	A	2.2
7	☐	5.000					

y = 0.0053 * x + 0.1328
R = 1.0000
DL = 0.4712
BEC = 25.1

Weight: <None>
Min Conc: <None>

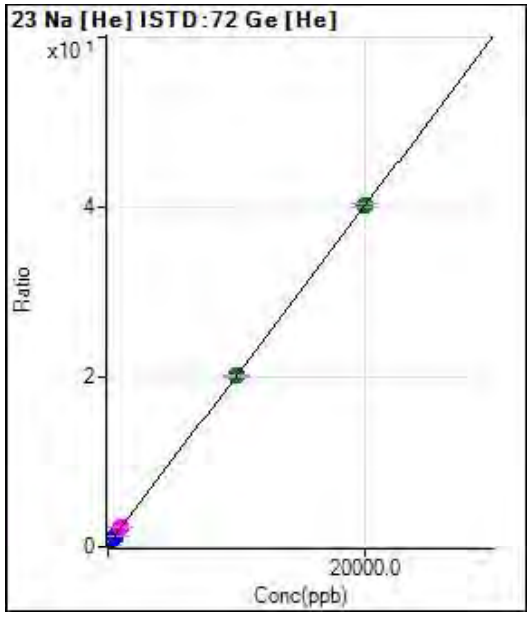


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	797532.71	0.5862	P	4.8
2	☐	200.000	1048.643	15744289.54	11.4037	A	132.
3	☐	500.000	509.625	7837938.46	5.8433	A	2.0
4	☐	1000.000	1035.302	14842553.98	11.2661	A	4.9
5	☐	10000.00	9627.373	131213790.4	99.8992	A	1.4
6	☐	20000.00	20175.821	260172589.1	208.713	A	3.4
7	☐	100.000					

y = 0.0103 * x + 0.5862
R = 0.9988
DL = 8.192
BEC = 56.83

Weight: <None>
Min Conc: <None>

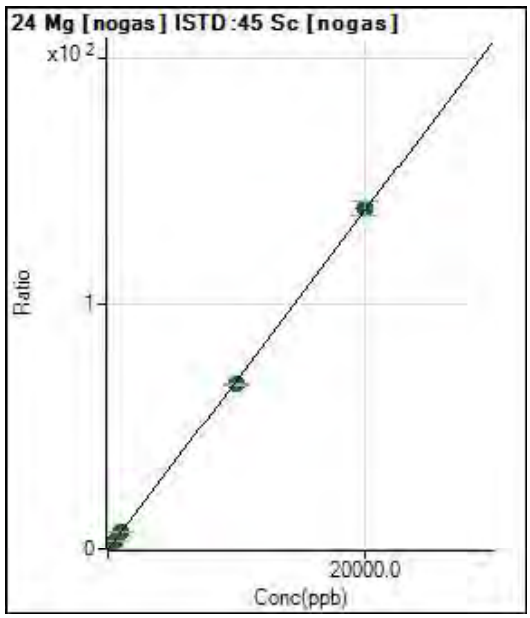
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	95682.43	0.1893	P	4.7
2	☐	200.000	207.063	302078.54	0.6031	P	2.2
3	☐	500.000	510.573	612149.11	1.2098	P	1.1
4	☐	1000.000	1071.430	1173608.06	2.3308	M	3.7
5	☐	10000.00	9993.916	10053114.44	20.1647	A	1.0
6	☐	20000.00	19999.135	19354253.46	40.1628	A	1.0
7	☐	100.000					

y = 0.0020 * x + 0.1893
R = 1.0000
DL = 13.47
BEC = 94.69

Weight: <None>
Min Conc: <None>

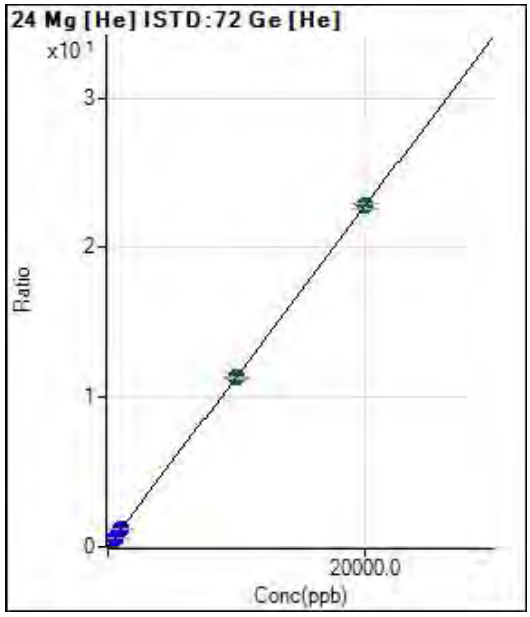


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54452.30	0.0401	P	7.3
2	☐	200.000	203.695	1960796.79	1.4423	A	3.6
3	☐	500.000	508.590	4749859.87	3.5411	A	2.2
4	☐	1000.000	1038.533	9474698.91	7.1892	A	3.4
5	☐	10000.00	9766.642	88364814.48	67.2721	A	1.1
6	☐	20000.00	20114.501	172598103.8	138.505	A	4.4
7	☐	100.000					

y = 0.0069 * x + 0.0401
R = 0.9999
DL = 1.275
BEC = 5.819

Weight: <None>
Min Conc: <None>

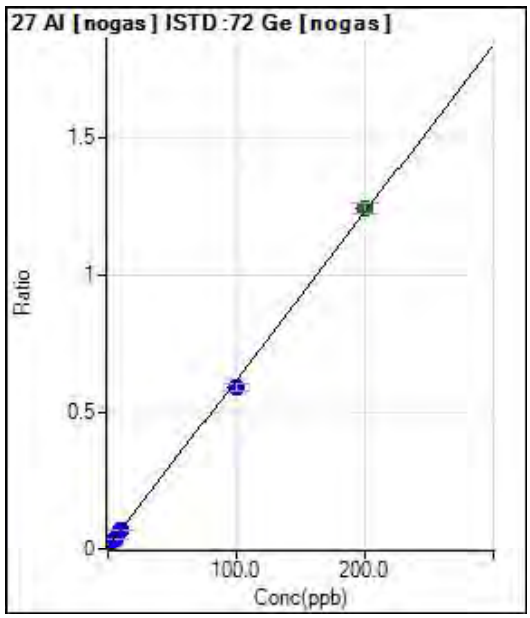
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3827.11	0.0076	P	1.1
2	☐	200.000	208.266	122333.89	0.2443	P	3.7
3	☐	500.000	516.063	300606.31	0.5941	P	1.0
4	☐	1000.000	1036.091	596767.79	1.1851	P	1.6
5	☐	10000.00	9926.807	5627883.46	11.2899	A	0.8
6	☐	20000.00	20034.308	10976193.59	22.7777	A	1.5
7	☐	100.000					

y = 0.0011 * x + 0.0076
R = 1.0000
DL = 0.2225
BEC = 6.655

Weight: <None>
Min Conc: <None>

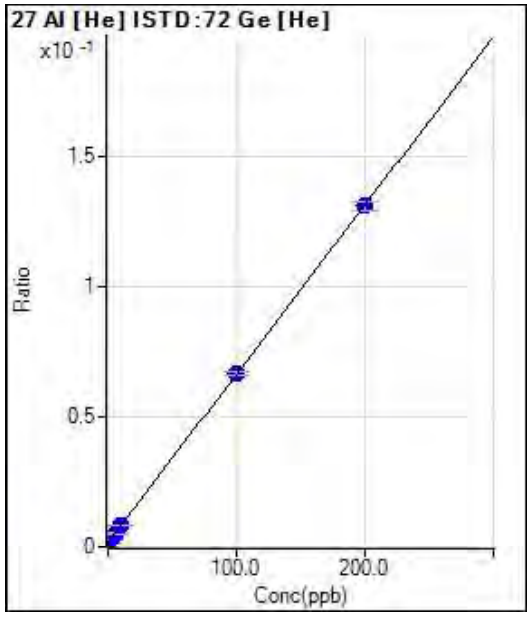


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18726.09	0.0102	P	2.6
2	☐	2.000	2.166	43533.59	0.0234	P	3.8
3	☐	5.000	5.154	77086.65	0.0416	P	1.2
4	☐	10.000	10.174	135075.31	0.0723	P	1.8
5	☐	100.000	95.813	1105251.44	0.5951	P	4.3
6	☐	200.000	202.079	2210781.42	1.2438	A	3.1
7	☐	1.000					

y = 0.0061 * x + 0.0102
R = 0.9997
DL = 0.1291
BEC = 1.666

Weight: <None>
Min Conc: <None>

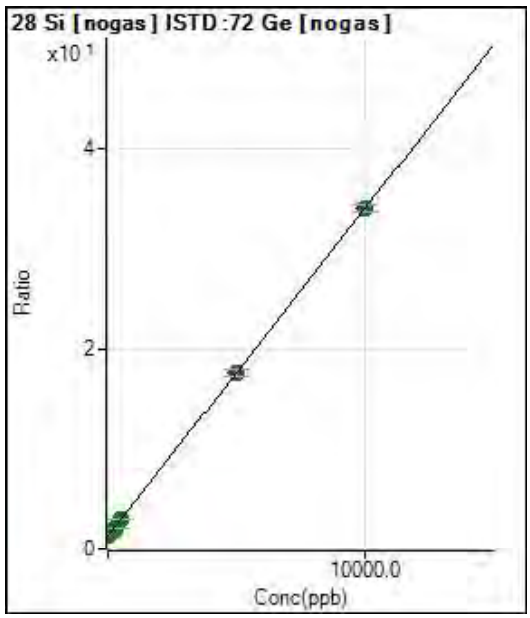
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.726	556.69	0.0011	P	10.9
2	☐	2.000	1.672	1330.07	0.0027	P	6.0
3	☐	5.000	5.404	2566.89	0.0051	P	7.2
4	☐	10.000	10.405	4187.21	0.0083	P	3.4
5	☐	100.000	100.545	33266.28	0.0667	P	1.8
6	☐	200.000	199.700	63125.16	0.1310	P	2.8
7	☐	1.000					

y = 6.4811E-004 * x + 0.0016
R = 1.0000
DL = 0.5548
BEC = 2.426

Weight: <None>
Min Conc: <None>

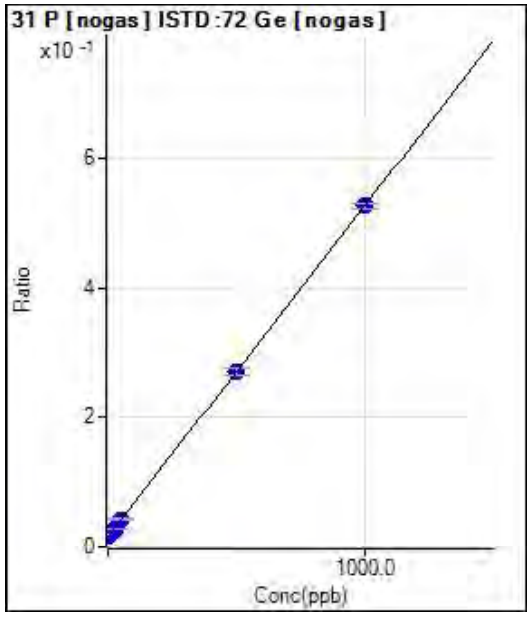


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2508358.35	1.3626	A	2.3
2	☐	100.000	92.608	3095622.87	1.6646	A	5.0
3	☐	250.000	263.424	4112987.96	2.2216	A	0.8
4	☐	500.000	516.623	5694060.75	3.0473	A	3.2
5	☐	5000.000	5003.639	32837654.51	17.6802	A	4.2
6	☐	10000.00	9997.088	60382119.10	33.9647	A	2.2
7	☐	5.000					

y = 0.0033 * x + 1.3626
R = 1.0000
DL = 29.42
BEC = 417.8

Weight: <None>
Min Conc: <None>

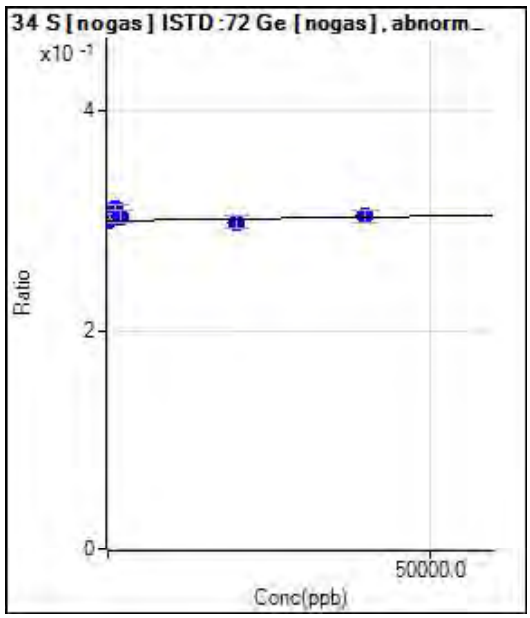
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	28551.71	0.0155	P	2.4
2	☐	10.000	10.397	38699.77	0.0208	P	7.1
3	☐	25.000	25.282	52636.68	0.0284	P	1.1
4	☐	50.000	53.815	80387.45	0.0430	P	1.9
5	☐	500.000	499.814	503290.43	0.2710	P	4.6
6	☐	1000.000	999.891	936241.65	0.5266	P	1.9
7	☐	5.000					

y = 5.1113E-004 * x + 0.0155
R = 1.0000
DL = 2.156
BEC = 30.34

Weight: <None>
Min Conc: <None>

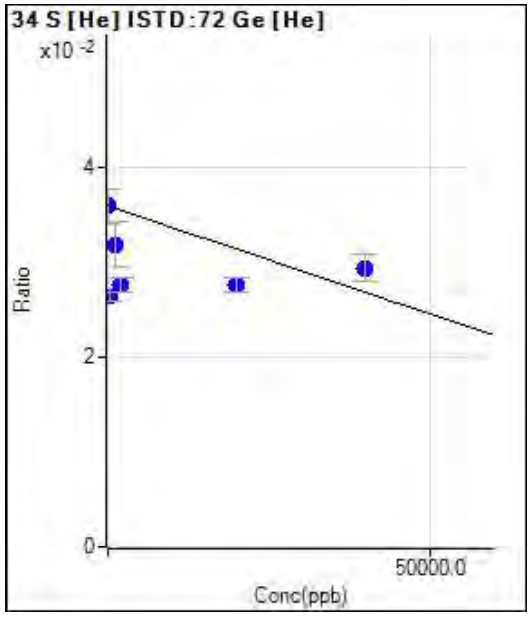


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	552374.77	0.3000	P	1.1
2	☐	400.000	106474.54	574441.92	0.3089	P	4.9
3	☐	1000.000	129288.93	575305.92	0.3108	P	3.0
4	☐	2000.000	44403.742	567529.42	0.3037	P	3.8
5	☐	20000.00	-14763.18	555022.77	0.2988	P	3.7
6	☐	40000.00	50993.434	540792.70	0.3043	P	4.1
7	☐	100.000					

y = 8.3144E-008 * x + 0.3000
R = -0.2881
DL = 1.234E+05
BEC = 3.608E+06

Weight: <None>
Min Conc: <None>

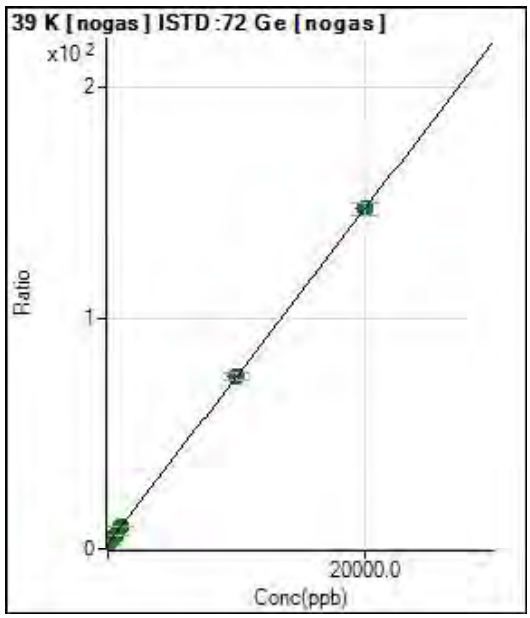
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18211.84	0.0360	P	10.3
2	☐	400.000	41262.701	13340.54	0.0266	P	5.3
3	☐	1000.000	17771.813	16176.72	0.0320	P	15.4
4	☐	2000.000	36363.076	13974.29	0.0277	P	5.6
5	☐	20000.00	36851.091	13775.08	0.0276	P	5.5
6	☐	40000.00	29028.378	14174.65	0.0294	P	9.6
7	☐	100.000					

y = -2.2749E-007 * x + 0.0360
R = -0.2372
DL = -4.894E+04
BEC = -1.583E+05

Weight: <None>
Min Conc: <None>

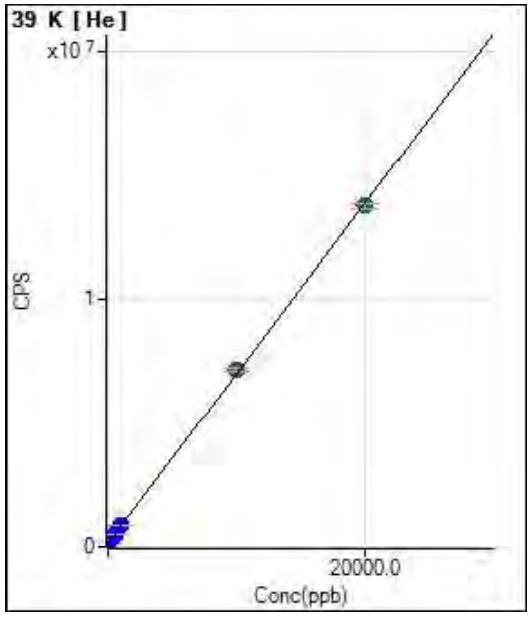


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4721045.55	2.5643	A	0.4
2	☐	200.000	204.170	7524428.55	4.0447	A	4.1
3	☐	500.000	527.799	11831892.19	6.3913	A	1.6
4	☐	1000.000	1038.882	18869631.67	10.0971	A	2.3
5	☐	10000.00	9986.278	139279828.1	74.9734	A	3.8
6	☐	20000.00	20004.180	262365880.8	147.611	A	3.4
7	☐	100.000					

y = 0.0073 * x + 2.5643
R = 1.0000
DL = 4.085
BEC = 353.6

Weight: <None>
Min Conc: <None>

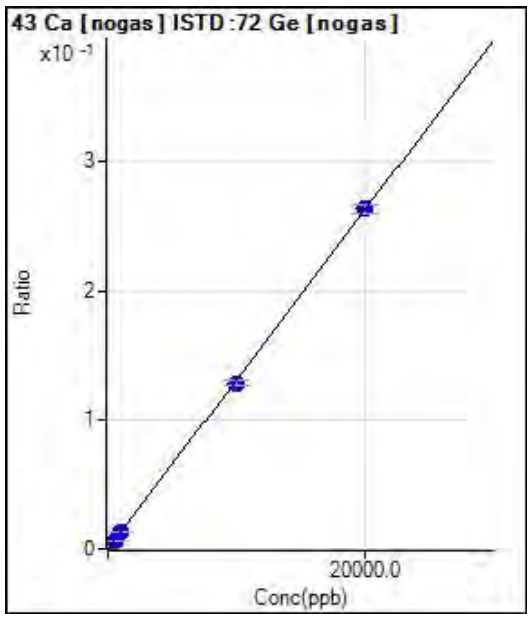
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	141601.43		P	0.9
2	☐	200.000	205.932	282703.30		P	0.5
3	☐	500.000	525.697	501801.24		P	0.4
4	☐	1000.000	1047.186	859117.75		P	1.5
5	☐	10000.00	10228.286	7149872.18		A	1.1
6	☐	20000.00	19882.796	13765000.21		A	1.3
7	☐	100.000					

y = 685.1853 * x + 141601.4267
R = 0.9999
DL = 5.478
BEC = 206.7

Weight: <None>
Min Conc: <None>

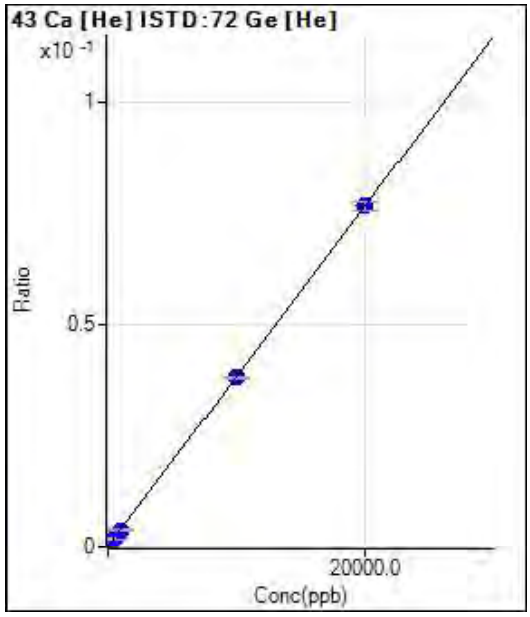


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	936.71	0.0005	P	9.0
2	☐	200.000	205.394	5941.03	0.0032	P	5.2
3	☐	500.000	524.889	13641.86	0.0074	P	3.4
4	☐	1000.000	1039.505	26345.61	0.0141	P	1.1
5	☐	10000.00	9819.580	239380.18	0.1289	P	3.4
6	☐	20000.00	20087.558	467657.68	0.2631	P	2.7
7	☐	100.000					

y = 1.3071E-005 * x + 5.0881E-004
R = 0.9999
DL = 10.57
BEC = 38.93

Weight: <None>
Min Conc: <None>

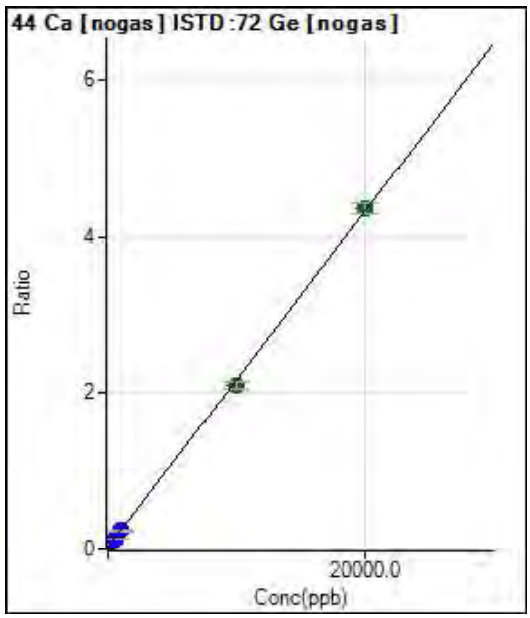
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	50.00	0.0001	P	51.2
2	☐	200.000	184.650	403.34	0.0008	P	7.5
3	☐	500.000	461.054	943.38	0.0019	P	4.5
4	☐	1000.000	980.120	1940.13	0.0039	P	4.6
5	☐	10000.00	9938.291	19029.97	0.0382	P	1.4
6	☐	20000.00	20032.976	37030.38	0.0768	P	2.5
7	☐	100.000					

y = 3.8310E-006 * x + 9.7803E-005
R = 1.0000
DL = 39.18
BEC = 25.53

Weight: <None>
Min Conc: <None>

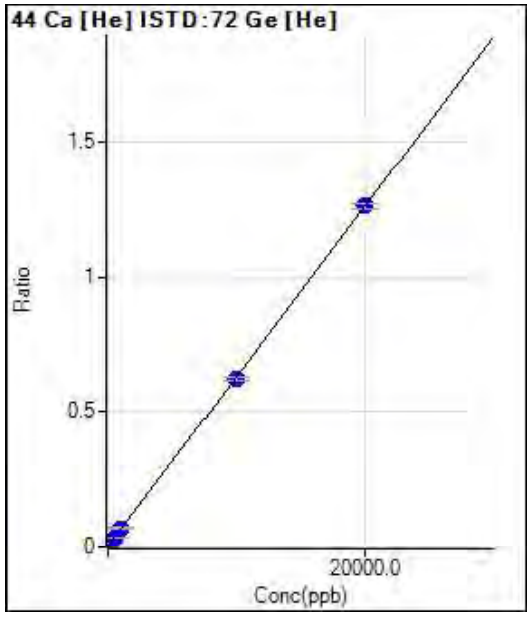


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53192.36	0.0289	P	2.3
2	☐	200.000	189.836	129558.32	0.0696	P	4.2
3	☐	500.000	494.695	250059.86	0.1351	P	3.4
4	☐	1000.000	997.527	454214.98	0.2430	P	1.3
5	☐	10000.00	9668.379	3908806.40	2.1044	A	4.0
6	☐	20000.00	20166.169	7746349.47	4.3580	A	3.3
7	☐	100.000					

y = 2.1467E-004 * x + 0.0289
R = 0.9998
DL = 9.17
BEC = 134.6

Weight: <None>
Min Conc: <None>

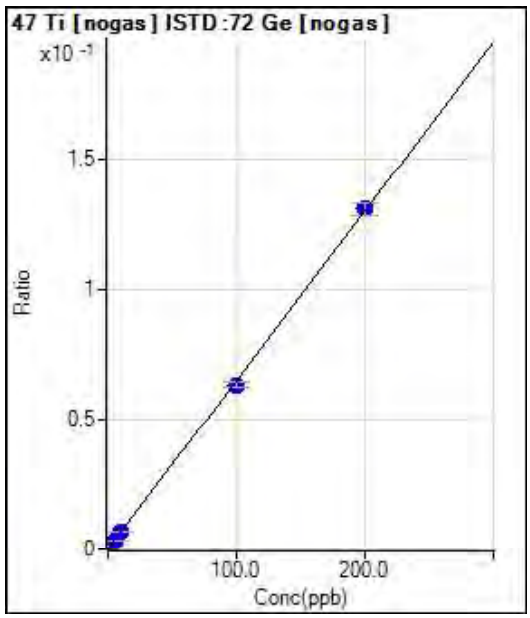
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1316.73	0.0026	P	10.3
2	☐	200.000	210.817	7941.82	0.0159	P	1.6
3	☐	500.000	516.599	17748.69	0.0351	P	4.0
4	☐	1000.000	1066.384	35069.91	0.0696	P	2.6
5	☐	10000.00	9878.516	310865.22	0.6237	P	1.5
6	☐	20000.00	20056.900	608894.91	1.2636	P	1.6
7	☐	100.000					

y = 6.2869E-005 * x + 0.0026
R = 1.0000
DL = 12.73
BEC = 41.39

Weight: <None>
Min Conc: <None>

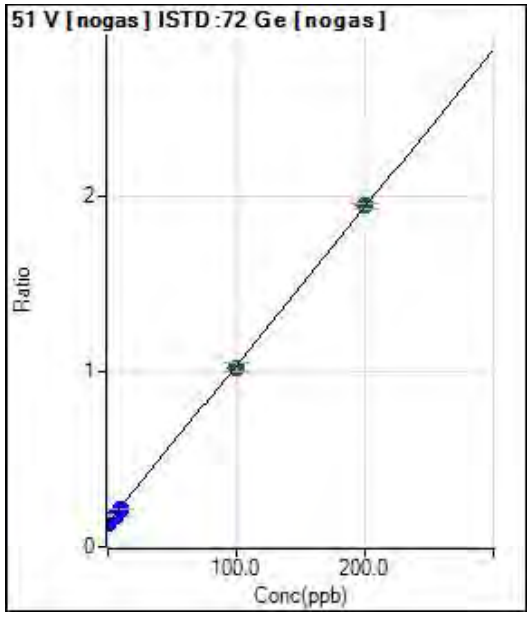


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	426.68	0.0002	P	15.4
2	☐	2.000	2.024	2873.60	0.0015	P	3.6
3	☐	5.000	4.891	6301.18	0.0034	P	6.1
4	☐	10.000	10.466	13121.55	0.0070	P	2.1
5	☐	100.000	97.092	117448.77	0.0632	P	3.1
6	☐	200.000	201.433	232674.77	0.1309	P	3.5
7	☐	1.000					

y = 6.4873E-004 * x + 2.3159E-004
R = 0.9998
DL = 0.1644
BEC = 0.357

Weight: <None>
Min Conc: <None>

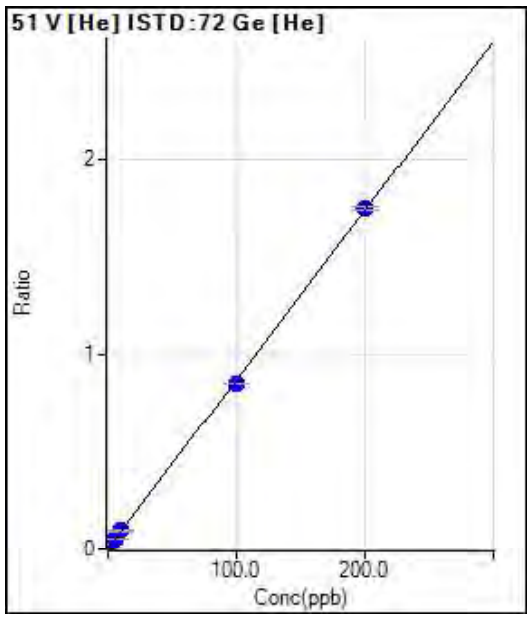
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	253776.61	0.1379	P	3.5
2	☐	2.000	1.625	283648.19	0.1525	P	4.3
3	☐	5.000	4.696	333395.58	0.1801	P	1.5
4	☐	10.000	8.968	408446.93	0.2185	P	1.5
5	☐	100.000	98.355	1898463.98	1.0223	A	5.0
6	☐	200.000	200.885	3457120.26	1.9444	A	1.9
7	☐	1.000					

y = 0.0090 * x + 0.1379
R = 1.0000
DL = 1.603
BEC = 15.33

Weight: <None>
Min Conc: <None>

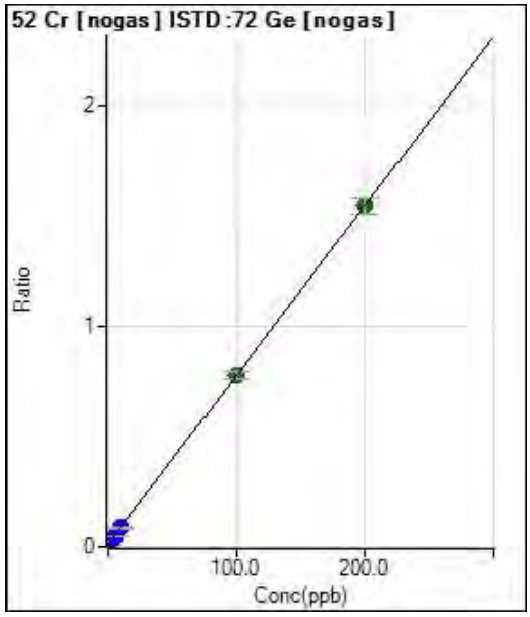


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.199	4356.52	0.0086	P	5.9
2	☐	2.000	2.223	13099.95	0.0262	P	1.8
3	☐	5.000	5.235	26432.71	0.0522	P	1.1
4	☐	10.000	10.458	49085.67	0.0975	P	0.8
5	☐	100.000	97.834	425896.09	0.8543	P	0.5
6	☐	200.000	201.052	842546.08	1.7484	P	1.1
7	☐	1.000					

y = 0.0087 * x + 0.0069
R = 0.9999
DL = 0.1768
BEC = 0.7963

Weight: <None>
Min Conc: <None>

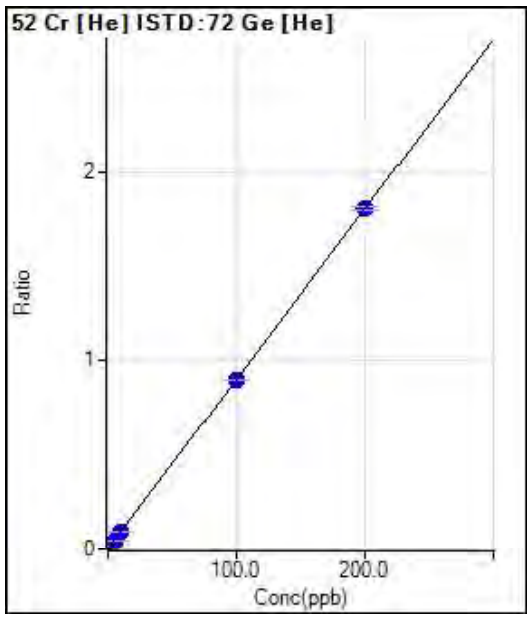
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	19844.17	0.0108	P	1.1
2	☐	2.000	1.954	48022.37	0.0258	P	3.5
3	☐	5.000	5.063	92054.04	0.0497	P	3.0
4	☐	10.000	9.910	162628.15	0.0870	P	1.9
5	☐	100.000	100.093	1450093.05	0.7808	A	4.7
6	☐	200.000	199.957	2752337.98	1.5491	A	5.0
7	☐	1.000					

y = 0.0077 * x + 0.0108
R = 1.0000
DL = 0.04649
BEC = 1.401

Weight: <None>
Min Conc: <None>

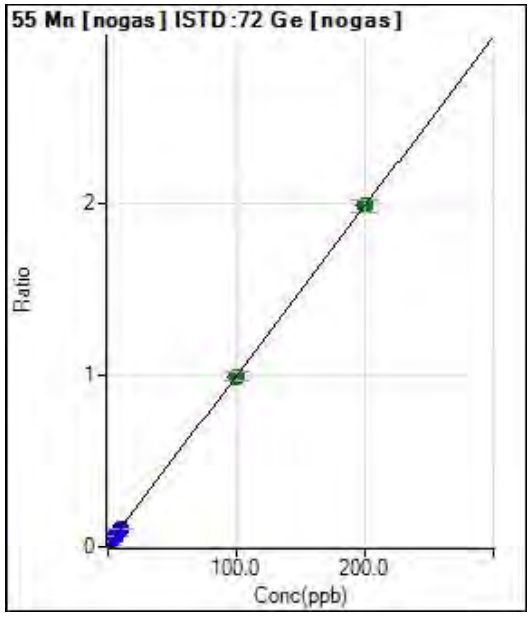


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2466.87	0.0049	P	17.6
2	☐	2.000	1.963	11286.95	0.0225	P	2.4
3	☐	5.000	4.894	24730.18	0.0489	P	4.9
4	☐	10.000	10.209	48670.69	0.0967	P	0.9
5	☐	100.000	99.592	448699.12	0.9001	P	0.8
6	☐	200.000	200.196	869549.60	1.8044	P	1.1
7	☐	1.000					

y = 0.0090 * x + 0.0049
R = 1.0000
DL = 0.2871
BEC = 0.5443

Weight: <None>
Min Conc: <None>

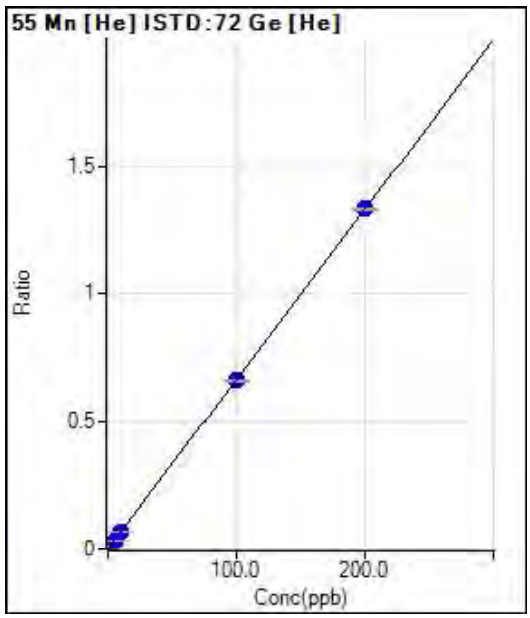
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17021.39	0.0092	P	3.1
2	☐	2.000	2.024	54346.42	0.0292	P	5.8
3	☐	5.000	5.040	109220.82	0.0590	P	1.4
4	☐	10.000	9.789	197878.11	0.1059	P	2.1
5	☐	100.000	99.692	1844803.98	0.9934	A	5.0
6	☐	200.000	200.163	3528109.74	1.9853	A	4.1
7	☐	1.000					

y = 0.0099 * x + 0.0092
R = 1.0000
DL = 0.08649
BEC = 0.9364

Weight: <None>
Min Conc: <None>

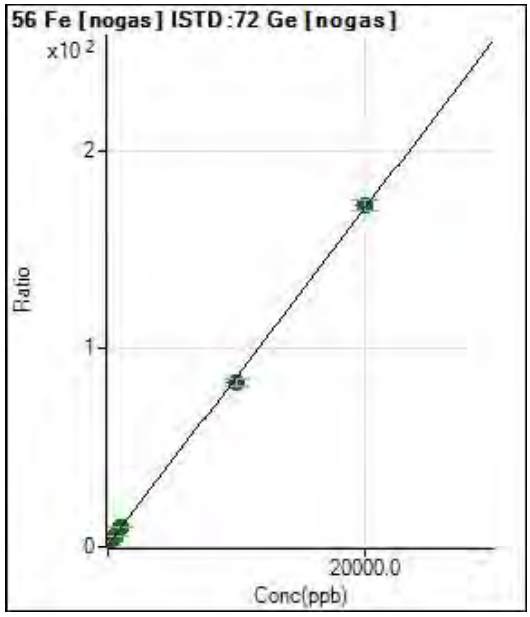


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1646.77	0.0033	P	0.5
2	☐	2.000	2.131	8715.51	0.0174	P	2.0
3	☐	5.000	5.217	19166.87	0.0379	P	1.9
4	☐	10.000	10.376	36319.21	0.0721	P	0.6
5	☐	100.000	99.180	329798.51	0.6615	P	1.2
6	☐	200.000	200.384	642493.30	1.3333	P	0.5
7	☐	1.000					

y = 0.0066 * x + 0.0033
R = 1.0000
DL = 0.007775
BEC = 0.4904

Weight: <None>
Min Conc: <None>

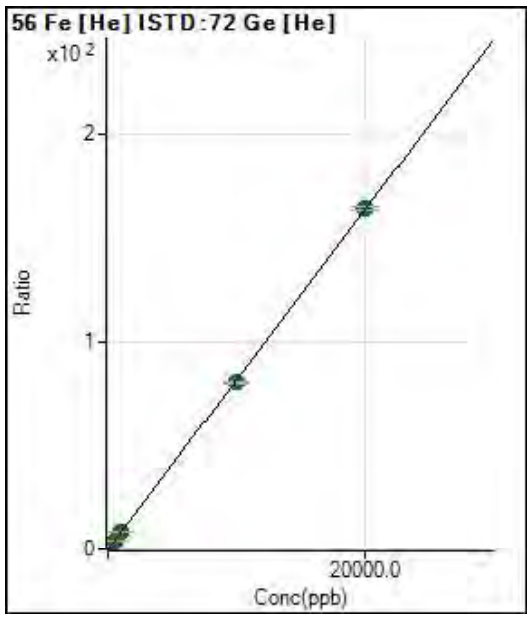
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1846429.53	1.0029	A	0.7
2	☐	200.000	199.070	5004104.93	2.6911	A	5.6
3	☐	500.000	501.724	9733786.15	5.2577	A	1.2
4	☐	1000.000	1022.790	18083082.69	9.6766	A	2.2
5	☐	10000.00	9685.627	154408361.7	83.1414	A	4.7
6	☐	20000.00	20156.013	305601598.5	171.935	A	3.2
7	☐	100.000					

y = 0.0085 * x + 1.0029
R = 0.9998
DL = 2.513
BEC = 118.3

Weight: <None>
Min Conc: <None>

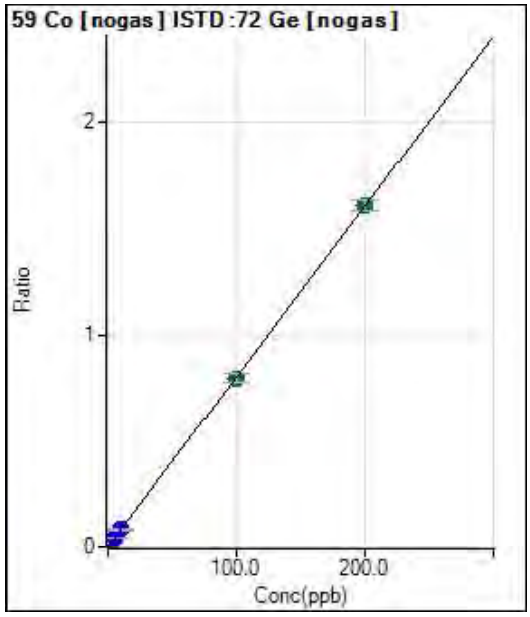


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26172.12	0.0518	P	4.4
2	☐	200.000	202.574	854520.53	1.7060	P	0.8
3	☐	500.000	529.374	2213438.35	4.3747	A	1.3
4	☐	1000.000	1075.855	4450003.79	8.8373	A	2.3
5	☐	10000.00	9845.946	40107256.07	80.4547	A	0.3
6	☐	20000.00	20072.474	79013145.49	163.965	A	1.1
7	☐	100.000					

y = 0.0082 * x + 0.0518
R = 0.9999
DL = 0.8425
BEC = 6.339

Weight: <None>
Min Conc: <None>

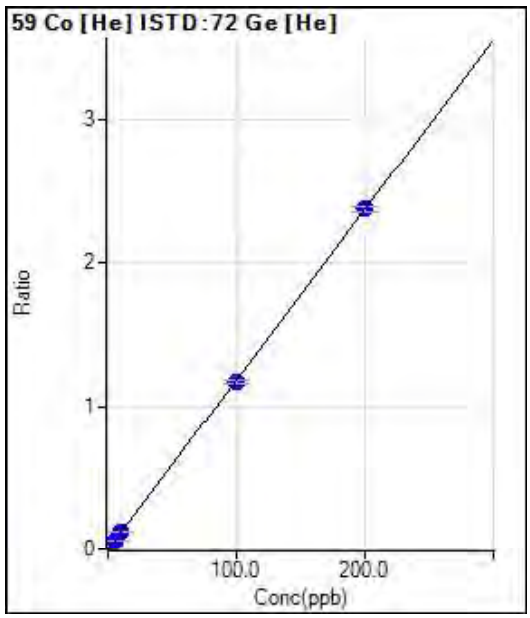
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	546.69	0.0003	P	14.3
2	☐	2.000	1.997	30338.63	0.0163	P	4.4
3	☐	5.000	5.002	74778.10	0.0404	P	1.7
4	☐	10.000	10.072	151441.55	0.0810	P	2.4
5	☐	100.000	99.248	1477820.65	0.7959	A	5.6
6	☐	200.000	200.372	2855751.63	1.6066	A	3.3
7	☐	1.000					

y = 0.0080 * x + 2.9678E-004
R = 1.0000
DL = 0.01591
BEC = 0.03702

Weight: <None>
Min Conc: <None>

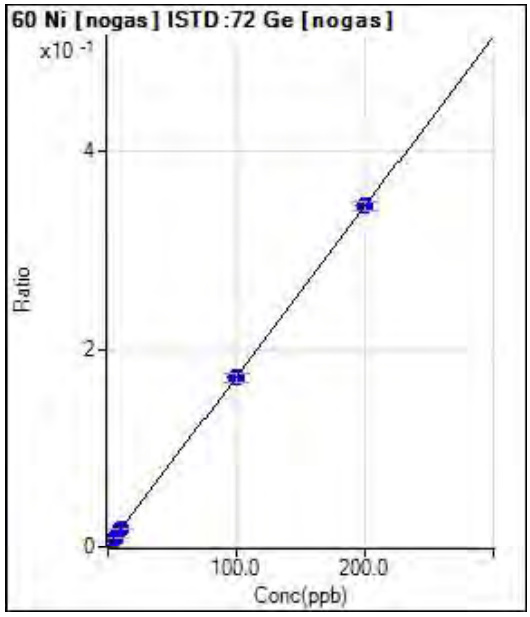


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0002	P	51.1
2	☐	2.000	2.159	12924.78	0.0258	P	6.0
3	☐	5.000	5.249	31580.69	0.0624	P	1.6
4	☐	10.000	10.556	63105.16	0.1253	P	3.4
5	☐	100.000	98.699	583220.54	1.1698	P	1.5
6	☐	200.000	200.615	1145686.67	2.3775	P	1.7
7	☐	1.000					

y = 0.0118 * x + 2.2169E-004
R = 1.0000
DL = 0.02868
BEC = 0.01871

Weight: <None>
Min Conc: <None>

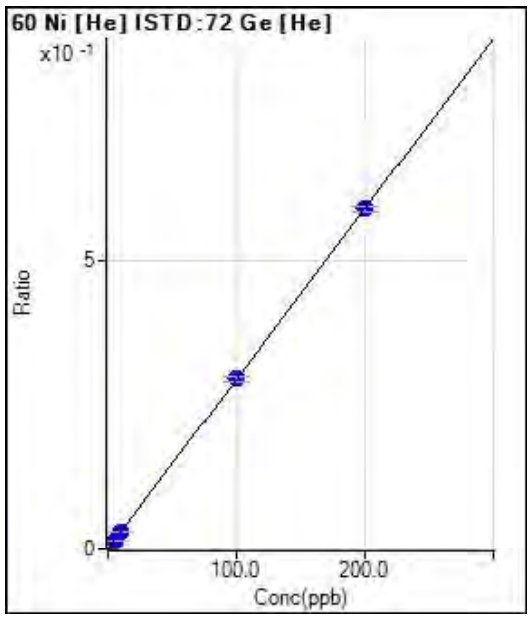
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.100	373.34	0.0002	P	16.1
2	☐	2.000	1.948	6938.10	0.0037	P	2.9
3	☐	5.000	5.186	17221.59	0.0093	P	1.6
4	☐	10.000	10.352	34004.99	0.0182	P	2.9
5	☐	100.000	99.273	318059.25	0.1713	P	5.0
6	☐	200.000	200.342	613740.76	0.3453	P	2.9
7	☐	1.000					

y = 0.0017 * x + 3.7530E-004
R = 1.0000
DL = 0.05705
BEC = 0.218

Weight: <None>
Min Conc: <None>

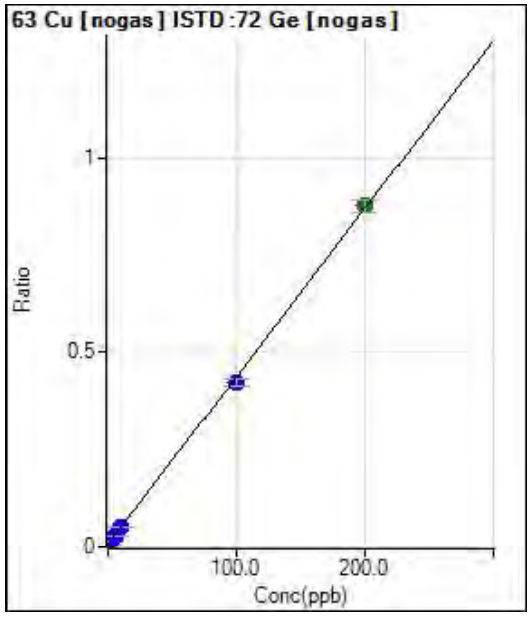


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.298	183.33	0.0004	P	3.6
2	☐	2.000	1.926	3467.04	0.0069	P	5.1
3	☐	5.000	5.084	8215.29	0.0162	P	6.5
4	☐	10.000	10.310	15937.10	0.0316	P	1.0
5	☐	100.000	99.990	147662.72	0.2962	P	2.2
6	☐	200.000	199.988	284841.21	0.5911	P	1.5
7	☐	1.000					

y = 0.0029 * x + 0.0012
R = 1.0000
DL = 0.01313
BEC = 0.4206

Weight: <None>
Min Conc: <None>

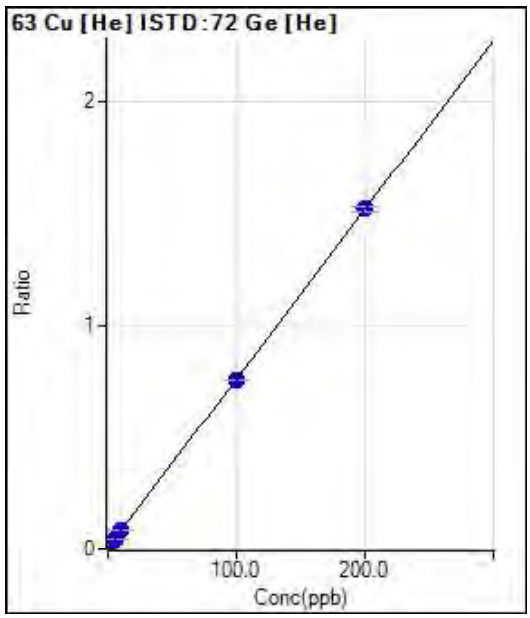
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	11510.41	0.0063	P	2.2
2	☐	2.000	1.939	27173.65	0.0146	P	5.7
3	☐	5.000	4.903	50710.04	0.0274	P	1.9
4	☐	10.000	10.112	93151.69	0.0498	P	2.9
5	☐	100.000	96.597	785171.14	0.4227	P	4.2
6	☐	200.000	201.699	1556633.73	0.8759	A	3.9
7	☐	1.000					

y = 0.0043 * x + 0.0063
R = 0.9998
DL = 0.09381
BEC = 1.45

Weight: <None>
Min Conc: <None>

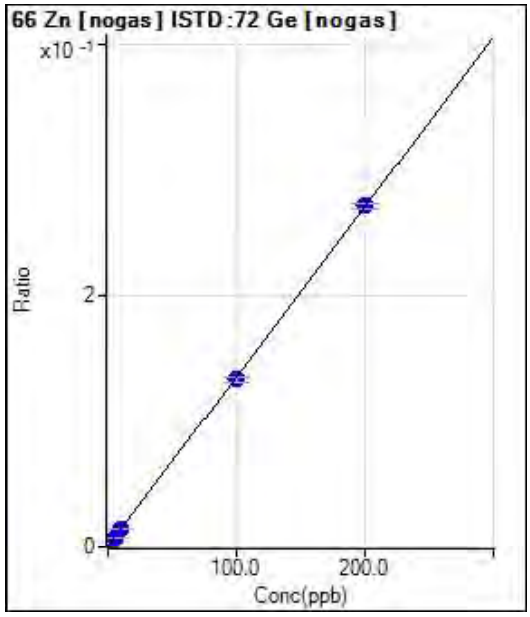


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.080	4320.58	0.0085	P	5.5
2	☐	2.000	2.117	12584.45	0.0251	P	2.7
3	☐	5.000	5.104	24129.44	0.0477	P	1.8
4	☐	10.000	10.464	44397.09	0.0882	P	1.0
5	☐	100.000	98.844	376738.28	0.7557	P	0.1
6	☐	200.000	200.551	734348.35	1.5239	P	1.8
7	☐	1.000					

y = 0.0076 * x + 0.0091
R = 1.0000
DL = 0.1853
BEC = 1.21

Weight: <None>
Min Conc: <None>

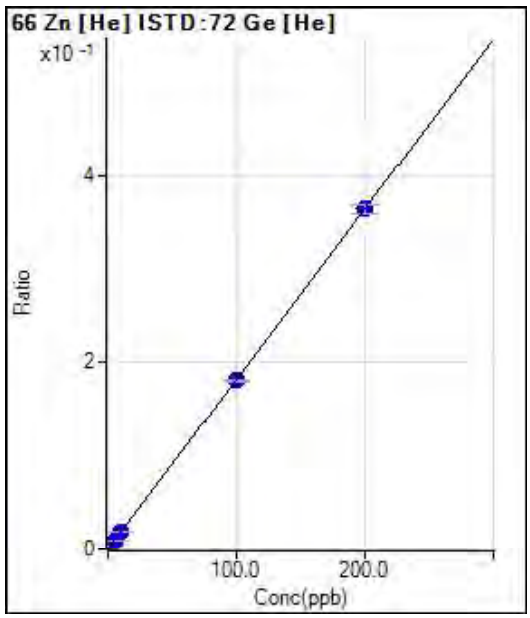
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.078	903.37	0.0005	P	11.2
2	☐	2.000	1.934	5580.94	0.0030	P	2.3
3	☐	5.000	5.225	13775.34	0.0074	P	3.9
4	☐	10.000	10.503	27240.59	0.0146	P	0.4
5	☐	100.000	98.579	248079.09	0.1335	P	3.4
6	☐	200.000	200.680	482725.45	0.2715	P	1.8
7	☐	1.000					

y = 0.0014 * x + 3.8472E-004
R = 1.0000
DL = 0.1222
BEC = 0.2848

Weight: <None>
Min Conc: <None>

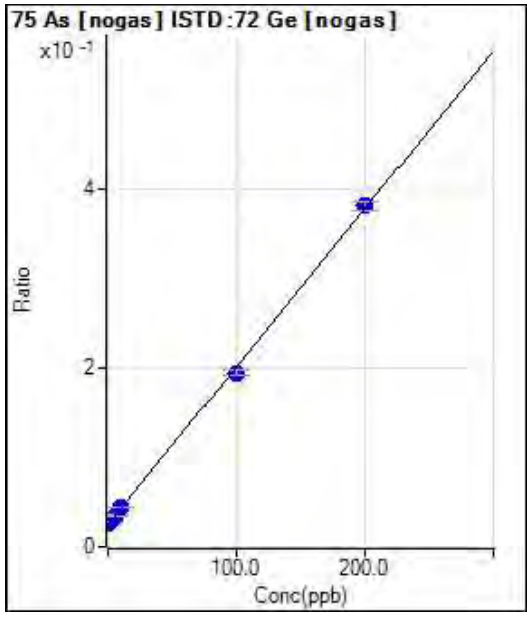


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.022	280.01	0.0006	P	19.5
2	☐	2.000	1.914	2036.81	0.0041	P	3.7
3	☐	5.000	4.964	4857.40	0.0096	P	4.8
4	☐	10.000	10.467	9862.86	0.0196	P	2.8
5	☐	100.000	99.396	90217.82	0.1810	P	1.0
6	☐	200.000	200.280	175416.66	0.3640	P	2.4
7	☐	1.000					

y = 0.0018 * x + 5.9276E-004
R = 1.0000
DL = 0.1784
BEC = 0.3267

Weight: <None>
Min Conc: <None>

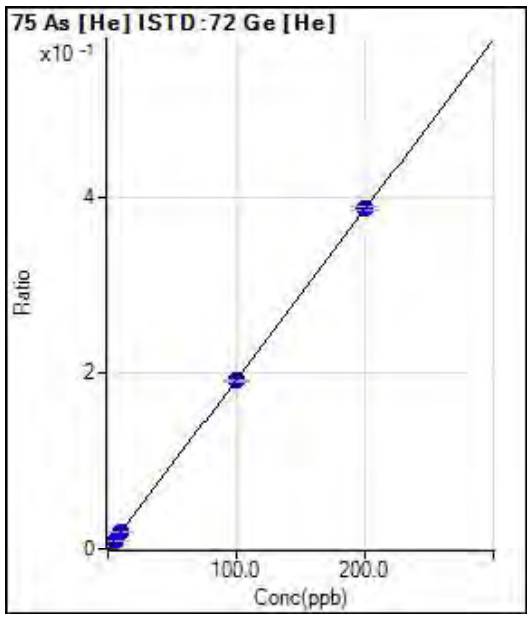
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.612	48484.72	0.0263	P	0.2
2	☐	2.000	2.241	54290.85	0.0292	P	5.7
3	☐	5.000	5.523	64741.42	0.0350	P	2.2
4	☐	10.000	10.616	82080.82	0.0439	P	2.6
5	☐	100.000	96.108	360838.72	0.1942	P	3.5
6	☐	200.000	201.900	675951.84	0.3803	P	2.8
7	☐	1.000					

y = 0.0018 * x + 0.0253
R = 0.9997
DL = 0.07825
BEC = 14.36

Weight: <None>
Min Conc: <None>

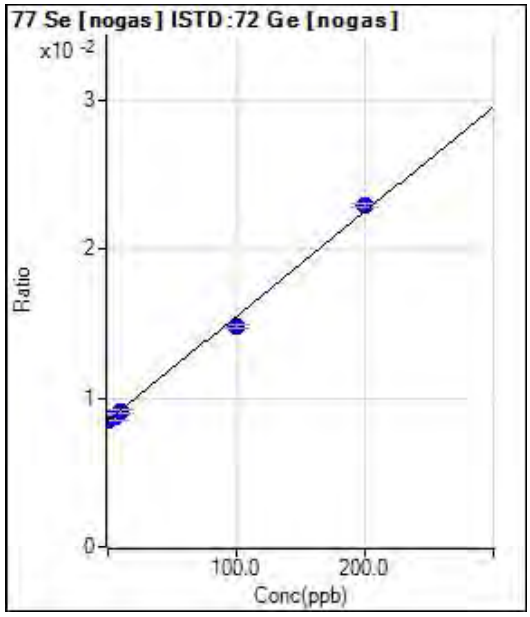


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	273.34	0.0005	P	10.4
2	☐	2.000	1.984	2183.47	0.0044	P	1.8
3	☐	5.000	5.025	5167.42	0.0102	P	5.0
4	☐	10.000	10.344	10300.73	0.0205	P	0.2
5	☐	100.000	99.208	95502.57	0.1916	P	0.4
6	☐	200.000	200.378	186187.93	0.3864	P	1.0
7	☐	1.000					

y = 0.0019 * x + 5.3930E-004
R = 1.0000
DL = 0.08714
BEC = 0.2801

Weight: <None>
Min Conc: <None>

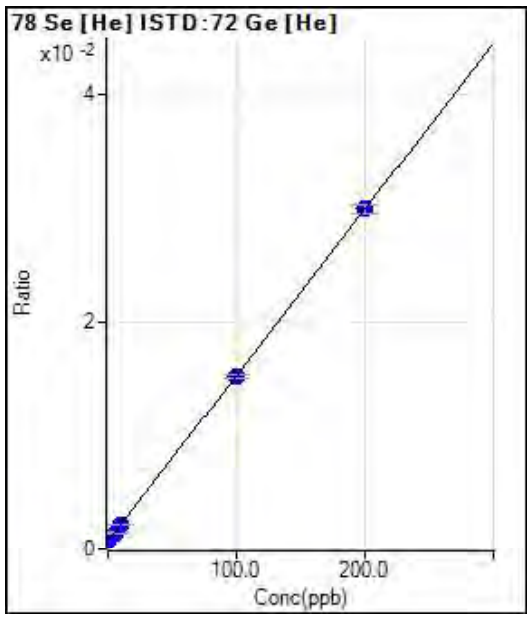
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15626.96	0.0085	P	1.6
2	☐	2.000	1.784	16023.95	0.0086	P	3.7
3	☐	5.000	3.264	16134.04	0.0087	P	4.2
4	☐	10.000	9.170	17061.56	0.0091	P	3.1
5	☐	100.000	89.467	27434.31	0.0148	P	1.5
6	☐	200.000	205.354	40695.81	0.0229	P	1.2
7	☐	1.000					

y = 7.0114E-005 * x + 0.0085
R = 0.9981
DL = 5.678
BEC = 121.1

Weight: <None>
Min Conc: <None>

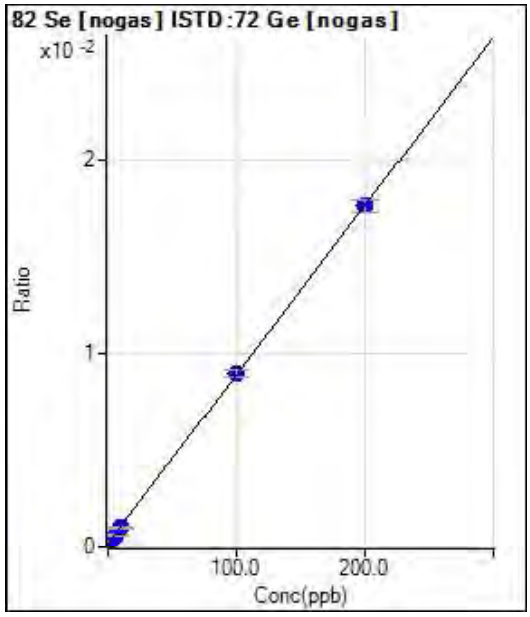


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.069	372.01	0.0007	P	0.6
2	☐	2.000	2.265	538.68	0.0011	P	0.4
3	☐	5.000	4.981	744.69	0.0015	P	9.7
4	☐	10.000	10.156	1120.70	0.0022	P	4.2
5	☐	100.000	99.353	7588.93	0.0152	P	1.2
6	☐	200.000	200.313	14424.40	0.0299	P	2.8
7	☐	1.000					

y = 1.4572E-004 * x + 7.4528E-004
R = 1.0000
DL = 0.08999
BEC = 5.115

Weight: <None>
Min Conc: <None>

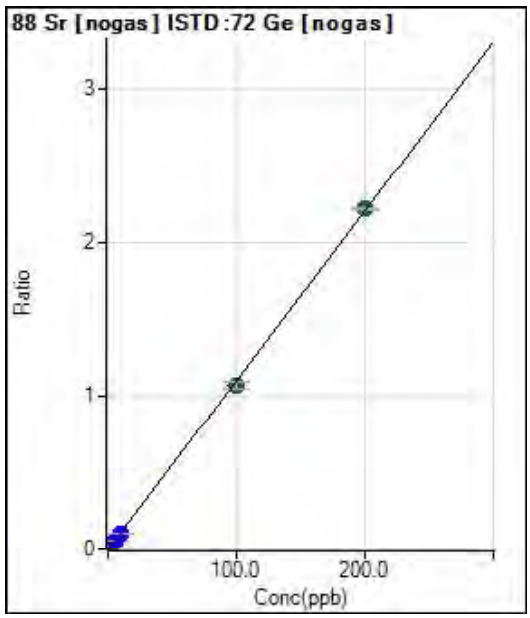
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	350.01	0.0002	P	4.4
2	☐	2.000	1.282	560.02	0.0003	P	12.9
3	☐	5.000	4.596	1093.38	0.0006	P	5.6
4	☐	10.000	9.333	1876.79	0.0010	P	6.7
5	☐	100.000	100.250	16587.83	0.0089	P	4.0
6	☐	200.000	199.926	31330.76	0.0176	P	3.5
7	☐	1.000					

y = 8.7188E-005 * x + 1.9007E-004
R = 1.0000
DL = 0.2845
BEC = 2.18

Weight: <None>
Min Conc: <None>

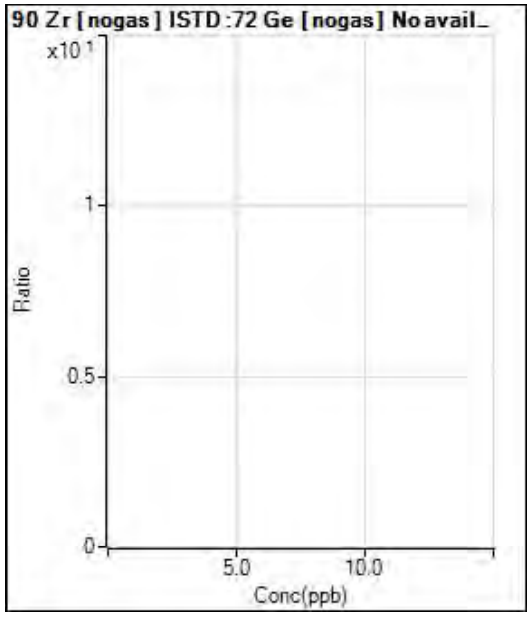


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3417.04	0.0019	P	3.3
2	☐	2.000	1.982	43974.21	0.0236	P	5.2
3	☐	5.000	4.886	102903.28	0.0556	P	3.0
4	☐	10.000	9.806	204982.04	0.1097	P	1.4
5	☐	100.000	97.083	1986576.48	1.0693	A	3.7
6	☐	200.000	201.471	3943215.57	2.2171	A	0.5
7	☐	1.000					

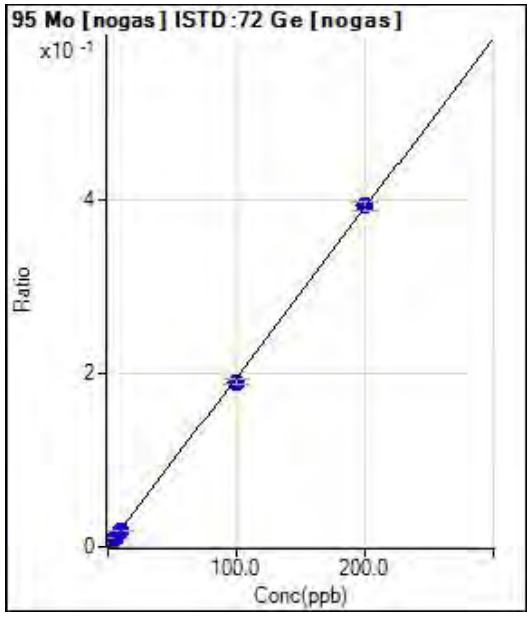
y = 0.0110 * x + 0.0019
R = 0.9999
DL = 0.01661
BEC = 0.1688

Weight: <None>
Min Conc: <None>

Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	103.33	0.0001	P	10.6
2	☐	2.000	1.955	7191.58	0.0039	P	12.7
3	☐	5.000	5.056	18393.07	0.0099	P	0.4
4	☐	10.000	9.923	36337.40	0.0194	P	2.2
5	☐	100.000	97.434	353876.73	0.1904	P	2.7
6	☐	200.000	201.286	699301.21	0.3934	P	2.4
7	☐	1.000					

y = 0.0020 * x + 5.6101E-005

R = 0.9999

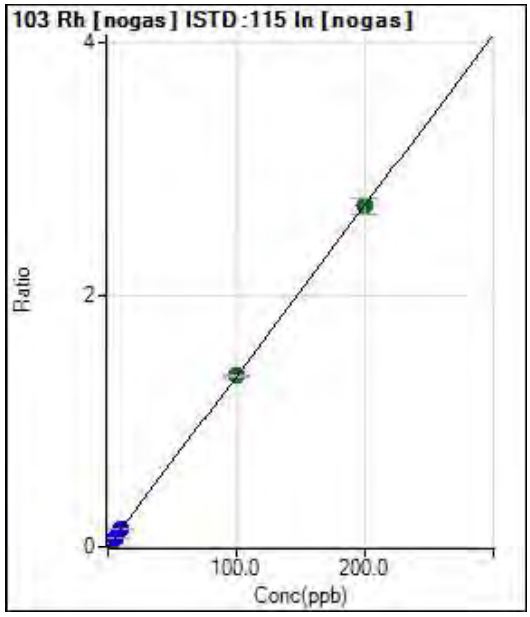
DL = 0.00913

BEC = 0.02871

Weight: <None>

Min Conc: <None>

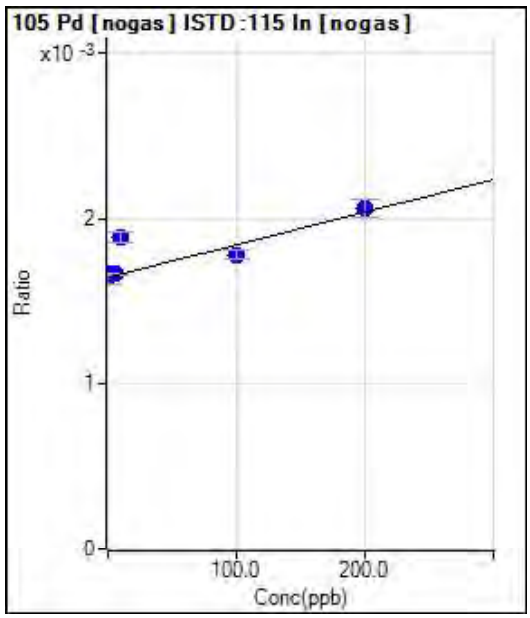
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23.33	0.0000	P	24.8
2	☐	2.000	1.982	43627.30	0.0269	P	2.5
3	☐	5.000	4.941	105405.42	0.0670	P	2.8
4	☐	10.000	10.228	215546.93	0.1387	P	1.8
5	☐	100.000	100.495	2126035.85	1.3629	A	1.0
6	☐	200.000	199.743	4144055.67	2.7089	A	4.8
7	☐	1.000					

y = 0.0136 * x + 1.3898E-005
R = 1.0000
DL = 0.0007621
BEC = 0.001025

Weight: <None>
Min Conc: <None>

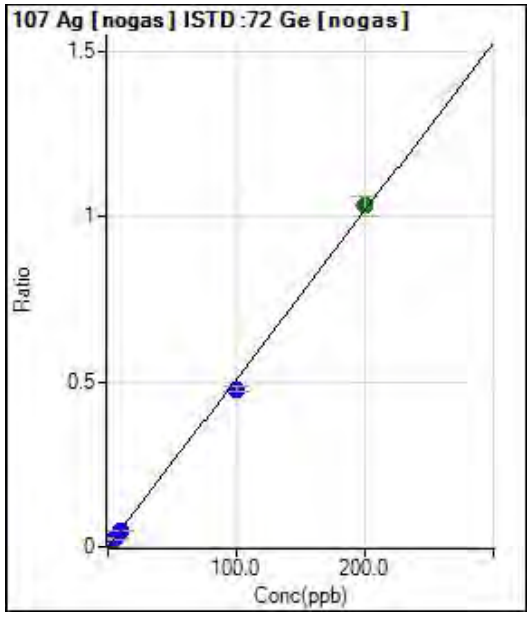


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2763.62	0.0016	P	4.6
2	☐	2.000	10.551	2703.58	0.0017	P	3.1
3	☐	5.000	9.873	2620.24	0.0017	P	0.4
4	☐	10.000	123.292	2936.96	0.0019	P	3.5
5	☐	100.000	68.868	2780.27	0.0018	P	3.2
6	☐	200.000	209.694	3150.33	0.0021	P	5.2
7	☐	1.000					

y = 1.9702E-006 * x + 0.0016
R = 0.8209
DL = 116.5
BEC = 835.5

Weight: <None>
Min Conc: <None>

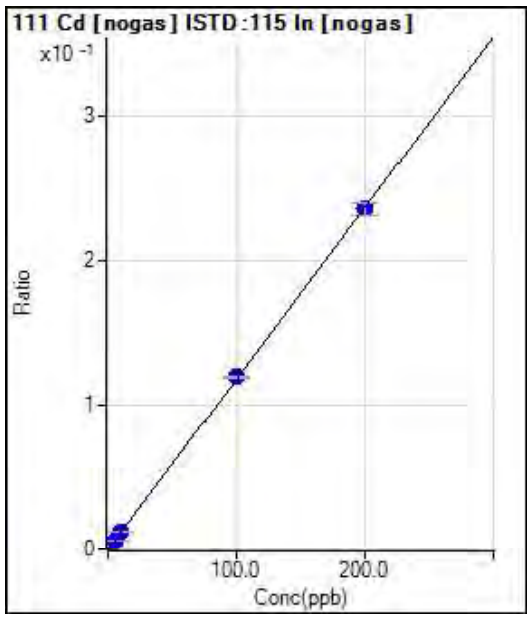
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.00	0.0000	P	43.2
2	☐	2.000	1.978	18750.21	0.0101	P	5.8
3	☐	5.000	4.893	46113.84	0.0249	P	2.4
4	☐	10.000	9.941	94522.16	0.0506	P	1.0
5	☐	100.000	93.992	887975.20	0.4780	P	3.2
6	☐	200.000	203.010	1833963.36	1.0324	A	5.7
7	☐	1.000					

y = 0.0051 * x + 2.1719E-005
R = 0.9994
DL = 0.005532
BEC = 0.004271

Weight: <None>
Min Conc: <None>

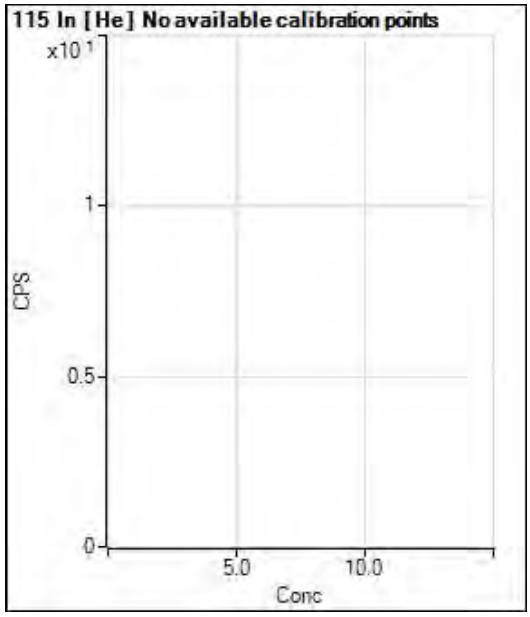


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	33.6
2	☐	2.000	2.071	4003.85	0.0025	P	3.6
3	☐	5.000	4.859	9075.84	0.0058	P	4.4
4	☐	10.000	10.705	19704.59	0.0127	P	4.8
5	☐	100.000	101.041	186562.68	0.1196	P	1.9
6	☐	200.000	199.447	361251.92	0.2361	P	4.0
7	☐	1.000					

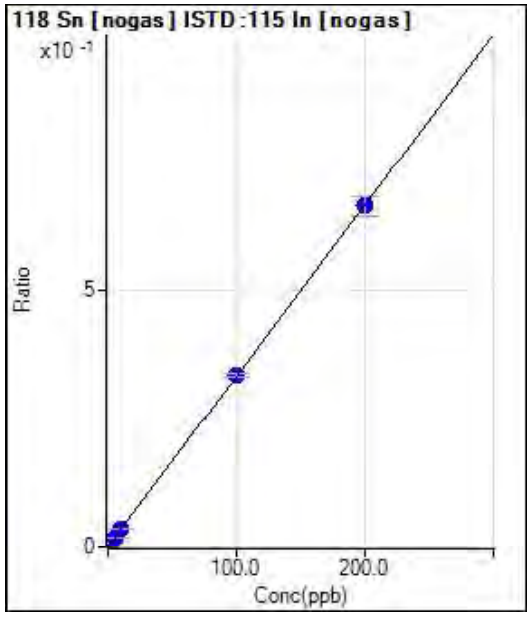
y = 0.0012 * x + 1.7875E-005
R = 1.0000
DL = 0.01521
BEC = 0.0151

Weight: <None>
Min Conc: <None>

Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			597177.18		P	0.7
2	☐			582896.43		P	2.1
3	☐			591999.06		P	0.7
4	☐			584705.73		P	0.7
5	☐			573572.51		P	1.7
6	☐			553200.95		P	0.7
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	663.36	0.0004	P	9.5
2	☐	2.000	1.955	11153.76	0.0069	P	6.0
3	☐	5.000	4.907	26213.18	0.0167	P	4.1
4	☐	10.000	10.498	54682.42	0.0352	P	1.9
5	☐	100.000	100.503	520201.63	0.3335	P	1.7
6	☐	200.000	199.726	1012998.40	0.6624	P	5.6
7	☐	1.000					

y = 0.0033 * x + 3.9507E-004

R = 1.0000

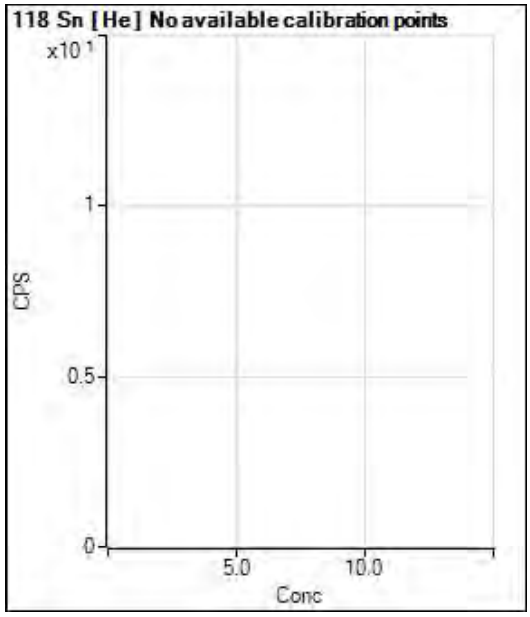
DL = 0.03415

BEC = 0.1192

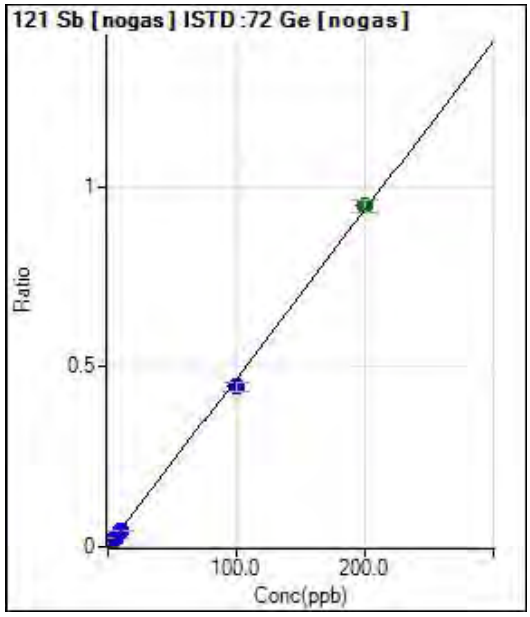
Weight: <None>

Min Conc: <None>

Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			326.68		P	4.7
2	☐			4740.71		P	7.2
3	☐			11510.65		P	2.0
4	☐			23702.99		P	3.0
5	☐			222327.43		P	1.5
6	☐			435440.23		P	1.7
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	526.68	0.0003	P	10.8
2	☐	2.000	2.009	18026.12	0.0097	P	4.1
3	☐	5.000	5.029	44096.10	0.0238	P	3.1
4	☐	10.000	9.971	87732.34	0.0469	P	2.4
5	☐	100.000	95.040	826581.34	0.4451	P	4.7
6	☐	200.000	202.481	1684566.64	0.9479	A	3.9
7	☐	1.000					

y = 0.0047 * x + 2.8609E-004

R = 0.9996

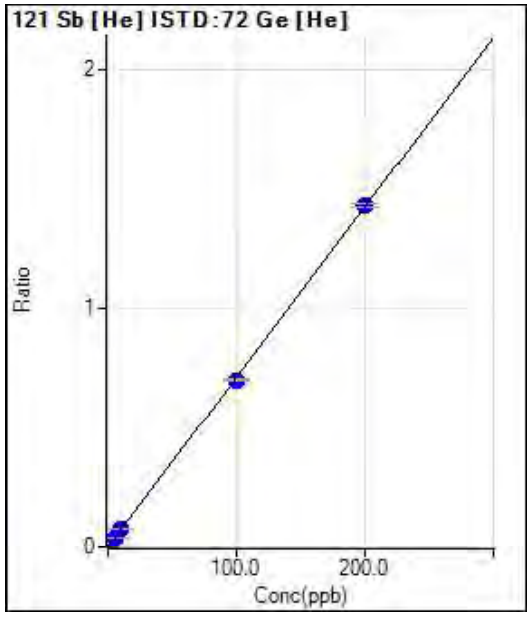
DL = 0.01989

BEC = 0.06113

Weight: <None>

Min Conc: <None>

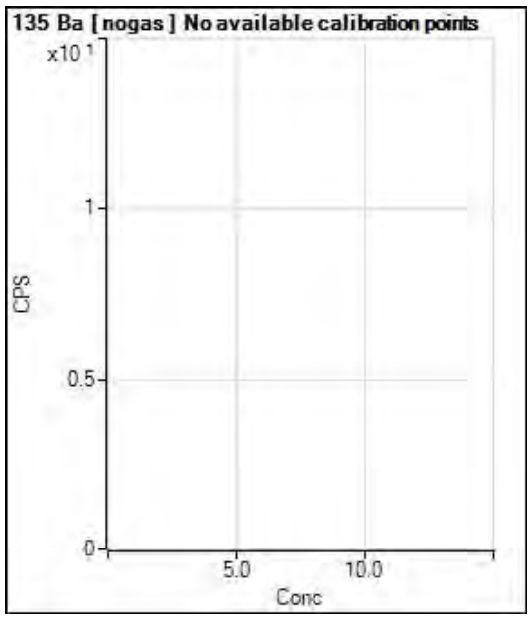
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	176.67	0.0003	P	13.9
2	☐	2.000	1.979	7228.32	0.0144	P	7.4
3	☐	5.000	5.081	18476.68	0.0365	P	2.1
4	☐	10.000	10.321	37163.05	0.0738	P	2.1
5	☐	100.000	98.232	348686.37	0.6995	P	1.6
6	☐	200.000	200.866	689129.23	1.4301	P	1.2
7	☐	1.000					

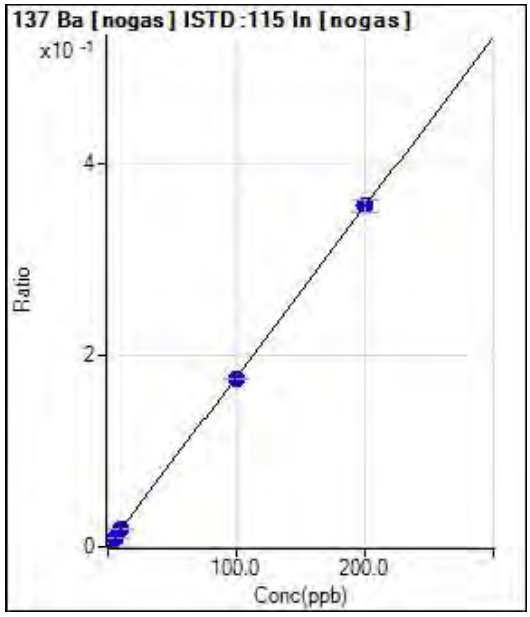
y = 0.0071 * x + 3.4918E-004
R = 0.9999
DL = 0.02045
BEC = 0.04906

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			200.01		P	20.0
2	☐			3353.72		P	3.8
3	☐			8548.90		P	3.5
4	☐			16758.40		P	4.8
5	☐			156312.84		P	0.9
6	☐			306570.25		P	0.6
7	☐						

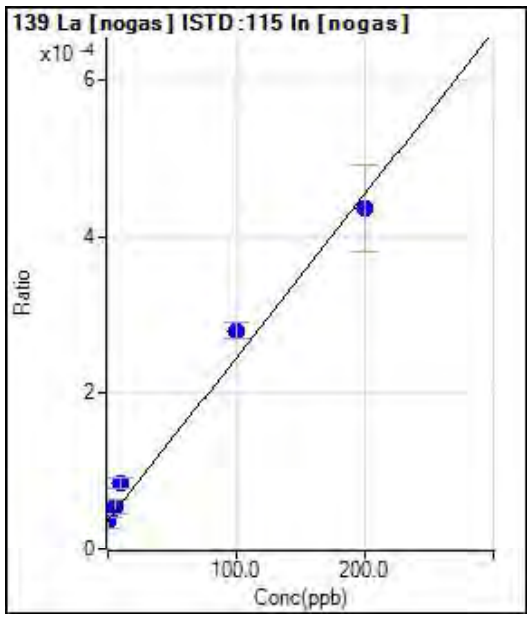
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	333.34	0.0002	P	1.8
2	☐	2.000	1.906	5807.73	0.0036	P	2.8
3	☐	5.000	5.006	14282.76	0.0091	P	5.4
4	☐	10.000	10.241	28537.23	0.0184	P	2.5
5	☐	100.000	98.861	273933.46	0.1756	P	0.9
6	☐	200.000	200.558	544762.31	0.3560	P	4.0
7	☐	1.000					

y = 0.0018 * x + 1.9853E-004
R = 1.0000
DL = 0.006109
BEC = 0.1119

Weight: <None>
Min Conc: <None>

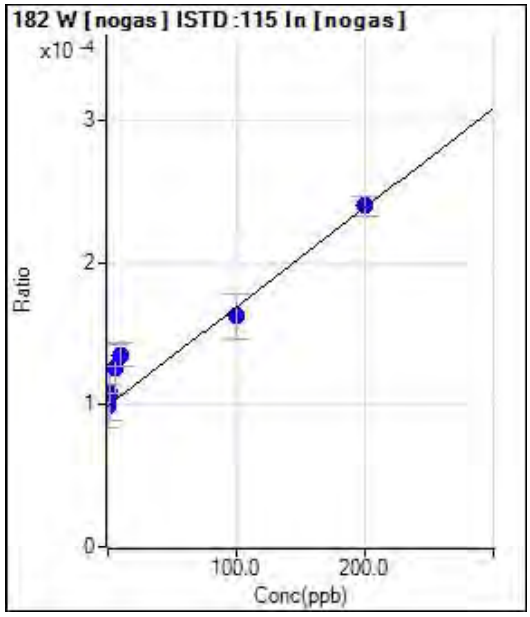


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	63.33	0.0000	P	50.8
2	☐	2.000	4.590	76.67	0.0000	P	20.0
3	☐	5.000	8.387	86.67	0.0001	P	34.0
4	☐	10.000	22.994	133.33	0.0001	P	16.7
5	☐	100.000	116.386	436.68	0.0003	P	7.6
6	☐	200.000	191.047	666.69	0.0004	P	25.6
7	☐	1.000					

y = 2.0818E-006 * x + 3.7716E-005
R = 0.9942
DL = 27.6
BEC = 18.12

Weight: <None>
Min Conc: <None>

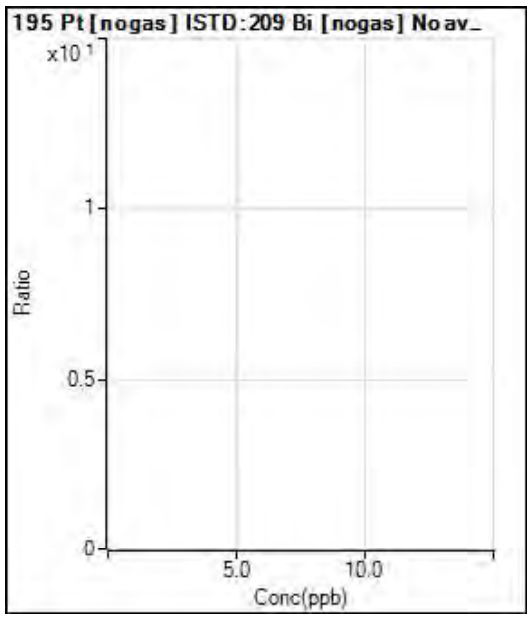
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	166.67	0.0001	P	30.4
2	☐	2.000	13.539	176.67	0.0001	P	36.9
3	☐	5.000	37.735	196.67	0.0001	P	27.8
4	☐	10.000	51.551	210.00	0.0001	P	12.5
5	☐	100.000	90.729	253.34	0.0002	P	19.6
6	☐	200.000	201.624	366.68	0.0002	P	6.0
7	☐	1.000					

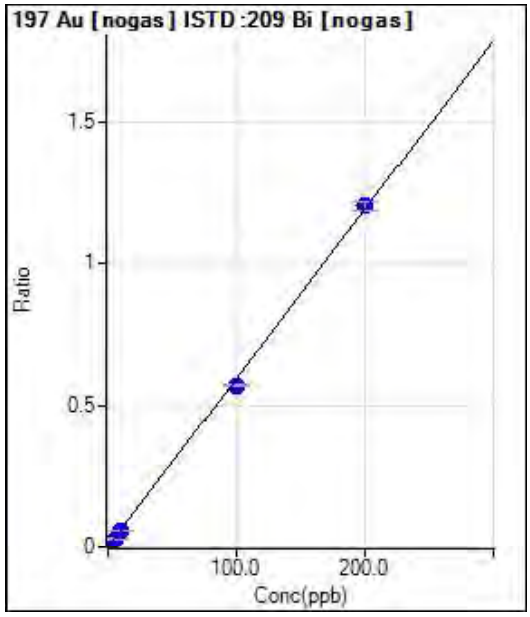
y = 6.9727E-007 * x + 9.9182E-005
R = 0.9721
DL = 129.9
BEC = 142.2

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

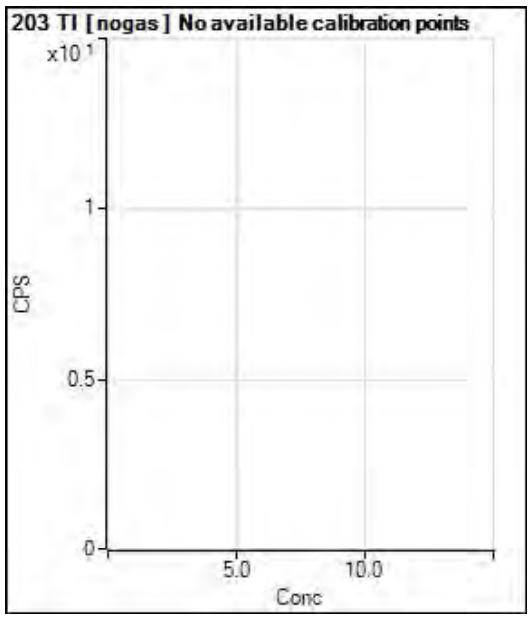
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	463.35	0.0004	P	17.1
2	☐	2.000	1.754	12004.57	0.0108	P	2.7
3	☐	5.000	4.721	31023.17	0.0285	P	7.0
4	☐	10.000	9.854	65189.47	0.0590	P	2.2
5	☐	100.000	95.717	615265.87	0.5692	P	0.7
6	☐	200.000	202.158	1259276.34	1.2017	P	2.3
7	☐	1.000					

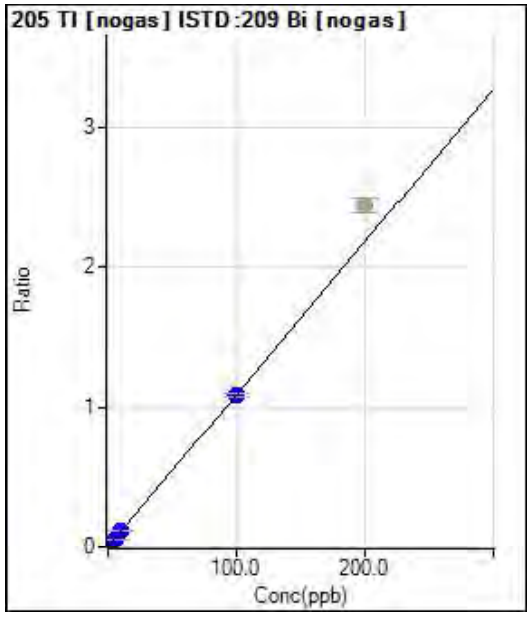
y = 0.0059 * x + 4.2689E-004
R = 0.9997
DL = 0.03679
BEC = 0.07184

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			43.33		P	87.4
2	☐			9916.49		P	4.0
3	☐			25500.20		P	1.6
4	☐			51147.21		P	3.7
5	☐			494707.08		P	0.5
6	☐			991810.19		P	0.7
7	☐						

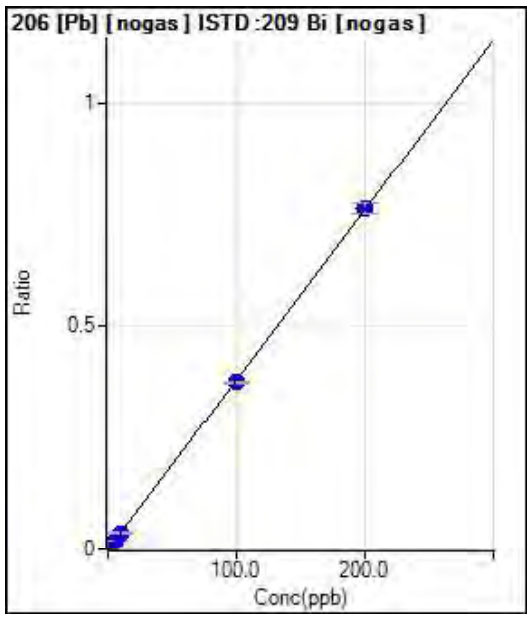
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	80.00	0.0001	P	42.8
2	☐	2.000	1.907	23096.55	0.0209	P	3.4
3	☐	5.000	5.084	60526.46	0.0555	P	4.9
4	☐	10.000	10.199	123069.65	0.1114	P	2.0
5	☐	100.000	99.978	1179172.15	1.0909	P	2.1
6	☑	200.000		2555178.66	2.4391	A	4.4
7	☐	1.000					

y = 0.0109 * x + 7.2831E-005
R = 1.0000
DL = 0.008565
BEC = 0.006675

Weight: <None>
Min Conc: <None>

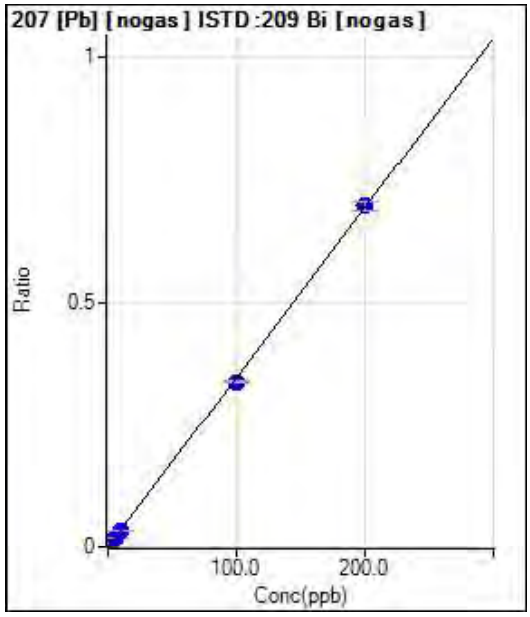


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	60.00	0.0001	P	19.8
2	☐	2.000	2.026	8589.07	0.0078	P	5.1
3	☐	5.000	5.094	21174.10	0.0194	P	6.9
4	☐	10.000	9.992	42084.81	0.0381	P	2.3
5	☐	100.000	98.626	405710.65	0.3753	P	1.1
6	☐	200.000	200.685	800143.97	0.7637	P	3.2
7	☐	1.000					

y = 0.0038 * x + 5.5301E-005
R = 1.0000
DL = 0.008621
BEC = 0.01453

Weight: <None>
Min Conc: <None>

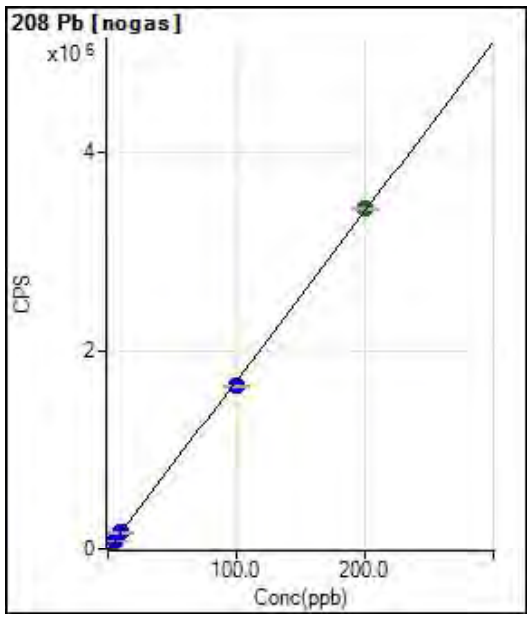
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	83.33	0.0001	P	40.2
2	☐	2.000	2.060	7965.47	0.0072	P	8.6
3	☐	5.000	4.946	18741.01	0.0172	P	3.0
4	☐	10.000	10.009	38365.53	0.0347	P	0.4
5	☐	100.000	97.463	364615.89	0.3373	P	1.5
6	☐	200.000	201.269	729839.49	0.6965	P	2.3
7	☐	1.000					

y = 0.0035 * x + 7.6869E-005
R = 0.9999
DL = 0.02681
BEC = 0.02222

Weight: <None>
Min Conc: <None>

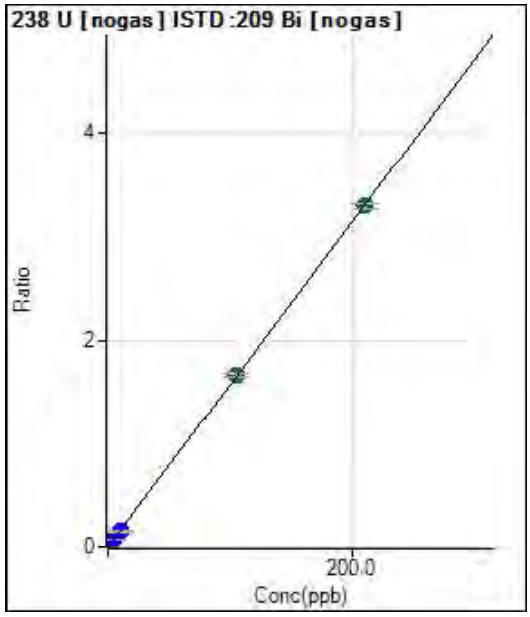


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	246.67		P	22.3
2	☐	2.000	2.025	34728.28		P	2.5
3	☐	5.000	4.953	84587.18		P	1.1
4	☐	10.000	10.190	173764.19		P	1.6
5	☐	100.000	96.959	1651280.41		P	1.4
6	☐	200.000	201.512	3431631.72		A	0.7
7	☐	1.000					

y = 17028.1918 * x + 246.6667
R = 0.9998
DL = 0.009703
BEC = 0.01449

Weight: <None>
Min Conc: <None>

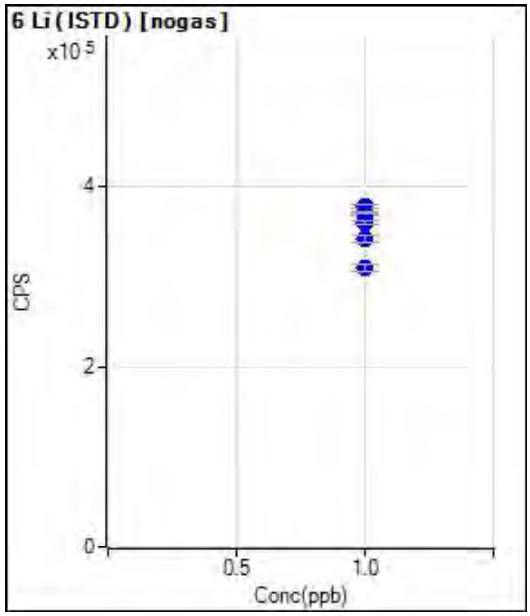
Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53.33	0.0000	P	12.5
2	☐	2.000	1.850	32306.68	0.0292	P	4.3
3	☐	5.000	4.791	82269.43	0.0755	P	6.5
4	☐	10.000	9.593	167031.23	0.1511	P	4.0
5	☐	105.000	105.820	1801761.12	1.6669	A	1.7
6	☐	210.000	209.616	3461923.80	3.3019	A	1.6
7	☐	1.000					

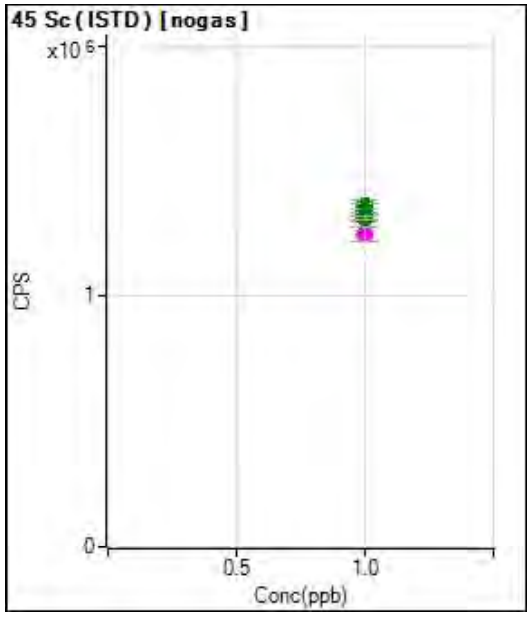
y = 0.0158 * x + 4.9022E-005
R = 1.0000
DL = 0.001168
BEC = 0.003112

Weight: <None>
Min Conc: <None>

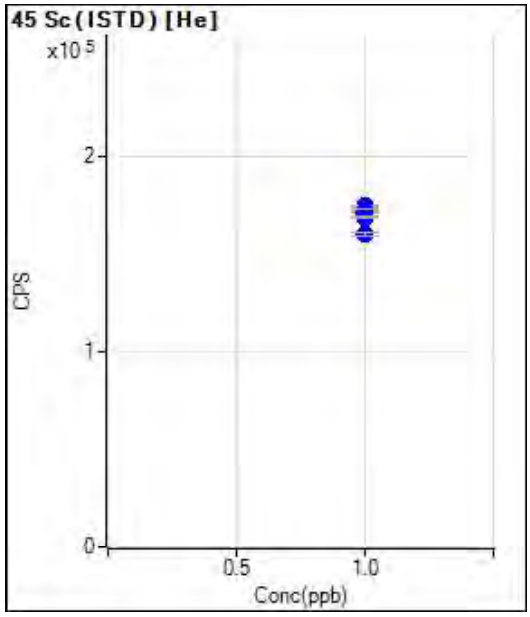


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		377818.86		P	0.9
2	☐	1.000		370471.54		P	1.2
3	☐	1.000		371446.03		P	0.4
4	☐	1.000		360468.53		P	1.5
5	☐	1.000		342609.65		P	2.1
6	☐	1.000		310125.44		P	2.5
7	☐	1.000					

Calibration for 015_ICV.d

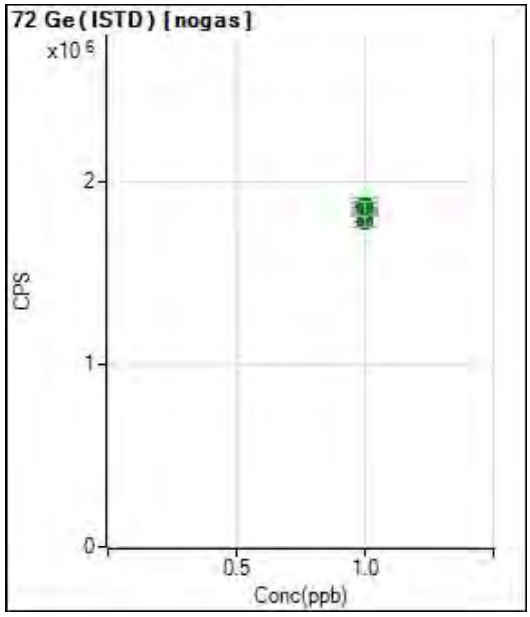


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1362034.93		A	3.9
2	☐	1.000		1360085.81		A	1.8
3	☐	1.000		1341601.23		A	1.5
4	☐	1.000		1318535.58		A	2.6
5	☐	1.000		1313508.86		A	0.6
6	☐	1.000		1247905.58		M	4.9
7	☐	1.000					

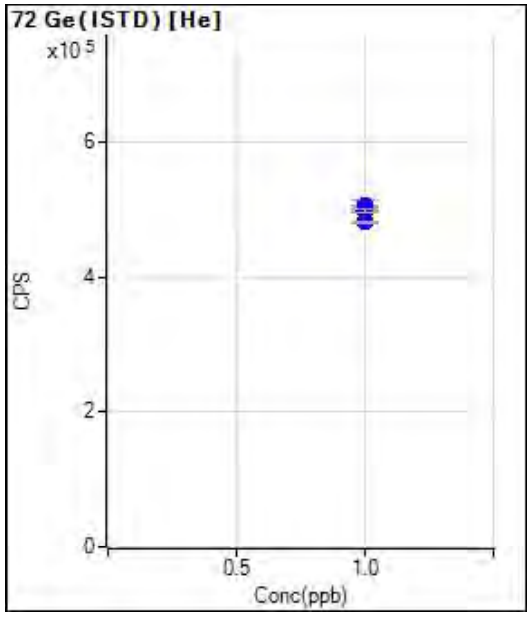


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		170223.21		P	1.5
2	☐	1.000		174804.45		P	0.6
3	☐	1.000		172102.04		P	0.3
4	☐	1.000		171510.32		P	2.1
5	☐	1.000		168990.06		P	1.0
6	☐	1.000		160282.29		P	1.0
7	☐	1.000					

Calibration for 015_ICV.d

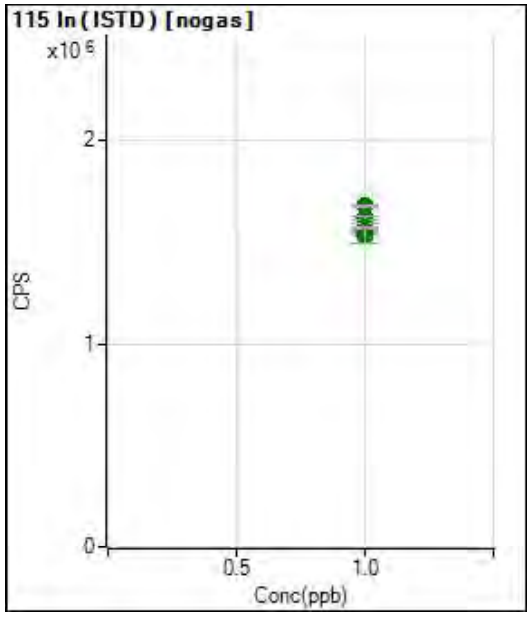


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1841116.53		A	0.7
2	☐	1.000		1862702.94		A	4.8
3	☐	1.000		1851450.02		A	1.0
4	☐	1.000		1869226.43		A	1.9
5	☐	1.000		1859109.97		A	3.5
6	☐	1.000		1778673.25		A	3.3
7	☐	1.000					

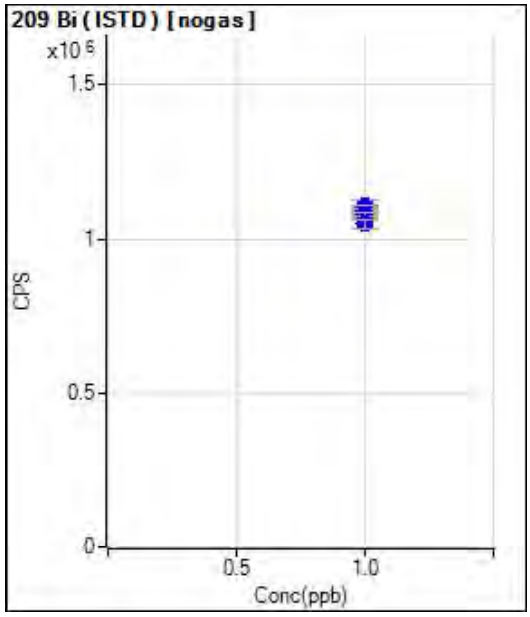


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		506025.41		P	3.0
2	☐	1.000		500910.80		P	0.8
3	☐	1.000		505991.47		P	0.8
4	☐	1.000		503545.17		P	0.8
5	☐	1.000		498514.95		P	1.2
6	☐	1.000		481895.23		P	0.3
7	☐	1.000					

Calibration for 015_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1679059.18		A	0.4
2	☐	1.000		1622175.28		A	1.1
3	☐	1.000		1573222.26		A	2.1
4	☐	1.000		1554160.93		A	2.2
5	☐	1.000		1560102.94		A	1.5
6	☐	1.000		1532183.63		A	4.9
7	☐	1.000					



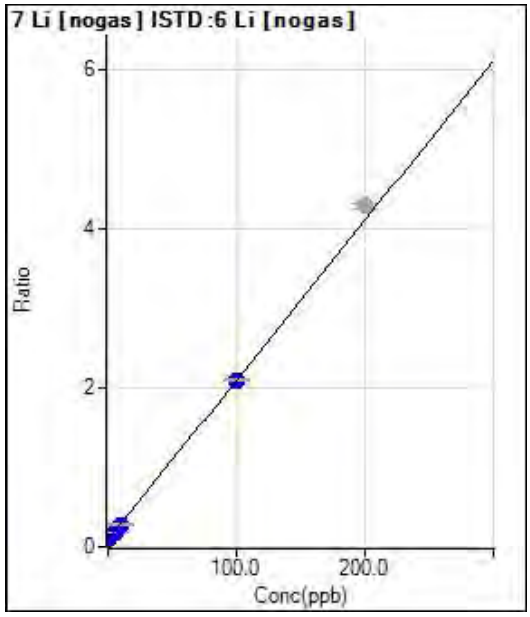
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1089822.40		P	3.6
2	☐	1.000		1107082.69		P	3.2
3	☐	1.000		1090455.64		P	2.3
4	☐	1.000		1105379.39		P	1.1
5	☐	1.000		1080957.74		P	0.9
6	☐	1.000		1048235.77		P	2.4
7	☐	1.000					

Calibration for 049_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\060818B.b\
Analysis File: 060818B.batch.bin
DA Date-Time: 2018-06-08 20:30:01
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	042CALB.d	CAL BLK	2018-06-08 16:16:19
2	043CALS.d	2/10/200	2018-06-08 16:18:18
3	044CALS.d	5/25/500	2018-06-08 16:20:18
4	045CALS.d	10/50/1000	2018-06-08 16:22:17
5	046CALS.d	100/500/10K	2018-06-08 16:24:15
6	047CALS.d	200/1000/20K	2018-06-08 16:26:11
7			

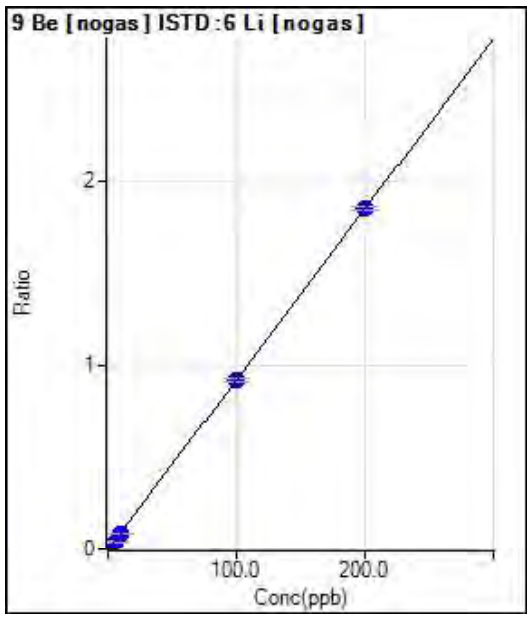
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37092.97	0.0879	P	2.8
2	☐	2.000	1.967	51272.00	0.1274	P	0.3
3	☐	5.000	4.841	75762.99	0.1852	P	1.6
4	☐	10.000	9.739	118311.47	0.2836	P	2.5
5	☐	100.000	100.035	811637.15	2.0983	P	1.0
6	☑	200.000		1567083.99	4.2918	A	1.7
7	☐	1.000					

y = 0.0201 * x + 0.0879
R = 1.0000
DL = 0.3733
BEC = 4.373

Weight: <None>
Min Conc: <None>

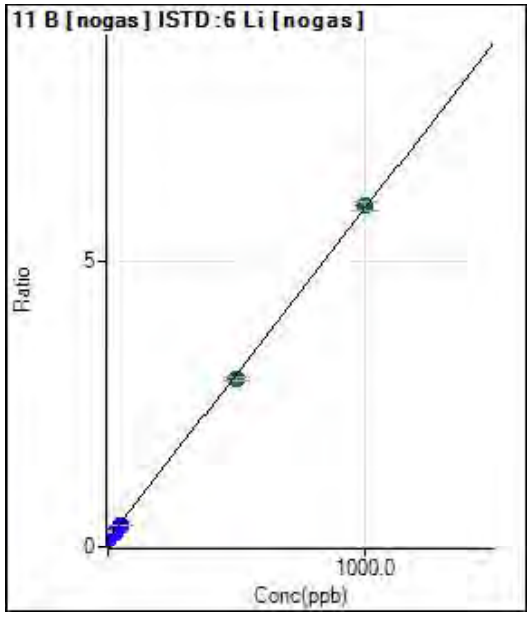


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.00	0.0001	P	66.6
2	☐	2.000	1.877	7008.09	0.0174	P	1.7
3	☐	5.000	4.735	17905.31	0.0438	P	5.8
4	☐	10.000	9.577	36902.85	0.0885	P	4.2
5	☐	100.000	99.616	355636.91	0.9194	P	1.5
6	☐	200.000	200.221	674731.45	1.8478	P	1.0
7	☐	1.000					

y = 0.0092 * x + 9.4867E-005
R = 1.0000
DL = 0.02055
BEC = 0.01028

Weight: <None>
Min Conc: <None>

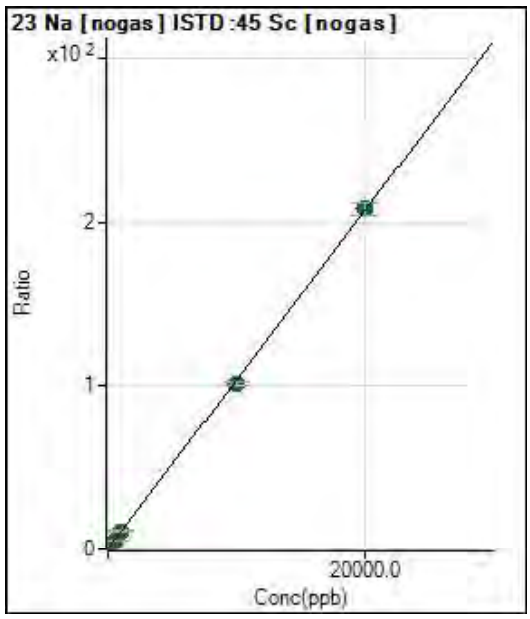
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	57346.28	0.1359	P	1.7
2	☐	10.000	10.634	79301.21	0.1972	P	4.9
3	☐	25.000	22.523	108707.87	0.2658	P	4.2
4	☐	50.000	43.702	161879.52	0.3881	P	2.3
5	☐	500.000	483.724	1132062.93	2.9274	A	2.6
6	☐	1000.000	1008.509	2174472.94	5.9559	A	2.5
7	☐	5.000					

y = 0.0058 * x + 0.1359
R = 0.9998
DL = 1.231
BEC = 23.54

Weight: <None>
Min Conc: <None>

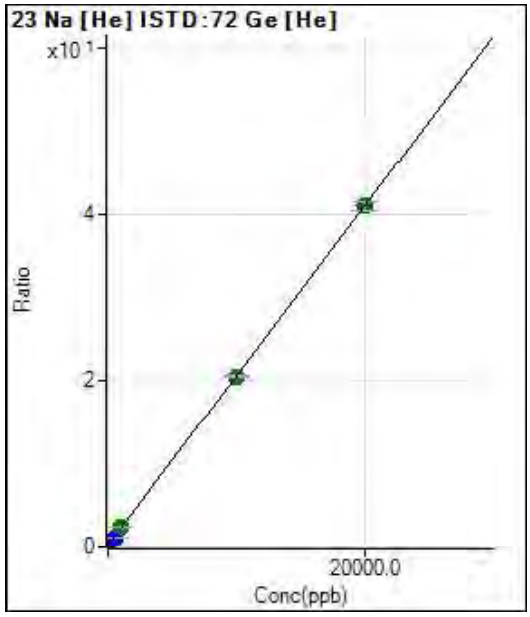


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	829764.47	0.5653	P	3.9
2	☐	200.000	200.964	4001469.36	2.6407	A	1.3
3	☐	500.000	508.618	8694095.24	5.8180	A	2.8
4	☐	1000.000	1055.042	16311306.61	11.4611	A	5.5
5	☐	10000.00	9768.466	147737528.3	101.448	A	2.4
6	☐	20000.00	20112.790	287836989.7	208.277	A	3.4
7	☐	100.000					

y = 0.0103 * x + 0.5653
R = 0.9999
DL = 6.381
BEC = 54.74

Weight: <None>
Min Conc: <None>

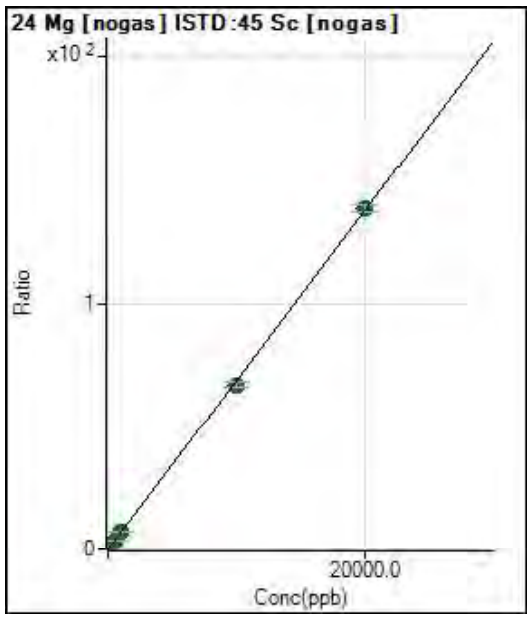
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	96395.66	0.1722	P	3.5
2	☐	200.000	203.839	330221.60	0.5883	P	0.7
3	☐	500.000	494.523	676743.04	1.1818	P	0.7
4	☐	1000.000	1092.658	1315191.83	2.4031	A	0.3
5	☐	10000.00	9971.418	11059194.42	20.5308	A	1.4
6	☐	20000.00	20009.757	21426795.93	41.0261	A	2.4
7	☐	100.000					

y = 0.0020 * x + 0.1722
R = 1.0000
DL = 8.734
BEC = 84.33

Weight: <None>
Min Conc: <None>

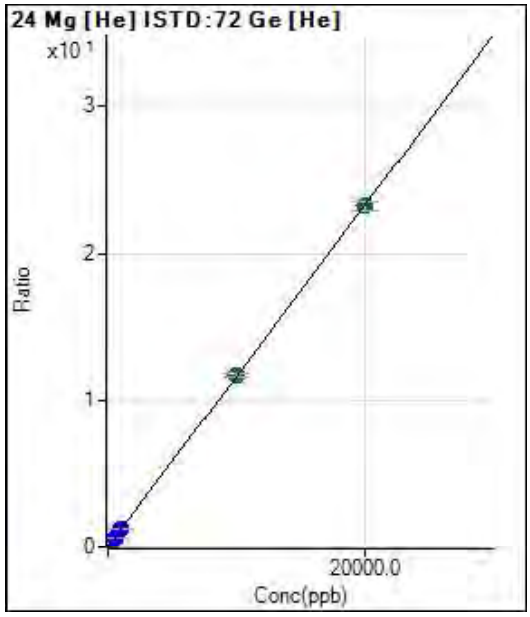


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20847.17	0.0142	P	4.2
2	☐	200.000	206.149	2167702.52	1.4303	A	0.7
3	☐	500.000	518.883	5347474.21	3.5787	A	1.7
4	☐	1000.000	1081.061	10595366.90	7.4406	A	3.0
5	☐	10000.00	9733.648	97374516.76	66.8803	A	3.7
6	☐	20000.00	20128.590	191147312.6	138.289	A	2.0
7	☐	100.000					

y = 0.0069 * x + 0.0142
R = 0.9999
DL = 0.2626
BEC = 2.065

Weight: <None>
Min Conc: <None>

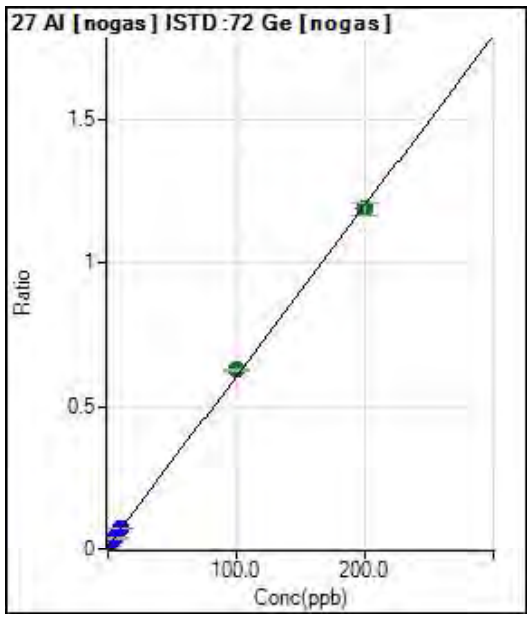
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1596.76	0.0029	P	3.8
2	☐	200.000	203.494	134399.91	0.2395	P	1.2
3	☐	500.000	492.373	329484.12	0.5754	P	1.9
4	☐	1000.000	1050.124	669824.05	1.2239	P	0.9
5	☐	10000.00	10030.108	6283244.28	11.6656	A	2.2
6	☐	20000.00	19982.595	12137007.73	23.2380	A	2.7
7	☐	100.000					

y = 0.0012 * x + 0.0029
R = 1.0000
DL = 0.2794
BEC = 2.453

Weight: <None>
Min Conc: <None>

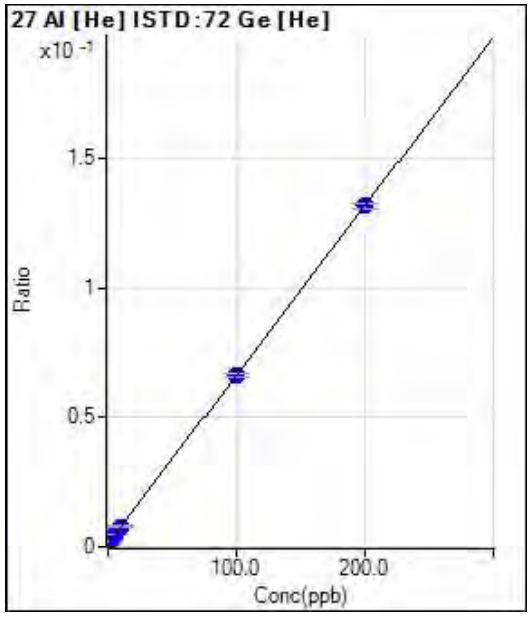


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26214.12	0.0127	P	30.9
2	☐	2.000	1.604	47082.28	0.0222	P	0.8
3	☐	5.000	4.808	86182.67	0.0412	P	3.6
4	☐	10.000	10.632	152759.96	0.0757	P	2.4
5	☐	100.000	103.665	1263950.84	0.6275	A	1.5
6	☐	200.000	198.145	2369936.94	1.1878	A	3.4
7	☐	1.000					

y = 0.0059 * x + 0.0127
R = 0.9997
DL = 1.977
BEC = 2.135

Weight: <None>
Min Conc: <None>

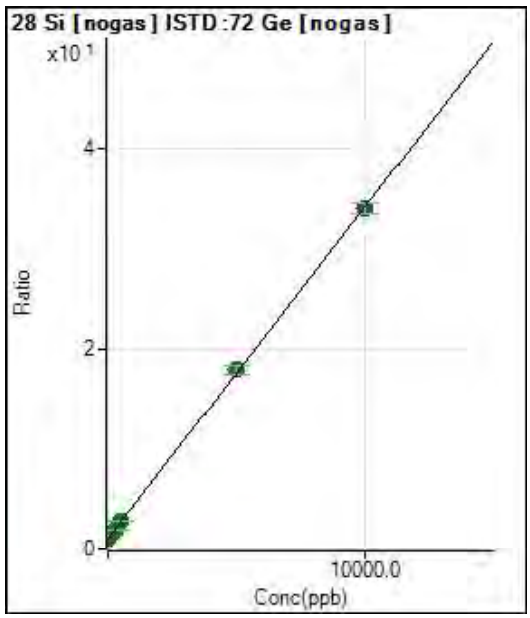
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.163	626.69	0.0011	P	18.1
2	☐	2.000	1.755	1330.07	0.0024	P	9.4
3	☐	5.000	5.196	2643.56	0.0046	P	2.3
4	☐	10.000	10.286	4343.92	0.0079	P	10.3
5	☐	100.000	99.886	35770.89	0.0664	P	1.8
6	☐	200.000	200.040	68811.91	0.1318	P	1.6
7	☐	1.000					

y = 6.5252E-004 * x + 0.0012
R = 1.0000
DL = 0.9296
BEC = 1.878

Weight: <None>
Min Conc: <None>

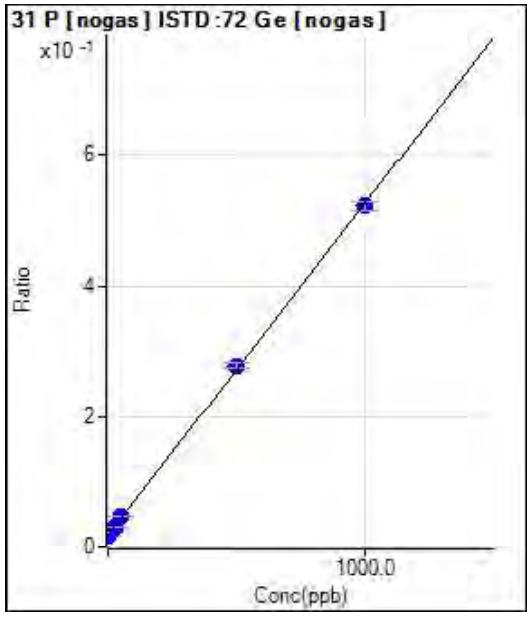


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2305952.05	1.1119	A	1.4
2	☐	100.000	83.196	2942663.39	1.3862	A	0.8
3	☐	250.000	243.279	4005391.60	1.9139	A	2.3
4	☐	500.000	552.695	5919058.25	2.9339	A	1.6
5	☐	5000.000	5090.292	36027475.30	17.8929	A	4.1
6	☐	10000.00	9952.555	67686125.66	33.9222	A	3.0
7	☐	5.000					

y = 0.0033 * x + 1.1119
R = 0.9999
DL = 13.93
BEC = 337.3

Weight: <None>
Min Conc: <None>

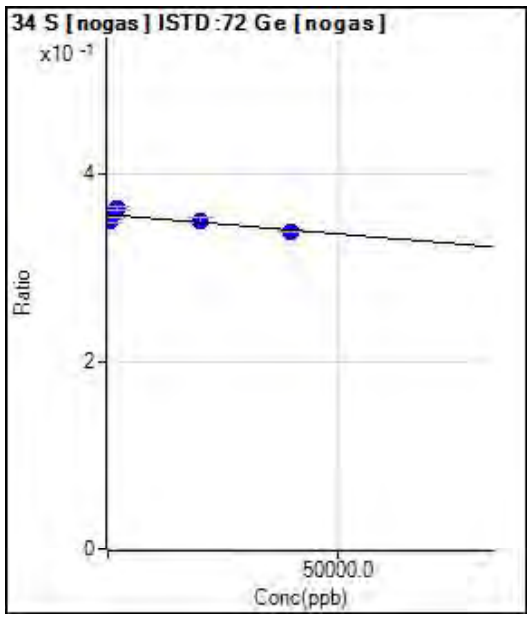
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36462.09	0.0176	P	0.9
2	☐	10.000	9.876	47971.17	0.0226	P	3.3
3	☐	25.000	26.783	65282.55	0.0312	P	1.4
4	☐	50.000	57.061	93979.39	0.0466	P	1.3
5	☐	500.000	512.576	560105.73	0.2781	P	2.5
6	☐	1000.000	993.316	1042494.77	0.5225	P	2.7
7	☐	5.000					

y = 5.0827E-004 * x + 0.0176
R = 0.9999
DL = 0.9
BEC = 34.59

Weight: <None>
Min Conc: <None>

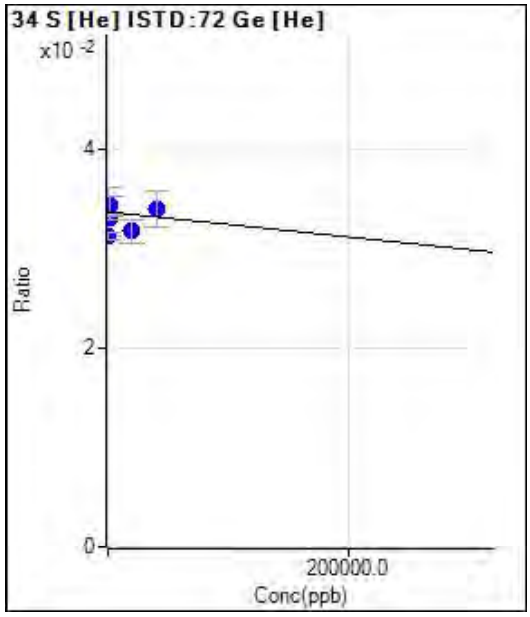


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	741319.37	0.3574	P	0.6
2	☐	400.000	18388.906	742846.91	0.3499	P	1.1
3	☐	1000.000	-3030.994	750587.13	0.3587	P	2.7
4	☐	2000.000	-14813.24	733363.46	0.3635	P	1.1
5	☐	20000.00	16102.168	706669.09	0.3508	P	1.7
6	☐	40000.00	42710.464	678531.51	0.3399	P	0.5
7	☐	100.000					

y = -4.0970E-007 * x + 0.3574
R = -0.8302
DL = -1.625E+04
BEC = -8.724E+05

Weight: <None>
Min Conc: <None>

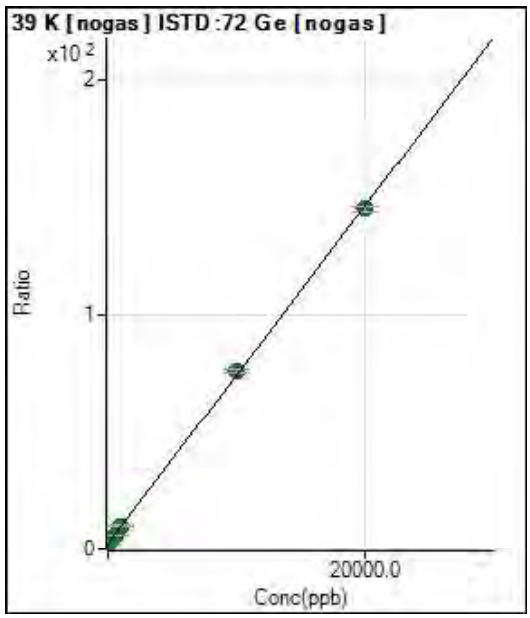
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18879.22	0.0338	P	14.3
2	☐	400.000	193550.75	17578.50	0.0313	P	2.5
3	☐	1000.000	45094.228	19012.52	0.0332	P	1.6
4	☐	2000.000	-47371.03	18812.75	0.0344	P	5.9
5	☐	20000.00	150132.67	17178.25	0.0319	P	7.5
6	☐	40000.00	-25631.64	17811.50	0.0341	P	10.9
7	☐	100.000					

y = -1.2681E-008 * x + 0.0338
R = 0.1658
DL = -1.139E+06
BEC = -2.664E+06

Weight: <None>
Min Conc: <None>

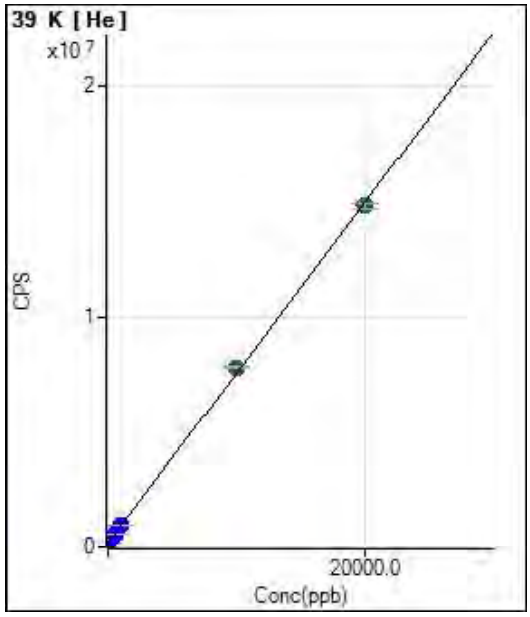


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5274066.26	2.5430	A	1.5
2	☐	200.000	201.241	8468704.10	3.9893	A	1.9
3	☐	500.000	532.773	13334395.61	6.3720	A	2.4
4	☐	1000.000	1087.224	20896849.95	10.3568	A	0.9
5	☐	10000.00	10282.369	153976449.2	76.4421	A	1.7
6	☐	20000.00	19853.623	289850698.1	145.230	A	1.9
7	☐	100.000					

y = 0.0072 * x + 2.5430
R = 0.9999
DL = 15.96
BEC = 353.8

Weight: <None>
Min Conc: <None>

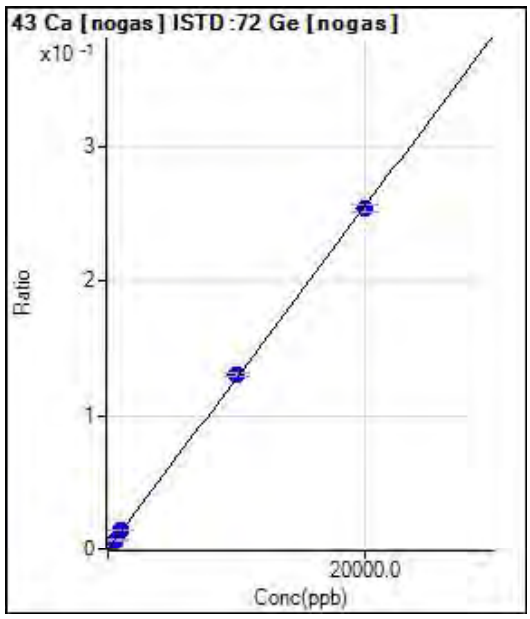
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	155570.62		P	1.3
2	☐	200.000	217.953	316841.56		P	1.5
3	☐	500.000	536.903	552842.71		P	0.6
4	☐	1000.000	1066.613	944792.72		P	0.7
5	☐	10000.00	10351.872	7815261.76		A	1.6
6	☐	20000.00	19819.631	14820768.53		A	1.5
7	☐	100.000					

y = 739.9329 * x + 155570.6200
R = 0.9998
DL = 8.073
BEC = 210.2

Weight: <None>
Min Conc: <None>

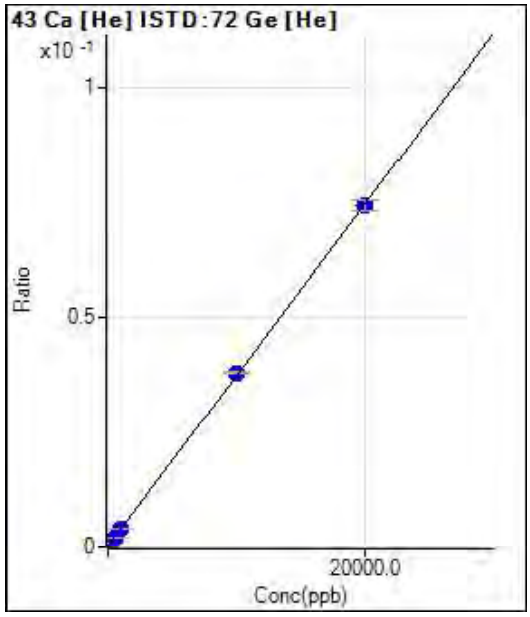


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	870.03	0.0004	P	4.6
2	☐	200.000	212.635	6637.96	0.0031	P	4.6
3	☐	500.000	541.544	15316.52	0.0073	P	2.4
4	☐	1000.000	1117.857	29573.75	0.0147	P	0.9
5	☐	10000.00	10244.557	263674.47	0.1309	P	1.9
6	☐	20000.00	19870.663	505918.22	0.2535	P	2.2
7	☐	100.000					

y = 1.2738E-005 * x + 4.1940E-004
R = 0.9999
DL = 4.548
BEC = 32.93

Weight: <None>
Min Conc: <None>

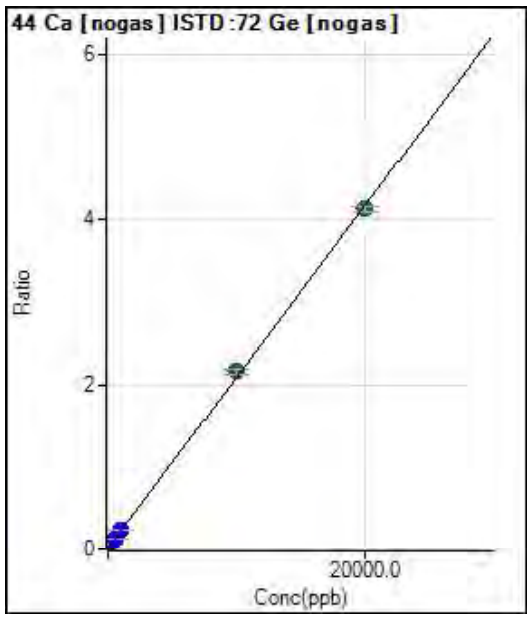
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53.33	0.0001	P	37.6
2	☐	200.000	222.582	520.02	0.0009	P	22.1
3	☐	500.000	488.208	1096.72	0.0019	P	13.8
4	☐	1000.000	1037.304	2166.83	0.0040	P	6.2
5	☐	10000.00	10147.161	20418.17	0.0379	P	1.4
6	☐	20000.00	19924.623	38827.39	0.0743	P	3.3
7	☐	100.000					

y = 3.7261E-006 * x + 9.4685E-005
R = 1.0000
DL = 28.66
BEC = 25.41

Weight: <None>
Min Conc: <None>

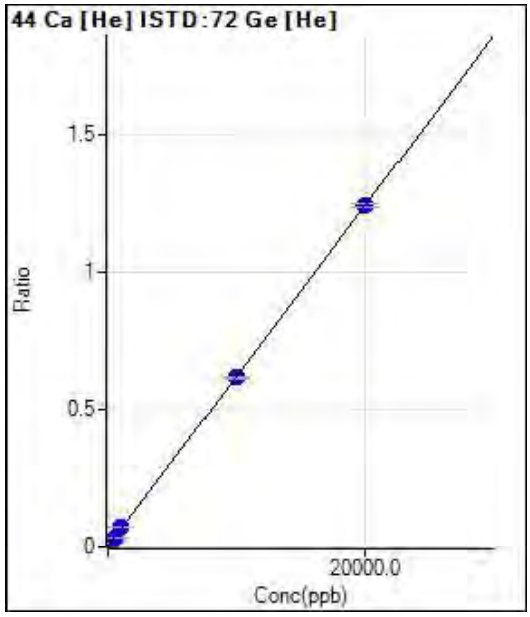


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	34111.33	0.0164	P	0.8
2	☐	200.000	201.134	123488.57	0.0582	P	1.2
3	☐	500.000	515.441	258187.90	0.1234	P	2.4
4	☐	1000.000	1073.801	482603.04	0.2392	P	2.5
5	☐	10000.00	10322.557	4346455.04	2.1579	A	2.2
6	☐	20000.00	19834.634	8244679.67	4.1312	A	1.8
7	☐	100.000					

y = 2.0745E-004 * x + 0.0164
R = 0.9998
DL = 1.928
BEC = 79.28

Weight: <None>
Min Conc: <None>

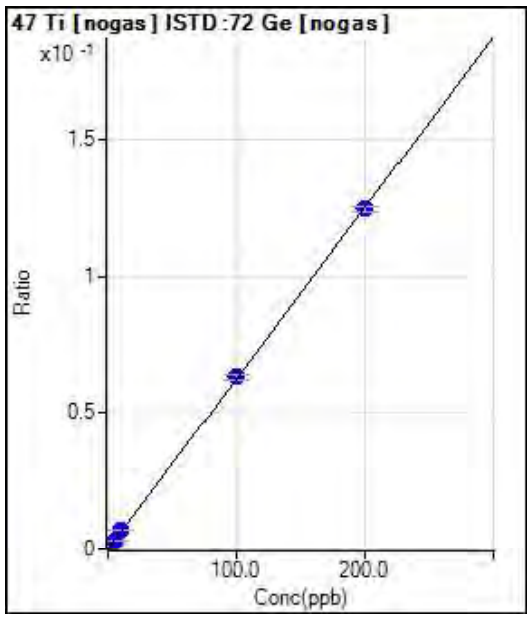
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	976.71	0.0017	P	19.1
2	☐	200.000	215.426	8475.41	0.0151	P	5.7
3	☐	500.000	505.835	18963.18	0.0331	P	0.2
4	☐	1000.000	1098.622	38242.94	0.0699	P	1.1
5	☐	10000.00	9943.025	333087.39	0.6183	P	0.9
6	☐	20000.00	20023.256	649462.93	1.2435	P	1.2
7	☐	100.000					

y = 6.2013E-005 * x + 0.0017
R = 1.0000
DL = 16.17
BEC = 28.19

Weight: <None>
Min Conc: <None>

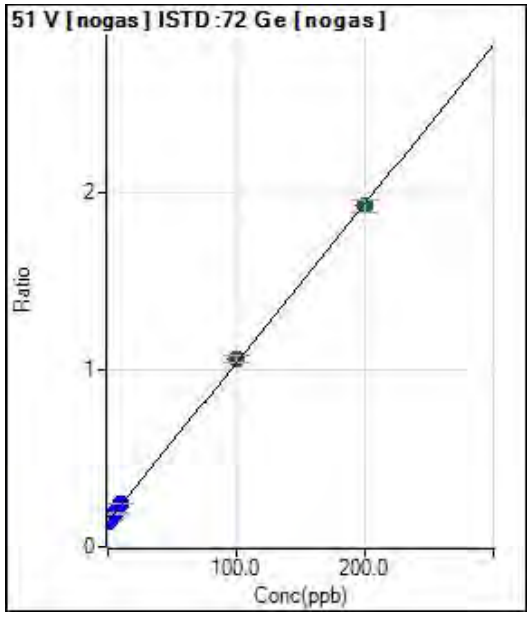


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	246.67	0.0001	P	19.2
2	☐	2.000	2.195	3160.33	0.0015	P	7.3
3	☐	5.000	5.495	7428.26	0.0036	P	3.6
4	☐	10.000	11.122	14252.38	0.0071	P	1.9
5	☐	100.000	101.042	127297.53	0.0632	P	3.4
6	☐	200.000	199.409	248750.60	0.1246	P	1.7
7	☐	1.000					

y = 6.2445E-004 * x + 1.1879E-004
R = 1.0000
DL = 0.1095
BEC = 0.1902

Weight: <None>
Min Conc: <None>

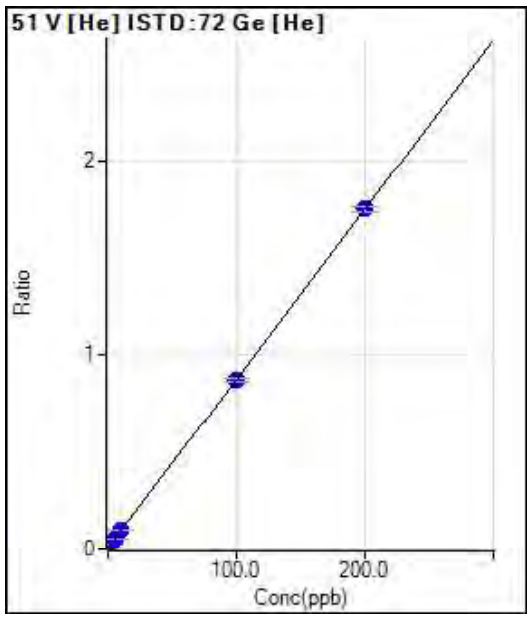
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	299961.00	0.1446	P	1.0
2	☐	2.000	1.435	334213.58	0.1575	P	5.2
3	☐	5.000	5.040	397132.72	0.1898	P	4.2
4	☐	10.000	11.667	502815.00	0.2492	P	0.6
5	☐	100.000	102.349	2138482.14	1.0620	A	4.0
6	☐	200.000	198.747	3845037.33	1.9261	A	3.6
7	☐	1.000					

y = 0.0090 * x + 0.1446
R = 0.9999
DL = 0.4749
BEC = 16.13

Weight: <None>
Min Conc: <None>

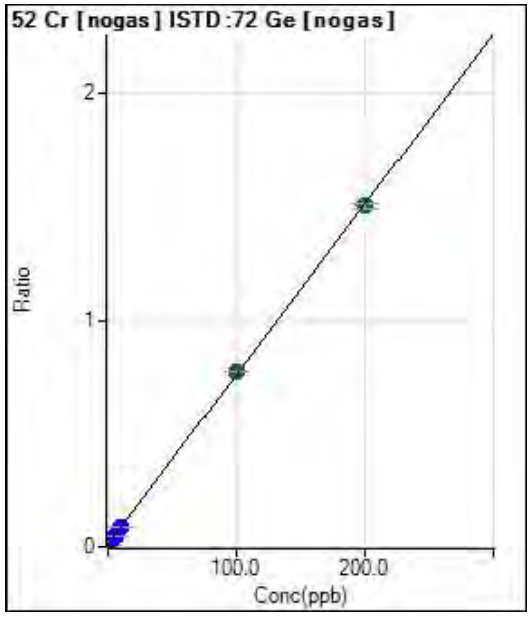


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.038	4948.00	0.0088	P	2.0
2	☐	2.000	2.036	14709.81	0.0262	P	1.2
3	☐	5.000	4.968	29606.79	0.0517	P	2.1
4	☐	10.000	10.491	54590.87	0.0997	P	0.4
5	☐	100.000	98.984	468247.88	0.8694	P	2.3
6	☐	200.000	200.484	915062.21	1.7521	P	1.9
7	☐	1.000					

y = 0.0087 * x + 0.0085
R = 1.0000
DL = 0.06217
BEC = 0.978

Weight: <None>
Min Conc: <None>

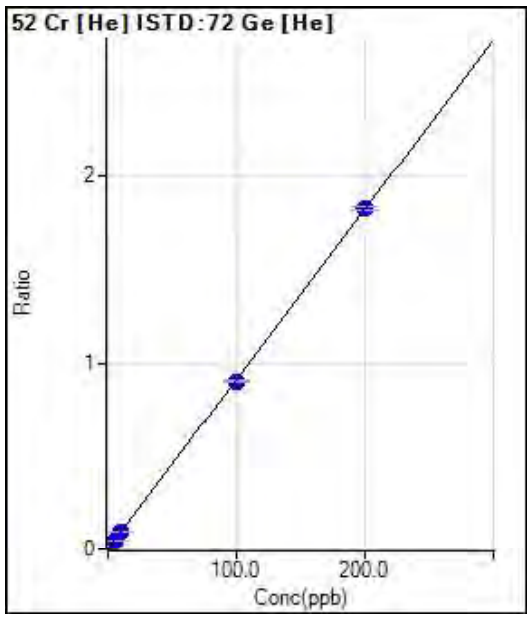
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22056.72	0.0106	P	5.1
2	☐	2.000	1.949	53604.52	0.0252	P	1.6
3	☐	5.000	5.009	100866.65	0.0482	P	0.9
4	☐	10.000	10.426	179175.13	0.0888	P	0.3
5	☐	100.000	101.752	1558302.37	0.7735	A	0.4
6	☐	200.000	199.103	3000789.12	1.5033	A	1.5
7	☐	1.000					

y = 0.0075 * x + 0.0106
R = 0.9999
DL = 0.2158
BEC = 1.419

Weight: <None>
Min Conc: <None>

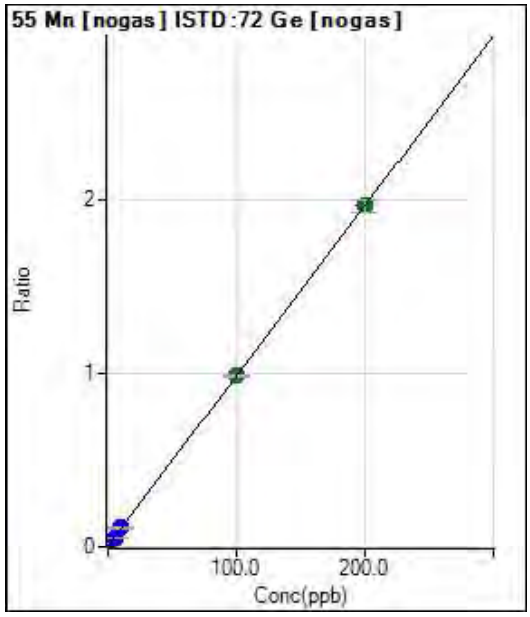


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2216.84	0.0040	P	9.4
2	☐	2.000	1.986	12340.93	0.0220	P	4.7
3	☐	5.000	4.892	27694.17	0.0484	P	2.6
4	☐	10.000	10.535	54500.53	0.0996	P	1.1
5	☐	100.000	99.046	486359.37	0.9029	P	1.6
6	☐	200.000	200.453	952313.08	1.8234	P	1.1
7	☐	1.000					

y = 0.0091 * x + 0.0040
R = 1.0000
DL = 0.1236
BEC = 0.4365

Weight: <None>
Min Conc: <None>

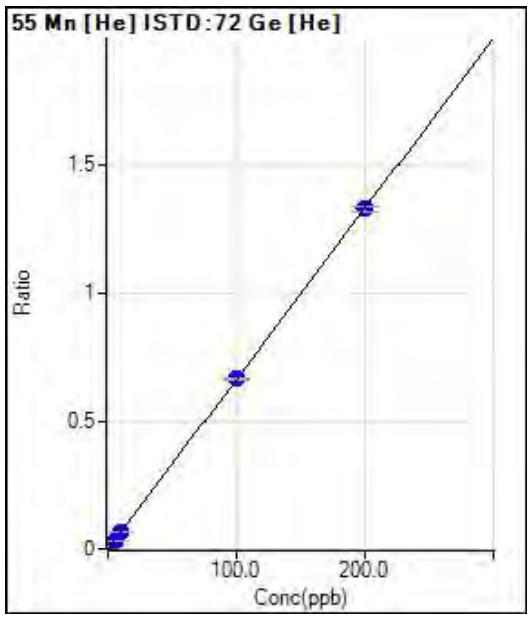
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	14709.38	0.0071	P	2.0
2	☐	2.000	1.940	55296.03	0.0261	P	3.4
3	☐	5.000	5.032	117760.05	0.0563	P	1.3
4	☐	10.000	10.494	221227.96	0.1096	P	1.0
5	☐	100.000	99.915	1981592.78	0.9835	A	1.5
6	☐	200.000	200.018	3916961.71	1.9617	A	3.8
7	☐	1.000					

y = 0.0098 * x + 0.0071
R = 1.0000
DL = 0.04423
BEC = 0.7258

Weight: <None>
Min Conc: <None>

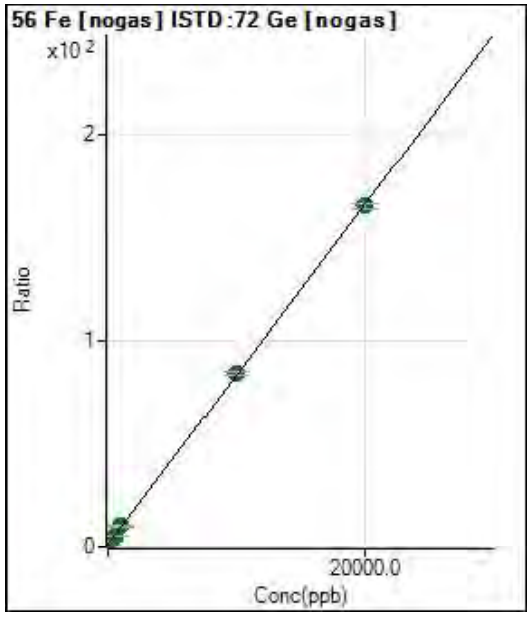


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	763.36	0.0014	P	31.2
2	☐	2.000	2.092	8555.43	0.0152	P	4.2
3	☐	5.000	4.912	19440.48	0.0340	P	4.9
4	☐	10.000	10.781	39890.22	0.0729	P	1.0
5	☐	100.000	100.218	358825.24	0.6662	P	1.3
6	☐	200.000	199.853	693130.56	1.3271	P	1.7
7	☐	1.000					

y = 0.0066 * x + 0.0014
R = 1.0000
DL = 0.1935
BEC = 0.2065

Weight: <None>
Min Conc: <None>

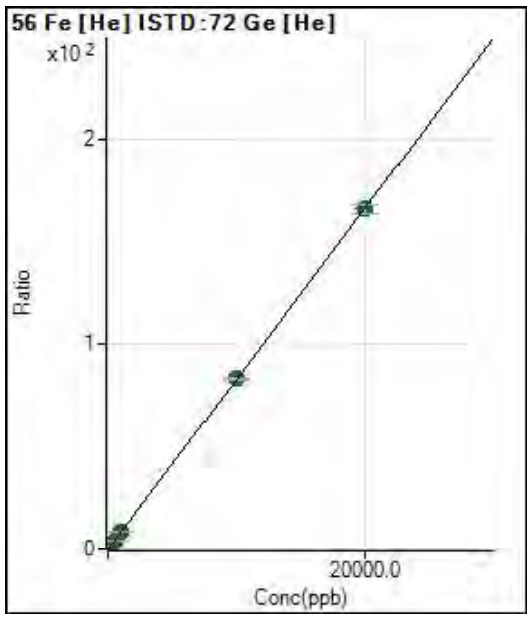
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2143556.30	1.0336	A	2.3
2	☐	200.000	205.258	5785624.87	2.7256	A	1.9
3	☐	500.000	524.696	11213130.46	5.3588	A	3.3
4	☐	1000.000	1102.387	20421271.29	10.1207	A	1.2
5	☐	10000.00	10111.742	169956499.6	84.3857	A	2.3
6	☐	20000.00	19938.340	330156407.3	165.387	A	1.4
7	☐	100.000					

y = 0.0082 * x + 1.0336
R = 1.0000
DL = 8.513
BEC = 125.4

Weight: <None>
Min Conc: <None>

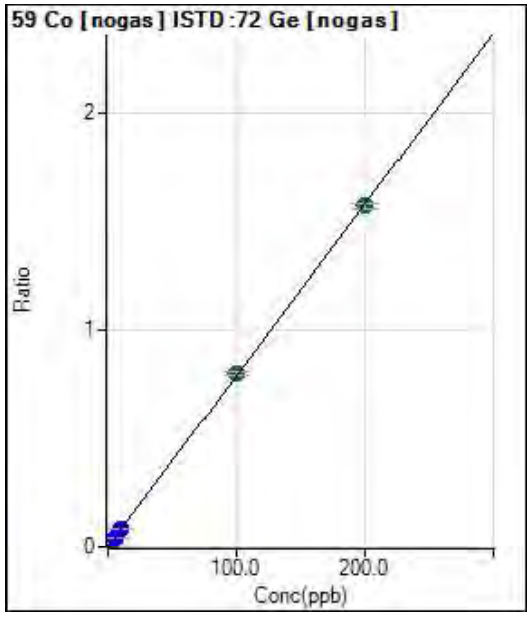


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17998.98	0.0321	P	3.0
2	☐	200.000	199.272	947562.10	1.6886	P	2.3
3	☐	500.000	516.732	2477986.42	4.3275	A	0.9
4	☐	1000.000	1061.103	4845030.86	8.8525	A	0.6
5	☐	10000.00	10013.803	44853614.33	83.2716	A	1.9
6	☐	20000.00	19989.632	86802638.71	166.195	A	2.9
7	☐	100.000					

y = 0.0083 * x + 0.0321
R = 1.0000
DL = 0.3452
BEC = 3.867

Weight: <None>
Min Conc: <None>

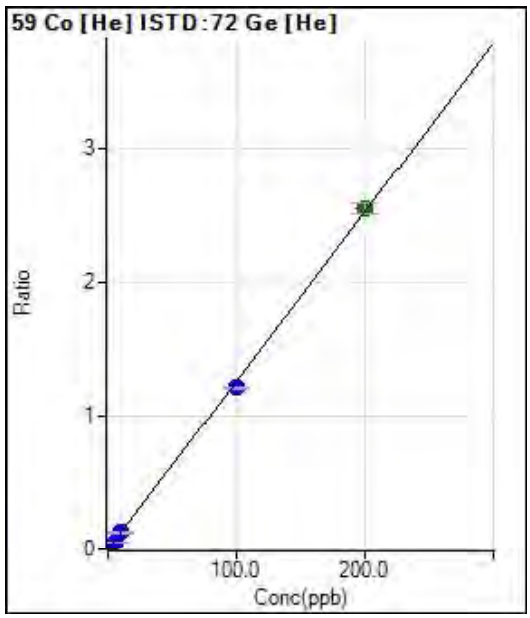
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	493.35	0.0002	P	12.3
2	☐	2.000	1.959	33317.03	0.0157	P	0.4
3	☐	5.000	5.080	84357.25	0.0403	P	3.7
4	☐	10.000	10.685	170553.98	0.0845	P	2.4
5	☐	100.000	101.547	1614408.94	0.8013	A	1.6
6	☐	200.000	199.191	3136513.18	1.5716	A	1.7
7	☐	1.000					

y = 0.0079 * x + 2.3789E-004
R = 1.0000
DL = 0.0111
BEC = 0.03016

Weight: <None>
Min Conc: <None>

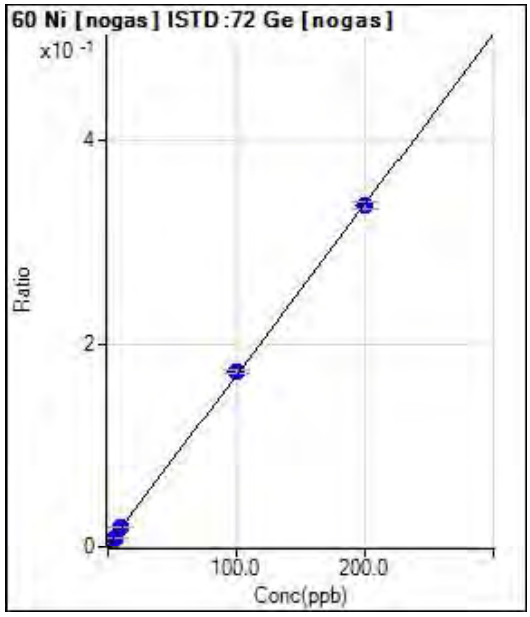


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	120.00	0.0002	P	10.9
2	☐	2.000	1.976	14132.37	0.0252	P	5.4
3	☐	5.000	4.761	34582.89	0.0604	P	0.8
4	☐	10.000	10.200	70675.65	0.1291	P	1.5
5	☐	100.000	96.035	653958.68	1.2141	P	1.3
6	☐	200.000	201.979	1333488.03	2.5532	A	3.0
7	☐	1.000					

y = 0.0126 * x + 2.1459E-004
R = 0.9997
DL = 0.005544
BEC = 0.01698

Weight: <None>
Min Conc: <None>

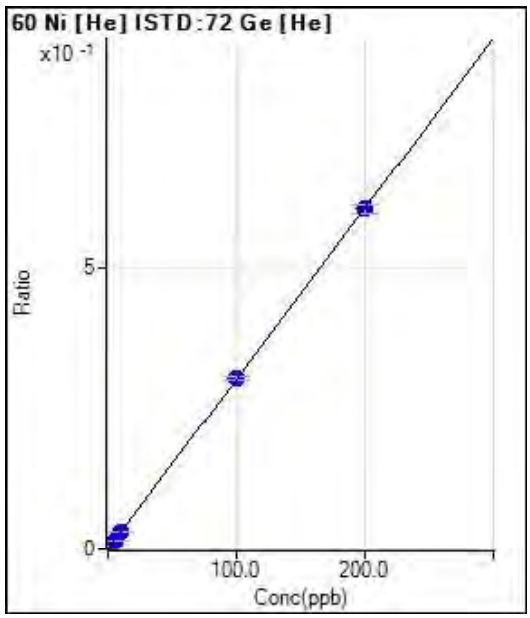
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.627	510.02	0.0002	P	29.7
2	☐	2.000	1.478	8031.88	0.0038	P	3.7
3	☐	5.000	4.685	19193.68	0.0092	P	5.5
4	☐	10.000	10.699	38914.84	0.0193	P	3.1
5	☐	100.000	101.576	346553.72	0.1720	P	1.9
6	☐	200.000	199.190	670781.19	0.3361	P	2.1
7	☐	1.000					

y = 0.0017 * x + 0.0013
R = 0.9999
DL = 0.1303
BEC = 0.7735

Weight: <None>
Min Conc: <None>

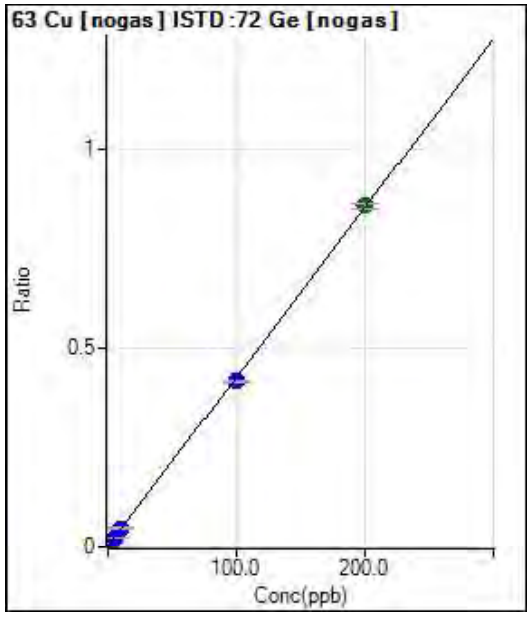


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.232	190.00	0.0003	P	37.1
2	☐	2.000	1.910	3823.81	0.0068	P	8.9
3	☐	5.000	4.681	8705.53	0.0152	P	4.2
4	☐	10.000	10.499	17949.05	0.0328	P	1.3
5	☐	100.000	100.315	163992.14	0.3045	P	1.4
6	☐	200.000	199.826	316215.27	0.6054	P	2.5
7	☐	1.000					

y = 0.0030 * x + 0.0010
R = 1.0000
DL = 0.1257
BEC = 0.3444

Weight: <None>
Min Conc: <None>

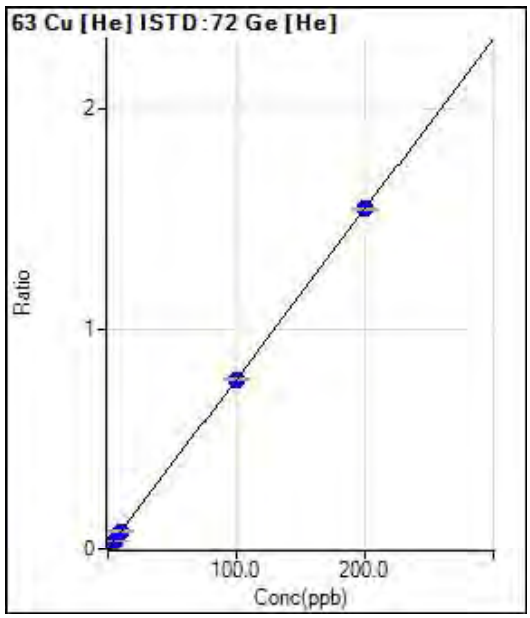
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3777.11	0.0018	P	3.6
2	☐	2.000	1.992	21863.32	0.0103	P	3.2
3	☐	5.000	5.077	49032.31	0.0234	P	0.7
4	☐	10.000	10.773	96138.14	0.0477	P	2.2
5	☐	100.000	97.446	838717.80	0.4164	P	1.9
6	☐	200.000	201.237	1712814.97	0.8580	A	1.5
7	☐	1.000					

y = 0.0043 * x + 0.0018
R = 0.9999
DL = 0.0464
BEC = 0.4281

Weight: <None>
Min Conc: <None>

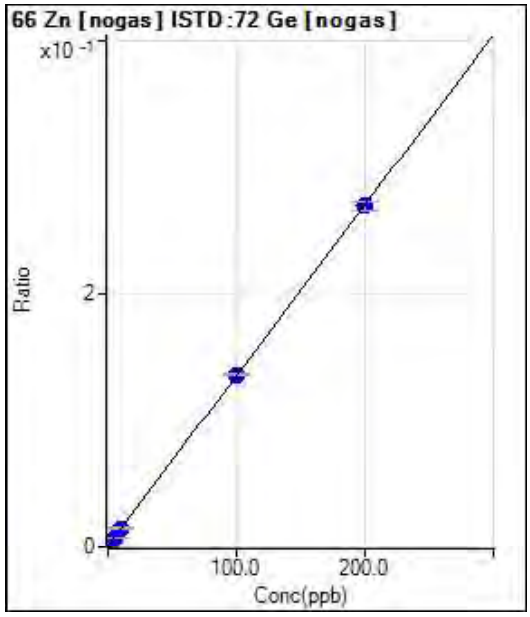


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.208	1436.75	0.0026	P	5.2
2	☐	2.000	1.861	10396.43	0.0185	P	1.1
3	☐	5.000	4.900	24029.43	0.0420	P	1.9
4	☐	10.000	10.535	46756.51	0.0854	P	2.3
5	☐	100.000	99.870	417249.82	0.7746	P	0.9
6	☐	200.000	200.042	808162.83	1.5473	P	0.8
7	☐	1.000					

y = 0.0077 * x + 0.0042
R = 1.0000
DL = 0.05146
BEC = 0.5402

Weight: <None>
Min Conc: <None>

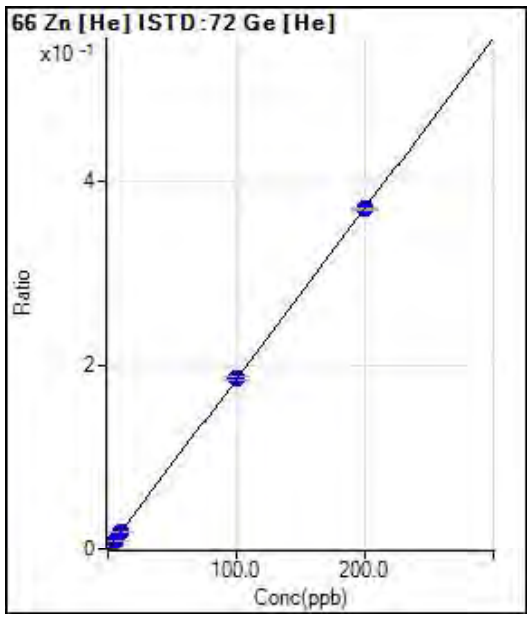
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.306	790.03	0.0004	P	5.5
2	☐	2.000	1.754	6697.98	0.0032	P	2.1
3	☐	5.000	4.675	14832.92	0.0071	P	6.0
4	☐	10.000	10.548	30262.04	0.0150	P	2.1
5	☐	100.000	100.692	274791.19	0.1364	P	1.0
6	☐	200.000	199.637	538307.67	0.2697	P	2.5
7	☐	1.000					

y = 0.0013 * x + 7.9268E-004
R = 1.0000
DL = 0.0466
BEC = 0.5885

Weight: <None>
Min Conc: <None>

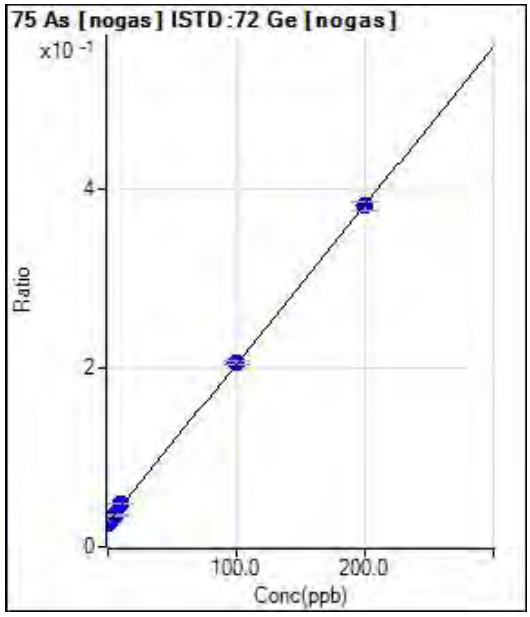


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.093	286.68	0.0005	P	12.8
2	☐	2.000	1.763	2216.84	0.0039	P	9.4
3	☐	5.000	4.880	5567.59	0.0097	P	4.1
4	☐	10.000	10.231	10746.63	0.0196	P	2.0
5	☐	100.000	100.450	100601.89	0.1868	P	1.1
6	☐	200.000	199.769	193622.88	0.3707	P	0.4
7	☐	1.000					

y = 0.0019 * x + 6.8428E-004
R = 1.0000
DL = 0.1061
BEC = 0.3694

Weight: <None>
Min Conc: <None>

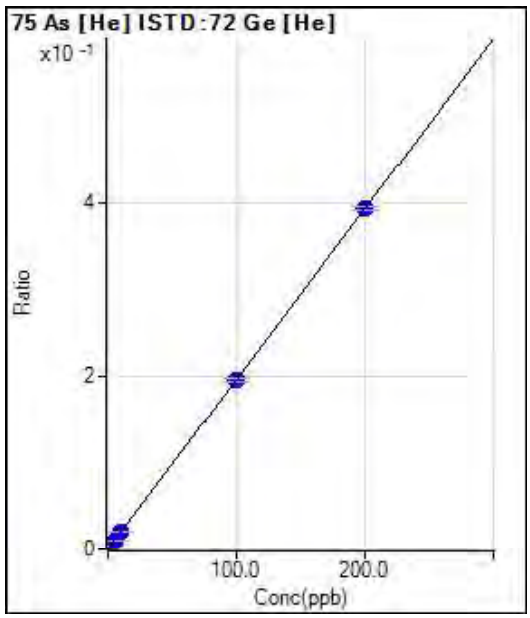
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.686	53863.16	0.0260	P	3.0
2	☐	2.000	1.115	61904.96	0.0292	P	1.3
3	☐	5.000	4.776	74588.89	0.0356	P	3.2
4	☐	10.000	11.611	96329.54	0.0477	P	1.3
5	☐	100.000	100.501	413099.31	0.2051	P	1.8
6	☐	200.000	199.683	759564.91	0.3807	P	2.7
7	☐	1.000					

y = 0.0018 * x + 0.0272
R = 0.9999
DL = 1.329
BEC = 15.36

Weight: <None>
Min Conc: <None>

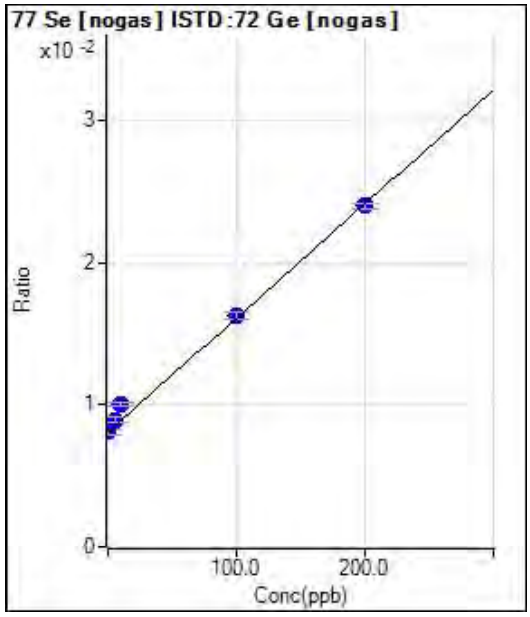


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	290.00	0.0005	P	12.7
2	☐	2.000	2.093	2591.31	0.0046	P	5.2
3	☐	5.000	4.846	5728.70	0.0100	P	2.0
4	☐	10.000	10.545	11578.17	0.0212	P	0.7
5	☐	100.000	99.616	105293.71	0.1955	P	1.2
6	☐	200.000	200.167	204876.10	0.3923	P	1.1
7	☐	1.000					

y = 0.0020 * x + 5.1809E-004
R = 1.0000
DL = 0.1007
BEC = 0.2647

Weight: <None>
Min Conc: <None>

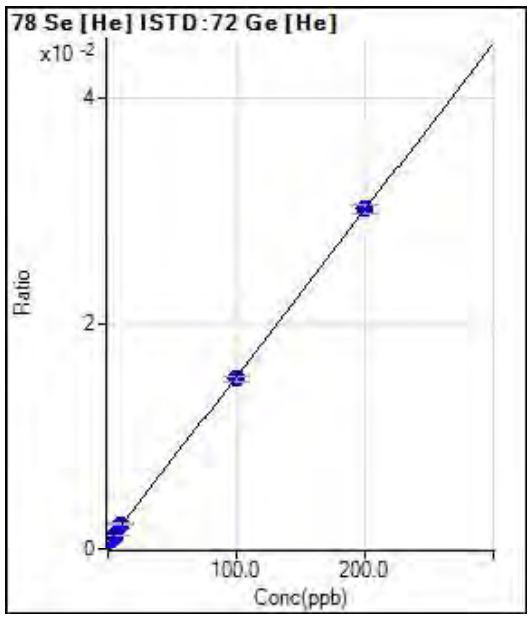
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16744.63	0.0081	P	5.3
2	☐	2.000	7.612	18439.53	0.0087	P	1.1
3	☐	5.000	10.905	18723.17	0.0089	P	4.7
4	☐	10.000	24.017	20178.10	0.0100	P	2.7
5	☐	100.000	101.805	32696.31	0.0162	P	2.8
6	☐	200.000	198.193	47816.49	0.0240	P	1.6
7	☐	1.000					

y = 8.0145E-005 * x + 0.0081
R = 0.9983
DL = 15.91
BEC = 100.8

Weight: <None>
Min Conc: <None>

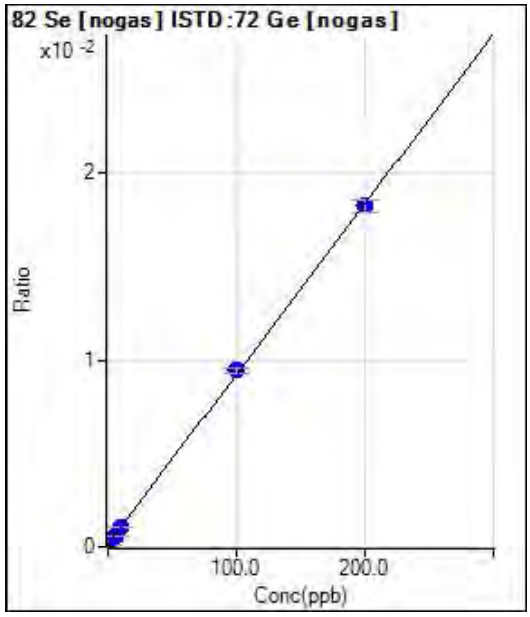


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.025	347.34	0.0006	P	9.3
2	☐	2.000	1.503	471.34	0.0008	P	8.5
3	☐	5.000	4.871	764.69	0.0013	P	2.9
4	☐	10.000	11.388	1256.71	0.0023	P	5.0
5	☐	100.000	98.548	8157.84	0.0151	P	3.1
6	☐	200.000	200.665	15774.18	0.0302	P	2.8
7	☐	1.000					

y = 1.4744E-004 * x + 6.1729E-004
R = 0.9999
DL = 1.176
BEC = 4.187

Weight: <None>
Min Conc: <None>

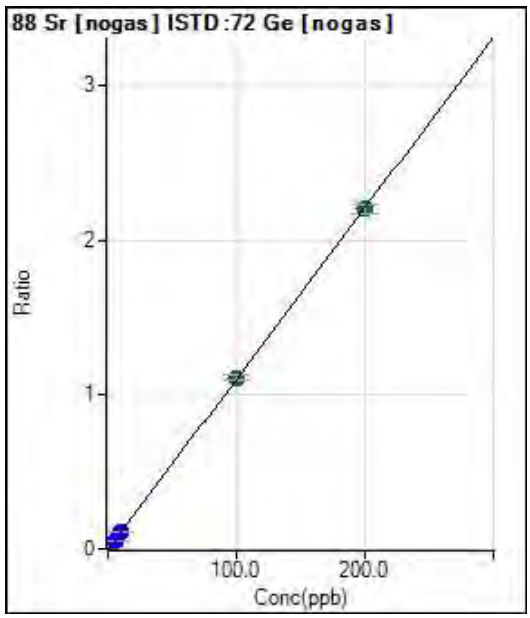
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	270.01	0.0001	P	11.1
2		2.000	2.330	726.69	0.0003	P	13.6
3		5.000	4.839	1193.39	0.0006	P	6.0
4		10.000	10.230	2140.17	0.0011	P	7.0
5		100.000	102.121	18976.78	0.0094	P	2.8
6		200.000	198.929	36380.27	0.0182	P	3.4
7		1.000					

y = 9.0998E-005 * x + 1.3019E-004
R = 0.9999
DL = 0.4758
BEC = 1.431

Weight: <None>
Min Conc: <None>

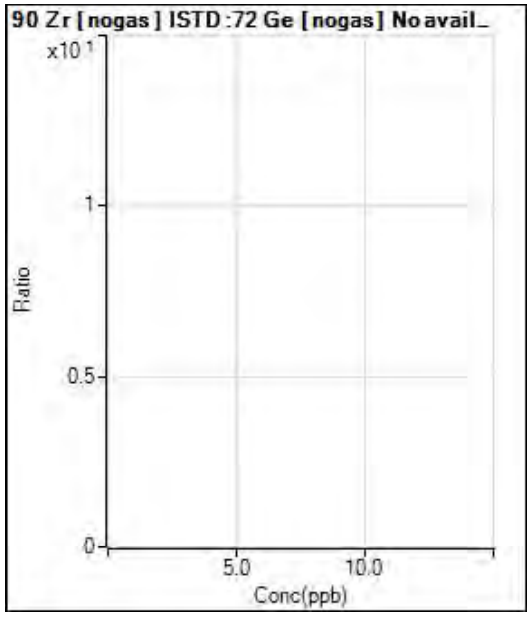


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	2016.81	0.0010	P	6.4
2		2.000	1.949	47743.63	0.0225	P	1.8
3		5.000	4.914	115547.85	0.0552	P	4.6
4		10.000	10.307	231603.58	0.1148	P	1.7
5		100.000	100.803	2244924.24	1.1140	A	2.5
6		200.000	199.586	4399581.29	2.2048	A	2.4
7		1.000					

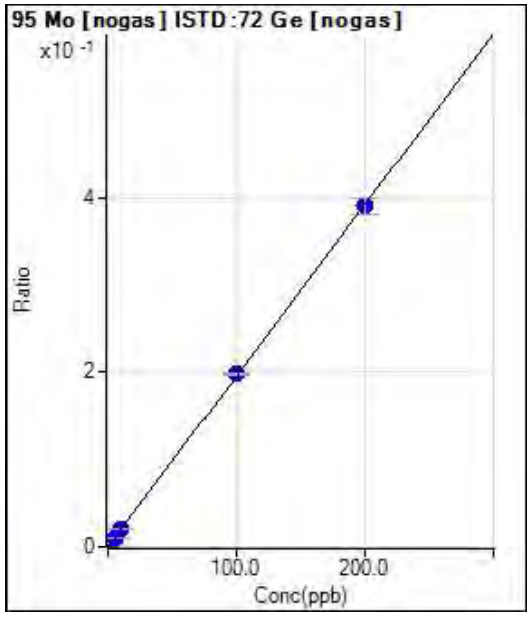
y = 0.0110 * x + 9.7276E-004
R = 1.0000
DL = 0.01686
BEC = 0.0881

Weight: <None>
Min Conc: <None>

Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	110.00	0.0001	P	17.4
2	☐	2.000	1.914	8058.62	0.0038	P	4.2
3	☐	5.000	5.179	21306.36	0.0102	P	5.3
4	☐	10.000	10.685	42283.92	0.0210	P	2.8
5	☐	100.000	101.009	398302.14	0.1977	P	1.4
6	☐	200.000	199.457	778492.93	0.3903	P	4.8
7	☐	1.000					

y = 0.0020 * x + 5.2986E-005

R = 1.0000

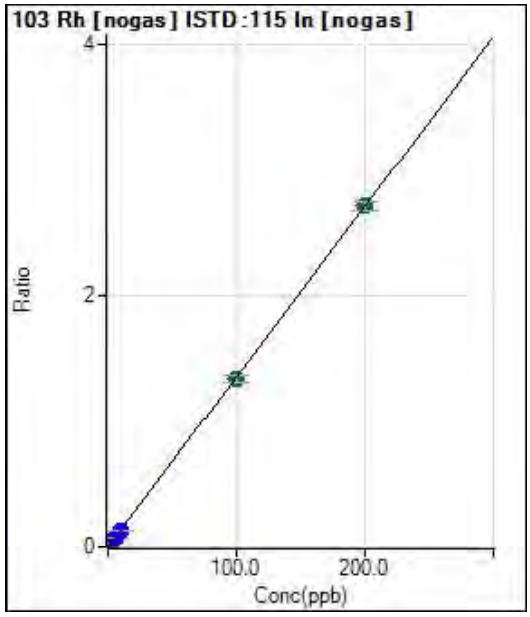
DL = 0.01417

BEC = 0.02708

Weight: <None>

Min Conc: <None>

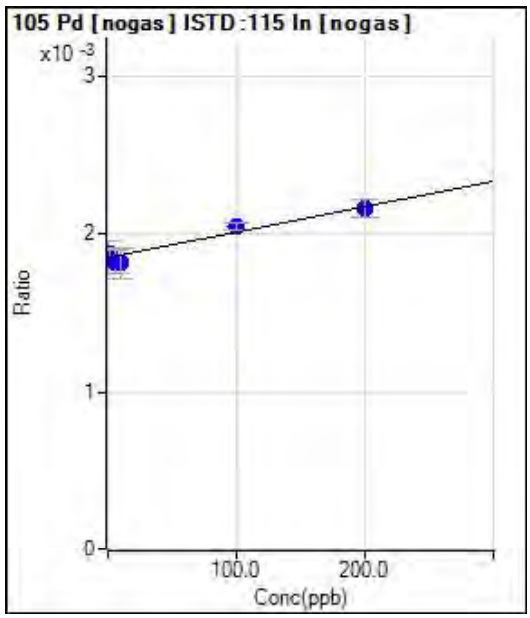
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36.67	0.0000	P	66.5
2	☐	2.000	1.910	47978.78	0.0259	P	2.0
3	☐	5.000	4.839	120870.26	0.0655	P	1.7
4	☐	10.000	9.516	241618.00	0.1289	P	2.7
5	☐	100.000	99.000	2377272.46	1.3404	A	3.9
6	☐	200.000	200.529	4680092.12	2.7151	A	2.7
7	☐	1.000					

y = 0.0135 * x + 1.9763E-005
R = 1.0000
DL = 0.00291
BEC = 0.00146

Weight: <None>
Min Conc: <None>

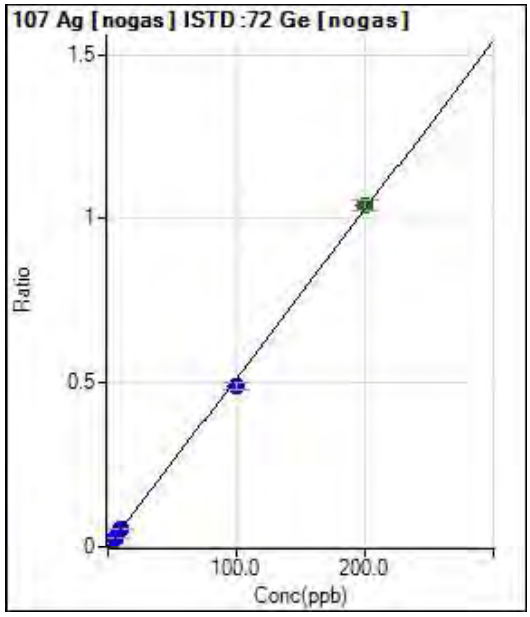


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3400.40	0.0019	P	11.3
2	☐	2.000	15.995	3483.75	0.0019	P	2.5
3	☐	5.000	-17.484	3367.05	0.0018	P	8.0
4	☐	10.000	-21.737	3407.06	0.0018	P	10.8
5	☐	100.000	121.358	3633.77	0.0020	P	2.5
6	☐	200.000	191.330	3727.11	0.0022	P	5.3
7	☐	1.000					

y = 1.6151E-006 * x + 0.0019
R = 0.9729
DL = 388
BEC = 1147

Weight: <None>
Min Conc: <None>

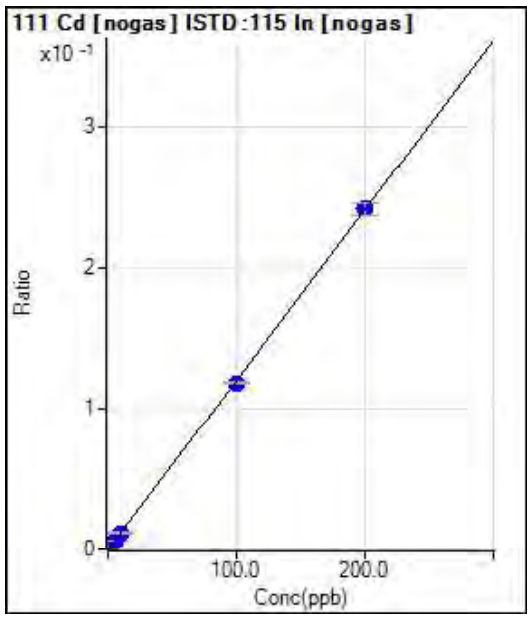
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	110.00	0.0001	P	42.3
2	☐	2.000	1.940	21269.95	0.0100	P	2.1
3	☐	5.000	4.918	52983.02	0.0253	P	3.5
4	☐	10.000	10.370	107606.51	0.0533	P	1.7
5	☐	100.000	95.479	987962.80	0.4906	P	3.8
6	☐	200.000	202.245	2073452.31	1.0392	A	3.3
7	☐	1.000					

y = 0.0051 * x + 5.3142E-005
R = 0.9996
DL = 0.01313
BEC = 0.01034

Weight: <None>
Min Conc: <None>

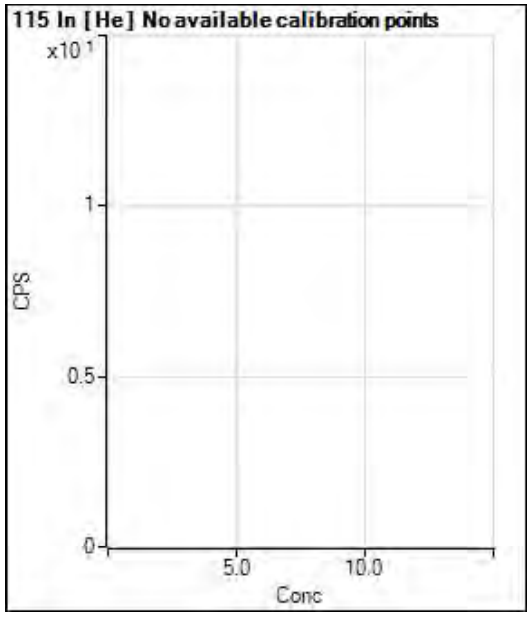


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	13.33	0.0000	P	86.6
2	☐	2.000	2.066	4617.35	0.0025	P	1.0
3	☐	5.000	5.185	11507.25	0.0062	P	2.0
4	☐	10.000	10.078	22724.99	0.0121	P	3.2
5	☐	100.000	98.195	209290.24	0.1180	P	1.2
6	☐	200.000	200.893	416037.16	0.2414	P	3.8
7	☐	1.000					

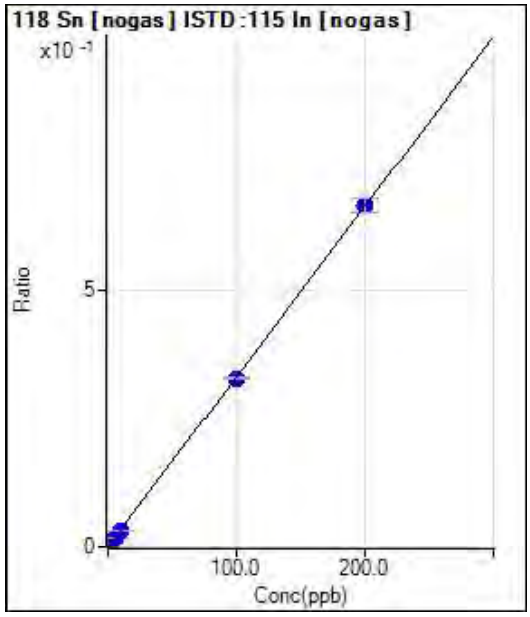
y = 0.0012 * x + 7.4289E-006
R = 0.9999
DL = 0.01606
BEC = 0.006181

Weight: <None>
Min Conc: <None>

Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			653467.26		P	2.2
2	☐			657964.32		P	2.2
3	☐			652913.78		P	0.9
4	☐			661257.10		P	0.1
5	☐			626265.97		P	0.9
6	☐			611525.48		P	0.2
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	806.69	0.0004	P	12.7
2	☐	2.000	1.965	12904.95	0.0070	P	1.9
3	☐	5.000	4.918	30887.74	0.0167	P	1.8
4	☐	10.000	9.832	61959.75	0.0330	P	1.5
5	☐	100.000	99.067	583345.24	0.3289	P	0.7
6	☐	200.000	200.477	1146024.62	0.6651	P	4.2
7	☐	1.000					

y = 0.0033 * x + 4.4193E-004

R = 1.0000

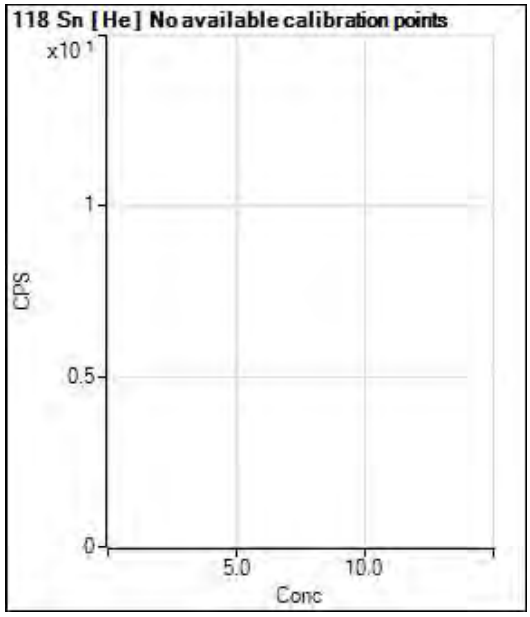
DL = 0.05078

BEC = 0.1333

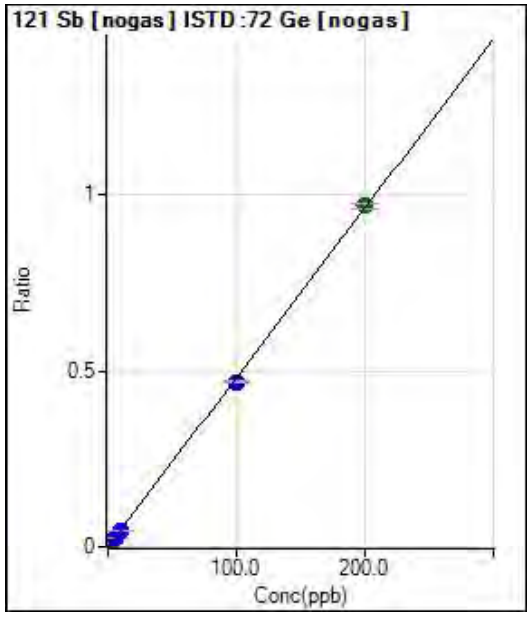
Weight: <None>

Min Conc: <None>

Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			323.34		P	28.1
2	☐			5497.64		P	3.5
3	☐			13218.48		P	3.9
4	☐			26640.59		P	2.3
5	☐			246212.74		P	1.8
6	☐			483585.44		P	1.0
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	336.68	0.0002	P	32.8
2	☐	2.000	1.914	19864.92	0.0094	P	4.0
3	☐	5.000	4.876	49383.50	0.0236	P	1.8
4	☐	10.000	10.065	97916.73	0.0485	P	0.5
5	☐	100.000	97.234	941632.28	0.4674	P	1.0
6	☐	200.000	201.384	1932049.09	0.9679	A	1.6
7	☐	1.000					

y = 0.0048 * x + 1.6266E-004

R = 0.9999

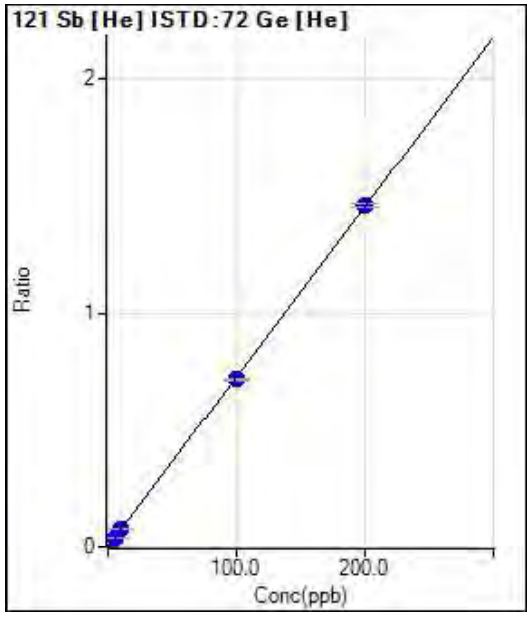
DL = 0.03331

BEC = 0.03385

Weight: <None>

Min Conc: <None>

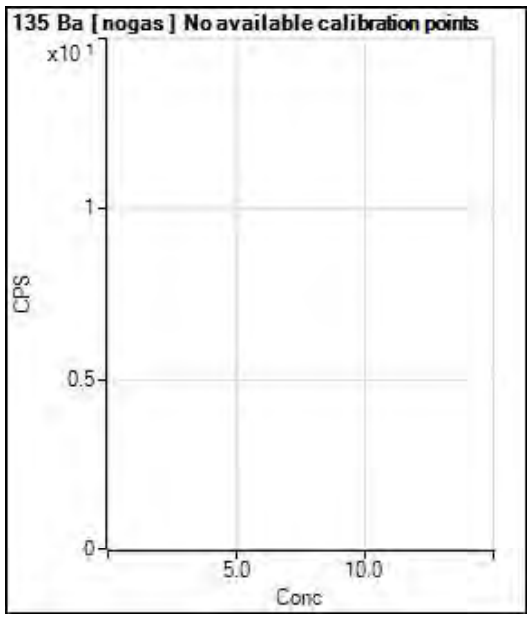
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	170.00	0.0003	P	15.8
2	☐	2.000	2.035	8472.16	0.0151	P	7.3
3	☐	5.000	4.983	20916.15	0.0365	P	5.2
4	☐	10.000	10.451	41753.58	0.0763	P	1.0
5	☐	100.000	98.562	386206.30	0.7169	P	1.1
6	☐	200.000	200.696	762313.03	1.4596	P	1.0
7	☐	1.000					

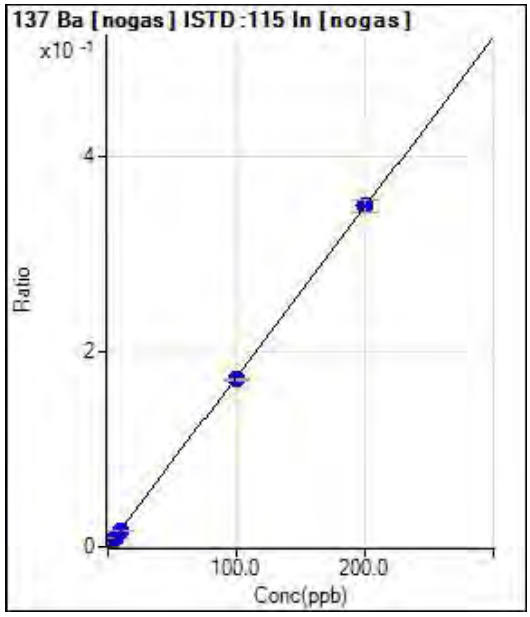
y = 0.0073 * x + 3.0363E-004
R = 1.0000
DL = 0.01982
BEC = 0.04176

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			230.01		P	34.8
2	☐			4153.90		P	4.6
3	☐			9292.65		P	2.8
4	☐			18313.24		P	0.8
5	☐			178262.89		P	1.5
6	☐			344684.47		P	0.5
7	☐						

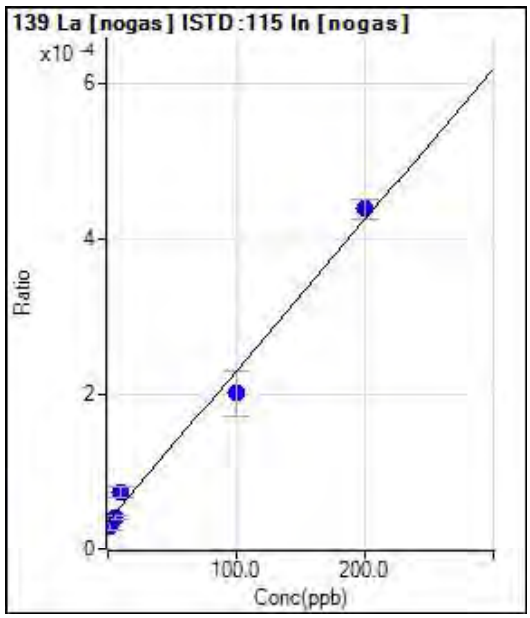
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	333.34	0.0002	P	14.7
2	☐	2.000	2.012	6841.49	0.0037	P	4.3
3	☐	5.000	4.993	16391.35	0.0089	P	3.7
4	☐	10.000	9.927	32791.47	0.0175	P	1.0
5	☐	100.000	98.482	304732.81	0.1718	P	0.9
6	☐	200.000	200.763	603415.82	0.3501	P	3.7
7	☐	1.000					

y = 0.0017 * x + 1.8254E-004
R = 1.0000
DL = 0.04616
BEC = 0.1047

Weight: <None>
Min Conc: <None>

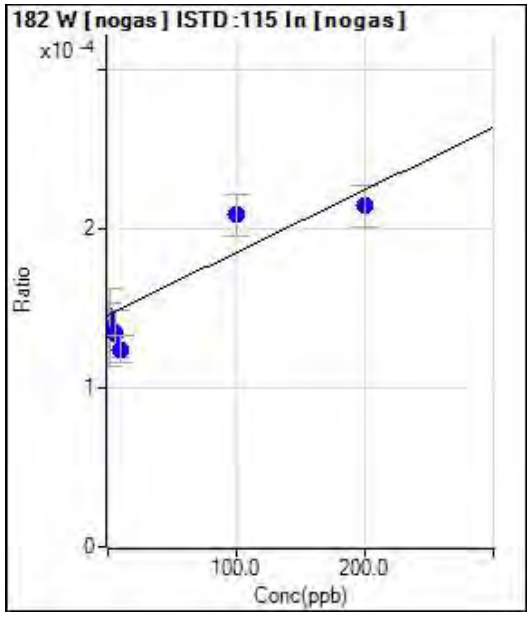


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66.67	0.0000	P	40.4
2	☐	2.000	-3.249	56.67	0.0000	P	25.0
3	☐	5.000	2.484	76.67	0.0000	P	8.1
4	☐	10.000	19.574	140.00	0.0001	P	20.2
5	☐	100.000	84.893	356.68	0.0002	P	28.2
6	☐	200.000	207.190	756.70	0.0004	P	5.7
7	☐	1.000					

y = 1.9417E-006 * x + 3.6761E-005
R = 0.9942
DL = 22.94
BEC = 18.93

Weight: <None>
Min Conc: <None>

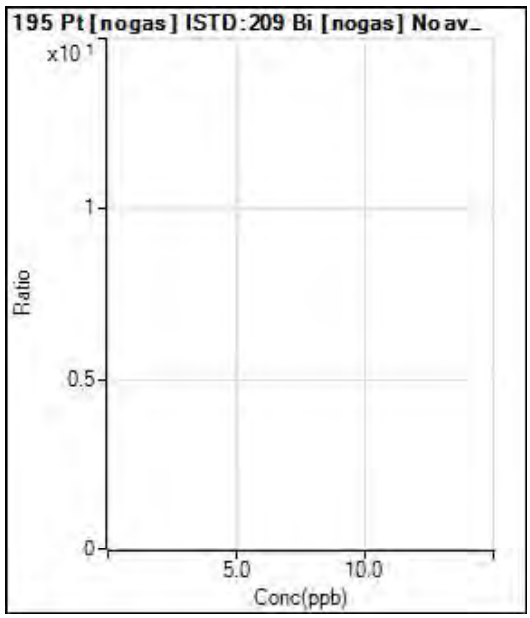
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	266.68	0.0001	P	9.8
2	☐	2.000	-20.481	256.67	0.0001	P	34.9
3	☐	5.000	-30.634	246.67	0.0001	P	21.5
4	☐	10.000	-55.270	233.34	0.0001	P	13.9
5	☐	100.000	160.129	370.01	0.0002	P	12.4
6	☐	200.000	174.315	370.01	0.0002	P	11.9
7	☐	1.000					

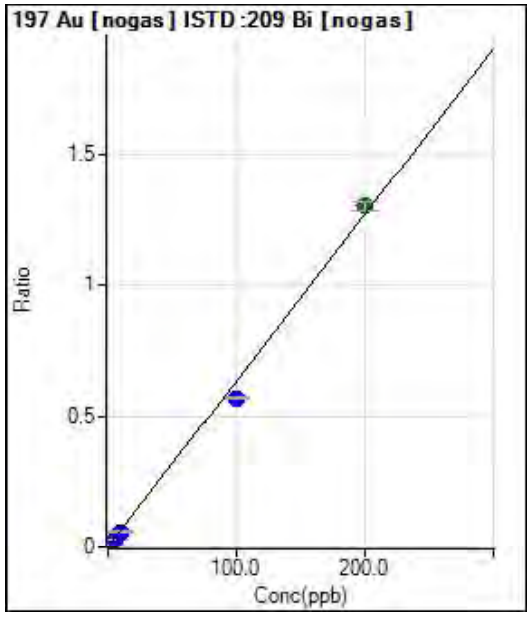
y = 3.9214E-007 * x + 1.4595E-004
R = 0.9160
DL = 109.8
BEC = 372.2

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

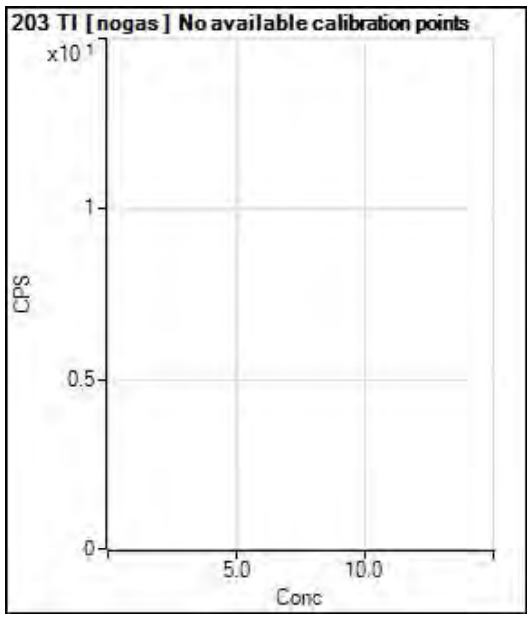
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	286.68	0.0002	P	13.3
2	☐	2.000	1.614	14586.65	0.0104	P	2.3
3	☐	5.000	4.133	36410.75	0.0264	P	5.5
4	☐	10.000	8.997	73950.03	0.0572	P	6.9
5	☐	100.000	89.360	731375.07	0.5665	P	1.1
6	☐	200.000	205.396	1597316.59	1.3017	A	2.7
7	☐	1.000					

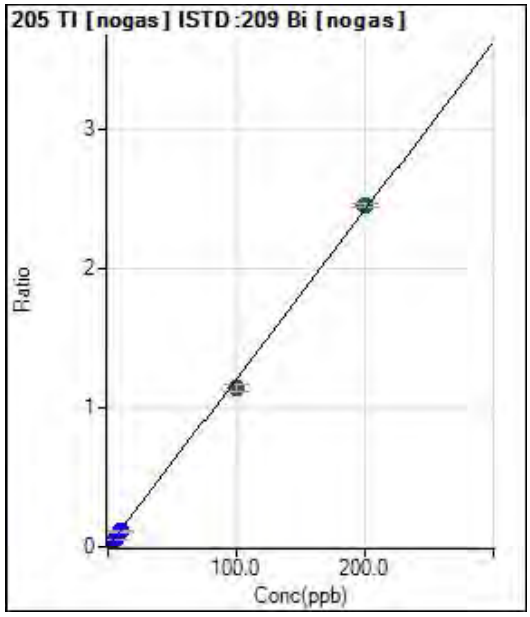
y = 0.0063 * x + 2.2223E-004
R = 0.9981
DL = 0.01401
BEC = 0.03507

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			63.33		P	9.1
2	☐			12057.94		P	3.5
3	☐			29810.90		P	3.1
4	☐			61419.20		P	1.8
5	☐			581626.79		P	1.3
6	☐			1147170.42		P	2.0
7	☐						

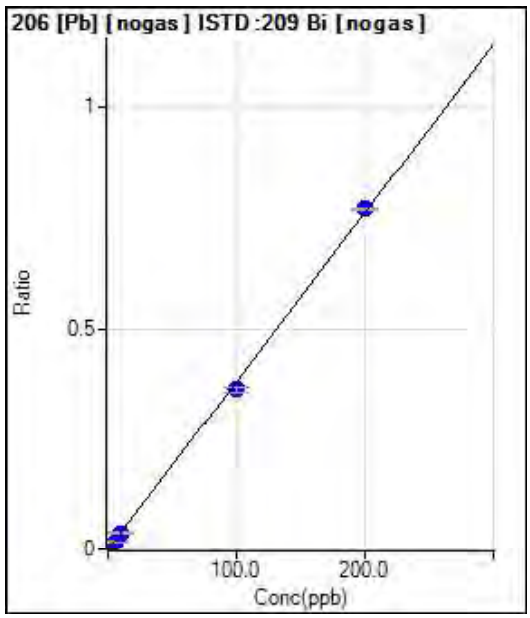
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	90.00	0.0001	P	28.4
2		2.000	1.674	28358.39	0.0203	P	4.9
3		5.000	4.229	70603.40	0.0512	P	6.9
4		10.000	9.152	143148.86	0.1108	P	6.1
5		100.000	94.814	1479971.13	1.1470	A	4.5
6		200.000	202.658	3008581.62	2.4515	A	1.1
7		1.000					

y = 0.0121 * x + 7.0450E-005
R = 0.9996
DL = 0.004963
BEC = 0.005824

Weight: <None>
Min Conc: <None>

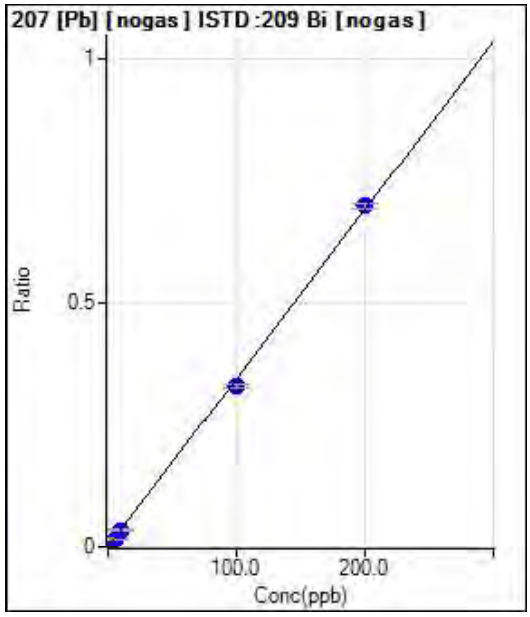


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	66.67	0.0001	P	57.1
2		2.000	1.824	9759.77	0.0070	P	4.3
3		5.000	4.797	25229.77	0.0183	P	6.6
4		10.000	10.084	49666.39	0.0384	P	5.3
5		100.000	95.045	466802.96	0.3617	P	2.6
6		200.000	202.480	945546.21	0.7704	P	0.4
7		1.000					

y = 0.0038 * x + 5.2928E-005
R = 0.9996
DL = 0.02383
BEC = 0.01391

Weight: <None>
Min Conc: <None>

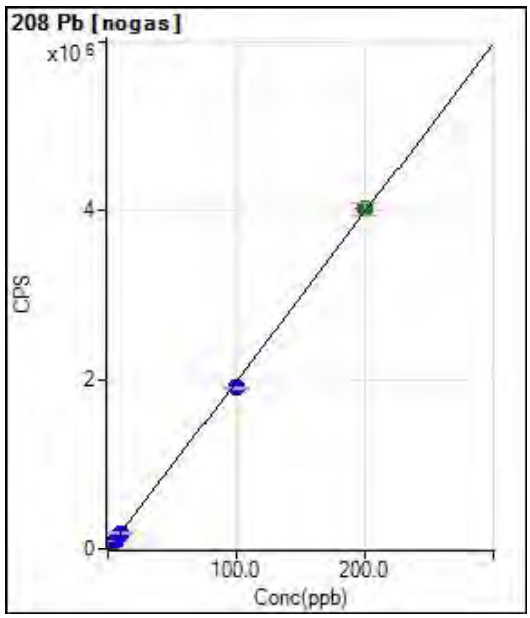
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	46.67	0.0000	P	70.3
2	☐	2.000	1.869	9076.00	0.0065	P	2.1
3	☐	5.000	4.705	22475.80	0.0163	P	7.0
4	☐	10.000	10.074	45056.20	0.0349	P	6.3
5	☐	100.000	95.153	424749.21	0.3291	P	2.0
6	☐	200.000	202.428	859295.20	0.7000	P	1.9
7	☐	1.000					

y = 0.0035 * x + 3.5911E-005
R = 0.9996
DL = 0.0219
BEC = 0.01039

Weight: <None>
Min Conc: <None>

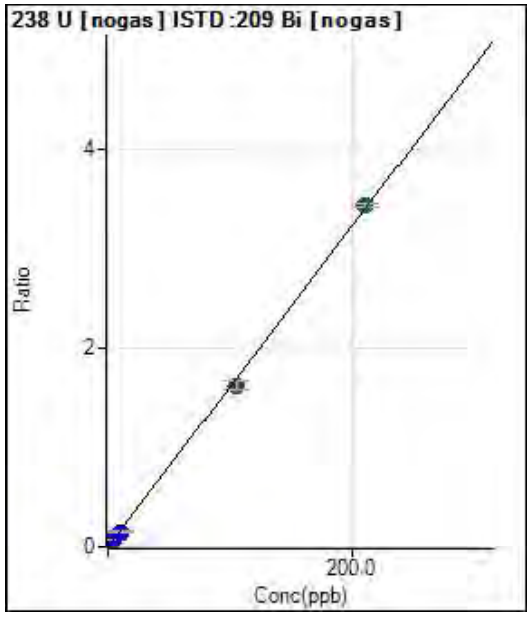


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	310.01		P	19.6
2	☐	2.000	1.997	40069.96		P	1.1
3	☐	5.000	5.075	101334.18		P	1.3
4	☐	10.000	10.133	202024.08		P	2.3
5	☐	100.000	95.922	1909872.99		P	0.6
6	☐	200.000	202.030	4022205.86		A	3.7
7	☐	1.000					

y = 19907.3840 * x + 310.0067
R = 0.9997
DL = 0.009167
BEC = 0.01557

Weight: <None>
Min Conc: <None>

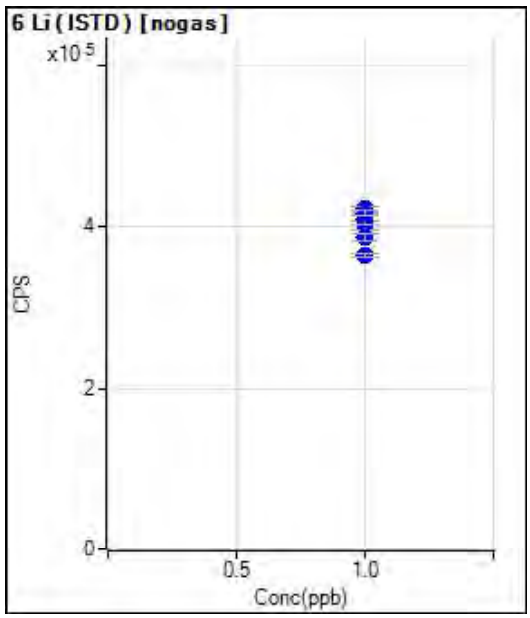
Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	70.00	0.0001	P	81.0
2	☐	2.000	1.724	38951.47	0.0279	P	2.4
3	☐	5.000	4.408	98237.56	0.0713	P	6.3
4	☐	10.000	9.427	196870.10	0.1523	P	5.9
5	☐	105.000	100.621	2097325.54	1.6255	A	5.8
6	☐	210.000	212.233	4207420.46	3.4285	A	1.2
7	☐	1.000					

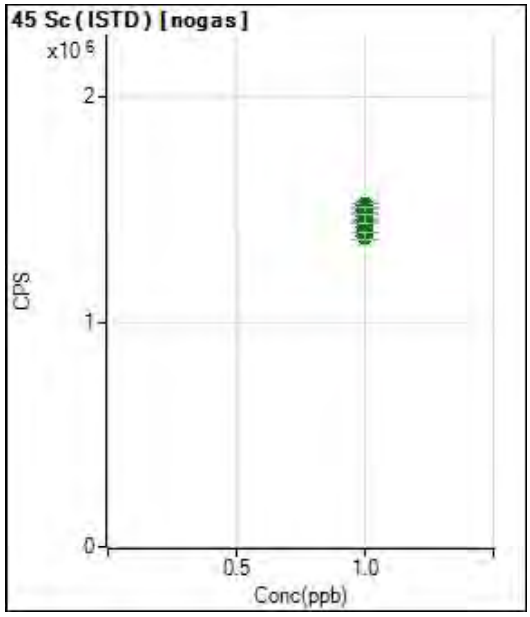
y = 0.0162 * x + 5.2159E-005
R = 0.9997
DL = 0.007848
BEC = 0.003229

Weight: <None>
Min Conc: <None>

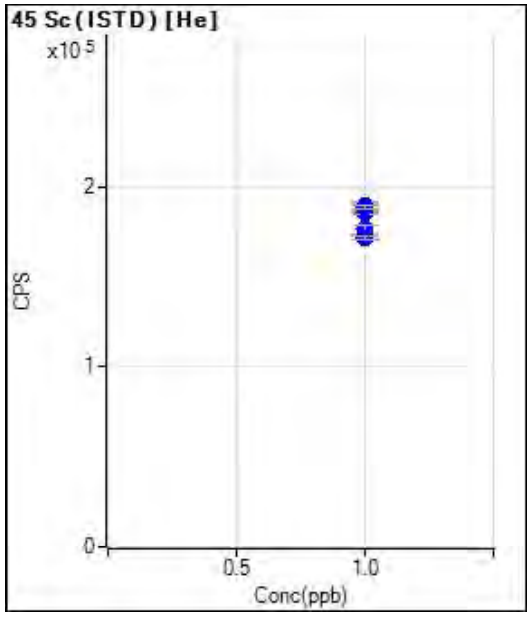


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		422169.31		P	1.8
2	☐	1.000		402423.50		P	2.8
3	☐	1.000		409274.76		P	3.2
4	☐	1.000		417259.86		P	1.8
5	☐	1.000		386818.21		P	1.9
6	☐	1.000		365154.76		P	0.9
7	☐	1.000					

Calibration for 049_ICV.d

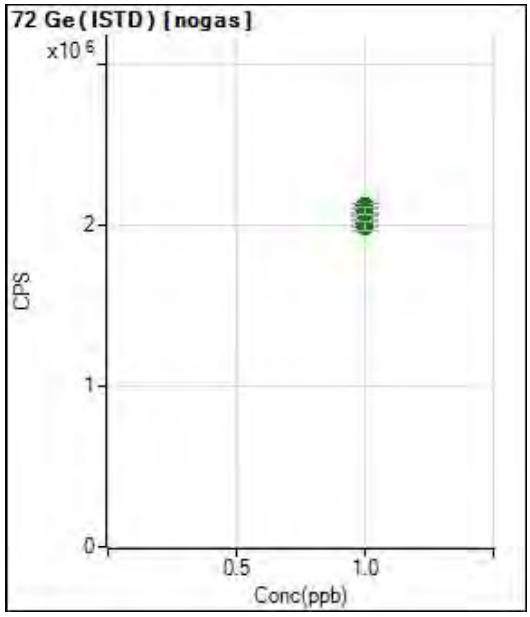


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1468700.81		A	2.6
2	☐	1.000		1515459.04		A	1.4
3	☐	1.000		1494575.50		A	1.9
4	☐	1.000		1424974.35		A	3.5
5	☐	1.000		1456902.27		A	2.7
6	☐	1.000		1382633.57		A	2.2
7	☐	1.000					

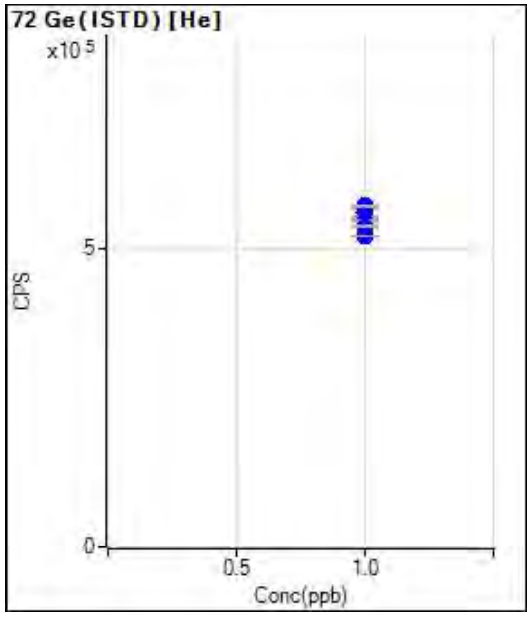


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		188392.25		P	2.7
2	☐	1.000		189506.23		P	2.6
3	☐	1.000		186014.39		P	1.5
4	☐	1.000		188855.82		P	1.6
5	☐	1.000		176444.98		P	2.5
6	☐	1.000		171990.10		P	1.2
7	☐	1.000					

Calibration for 049_ICV.d

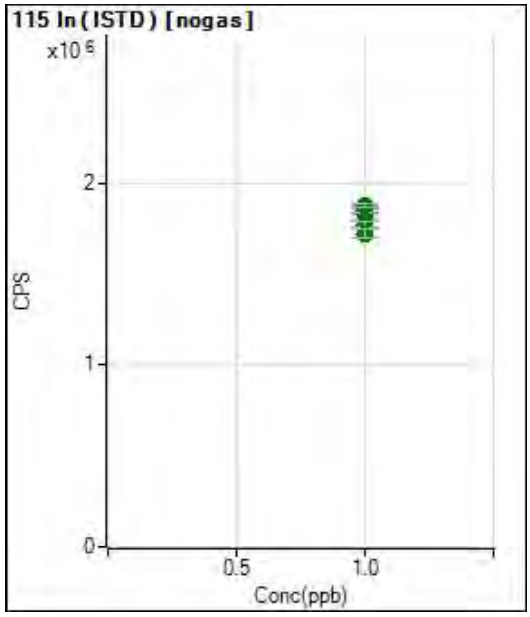


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2074092.52		A	0.9
2	☐	1.000		2122992.42		A	1.4
3	☐	1.000		2093257.99		A	1.8
4	☐	1.000		2017645.70		A	0.9
5	☐	1.000		2014734.71		A	2.3
6	☐	1.000		1996235.54		A	2.4
7	☐	1.000					

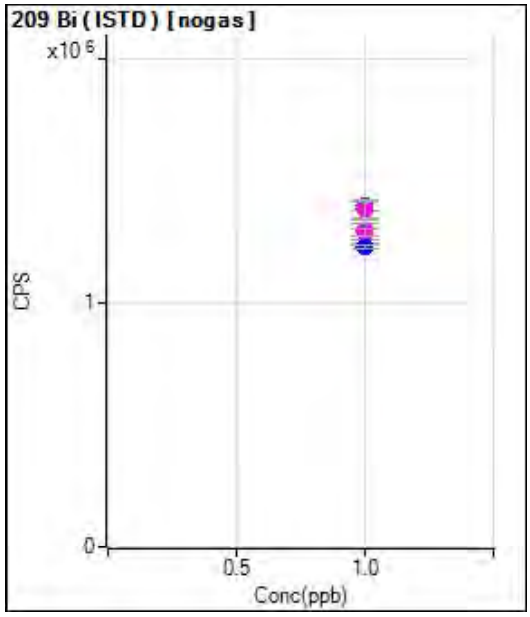


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		560222.45		P	2.6
2	☐	1.000		561308.47		P	1.8
3	☐	1.000		572625.57		P	0.8
4	☐	1.000		547296.42		P	0.4
5	☐	1.000		538695.75		P	1.0
6	☐	1.000		522290.33		P	0.4
7	☐	1.000					

Calibration for 049_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1830149.36		A	3.4
2	☐	1.000		1854485.50		A	2.5
3	☐	1.000		1844281.45		A	1.1
4	☐	1.000		1875473.47		A	1.2
5	☐	1.000		1773541.16		A	1.4
6	☐	1.000		1724485.11		A	3.2
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1294991.08		M	7.5
2	☐	1.000		1396839.98		A	3.3
3	☐	1.000		1381240.13		M	4.9
4	☐	1.000		1294831.18		M	5.2
5	☐	1.000		1291192.38		M	2.4
6	☐	1.000		1227320.45		P	1.5
7	☐	1.000					

ALS Group Houston, Corp Date: 18-Jun-18

Form 11 - INTERNAL STANDARD ASSOCIATION

Client: Bhate Environmental Associates, Inc. Instrument:ICPMS05
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308

Mass	Analyte	Assoc Int Standard 1	Assoc Int Standard 2	Mode
9	Beryllium	Lithium		Ar
11	Boron	Lithium		Ar
23	Sodium	Germanium		Ar
24	Magnesium	Germanium		Ar
27	Aluminum	Germanium		Ar
39	Potassium	Germanium		Ar
44	Calcium	Germanium		Ar
47	Titanium	Germanium		Ar
51	Vanadium	Germanium		ArHe
52	Chromium	Germanium		ArHe
55	Manganese	Germanium		ArHe
56	Iron	Germanium		ArHe
59	Cobalt	Germanium		ArHe
60	Nickel	Germanium		ArHe
63	Copper	Germanium		ArHe
66	Zinc	Germanium		ArHe
75	Arsenic	Germanium		ArHe
78	Selenium	Germanium		ArHe
88	Strontium	Germanium		Ar
95	Molybdenum	Germanium		Ar
105	Palladium	Germanium		Ar
107	Silver	Germanium		Ar
114	Cadmium	Indium		Ar
118	Tin	Germanium		Ar
121	Antimony	Germanium		ArHe
137	Barium	Indium		Ar
205	Thallium	Bismuth		Ar
208	Lead	Bismuth		Ar

ALS Group Houston, Corp Date: 18-Jun-18

FORM 13 - ANALYSIS RUN LOG

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060308
Start Date: 11-Jun-2018 End Date: 11-Jun-2018

Run ID:ICPMS05_317709
Instrument:ICPMS05
Method:

Sample No.	D/F	Time	FileID	Analytes
ICPMS05_317709_Tune	1	11-Jun-2018 00:00	ICPMS05_317709_Tune_1	

Tune Report

Batch Folder C:\Agilent\ICPMH\1\DATA\061118A.b
Report Comment
Instrument Name G3281A JP11080910

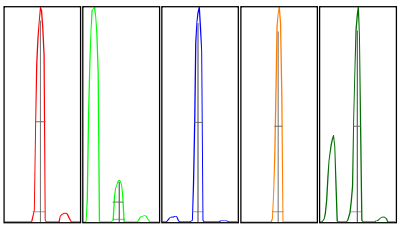
[nogas]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		12532				NaN	-	
24		32907				NaN	-	
59		39229				NaN	-	
115		38443				NaN	-	
208		16774				NaN	-	

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	1.03	5.00				
24	0.77	5.00				
59	0.86	5.00				
115	0.89	5.00				
208	1.19	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	12553	12431	12452	12478	12747
24	32823	32574	33230	32835	33074
59	39541	39577	39241	38952	38834
115	38744	38538	38766	38150	38018
208	16948	16810	16432	16869	16813

Integration Time [sec] 0.1



Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	3498.93	8.95	8.9 - 9.1		0.37	0.452	0.750	
24	9190.19	23.95	23.9 - 24.1		0.37	0.445	0.750	
59	11902.55	58.95	58.9 - 59.1		0.33	0.436	0.750	
115	12444.50	115.00	114.9 - 115.1		0.29	0.434	0.750	
208	5233.51	208.00	207.9 - 208.1		0.31	0.493	0.750	

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 168.5 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.45 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.40 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	15.0 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-50 V
Omega Bias	-100 V	Cell Exit	-58 V		

Cell Parameters

OctP Bias	-8.0 V	He Flow	0.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

[He]

Mass	Range	Count (Actual)	Response (Actual) [cps/ug/l]	Response (Required) [cps/ug/l]	Response (Flag)	Resp Ratio (Actual)	Resp Ratio (Required)	Resp Ratio (Flag)
9		270				NaN	-	
24		2301				NaN	-	
59		15575				NaN	-	

Tune Report

Mass	RSD% (Actual)	RSD% (Required)	RSD% (Flag)	Background (Actual)	Background (Required)	Background (Flag)
9	3.65	5.00				
24	2.54	5.00				
59	3.21	5.00				

Mass	Replicate 1 Count	Replicate 2 Count	Replicate 3 Count	Replicate 4 Count	Replicate 5 Count
9	277	280	268	273	255
24	2269	2324	2220	2374	2316
59	15132	15116	15479	15864	16283

Integration Time [sec] 0.1

Mass	Peak Height	Axis (Actual)	Axis (Required)	Axis (Flag)	W-50%	W-X% (Actual)	W-X% (Required)	W-X% (Flag)
9	75.52	8.95	8.9 - 9.1		0.36	0.475	0.750	
24	638.36	23.90	23.9 - 24.1		0.38	0.444	0.750	
59	4890.98	58.95	58.9 - 59.1		0.31	0.428	0.750	

X = 5 **Integration Time [sec]** 0.1 **Acquisition Time [sec]** 100.6 **Y Axis** Linear

Tune Parameters

Plasma Paramters

RF Power	1600 W	Carrier Gas	0.45 L/min	S/C Temp	2 ℃
RF Matching	1.70 V	Option Gas	0.0 %	Makeup/Dilution Gas	0.40 L/min
Smpl Depth	8.0 mm	Nebulizer Pump	0.10 rps	Gas Switch	Dilution Gas

Lenses Parameters

Extract 1	0.0 V	Omega Lens	10.0 V	Deflect	2.0 V
Extract 2	-200.0 V	Cell Entrance	-32 V	Plate Bias	-60 V
Omega Bias	-100 V	Cell Exit	-70 V		

Cell Parameters

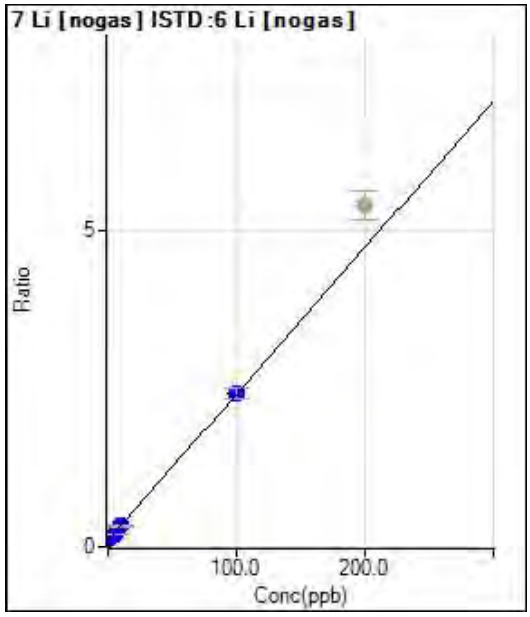
OctP Bias	-18.0 V	He Flow	4.0 mL/min	Energy Discrimination	5.0 V
OctP RF	190 V	H2 Flow	0.0 mL/min		
Use Gas	true	3rd Gas Flow	0 %		

Calibration for 011_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\061118A.b\
Analysis File: 061118A.batch.bin
DA Date-Time: 2018-06-11 23:04:04
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	004CALB.d	CAL BLK	2018-06-11 12:15:49
2	005CALS.d	2/10/200	2018-06-11 12:17:49
3	006CALS.d	5/25/500	2018-06-11 12:19:48
4	007CALS.d	10/50/1000	2018-06-11 12:21:48
5	008CALS.d	100/500/10K	2018-06-11 12:23:47
6	009CALS.d	200/1000/20K	2018-06-11 12:25:45
7			

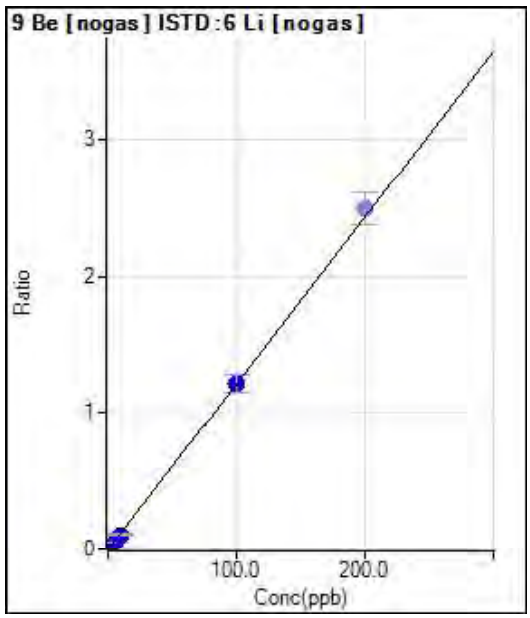
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	42545.36	0.1038	P	3.2
2	☐	2.000	1.724	56913.28	0.1437	P	1.3
3	☐	5.000	4.532	80749.43	0.2087	P	2.5
4	☐	10.000	9.781	125686.65	0.3301	P	3.3
5	☐	100.000	100.051	814664.73	2.4181	P	6.9
6	☑	200.000		1722488.57	5.3887	A	8.5
7	☐	1.000					

y = 0.0231 * x + 0.1038
R = 1.0000
DL = 0.4313
BEC = 4.489

Weight: <None>
Min Conc: <None>

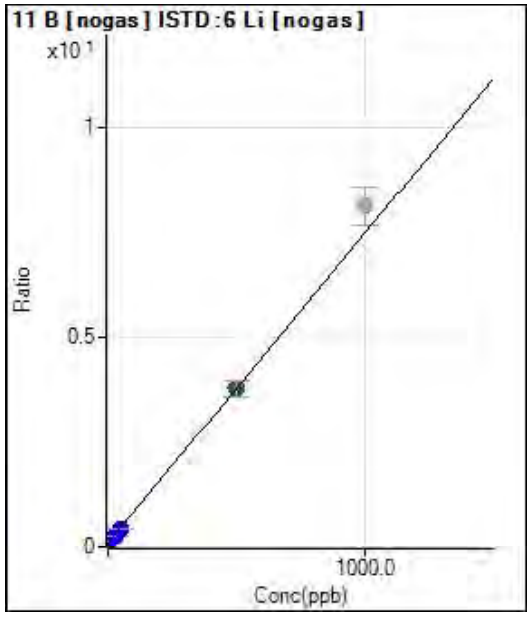


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	63.33	0.0002	P	44.1
2	☐	2.000	1.695	8218.59	0.0208	P	7.7
3	☐	5.000	4.397	20744.88	0.0536	P	1.0
4	☐	10.000	9.202	42655.50	0.1120	P	2.1
5	☐	100.000	100.116	409334.32	1.2175	P	11.5
6	☑	200.000		797134.44	2.4964	P	9.4
7	☐	1.000					

y = 0.0122 * x + 1.5336E-004
R = 1.0000
DL = 0.01667
BEC = 0.01261

Weight: <None>
Min Conc: <None>

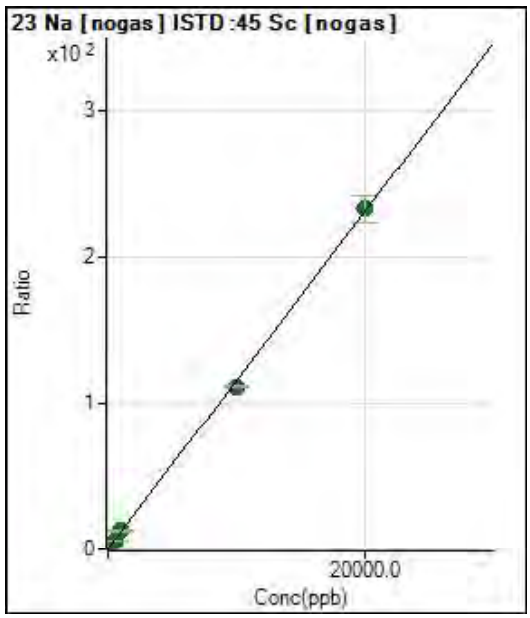
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37236.77	0.0908	P	1.3
2	☐	10.000	8.539	60914.26	0.1539	P	4.3
3	☐	25.000	22.734	100063.82	0.2587	P	3.0
4	☐	50.000	48.077	169689.53	0.4458	P	1.3
5	☐	500.000	500.335	1273214.98	3.7847	A	10.2
6	☑	1000.000		2593844.23	8.1290	A	10.8
7	☐	5.000					

y = 0.0074 * x + 0.0908
R = 1.0000
DL = 0.468
BEC = 12.31

Weight: <None>
Min Conc: <None>

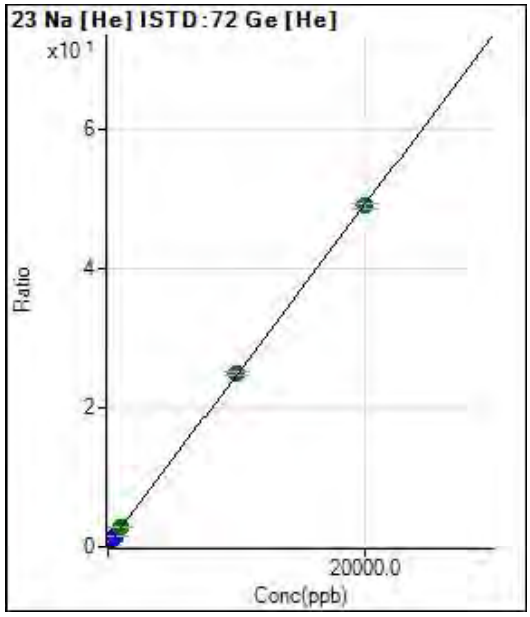


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	955364.73	0.6059	P	1.8
2	☐	200.000	207.225	4718307.27	2.9896	A	2.0
3	☐	500.000	520.629	10250749.19	6.5948	A	5.2
4	☐	1000.000	1077.062	19733306.17	12.9956	A	8.1
5	☐	10000.00	9633.743	172209787.1	111.425	A	1.1
6	☐	20000.00	20178.687	345432857.7	232.726	A	8.1
7	☐	100.000					

y = 0.0115 * x + 0.6059
R = 0.9997
DL = 2.891
BEC = 52.67

Weight: <None>
Min Conc: <None>

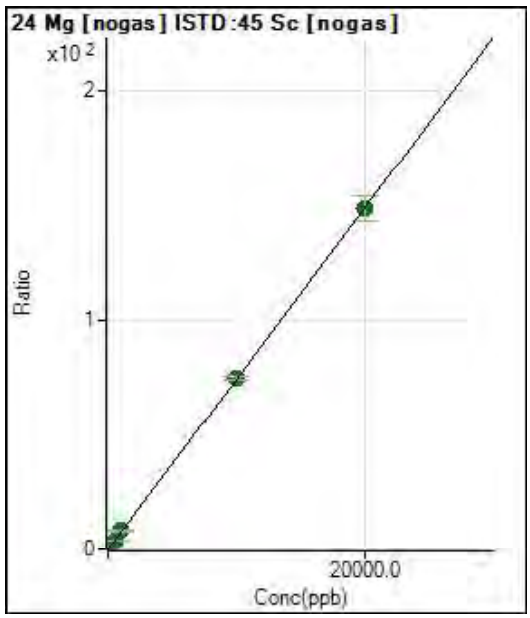
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	143755.67	0.2431	P	1.9
2	☐	200.000	227.803	466959.45	0.7993	P	0.9
3	☐	500.000	556.180	939666.84	1.6010	P	6.8
4	☐	1000.000	1100.459	1763760.08	2.9299	A	1.6
5	☐	10000.00	10113.102	14871081.03	24.9348	A	2.6
6	☐	20000.00	19936.744	28613655.41	48.9198	A	1.9
7	☐	100.000					

y = 0.0024 * x + 0.2431
R = 1.0000
DL = 5.55
BEC = 99.56

Weight: <None>
Min Conc: <None>

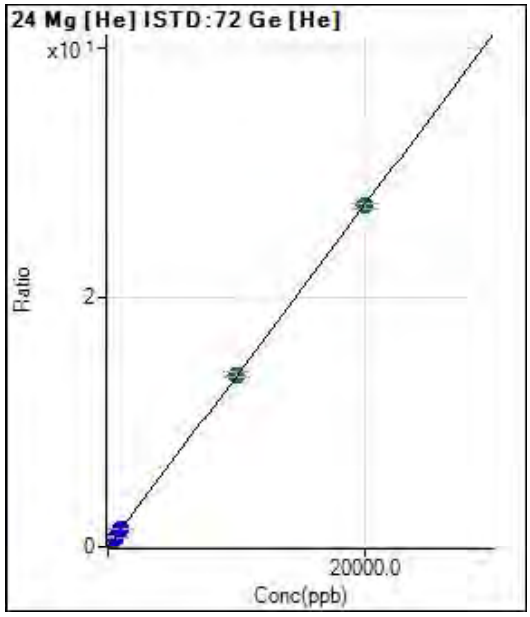


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	10304.92	0.0065	P	2.1
2	☐	200.000	216.399	2555686.84	1.6190	A	2.2
3	☐	500.000	540.765	6275356.26	4.0360	A	3.7
4	☐	1000.000	1132.066	12829462.52	8.4421	A	5.7
5	☐	10000.00	10060.166	115856781.7	74.9692	A	1.8
6	☐	20000.00	19962.130	220873271.6	148.753	A	7.3
7	☐	100.000					

y = 0.0075 * x + 0.0065
R = 1.0000
DL = 0.05464
BEC = 0.877

Weight: <None>
Min Conc: <None>

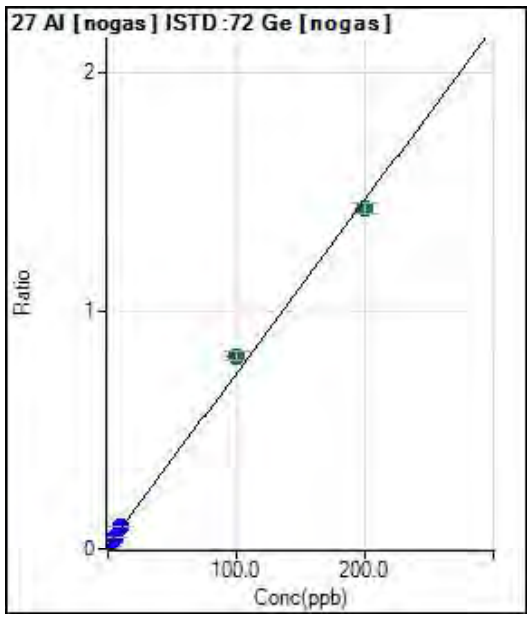
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1086.72	0.0018	P	20.4
2	☐	200.000	223.948	180137.62	0.3084	P	3.2
3	☐	500.000	561.630	452196.89	0.7706	P	7.6
4	☐	1000.000	1088.245	897893.48	1.4914	P	1.3
5	☐	10000.00	10088.474	8236452.17	13.8105	A	2.3
6	☐	20000.00	19949.571	15973113.09	27.3080	A	1.8
7	☐	100.000					

y = 0.0014 * x + 0.0018
R = 1.0000
DL = 0.8224
BEC = 1.346

Weight: <None>
Min Conc: <None>

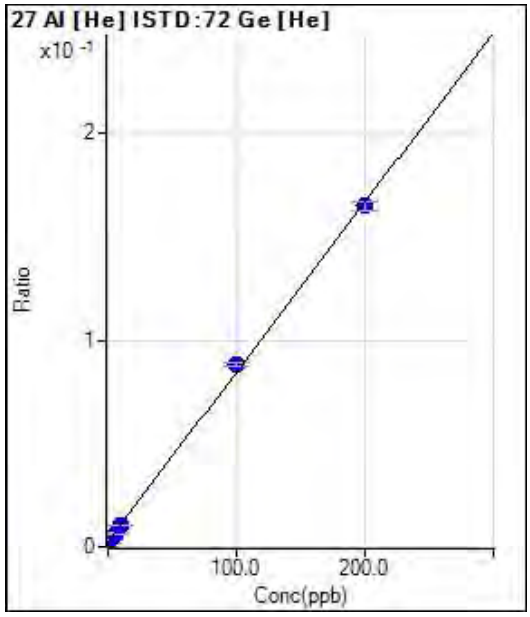


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	32381.87	0.0160	P	1.5
2	☐	2.000	2.398	67571.33	0.0333	P	4.1
3	☐	5.000	5.416	113769.00	0.0552	P	1.8
4	☐	10.000	11.497	198460.71	0.0992	P	3.8
5	☐	100.000	109.997	1603543.62	0.8121	A	3.9
6	☐	200.000	194.912	2840491.21	1.4268	A	3.1
7	☐	1.000					

y = 0.0072 * x + 0.0160
R = 0.9982
DL = 0.09835
BEC = 2.207

Weight: <None>
Min Conc: <None>

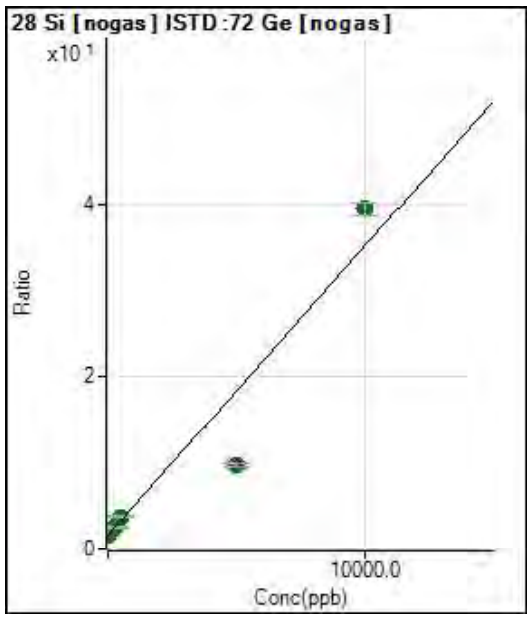
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.035	1083.38	0.0018	P	6.7
2	☐	2.000	1.294	2183.49	0.0037	P	5.8
3	☐	5.000	4.628	3797.11	0.0065	P	8.9
4	☐	10.000	9.982	6534.58	0.0109	P	0.9
5	☐	100.000	104.227	52520.00	0.0881	P	1.7
6	☐	200.000	197.904	96393.55	0.1648	P	2.4
7	☐	1.000					

y = 8.1914E-004 * x + 0.0027
R = 0.9996
DL = 0.4497
BEC = 3.27

Weight: <None>
Min Conc: <None>

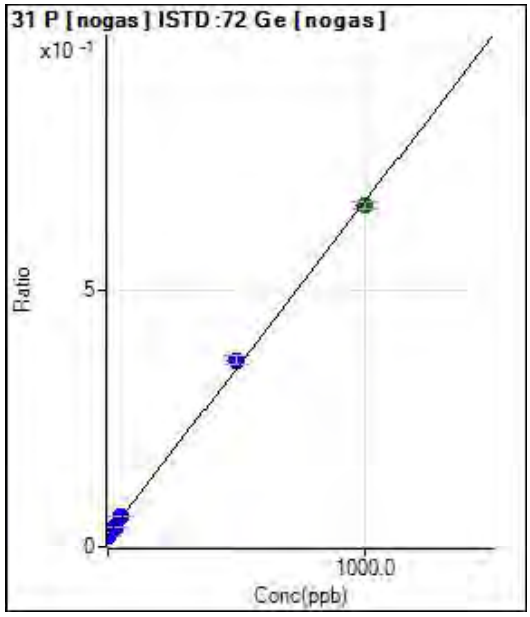


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3433753.80	1.6943	A	0.2
2	☐	100.000	112.427	4198933.37	2.0712	A	2.4
3	☐	250.000	283.320	5451024.71	2.6440	A	2.1
4	☐	500.000	645.439	7720346.14	3.8577	A	1.6
5	☐	5000.000	2418.597	19351332.21	9.8010	A	4.2
6	☐	10000.00	11282.472	78660445.49	39.5110	A	3.4
7	☐	5.000					

y = 0.0034 * x + 1.6943
R = 0.9579
DL = 3.27
BEC = 505.5

Weight: <None>
Min Conc: <None>

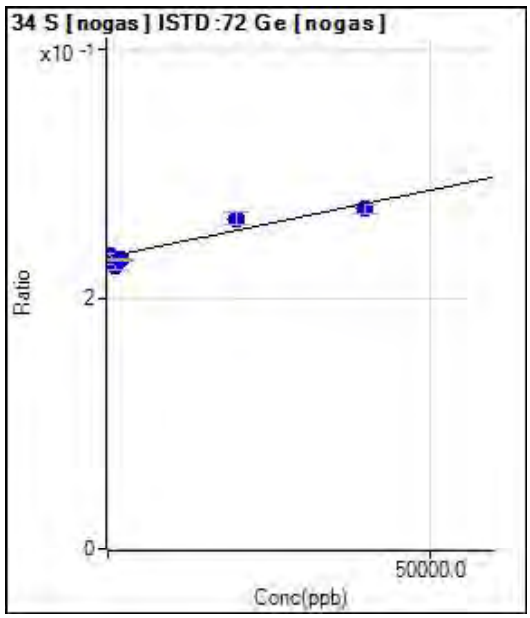
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	45966.17	0.0227	P	4.5
2	☐	10.000	10.249	59463.76	0.0293	P	2.7
3	☐	25.000	25.673	81083.99	0.0393	P	1.9
4	☐	50.000	56.419	118578.83	0.0593	P	2.5
5	☐	500.000	525.100	716821.06	0.3631	P	4.8
6	☐	1000.000	987.110	1319192.59	0.6625	A	2.2
7	☐	5.000					

y = 6.4820E-004 * x + 0.0227
R = 0.9996
DL = 4.728
BEC = 35

Weight: <None>
Min Conc: <None>

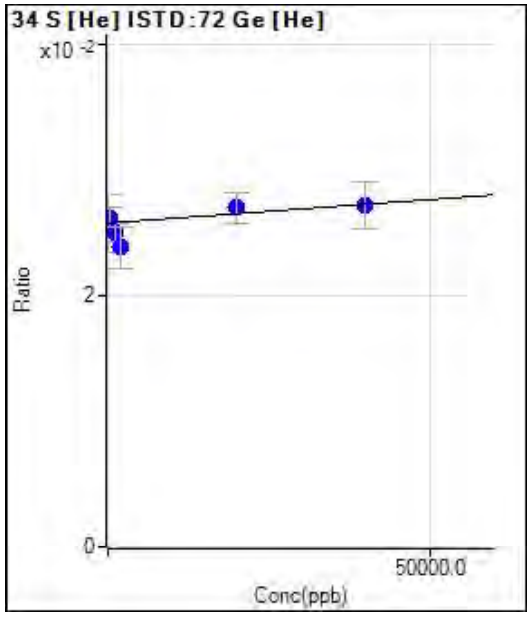


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	473883.88	0.2339	P	1.8
2	☐	400.000	873.569	476140.10	0.2348	P	1.5
3	☐	1000.000	-7517.897	465736.10	0.2259	P	1.4
4	☐	2000.000	-1919.383	464001.49	0.2318	P	0.4
5	☐	20000.00	28745.493	522035.85	0.2644	P	3.9
6	☐	40000.00	36031.434	541801.54	0.2721	P	2.7
7	☐	100.000					

y = 1.0615E-006 * x + 0.2339
R = 0.9482
DL = 1.19E+04
BEC = 2.203E+05

Weight: <None>
Min Conc: <None>

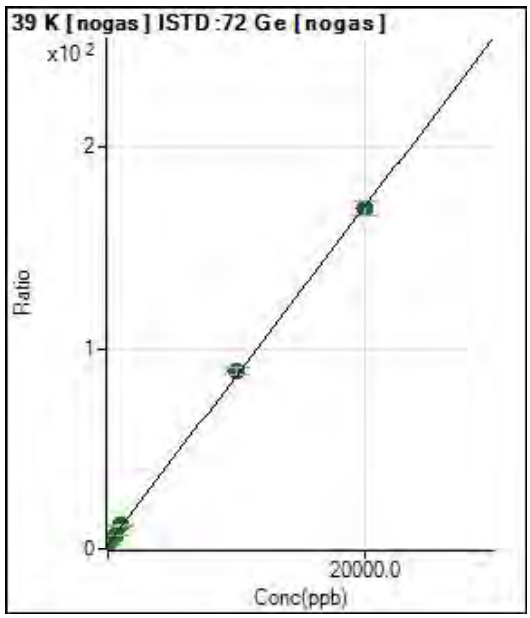
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	15275.99	0.0257	P	17.6
2	☐	400.000	9094.838	15242.92	0.0261	P	6.7
3	☐	1000.000	-18793.91	14708.64	0.0250	P	5.9
4	☐	2000.000	-52647.54	14308.20	0.0238	P	13.7
5	☐	20000.00	33348.375	16109.19	0.0270	P	9.1
6	☐	40000.00	36466.089	15843.57	0.0271	P	13.9
7	☐	100.000					

y = 3.7285E-008 * x + 0.0257
R = 0.7019
DL = 3.655E+05
BEC = 6.906E+05

Weight: <None>
Min Conc: <None>

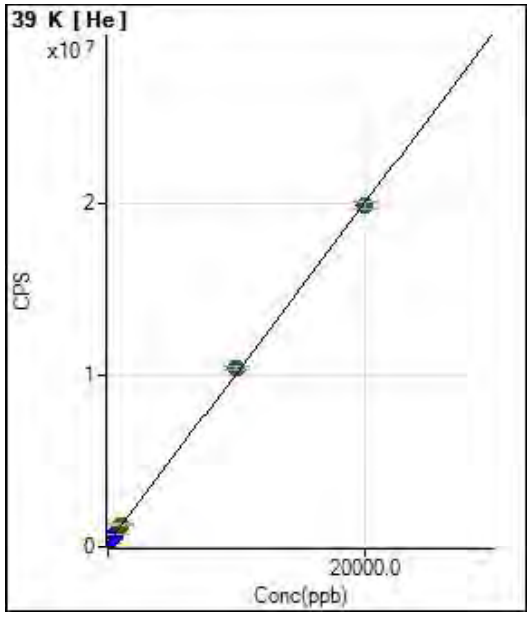


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5744889.06	2.8350	A	1.3
2	☐	200.000	216.743	9432109.06	4.6521	A	1.8
3	☐	500.000	518.667	14811282.62	7.1833	A	1.4
4	☐	1000.000	1128.129	24597326.07	12.2929	A	3.0
5	☐	10000.00	10243.730	175174137.2	88.7150	A	3.7
6	☐	20000.00	19871.095	337246949.2	169.427	A	4.3
7	☐	100.000					

y = 0.0084 * x + 2.8350
R = 0.9999
DL = 13.39
BEC = 338.2

Weight: <None>
Min Conc: <None>

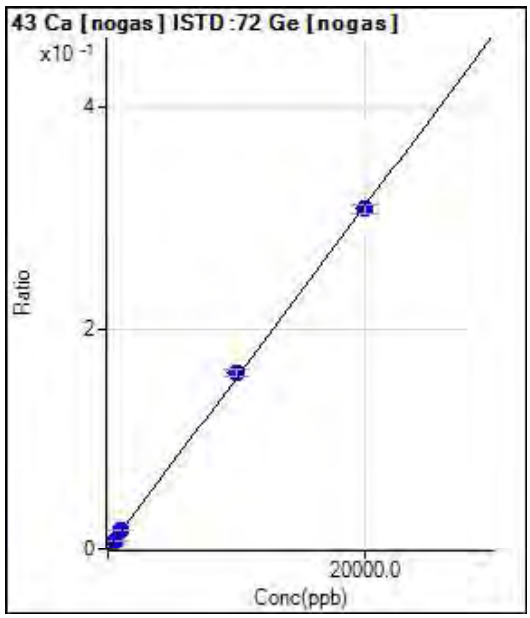
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	200388.25		P	1.3
2	☐	200.000	217.512	415936.93		P	0.8
3	☐	500.000	526.540	722176.21		P	2.6
4	☐	1000.000	1120.056	1310335.63		A	2.1
5	☐	10000.00	10325.645	10432839.63		A	2.6
6	☐	20000.00	19830.336	19851746.37		A	2.2
7	☐	100.000					

y = 990.9745 * x + 200388.2467
R = 0.9998
DL = 8.039
BEC = 202.2

Weight: <None>
Min Conc: <None>

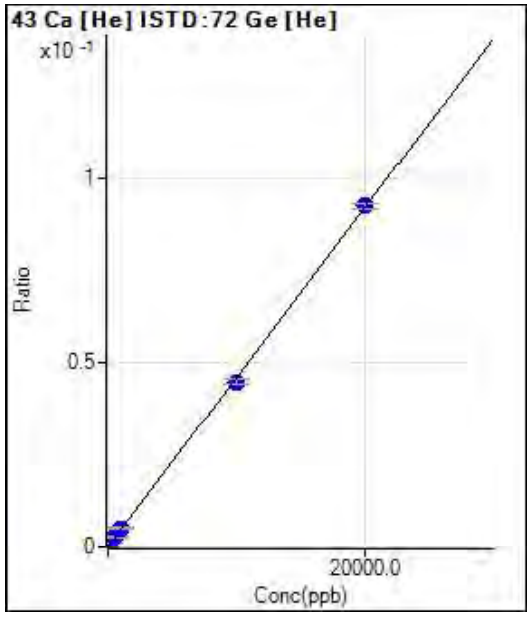


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1160.06	0.0006	P	2.7
2	☐	200.000	220.605	8091.90	0.0040	P	5.0
3	☐	500.000	507.495	17395.11	0.0084	P	4.4
4	☐	1000.000	1093.528	35066.81	0.0175	P	2.3
5	☐	10000.00	10292.399	316104.46	0.1601	P	3.5
6	☐	20000.00	19848.731	613617.91	0.3082	P	2.5
7	☐	100.000					

y = 1.5498E-005 * x + 5.7239E-004
R = 0.9998
DL = 3.005
BEC = 36.93

Weight: <None>
Min Conc: <None>

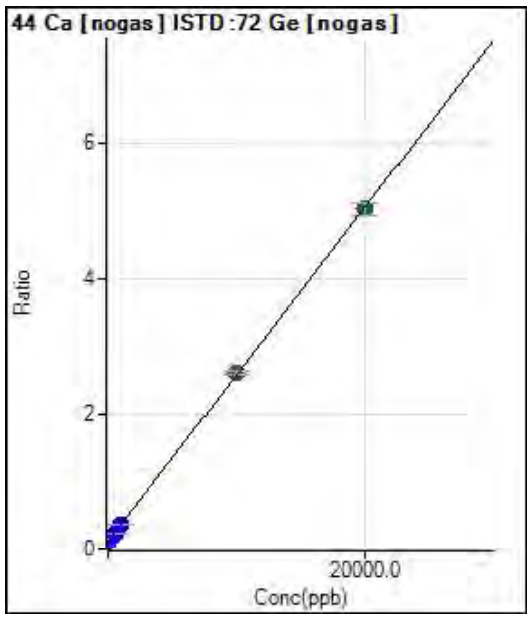
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	40.00	0.0001	P	74.8
2	☐	200.000	197.888	570.02	0.0010	P	20.6
3	☐	500.000	607.339	1683.44	0.0029	P	16.3
4	☐	1000.000	1080.982	3023.62	0.0050	P	8.9
5	☐	10000.00	9729.001	26649.36	0.0447	P	3.0
6	☐	20000.00	20128.788	54042.32	0.0924	P	1.7
7	☐	100.000					

y = 4.5859E-006 * x + 6.8044E-005
R = 0.9998
DL = 33.3
BEC = 14.84

Weight: <None>
Min Conc: <None>

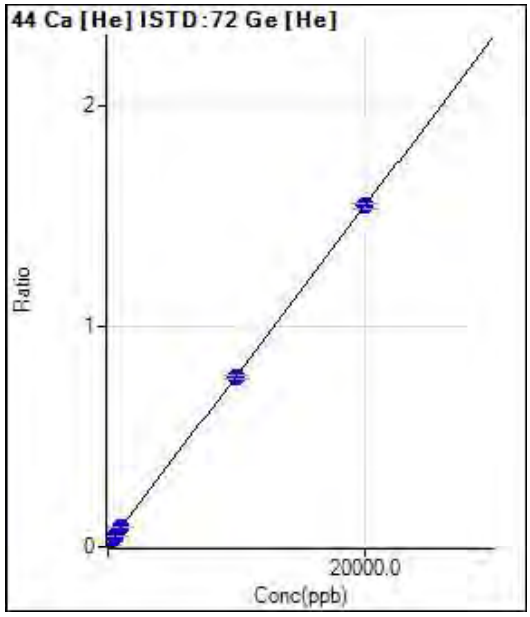


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	239584.94	0.1182	P	2.3
2	☐	200.000	200.783	339927.47	0.1677	P	2.4
3	☐	500.000	480.776	487849.41	0.2366	P	0.1
4	☐	1000.000	1057.044	757590.43	0.3785	P	0.6
5	☐	10000.00	10143.012	5165833.99	2.6156	A	2.5
6	☐	20000.00	19926.114	10003334.85	5.0244	A	3.7
7	☐	100.000					

y = 2.4622E-004 * x + 0.1182
R = 1.0000
DL = 32.54
BEC = 480.2

Weight: <None>
Min Conc: <None>

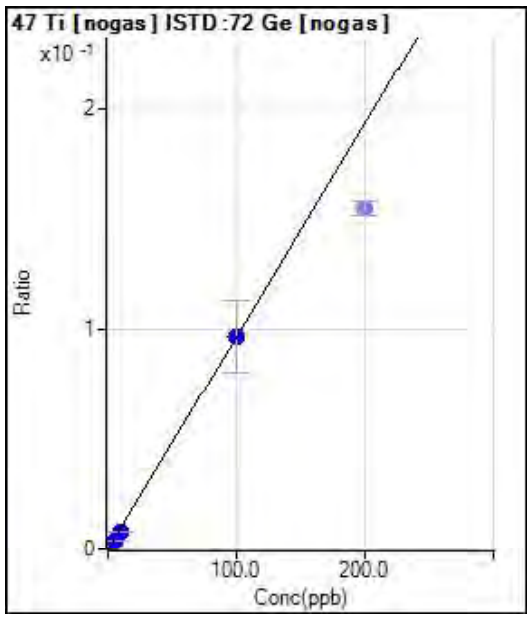
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4297.24	0.0073	P	2.8
2	☐	200.000	222.149	14218.97	0.0243	P	1.6
3	☐	500.000	534.662	28395.26	0.0484	P	4.7
4	☐	1000.000	1044.954	52721.39	0.0876	P	0.1
5	☐	10000.00	9938.686	459842.73	0.7711	P	2.8
6	☐	20000.00	20027.321	904605.77	1.5464	P	1.7
7	☐	100.000					

y = 7.6851E-005 * x + 0.0073
R = 1.0000
DL = 8.06
BEC = 94.56

Weight: <None>
Min Conc: <None>

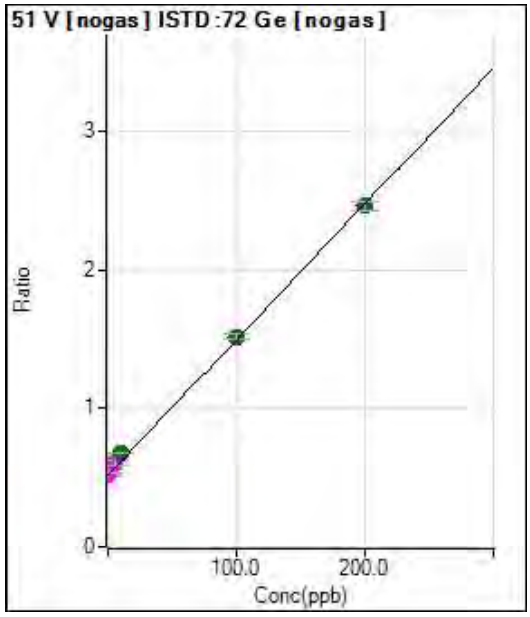


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	280.01	0.0001	P	22.3
2	☐	2.000	1.531	3277.02	0.0016	P	6.2
3	☐	5.000	4.243	8732.19	0.0042	P	5.9
4	☐	10.000	8.492	16684.41	0.0083	P	2.8
5	☐	100.000	100.198	191720.06	0.0969	P	33.7
6	☑	200.000		308197.07	0.1548	P	4.2
7	☐	1.000					

y = 9.6563E-004 * x + 1.3816E-004
R = 0.9999
DL = 0.09588
BEC = 0.1431

Weight: <None>
Min Conc: <None>

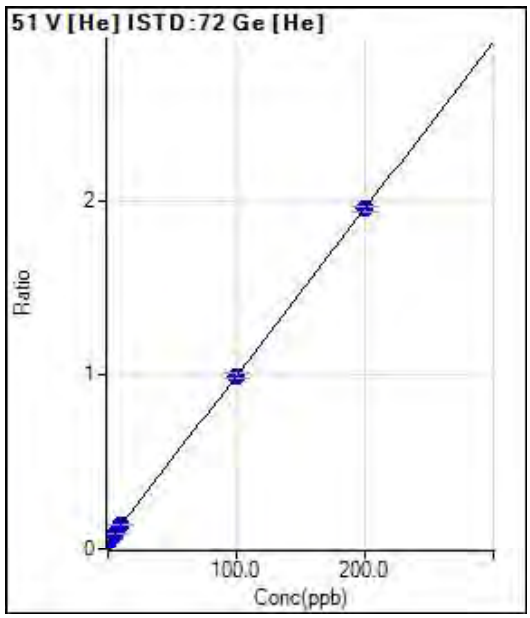
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1048386.16	0.5172	M	3.2
2	☐	2.000	2.933	1106741.66	0.5460	M	5.3
3	☐	5.000	9.384	1255963.18	0.6092	M	7.1
4	☐	10.000	16.675	1362402.50	0.6807	A	1.0
5	☐	100.000	102.294	3001930.93	1.5199	A	3.1
6	☐	200.000	198.401	4901627.84	2.4619	A	2.9
7	☐	1.000					

y = 0.0098 * x + 0.5172
R = 0.9995
DL = 5.14
BEC = 52.77

Weight: <None>
Min Conc: <None>

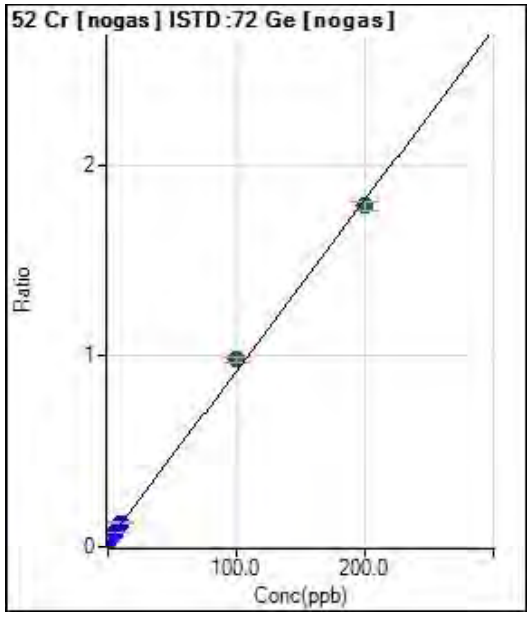


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.337	23089.63	0.0390	P	0.8
2	☐	2.000	1.827	34875.15	0.0597	P	0.6
3	☐	5.000	5.117	53503.73	0.0911	P	4.5
4	☐	10.000	10.394	85178.83	0.1415	P	1.1
5	☐	100.000	100.039	594923.25	0.9975	P	2.4
6	☐	200.000	199.959	1141567.25	1.9516	P	1.4
7	☐	1.000					

y = 0.0095 * x + 0.0422
R = 1.0000
DL = 0.09813
BEC = 4.424

Weight: <None>
Min Conc: <None>

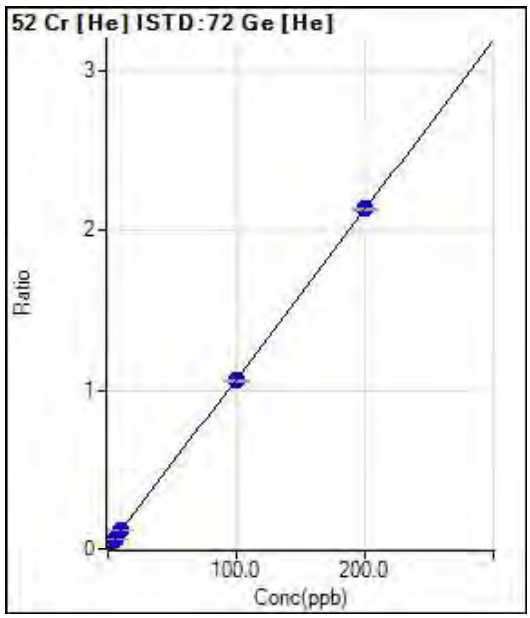
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	55991.62	0.0276	P	3.4
2	☐	2.000	2.049	93140.86	0.0459	P	2.1
3	☐	5.000	5.227	153267.92	0.0743	P	1.4
4	☐	10.000	11.174	255156.41	0.1275	P	0.5
5	☐	100.000	106.565	1934832.94	0.9797	A	2.5
6	☐	200.000	196.653	3553393.90	1.7846	A	2.3
7	☐	1.000					

y = 0.0089 * x + 0.0276
R = 0.9992
DL = 0.32
BEC = 3.093

Weight: <None>
Min Conc: <None>

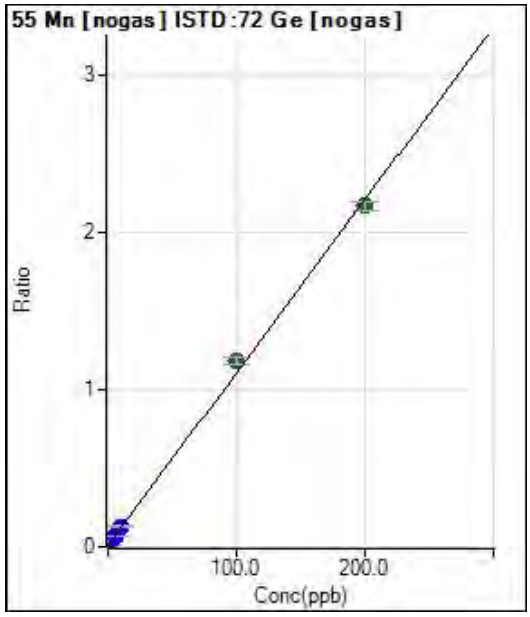


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6541.28	0.0111	P	8.2
2	☐	2.000	2.006	18869.86	0.0323	P	0.9
3	☐	5.000	5.016	37712.32	0.0642	P	2.4
4	☐	10.000	10.669	74654.31	0.1240	P	0.6
5	☐	100.000	98.992	631648.25	1.0590	P	1.5
6	☐	200.000	200.470	1247832.06	2.1332	P	0.8
7	☐	1.000					

y = 0.0106 * x + 0.0111
R = 1.0000
DL = 0.2562
BEC = 1.046

Weight: <None>
Min Conc: <None>

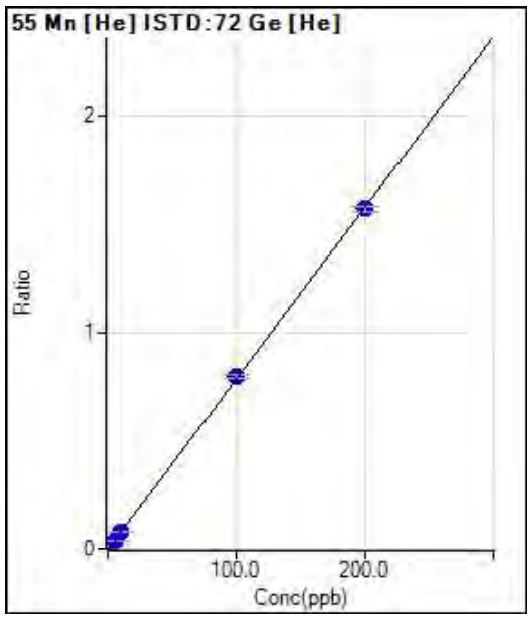
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	17732.06	0.0088	P	1.2
2	☐	2.000	2.159	65774.63	0.0324	P	1.0
3	☐	5.000	5.323	138430.01	0.0671	P	2.0
4	☐	10.000	11.188	263189.81	0.1315	P	1.9
5	☐	100.000	106.745	2330607.52	1.1798	A	4.1
6	☐	200.000	196.559	4310888.17	2.1652	A	2.5
7	☐	1.000					

y = 0.0110 * x + 0.0088
R = 0.9992
DL = 0.02955
BEC = 0.7976

Weight: <None>
Min Conc: <None>

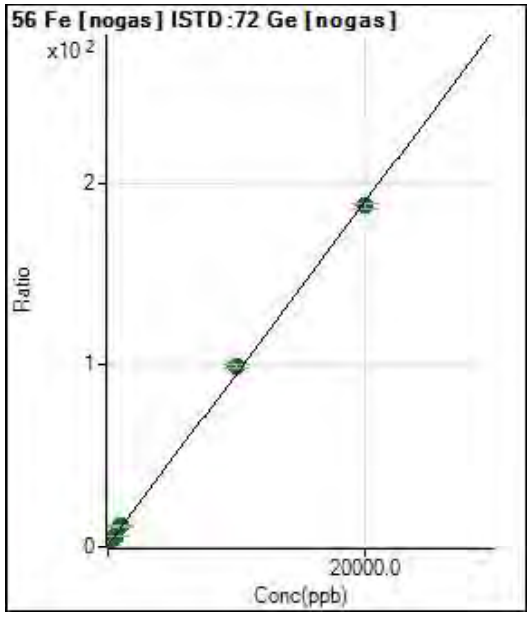


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	506.68	0.0009	P	8.0
2	☐	2.000	2.163	10473.13	0.0179	P	1.1
3	☐	5.000	5.195	24606.69	0.0419	P	0.8
4	☐	10.000	10.719	51452.23	0.0855	P	1.0
5	☐	100.000	101.233	477110.99	0.7999	P	2.0
6	☐	200.000	199.341	920903.63	1.5743	P	1.3
7	☐	1.000					

y = 0.0079 * x + 8.5571E-004
R = 1.0000
DL = 0.02592
BEC = 0.1084

Weight: <None>
Min Conc: <None>

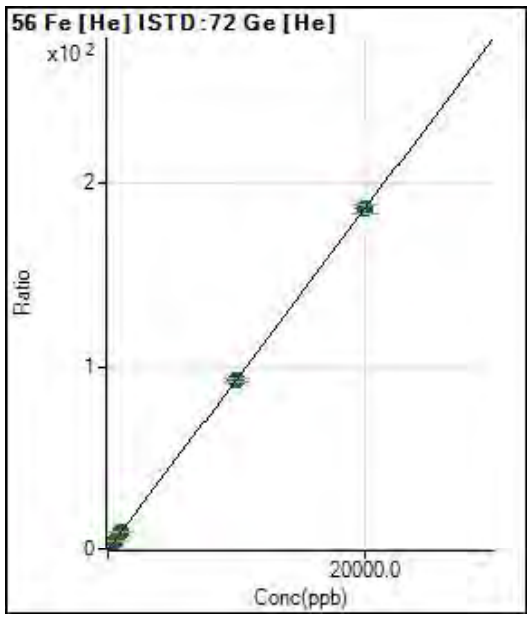
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2024116.45	0.9988	A	1.2
2	☐	200.000	215.908	6157625.92	3.0364	A	1.8
3	☐	500.000	520.938	12195702.62	5.9152	A	1.1
4	☐	1000.000	1114.347	23046859.37	11.5155	A	1.8
5	☐	10000.00	10428.013	196386966.8	99.4133	A	1.6
6	☐	20000.00	19779.594	373723858.3	187.669	A	1.5
7	☐	100.000					

y = 0.0094 * x + 0.9988
R = 0.9997
DL = 3.952
BEC = 105.8

Weight: <None>
Min Conc: <None>

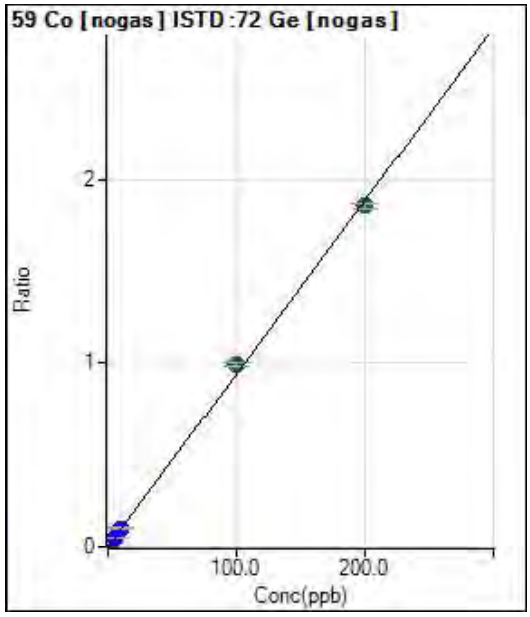


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	18169.13	0.0307	P	2.1
2	☐	200.000	224.281	1238034.41	2.1188	P	3.8
3	☐	500.000	554.820	3054269.12	5.1961	A	0.6
4	☐	1000.000	1073.030	6031832.20	10.0207	A	2.5
5	☐	10000.00	9985.625	55470362.51	92.9977	A	1.7
6	☐	20000.00	20001.923	108937288.3	186.250	A	2.6
7	☐	100.000					

y = 0.0093 * x + 0.0307
R = 1.0000
DL = 0.2038
BEC = 3.3

Weight: <None>
Min Conc: <None>

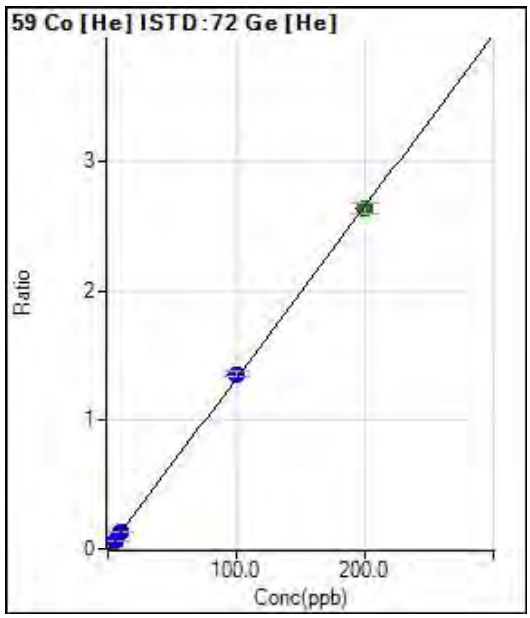
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	490.02	0.0002	P	17.7
2	☐	2.000	2.109	40766.07	0.0201	P	2.3
3	☐	5.000	5.250	102442.01	0.0497	P	1.7
4	☐	10.000	10.896	205854.44	0.1029	P	1.8
5	☐	100.000	105.535	1963456.07	0.9942	A	2.1
6	☐	200.000	197.180	3699546.61	1.8574	A	1.6
7	☐	1.000					

y = 0.0094 * x + 2.4164E-004
R = 0.9995
DL = 0.01361
BEC = 0.02566

Weight: <None>
Min Conc: <None>

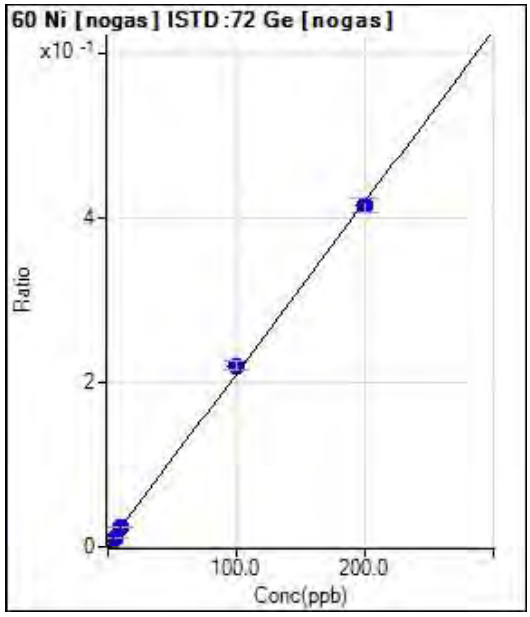


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	76.67	0.0001	P	35.3
2	☐	2.000	2.301	17912.30	0.0307	P	2.4
3	☐	5.000	5.586	43592.38	0.0743	P	6.2
4	☐	10.000	10.841	86670.68	0.1440	P	3.0
5	☐	100.000	102.579	811926.19	1.3614	P	3.0
6	☐	200.000	198.651	1541905.34	2.6364	A	3.3
7	☐	1.000					

y = 0.0133 * x + 1.2896E-004
R = 0.9999
DL = 0.01029
BEC = 0.009718

Weight: <None>
Min Conc: <None>

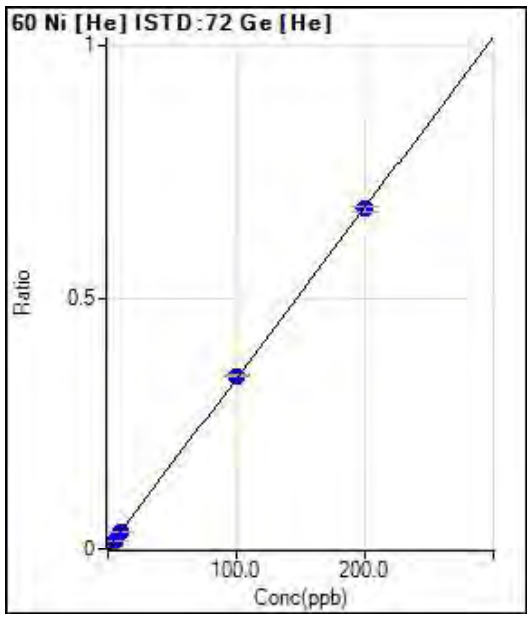
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.993	216.67	0.0001	P	30.5
2	☐	2.000	1.203	9502.60	0.0047	P	1.0
3	☐	5.000	4.197	22544.16	0.0109	P	1.5
4	☐	10.000	10.278	47271.71	0.0236	P	0.6
5	☐	100.000	104.601	435096.01	0.2204	P	5.4
6	☐	200.000	197.714	825320.25	0.4146	P	4.1
7	☐	1.000					

y = 0.0021 * x + 0.0022
R = 0.9996
DL = 0.04692
BEC = 1.044

Weight: <None>
Min Conc: <None>

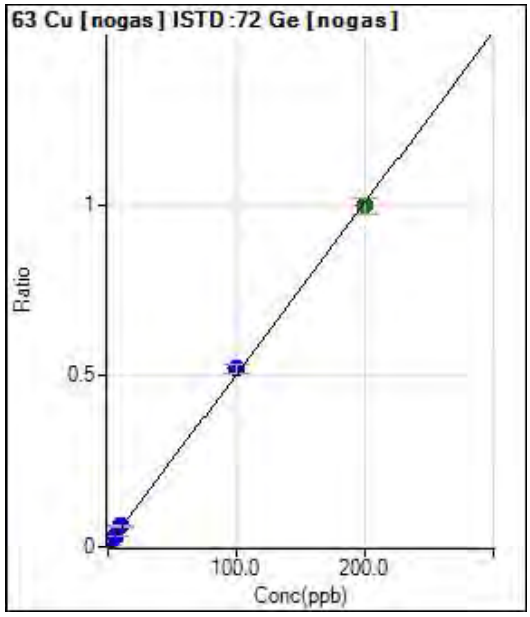


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.578	143.33	0.0002	P	30.4
2	☐	2.000	1.692	4630.67	0.0079	P	5.0
3	☐	5.000	4.840	10900.07	0.0186	P	10.4
4	☐	10.000	10.377	22470.72	0.0373	P	1.3
5	☐	100.000	101.360	205984.54	0.3453	P	1.1
6	☐	200.000	199.308	395954.00	0.6769	P	1.3
7	☐	1.000					

y = 0.0034 * x + 0.0022
R = 1.0000
DL = 0.06561
BEC = 0.6496

Weight: <None>
Min Conc: <None>

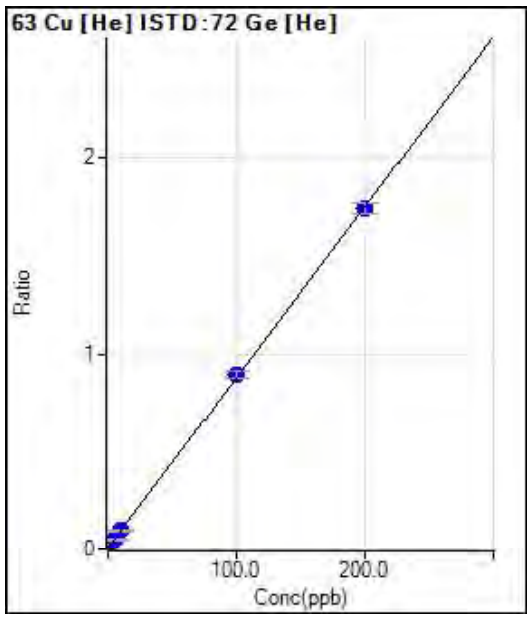
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	7491.64	0.0037	P	3.4
2	☐	2.000	2.246	30275.42	0.0149	P	4.7
3	☐	5.000	5.338	62697.73	0.0304	P	2.0
4	☐	10.000	11.486	122459.97	0.0612	P	1.8
5	☐	100.000	103.340	1028408.86	0.5208	P	4.7
6	☐	200.000	198.245	1981922.42	0.9957	A	4.5
7	☐	1.000					

y = 0.0050 * x + 0.0037
R = 0.9998
DL = 0.07502
BEC = 0.7386

Weight: <None>
Min Conc: <None>

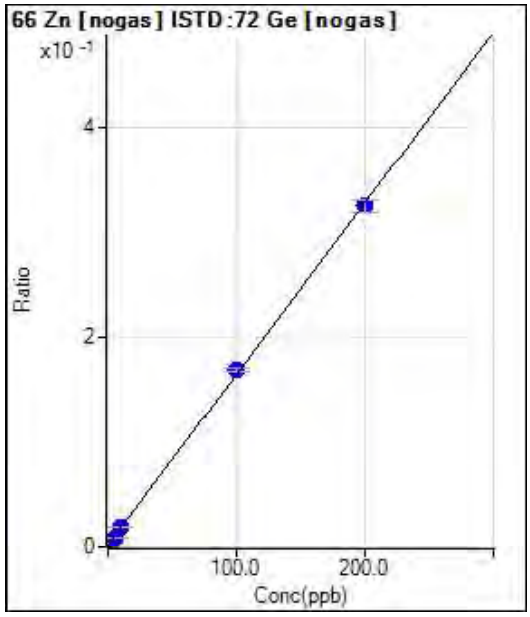


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.553	3223.68	0.0055	P	8.3
2	☐	2.000	1.572	13988.91	0.0239	P	1.4
3	☐	5.000	4.931	31173.51	0.0532	P	12.4
4	☐	10.000	10.032	58751.34	0.0976	P	2.5
5	☐	100.000	102.026	535580.26	0.8982	P	4.1
6	☐	200.000	198.991	1018827.69	1.7420	P	3.2
7	☐	1.000					

y = 0.0087 * x + 0.0103
R = 0.9999
DL = 0.1567
BEC = 1.18

Weight: <None>
Min Conc: <None>

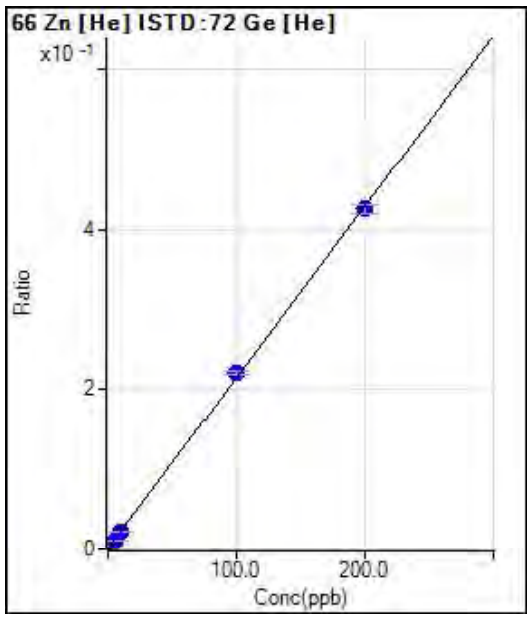
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.638	1120.05	0.0006	P	12.3
2	☐	2.000	1.404	7871.84	0.0039	P	6.8
3	☐	5.000	4.378	17985.93	0.0087	P	3.2
4	☐	10.000	10.346	36917.95	0.0184	P	1.8
5	☐	100.000	103.010	334585.38	0.1694	P	2.1
6	☐	200.000	198.499	646942.72	0.3250	P	3.6
7	☐	1.000					

y = 0.0016 * x + 0.0016
R = 0.9998
DL = 0.1249
BEC = 0.9769

Weight: <None>
Min Conc: <None>

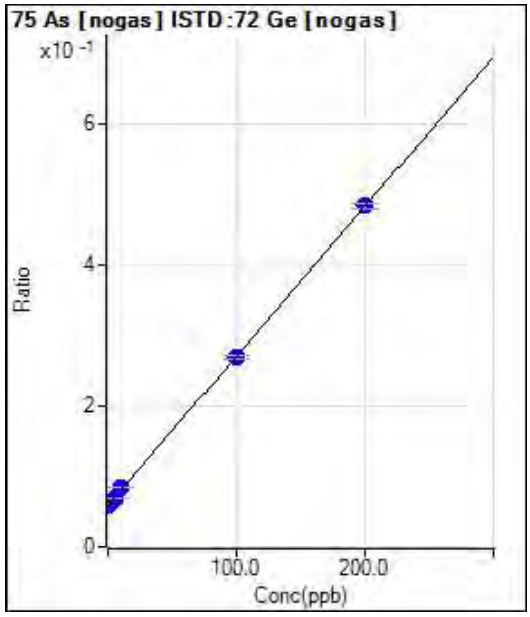


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.543	386.68	0.0007	P	8.1
2	☐	2.000	1.468	2886.95	0.0049	P	7.7
3	☐	5.000	4.674	6908.09	0.0118	P	7.0
4	☐	10.000	10.067	14002.25	0.0233	P	2.5
5	☐	100.000	102.647	131522.93	0.2205	P	2.8
6	☐	200.000	198.686	248678.92	0.4252	P	2.8
7	☐	1.000					

y = 0.0021 * x + 0.0018
R = 0.9999
DL = 0.07453
BEC = 0.8501

Weight: <None>
Min Conc: <None>

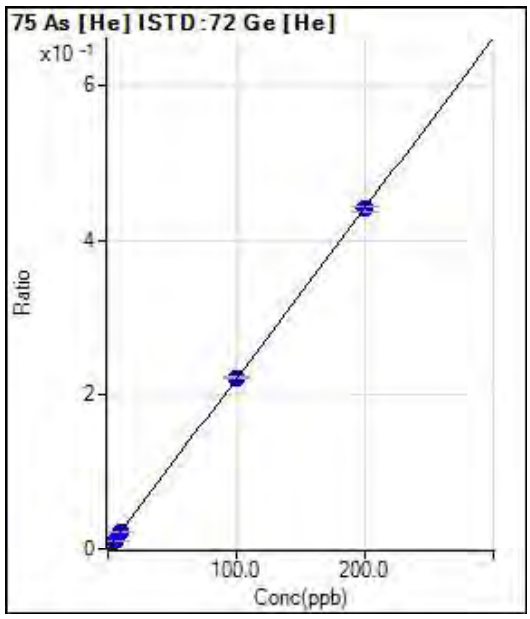
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.153	118764.31	0.0586	P	2.0
2	☐	2.000	1.143	124374.89	0.0614	P	3.1
3	☐	5.000	4.609	141656.71	0.0687	P	0.8
4	☐	10.000	11.986	168824.61	0.0844	P	1.2
5	☐	100.000	98.992	531096.47	0.2689	P	2.0
6	☐	200.000	200.423	963994.91	0.4841	P	1.6
7	☐	1.000					

y = 0.0021 * x + 0.0589
R = 0.9999
DL = 1.687
BEC = 27.78

Weight: <None>
Min Conc: <None>

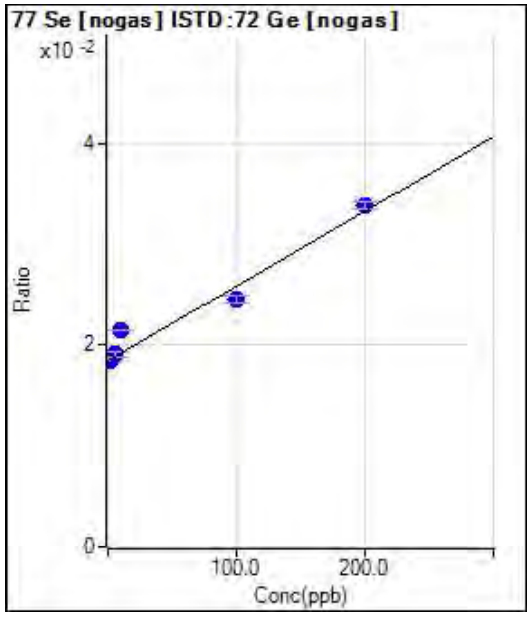


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	792.25	0.0013	P	8.8
2	☐	2.000	2.040	3404.78	0.0058	P	0.9
3	☐	5.000	5.136	7429.33	0.0126	P	1.5
4	☐	10.000	10.061	14127.75	0.0235	P	0.6
5	☐	100.000	100.722	132909.24	0.2228	P	1.9
6	☐	200.000	199.632	257598.27	0.4404	P	1.4
7	☐	1.000					

y = 0.0022 * x + 0.0013
R = 1.0000
DL = 0.1613
BEC = 0.6097

Weight: <None>
Min Conc: <None>

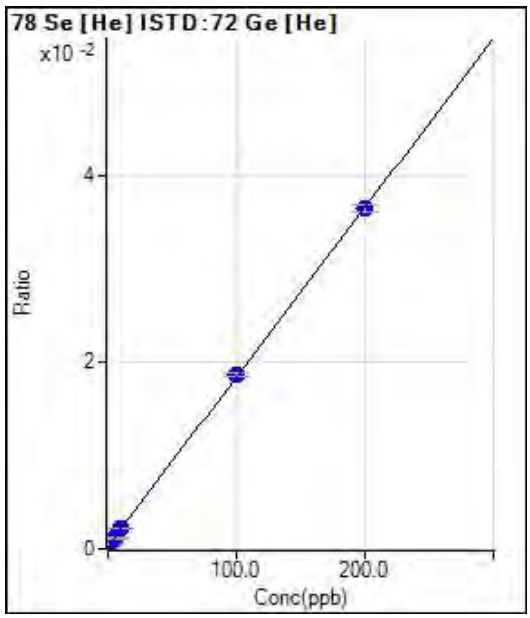
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	37425.52	0.0185	P	2.3
2	☐	2.000	0.943	37599.27	0.0185	P	0.8
3	☐	5.000	9.328	39506.57	0.0192	P	2.7
4	☐	10.000	40.466	42967.68	0.0215	P	0.5
5	☐	100.000	82.446	48528.44	0.0246	P	3.3
6	☐	200.000	207.156	67311.31	0.0338	P	2.2
7	☐	1.000					

y = 7.4030E-005 * x + 0.0185
R = 0.9816
DL = 17.11
BEC = 249.5

Weight: <None>
Min Conc: <None>

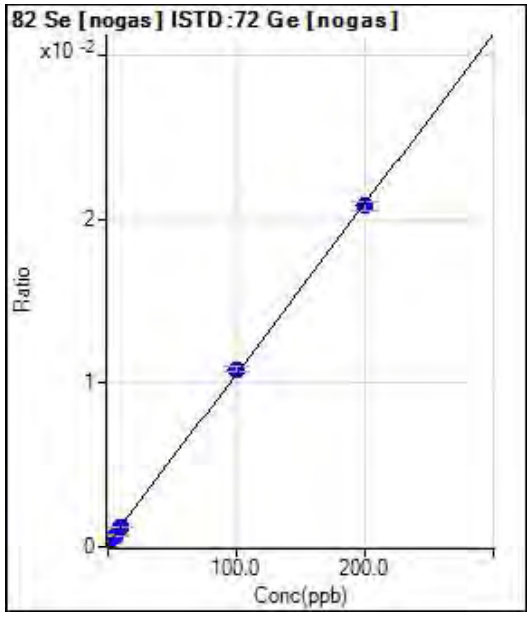


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.235	220.67	0.0004	P	2.2
2	☐	2.000	1.539	405.34	0.0007	P	8.3
3	☐	5.000	4.743	749.35	0.0013	P	6.9
4	☐	10.000	10.229	1363.39	0.0023	P	2.9
5	☐	100.000	101.449	11183.45	0.0188	P	1.6
6	☐	200.000	199.275	21308.46	0.0364	P	2.0
7	☐	1.000					

y = 1.8073E-004 * x + 4.1556E-004
R = 1.0000
DL = 0.1333
BEC = 2.299

Weight: <None>
Min Conc: <None>

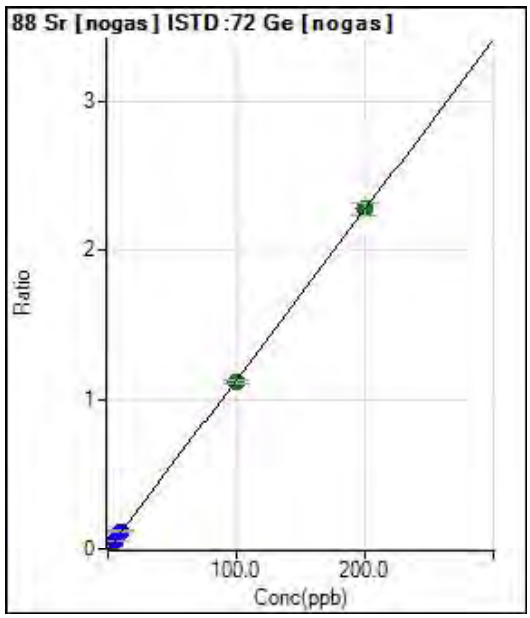
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	420.01	0.0002	P	7.6
2	☐	2.000	1.736	783.36	0.0004	P	27.0
3	☐	5.000	4.761	1443.42	0.0007	P	12.7
4	☐	10.000	9.366	2356.86	0.0012	P	2.6
5	☐	100.000	102.562	21386.36	0.0108	P	3.4
6	☐	200.000	198.759	41397.92	0.0208	P	2.5
7	☐	1.000					

y = 1.0357E-004 * x + 2.0718E-004
R = 0.9999
DL = 0.4547
BEC = 2

Weight: <None>
Min Conc: <None>

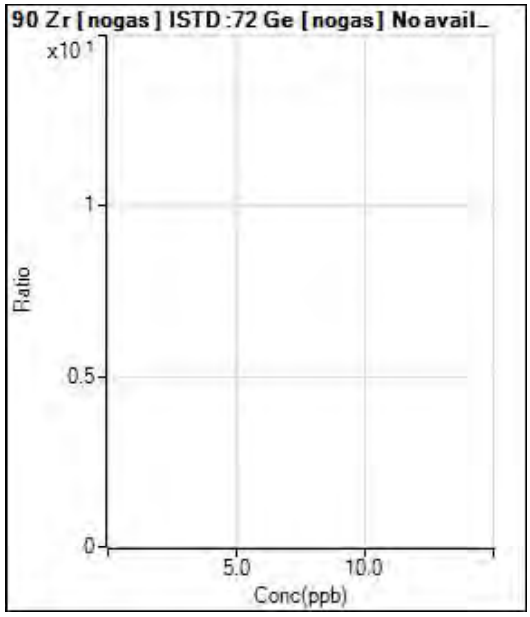


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	970.04	0.0005	P	5.3
2	☐	2.000	2.118	49753.40	0.0245	P	2.8
3	☐	5.000	5.220	123264.63	0.0598	P	1.2
4	☐	10.000	11.089	253083.71	0.1265	P	2.0
5	☐	100.000	98.928	2220724.45	1.1245	A	1.7
6	☐	200.000	200.475	4536485.04	2.2782	A	3.4
7	☐	1.000					

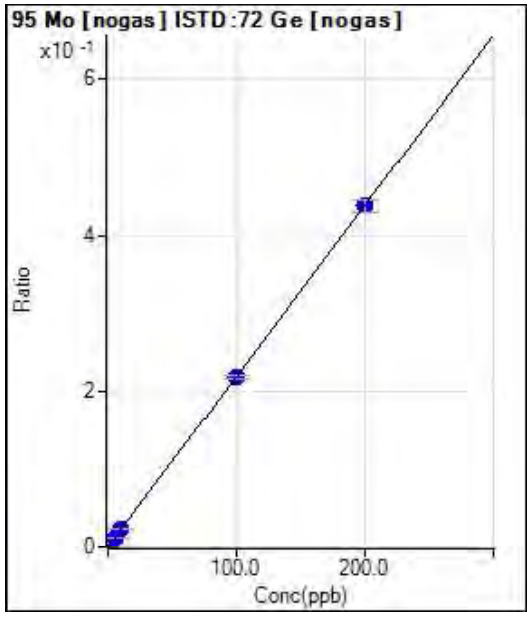
y = 0.0114 * x + 4.7876E-004
R = 1.0000
DL = 0.006712
BEC = 0.04214

Weight: <None>
Min Conc: <None>

Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	240.01	0.0001	P	16.0
2	☐	2.000	2.052	9342.63	0.0046	P	3.0
3	☐	5.000	5.030	22938.53	0.0111	P	3.8
4	☐	10.000	10.742	47274.03	0.0236	P	3.4
5	☐	100.000	100.010	432516.48	0.2190	P	2.1
6	☐	200.000	199.957	871517.02	0.4377	P	3.9
7	☐	1.000					

y = 0.0022 * x + 1.1835E-004

R = 1.0000

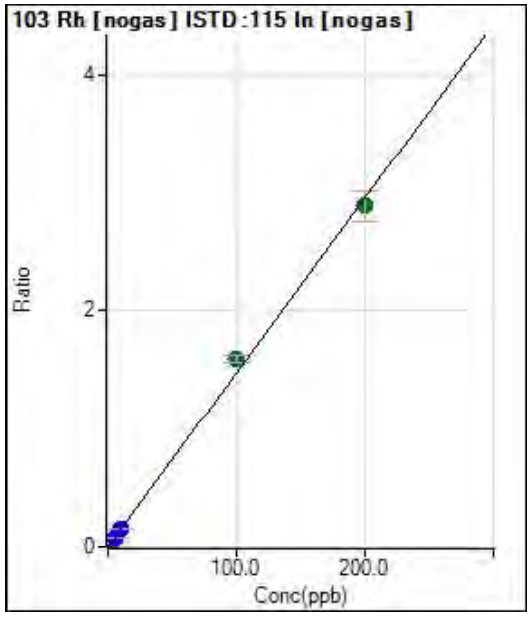
DL = 0.02596

BEC = 0.05408

Weight: <None>

Min Conc: <None>

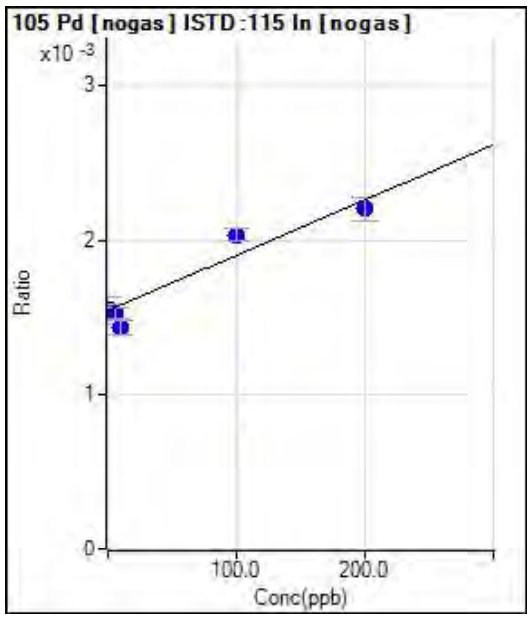
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	153.33	0.0001	P	24.5
2	☐	2.000	2.139	54572.01	0.0317	P	4.2
3	☐	5.000	5.120	133273.84	0.0756	P	0.4
4	☐	10.000	10.718	269865.56	0.1582	P	1.4
5	☐	100.000	108.335	2533522.62	1.5984	A	3.6
6	☐	200.000	195.792	4679120.87	2.8886	A	9.3
7	☐	1.000					

y = 0.0148 * x + 8.9346E-005
R = 0.9988
DL = 0.004447
BEC = 0.006056

Weight: <None>
Min Conc: <None>

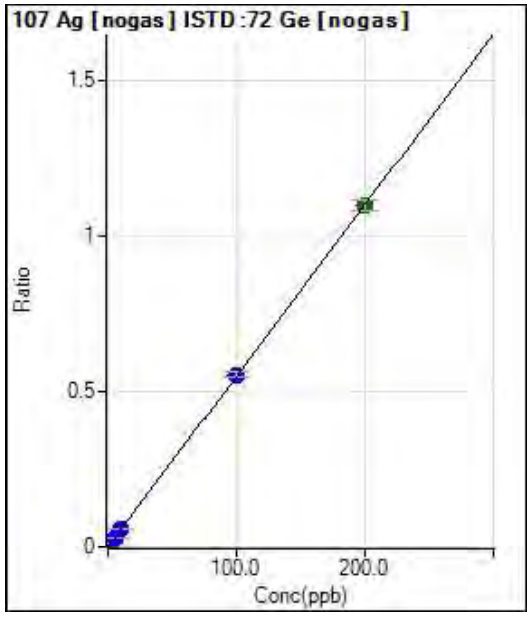


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2626.90	0.0015	P	11.2
2	☐	2.000	2.808	2690.25	0.0016	P	3.2
3	☐	5.000	-4.840	2700.26	0.0015	P	4.5
4	☐	10.000	-31.095	2453.55	0.0014	P	6.1
5	☐	100.000	137.264	3233.68	0.0020	P	3.8
6	☐	200.000	183.661	3587.12	0.0022	P	6.6
7	☐	1.000					

y = 3.5765E-006 * x + 0.0015
R = 0.9585
DL = 145.2
BEC = 433.2

Weight: <None>
Min Conc: <None>

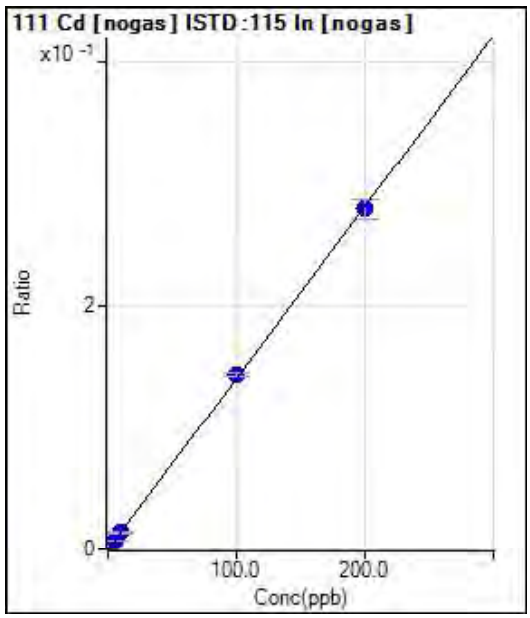
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	216.67	0.0001	P	28.6
2	☐	2.000	2.130	23933.22	0.0118	P	2.0
3	☐	5.000	5.136	58344.72	0.0283	P	1.9
4	☐	10.000	10.842	119319.12	0.0596	P	2.3
5	☐	100.000	100.777	1092659.10	0.5533	P	2.7
6	☐	200.000	199.565	2181564.34	1.0956	A	3.3
7	☐	1.000					

y = 0.0055 * x + 1.0672E-004
R = 1.0000
DL = 0.01671
BEC = 0.01944

Weight: <None>
Min Conc: <None>

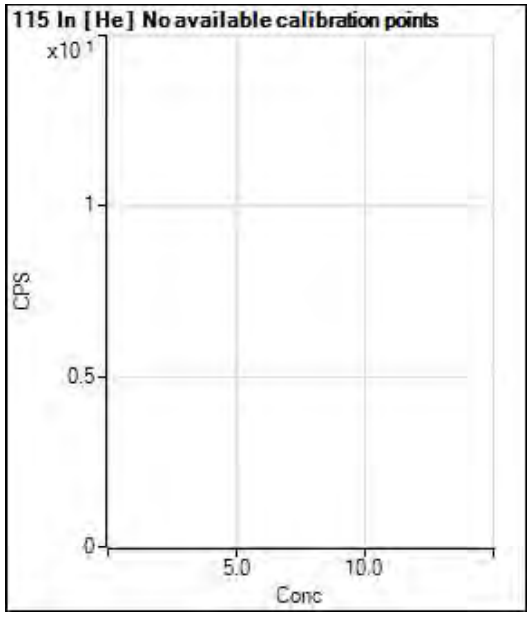


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30.00	0.0000	P	70.3
2	☐	2.000	1.882	4604.01	0.0027	P	3.6
3	☐	5.000	4.793	11924.29	0.0068	P	0.9
4	☐	10.000	10.015	24076.86	0.0141	P	1.5
5	☐	100.000	102.323	228400.88	0.1441	P	1.8
6	☐	200.000	198.844	454151.28	0.2799	P	6.2
7	☐	1.000					

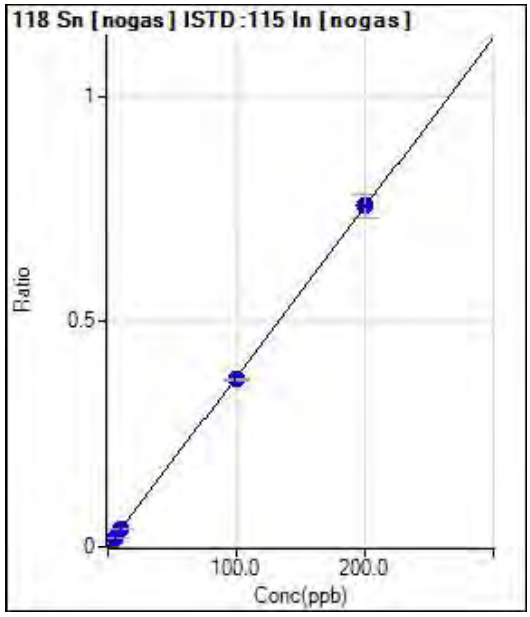
y = 0.0014 * x + 1.8060E-005
R = 0.9999
DL = 0.02707
BEC = 0.01283

Weight: <None>
Min Conc: <None>

Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			709622.48		P	0.6
2	☐			716247.74		P	2.5
3	☐			712232.20		P	1.9
4	☐			707231.35		P	1.4
5	☐			696262.41		P	1.1
6	☐			680652.83		P	0.7
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1090.06	0.0006	P	10.5
2	☐	2.000	1.904	13478.82	0.0078	P	1.8
3	☐	5.000	4.791	32908.32	0.0187	P	1.1
4	☐	10.000	10.124	66069.54	0.0387	P	3.1
5	☐	100.000	98.411	588175.60	0.3710	P	1.1
6	☐	200.000	200.795	1226333.79	0.7563	P	7.1
7	☐	1.000					

y = 0.0038 * x + 6.4255E-004

R = 1.0000

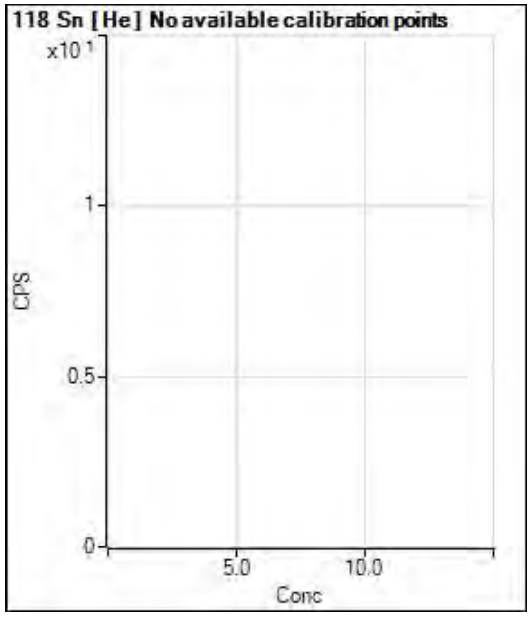
DL = 0.05389

BEC = 0.1708

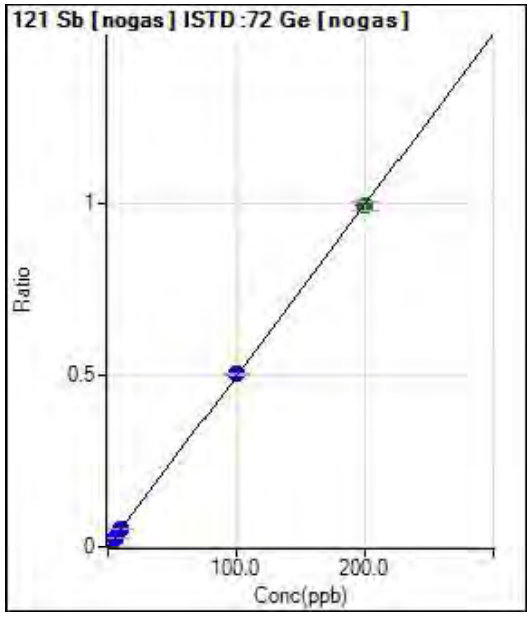
Weight: <None>

Min Conc: <None>

Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			506.68		P	23.4
2	☐			6434.63		P	1.4
3	☐			14499.59		P	7.1
4	☐			29966.30		P	1.6
5	☐			272416.70		P	2.4
6	☐			563736.58		P	1.1
7	☐						

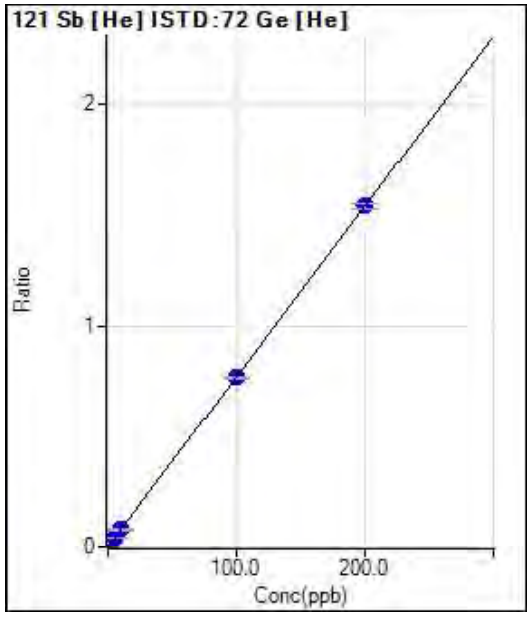


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	656.69	0.0003	P	9.1
2	☐	2.000	2.106	21950.89	0.0108	P	3.8
3	☐	5.000	4.873	50784.86	0.0246	P	1.7
4	☐	10.000	10.425	104718.53	0.0523	P	2.5
5	☐	100.000	101.100	996691.99	0.5047	P	1.5
6	☐	200.000	199.431	1981679.03	0.9952	A	2.4
7	☐	1.000					

y = 0.0050 * x + 3.2418E-004
R = 1.0000
DL = 0.0178
BEC = 0.06498

Weight: <None>
Min Conc: <None>

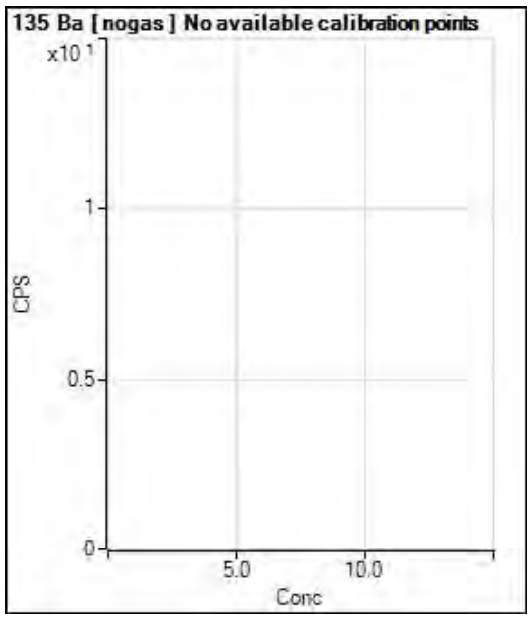
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	410.01	0.0007	P	11.2
2	☐	2.000	2.143	10033.03	0.0172	P	4.2
3	☐	5.000	5.105	23472.91	0.0400	P	3.2
4	☐	10.000	10.077	47073.95	0.0782	P	2.2
5	☐	100.000	99.255	455795.92	0.7642	P	1.5
6	☐	200.000	200.365	901878.03	1.5419	P	1.8
7	☐	1.000					

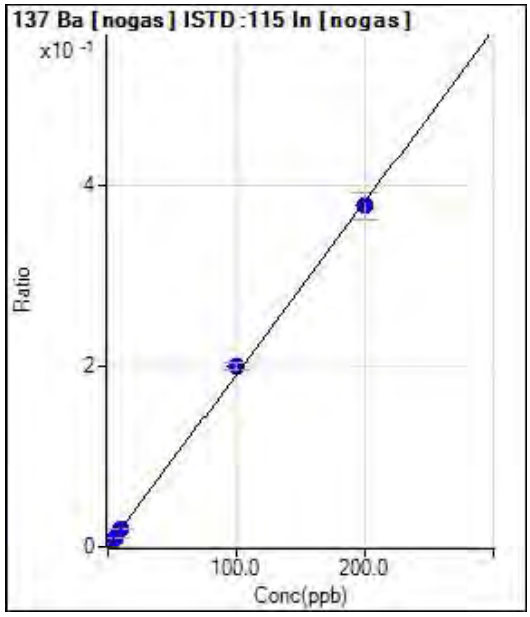
y = 0.0077 * x + 6.9182E-004
R = 1.0000
DL = 0.03029
BEC = 0.08994

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			260.01		P	32.9
2	☐			3990.53		P	7.4
3	☐			9429.40		P	4.9
4	☐			19791.61		P	1.4
5	☐			188906.49		P	3.3
6	☐			355365.27		P	3.9
7	☐						

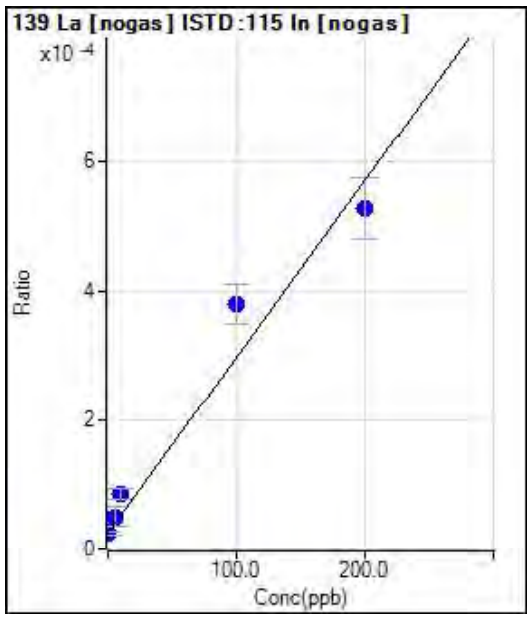
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	383.34	0.0002	P	21.5
2	☐	2.000	2.048	7108.26	0.0041	P	8.8
3	☐	5.000	4.688	16151.20	0.0092	P	3.5
4	☐	10.000	10.468	34428.54	0.0202	P	1.1
5	☐	100.000	104.551	316328.61	0.1996	P	3.4
6	☐	200.000	197.708	611293.17	0.3772	P	8.2
7	☐	1.000					

y = 0.0019 * x + 2.2596E-004
R = 0.9996
DL = 0.07632
BEC = 0.1185

Weight: <None>
Min Conc: <None>

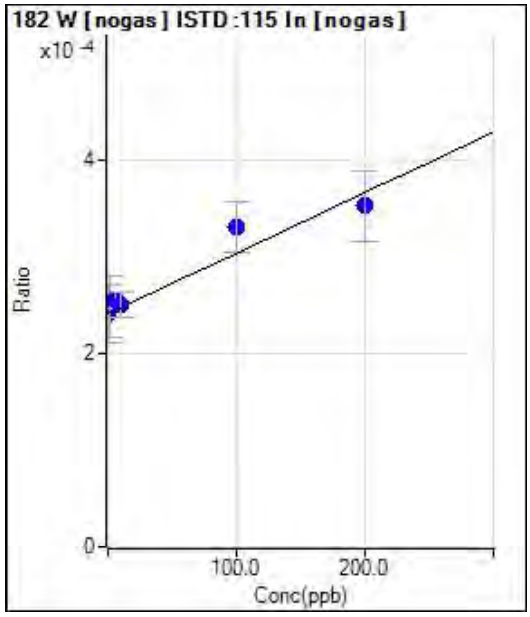


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43.33	0.0000	P	18.3
2	☐	2.000	8.491	83.33	0.0000	P	32.3
3	☐	5.000	9.360	90.00	0.0001	P	61.9
4	☐	10.000	22.209	146.67	0.0001	P	20.4
5	☐	100.000	130.084	603.35	0.0004	P	16.0
6	☐	200.000	184.173	850.03	0.0005	P	18.0
7	☐	1.000					

y = 2.7221E-006 * x + 2.5609E-005
R = 0.9832
DL = 5.165
BEC = 9.408

Weight: <None>
Min Conc: <None>

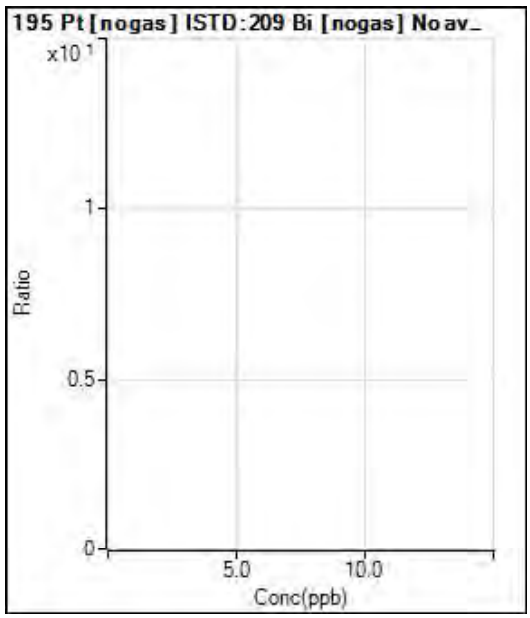
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	406.68	0.0002	P	25.2
2	☐	2.000	13.268	433.35	0.0002	P	25.4
3	☐	5.000	23.076	450.01	0.0003	P	6.8
4	☐	10.000	14.853	426.68	0.0003	P	9.8
5	☐	100.000	142.538	523.35	0.0003	P	16.2
6	☐	200.000	177.924	570.02	0.0004	P	20.4
7	☐	1.000					

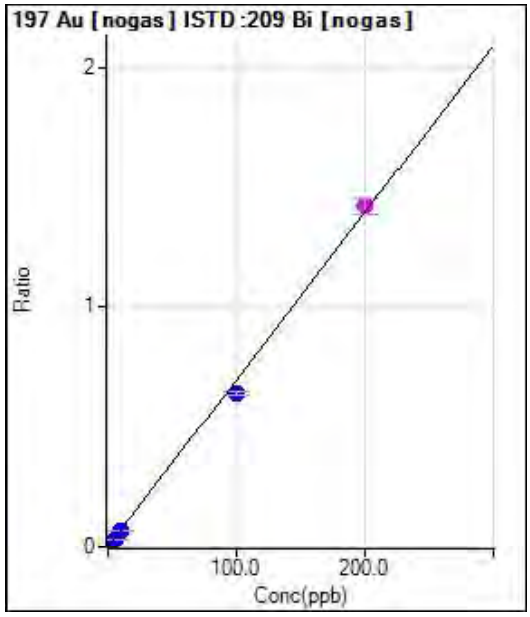
y = 6.2589E-007 * x + 2.4091E-004
R = 0.9655
DL = 290.7
BEC = 384.9

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

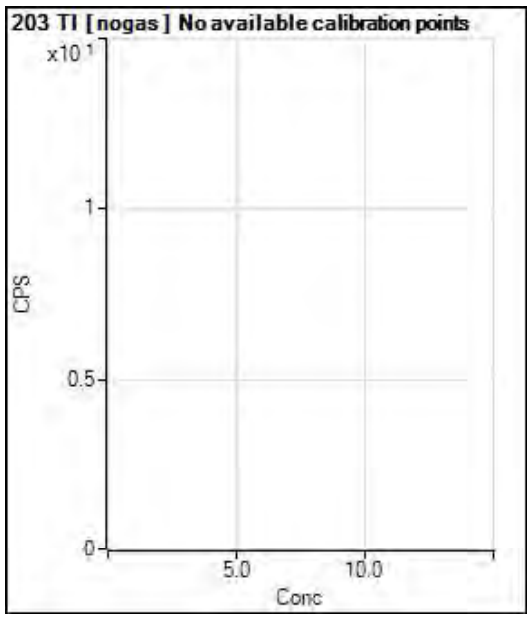
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	806.70	0.0007	P	10.9
2	☐	2.000	1.771	14566.77	0.0131	P	8.0
3	☐	5.000	4.576	36026.79	0.0326	P	3.6
4	☐	10.000	9.882	73767.24	0.0696	P	1.8
5	☐	100.000	91.917	692763.27	0.6413	P	2.6
6	☐	200.000	204.060	1440740.24	1.4228	M	4.6
7	☐	1.000					

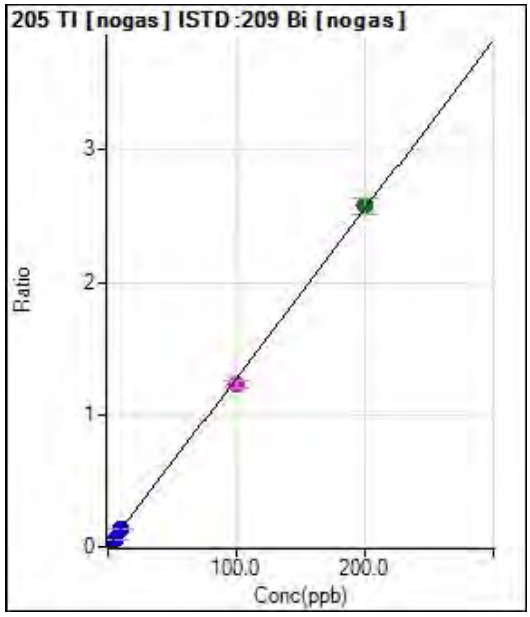
y = 0.0070 * x + 7.4091E-004
R = 0.9989
DL = 0.03488
BEC = 0.1063

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			160.00		P	34.8
2	☐			11287.45		P	5.0
3	☐			27994.62		P	1.3
4	☐			58248.51		P	2.3
5	☐			547000.62		P	2.7
6	☐			1082835.66		P	1.0
7	☐						

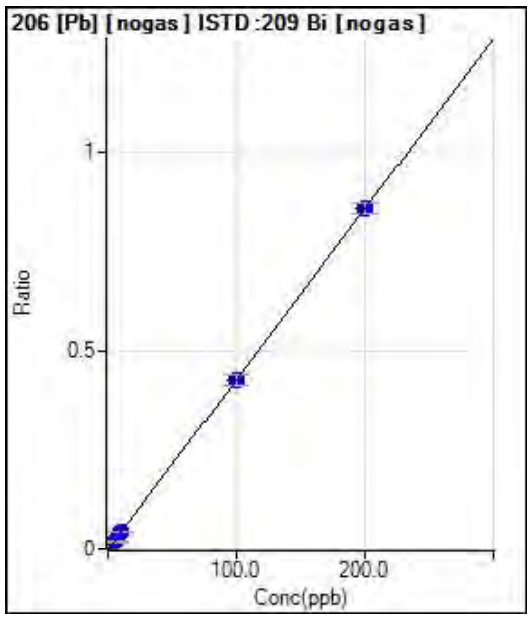
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	210.01	0.0002	P	11.1
2	☐	2.000	1.870	26792.75	0.0240	P	4.5
3	☐	5.000	4.679	66054.93	0.0599	P	5.1
4	☐	10.000	10.329	139737.53	0.1319	P	3.2
5	☐	100.000	96.011	1322230.60	1.2245	M	4.8
6	☐	200.000	201.987	2608322.51	2.5758	A	4.7
7	☐	1.000					

y = 0.0128 * x + 1.9333E-004
R = 0.9997
DL = 0.005046
BEC = 0.01516

Weight: <None>
Min Conc: <None>

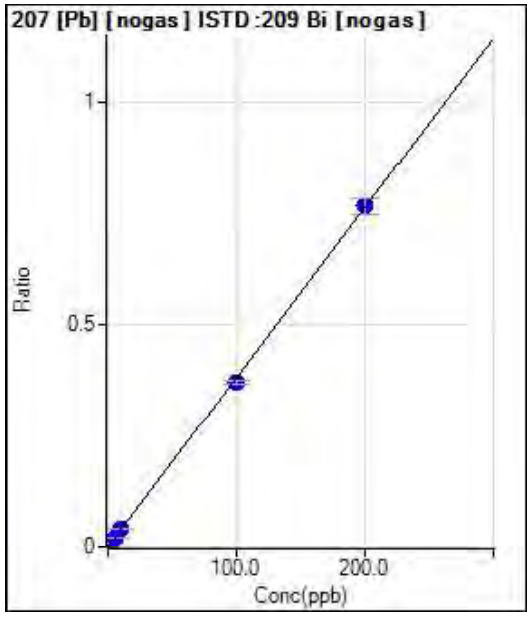


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	106.67	0.0001	P	13.0
2	☐	2.000	1.989	9606.42	0.0086	P	5.7
3	☐	5.000	4.852	23060.11	0.0209	P	4.8
4	☐	10.000	10.789	49095.19	0.0463	P	4.3
5	☐	100.000	99.683	461492.13	0.4274	P	5.4
6	☐	200.000	200.123	869130.67	0.8579	P	3.0
7	☐	1.000					

y = 0.0043 * x + 9.7970E-005
R = 1.0000
DL = 0.008928
BEC = 0.02286

Weight: <None>
Min Conc: <None>

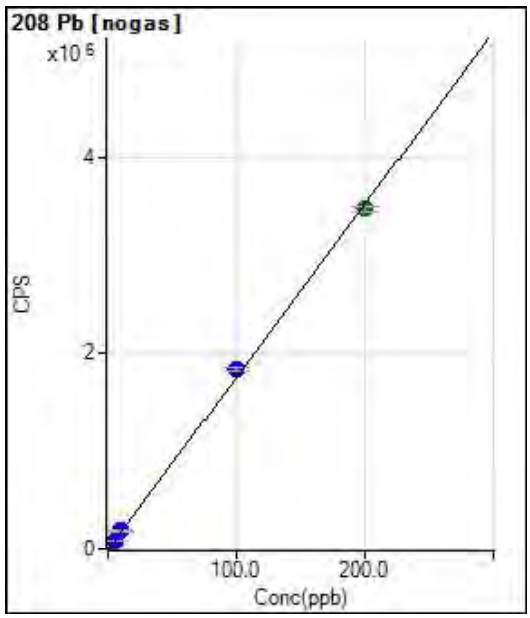
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	120.00	0.0001	P	31.4
2	☐	2.000	1.945	8375.69	0.0075	P	7.3
3	☐	5.000	4.907	20757.05	0.0188	P	3.7
4	☐	10.000	10.709	43342.12	0.0409	P	3.8
5	☐	100.000	97.342	400861.49	0.3710	P	2.0
6	☐	200.000	201.297	776779.96	0.7671	P	4.7
7	☐	1.000					

y = 0.0038 * x + 1.1076E-004
R = 0.9999
DL = 0.02742
BEC = 0.02907

Weight: <None>
Min Conc: <None>

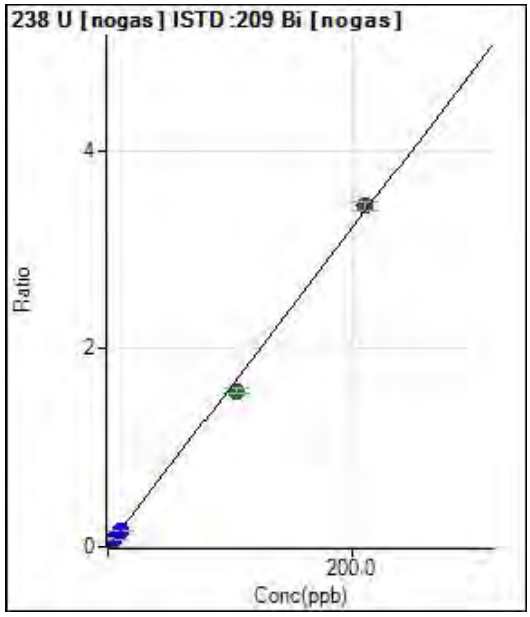


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	346.67		P	17.6
2	☐	2.000	2.143	38074.95		P	1.8
3	☐	5.000	5.259	92906.22		P	1.0
4	☐	10.000	11.024	194377.46		P	2.2
5	☐	100.000	104.890	1846569.23		P	2.0
6	☐	200.000	197.496	3476584.14		A	1.3
7	☐	1.000					

y = 17601.5543 * x + 346.6667
R = 0.9996
DL = 0.01041
BEC = 0.0197

Weight: <None>
Min Conc: <None>

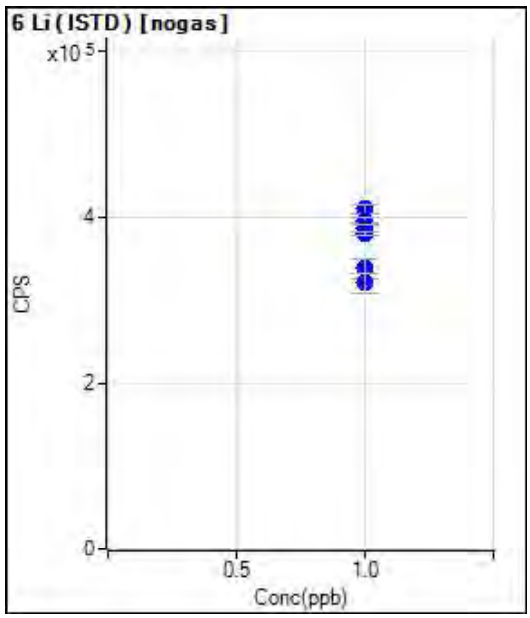
Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	113.33	0.0001	P	44.8
2	☐	2.000	1.986	35744.38	0.0321	P	6.5
3	☐	5.000	5.086	90614.59	0.0820	P	0.7
4	☐	10.000	10.706	182900.12	0.1726	P	0.5
5	☐	105.000	97.713	1700679.66	1.5743	A	4.0
6	☐	210.000	213.608	3487432.03	3.4414	A	2.5
7	☐	1.000					

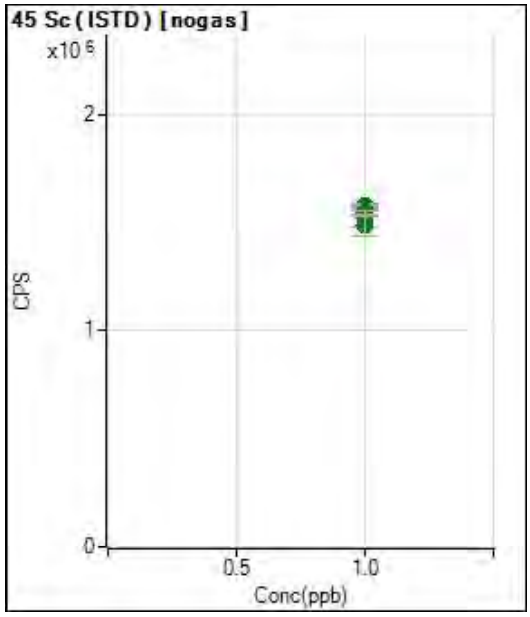
y = 0.0161 * x + 1.0459E-004
R = 0.9991
DL = 0.008717
BEC = 0.006492

Weight: <None>
Min Conc: <None>

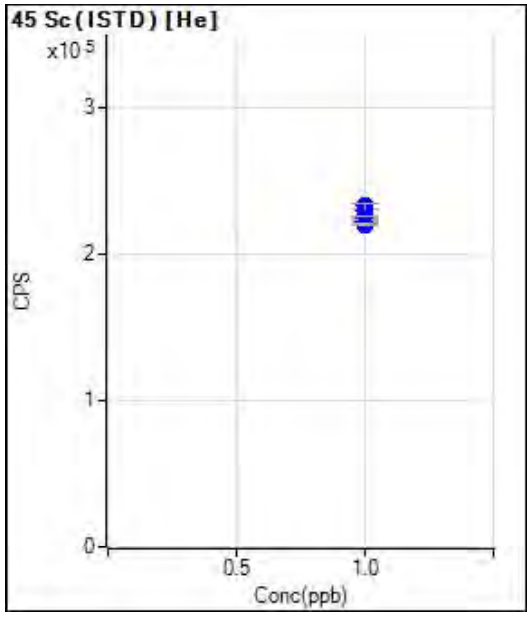


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		409972.61		P	2.6
2	☐	1.000		396012.44		P	1.5
3	☐	1.000		386905.91		P	1.8
4	☐	1.000		380689.47		P	1.3
5	☐	1.000		337977.35		P	6.9
6	☐	1.000		320884.43		P	7.8
7	☐	1.000					

Calibration for 011_ICV.d

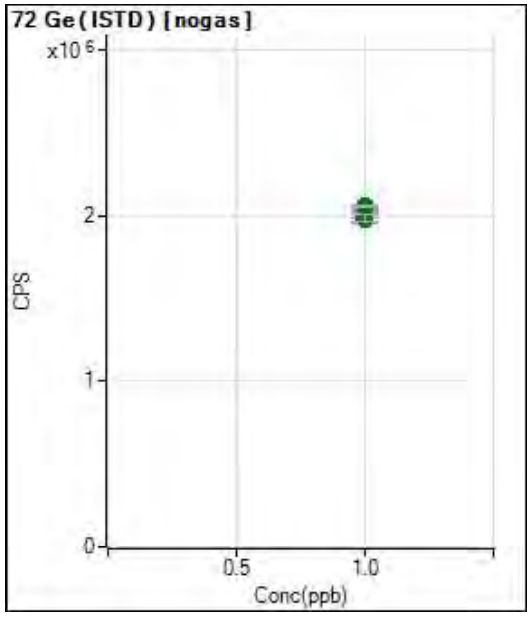


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1577152.32		A	1.5
2	☐	1.000		1578379.93		A	1.2
3	☐	1.000		1556082.27		A	3.2
4	☐	1.000		1522635.86		A	5.1
5	☐	1.000		1545693.36		A	1.6
6	☐	1.000		1489719.61		A	6.8
7	☐	1.000					

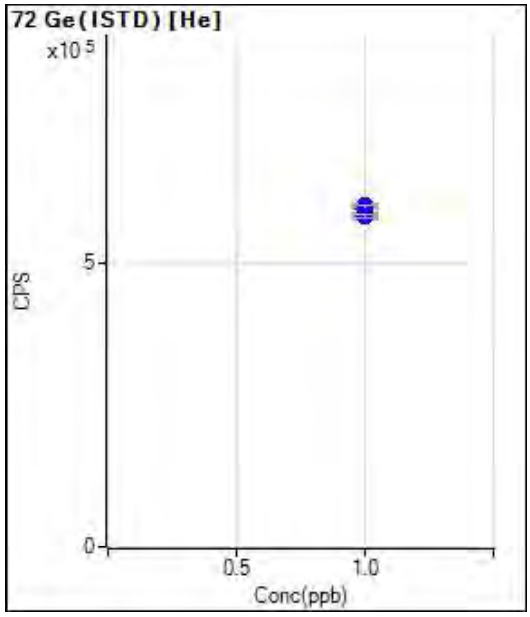


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		223390.91		P	1.6
2	☐	1.000		232691.44		P	1.8
3	☐	1.000		229088.83		P	4.5
4	☐	1.000		221973.41		P	0.7
5	☐	1.000		224437.45		P	1.2
6	☐	1.000		220137.12		P	1.1
7	☐	1.000					

Calibration for 011_ICV.d

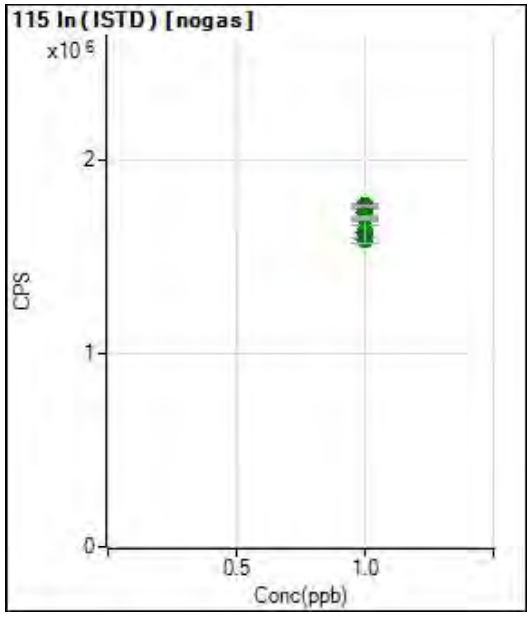


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2026588.56		A	1.0
2	☐	1.000		2027907.16		A	1.8
3	☐	1.000		2061820.54		A	0.5
4	☐	1.000		2001623.93		A	1.7
5	☐	1.000		1975202.16		A	1.5
6	☐	1.000		1991799.24		A	2.3
7	☐	1.000					

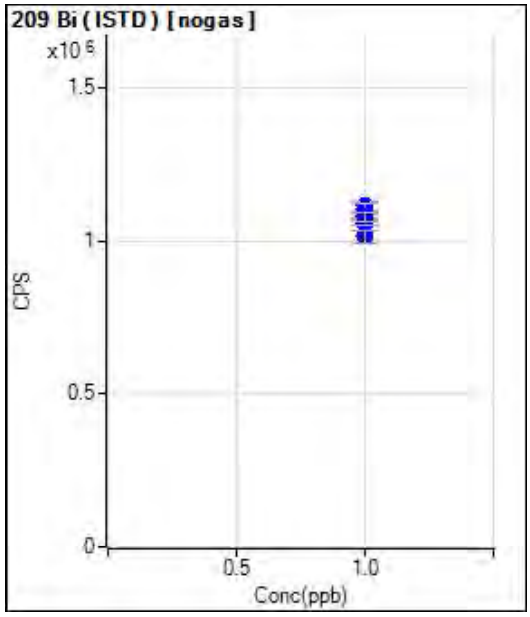


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		591575.07		P	2.5
2	☐	1.000		584227.10		P	0.6
3	☐	1.000		587850.29		P	3.5
4	☐	1.000		602028.64		P	1.2
5	☐	1.000		596552.40		P	1.8
6	☐	1.000		584983.26		P	1.0
7	☐	1.000					

Calibration for 011_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1701972.06		A	5.1
2	☐	1.000		1726538.35		A	5.6
3	☐	1.000		1762431.29		A	0.3
4	☐	1.000		1705753.33		A	0.7
5	☐	1.000		1585713.28		A	1.9
6	☐	1.000		1627240.32		A	7.4
7	☐	1.000					



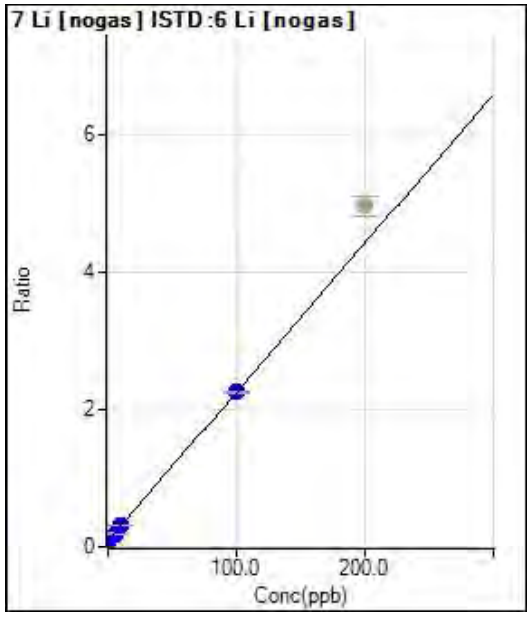
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1087614.64		P	1.9
2	☐	1.000		1115115.27		P	2.9
3	☐	1.000		1104638.87		P	3.4
4	☐	1.000		1059794.33		P	1.9
5	☐	1.000		1080684.72		P	2.6
6	☐	1.000		1013813.84		P	3.8
7	☐	1.000					

Calibration for 073_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\061118A.b\
Analysis File: 061118A.batch.bin
DA Date-Time: 2018-06-11 23:04:05
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	066CALB.d	CAL BLK	2018-06-11 14:25:33
2	067CALS.d	2/10/200	2018-06-11 14:27:32
3	068CALS.d	5/25/500	2018-06-11 14:29:32
4	069CALS.d	10/50/1000	2018-06-11 14:31:32
5	070CALS.d	100/500/10K	2018-06-11 14:33:32
6	071CALS.d	200/1000/20K	2018-06-11 14:35:28
7			

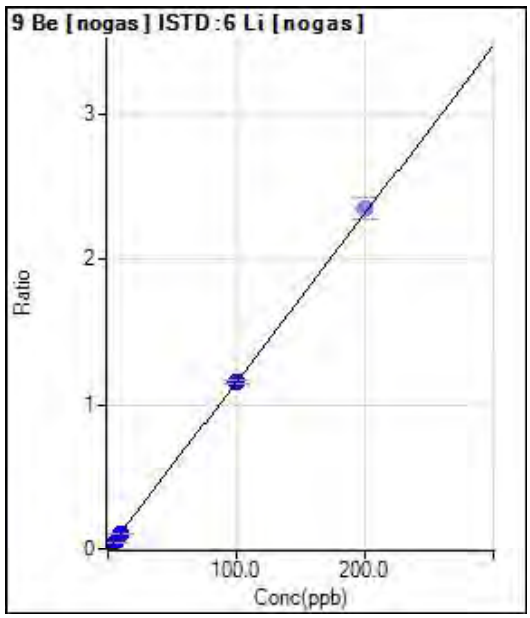
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	29162.96	0.0891	P	1.3
2	☐	2.000	2.120	43069.78	0.1350	P	1.2
3	☐	5.000	4.885	64835.50	0.1948	P	4.3
4	☐	10.000	10.219	100891.88	0.3102	P	1.0
5	☐	100.000	99.981	676972.96	2.2517	P	1.2
6	☑	200.000		1374534.30	4.9571	A	5.6
7	☐	1.000					

y = 0.0216 * x + 0.0891
R = 1.0000
DL = 0.1588
BEC = 4.12

Weight: <None>
Min Conc: <None>

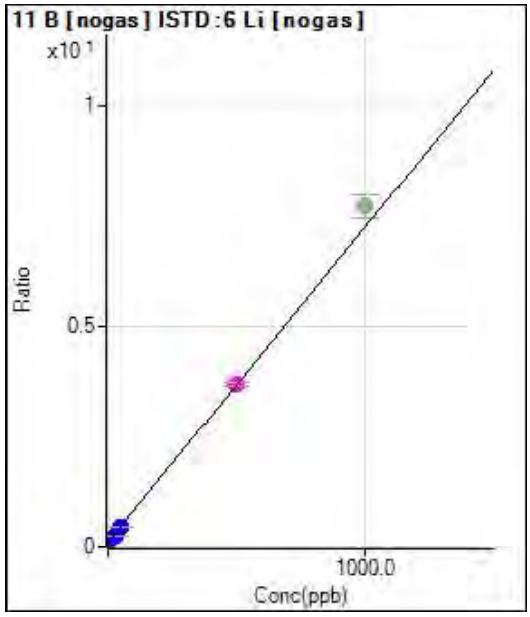


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	63.33	0.0002	P	8.2
2	☐	2.000	1.789	6671.26	0.0209	P	2.9
3	☐	5.000	4.275	16550.78	0.0497	P	4.4
4	☐	10.000	9.320	35169.90	0.1081	P	2.6
5	☐	100.000	100.109	348639.16	1.1596	P	1.2
6	☑	200.000		651704.68	2.3510	P	6.3
7	☐	1.000					

y = 0.0116 * x + 1.9348E-004
R = 1.0000
DL = 0.004101
BEC = 0.01671

Weight: <None>
Min Conc: <None>

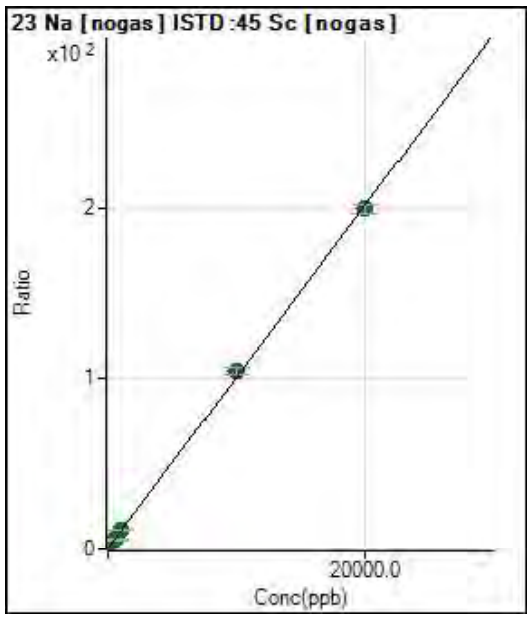
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36382.10	0.1112	P	6.2
2	☐	10.000	9.410	56852.85	0.1782	P	2.6
3	☐	25.000	20.380	85396.91	0.2563	P	0.9
4	☐	50.000	47.674	146469.57	0.4506	P	4.1
5	☐	500.000	500.475	1104380.48	3.6743	M	2.2
6	☑	1000.000		2140746.84	7.7225	A	7.1
7	☐	5.000					

y = 0.0071 * x + 0.1112
R = 1.0000
DL = 2.889
BEC = 15.62

Weight: <None>
Min Conc: <None>

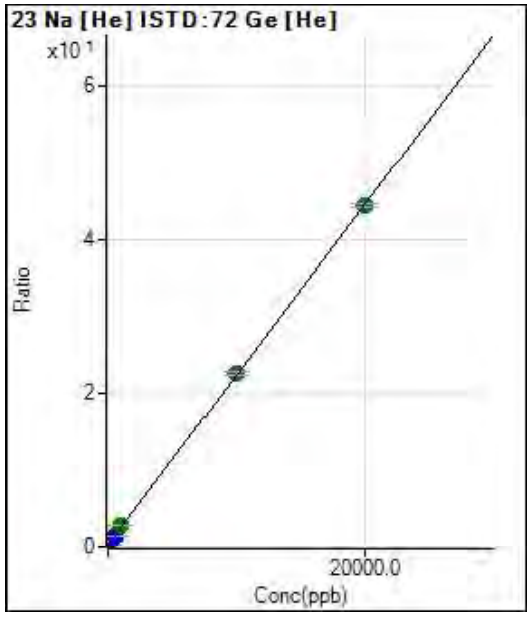


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1247888.73	0.7525	M	7.9
2	☐	200.000	220.886	4827840.21	2.9678	A	2.8
3	☐	500.000	517.950	9831575.22	5.9471	A	5.8
4	☐	1000.000	1094.768	18870998.86	11.7322	A	5.3
5	☐	10000.00	10349.550	166192066.2	104.550	A	4.0
6	☐	20000.00	19819.829	324559240.5	199.530	A	2.8
7	☐	100.000					

y = 0.0100 * x + 0.7525
R = 0.9998
DL = 17.68
BEC = 75.03

Weight: <None>
Min Conc: <None>

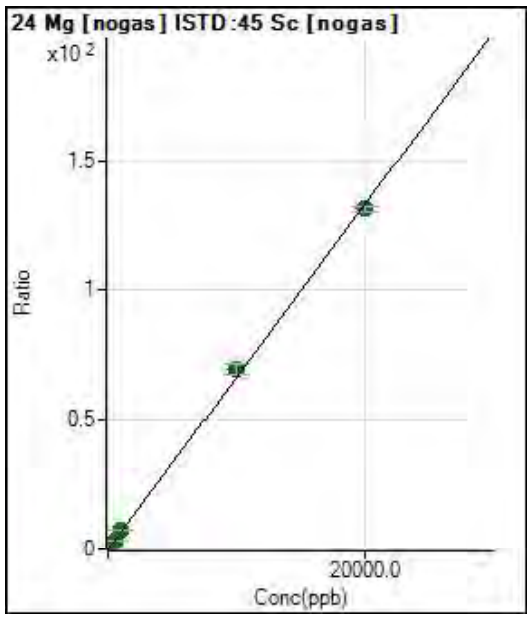
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	178338.34	0.2674	P	1.4
2	☐	200.000	223.408	506839.16	0.7616	P	3.7
3	☐	500.000	549.311	985985.06	1.4824	P	2.9
4	☐	1000.000	1143.508	1874989.24	2.7967	A	3.8
5	☐	10000.00	10082.460	15062386.03	22.5682	A	2.5
6	☐	20000.00	19950.128	28862973.74	44.3939	A	1.2
7	☐	100.000					

y = 0.0022 * x + 0.2674
R = 1.0000
DL = 5.204
BEC = 120.9

Weight: <None>
Min Conc: <None>

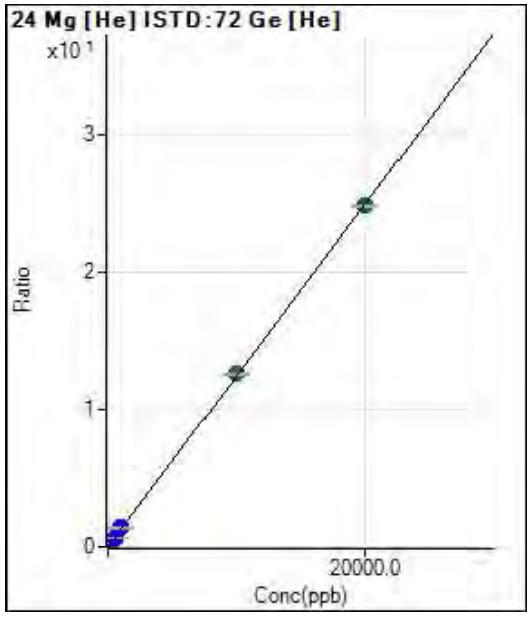


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26690.41	0.0160	P	8.6
2	☐	200.000	222.165	2427189.05	1.4921	A	3.2
3	☐	500.000	528.629	5831000.00	3.5284	A	7.3
4	☐	1000.000	1128.435	12092986.99	7.5136	A	3.3
5	☐	10000.00	10455.026	110414469.1	69.4820	A	5.4
6	☐	20000.00	19765.128	213737271.4	131.340	A	1.7
7	☐	100.000					

y = 0.0066 * x + 0.0160
R = 0.9996
DL = 0.6211
BEC = 2.41

Weight: <None>
Min Conc: <None>

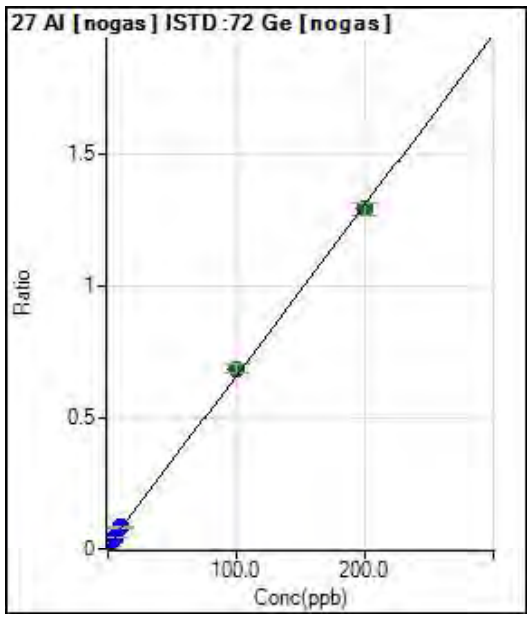
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2466.87	0.0037	P	2.6
2	☐	200.000	224.166	188455.28	0.2833	P	5.6
3	☐	500.000	549.893	458657.99	0.6895	P	1.9
4	☐	1000.000	1117.109	936769.91	1.3970	P	1.9
5	☐	10000.00	10098.165	8408799.87	12.5981	A	1.7
6	☐	20000.00	19943.573	16174516.43	24.8773	A	0.2
7	☐	100.000					

y = 0.0012 * x + 0.0037
R = 1.0000
DL = 0.2327
BEC = 2.966

Weight: <None>
Min Conc: <None>

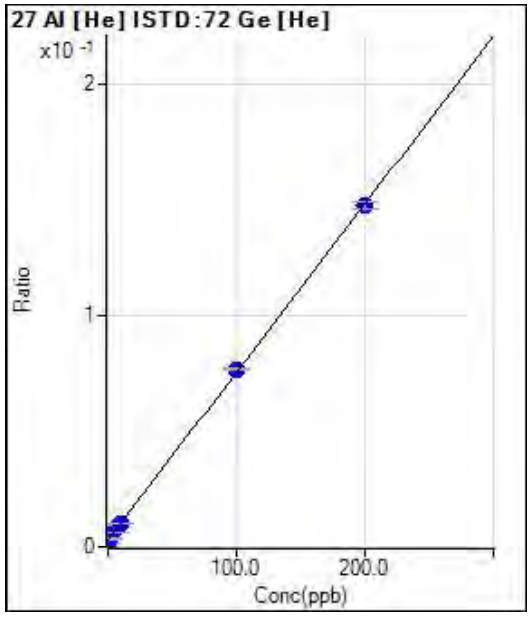


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	32278.16	0.0142	P	2.0
2	☐	2.000	2.293	65113.56	0.0290	P	2.2
3	☐	5.000	5.360	110557.67	0.0488	P	1.1
4	☐	10.000	11.052	191579.86	0.0856	P	1.2
5	☐	100.000	104.268	1521399.77	0.6874	A	5.3
6	☐	200.000	197.801	2812570.69	1.2914	A	3.9
7	☐	1.000					

y = 0.0065 * x + 0.0142
R = 0.9997
DL = 0.1336
BEC = 2.199

Weight: <None>
Min Conc: <None>

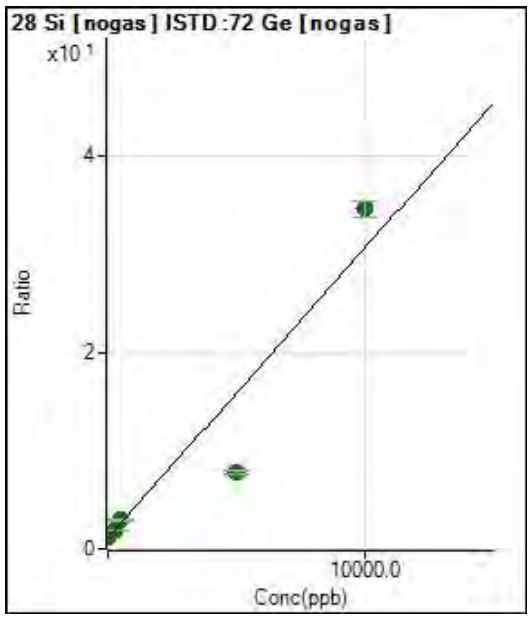
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.503	1226.73	0.0018	P	3.8
2	☐	2.000	1.005	2430.19	0.0037	P	12.9
3	☐	5.000	6.725	5204.10	0.0078	P	40.5
4	☐	10.000	9.832	6747.95	0.0101	P	4.6
5	☐	100.000	101.933	51339.76	0.0769	P	0.9
6	☐	200.000	199.009	95818.86	0.1474	P	2.0
7	☐	1.000					

y = 7.2579E-004 * x + 0.0029
R = 0.9998
DL = 0.2899
BEC = 4.037

Weight: <None>
Min Conc: <None>

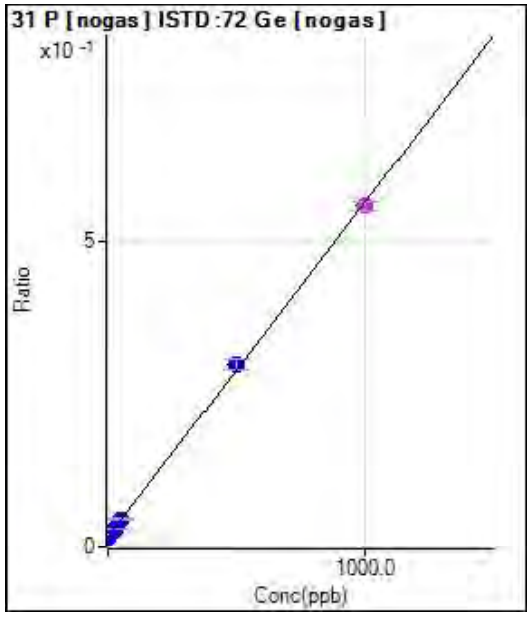


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2806335.79	1.2345	A	2.7
2	☐	100.000	112.483	3512772.86	1.5647	A	2.8
3	☐	250.000	281.846	4670446.60	2.0618	A	0.6
4	☐	500.000	618.199	6824407.40	3.0491	A	3.1
5	☐	5000.000	2290.421	17611510.57	7.9573	A	4.6
6	☐	10000.00	11347.959	75226805.55	34.5428	A	4.4
7	☐	5.000					

y = 0.0029 * x + 1.2345
R = 0.9543
DL = 33.85
BEC = 420.6

Weight: <None>
Min Conc: <None>

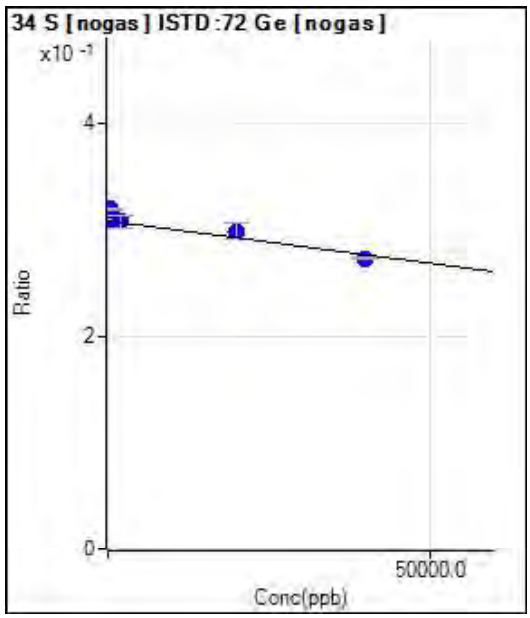
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36923.13	0.0162	P	1.7
2	☐	10.000	10.191	48990.79	0.0218	P	5.9
3	☐	25.000	24.592	67313.68	0.0297	P	3.4
4	☐	50.000	53.734	102259.97	0.0457	P	3.7
5	☐	500.000	517.707	663805.42	0.3000	P	5.5
6	☐	1000.000	990.968	1218604.33	0.5594	M	2.6
7	☐	5.000					

y = 5.4813E-004 * x + 0.0162
R = 0.9998
DL = 1.494
BEC = 29.63

Weight: <None>
Min Conc: <None>

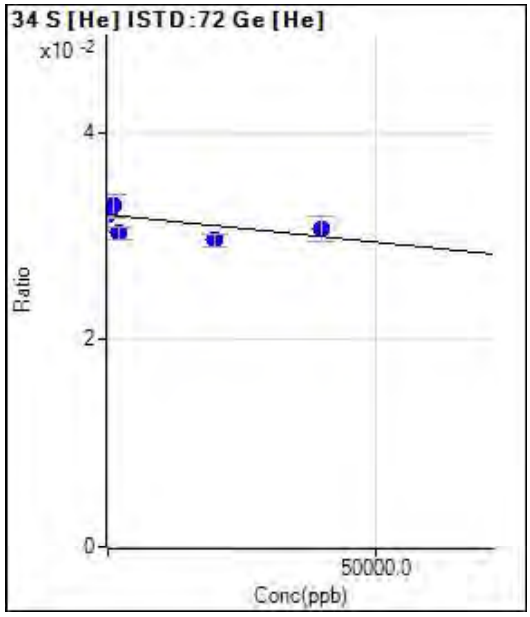


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	701146.92	0.3084	P	1.6
2	☐	400.000	-14214.02	717840.35	0.3197	P	0.7
3	☐	1000.000	-2203.512	702598.86	0.3102	P	0.3
4	☐	2000.000	932.691	688513.25	0.3077	P	4.3
5	☐	20000.00	12234.182	661070.86	0.2988	P	5.2
6	☐	40000.00	44162.503	595929.26	0.2735	P	0.6
7	☐	100.000					

y = -7.9105E-007 * x + 0.3084
R = -0.9556
DL = -1.91E+04
BEC = -3.899E+05

Weight: <None>
Min Conc: <None>

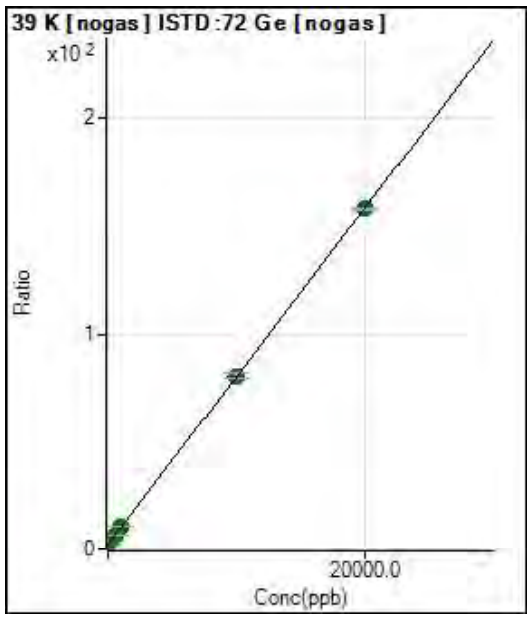
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21382.10	0.0321	P	9.5
2	☐	400.000	-5791.446	21549.88	0.0324	P	3.2
3	☐	1000.000	-15954.37	21883.40	0.0329	P	7.0
4	☐	2000.000	33489.263	20313.85	0.0303	P	3.8
5	☐	20000.00	47251.539	19746.85	0.0296	P	3.9
6	☐	40000.00	25285.541	19981.07	0.0307	P	7.9
7	☐	100.000					

y = -5.2887E-008 * x + 0.0321
R = -0.5480
DL = -1.736E+05
BEC = -6.064E+05

Weight: <None>
Min Conc: <None>

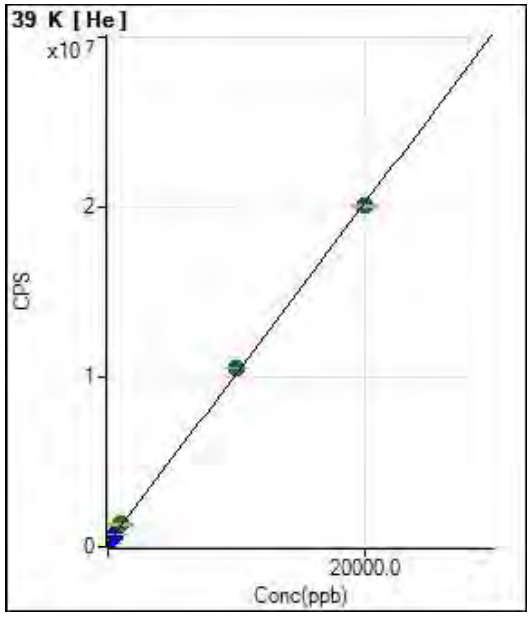


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5512379.81	2.4249	A	1.2
2	☐	200.000	217.460	9254850.21	4.1216	A	1.0
3	☐	500.000	529.341	14847919.08	6.5551	A	0.6
4	☐	1000.000	1096.749	24571131.28	10.9822	A	4.8
5	☐	10000.00	10056.736	179135058.1	80.8918	A	2.3
6	☐	20000.00	19965.887	344743716.0	158.207	A	0.2
7	☐	100.000					

y = 0.0078 * x + 2.4249
R = 1.0000
DL = 11.45
BEC = 310.8

Weight: <None>
Min Conc: <None>

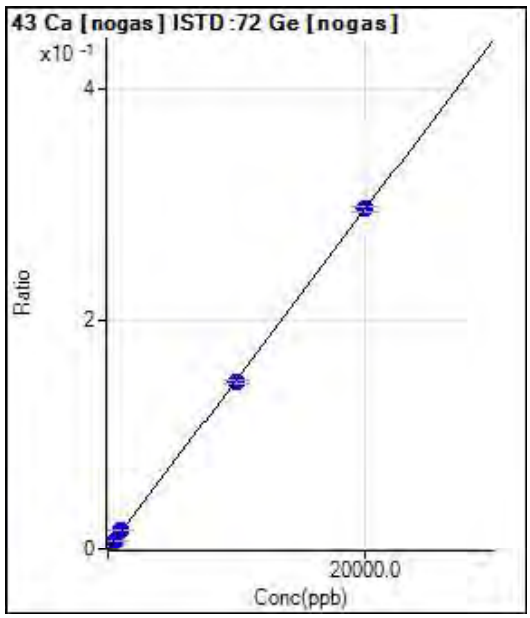
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	194066.33		P	1.0
2	☐	200.000	224.847	419283.76		P	2.2
3	☐	500.000	558.256	753240.74		P	1.0
4	☐	1000.000	1152.925	1348888.83		A	3.5
5	☐	10000.00	10301.625	10512645.05		A	0.3
6	☐	20000.00	19839.836	20066553.45		A	0.3
7	☐	100.000					

y = 1001.6457 * x + 194066.3333
R = 0.9998
DL = 5.583
BEC = 193.7

Weight: <None>
Min Conc: <None>

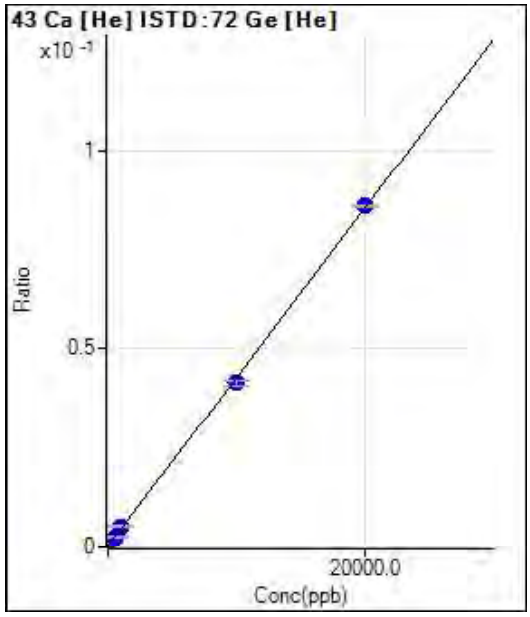


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1246.74	0.0005	P	5.1
2	☐	200.000	209.902	8178.60	0.0036	P	4.1
3	☐	500.000	517.396	18519.61	0.0082	P	2.5
4	☐	1000.000	1104.664	37678.60	0.0168	P	3.3
5	☐	10000.00	9892.851	324277.61	0.1464	P	2.4
6	☐	20000.00	20047.808	645185.99	0.2961	P	1.4
7	☐	100.000					

y = 1.4744E-005 * x + 5.4843E-004
R = 1.0000
DL = 5.696
BEC = 37.2

Weight: <None>
Min Conc: <None>

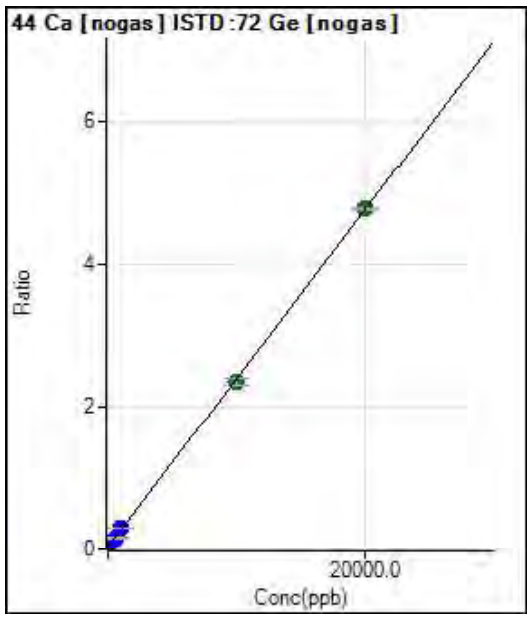
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	90.00	0.0001	P	19.1
2	☐	200.000	241.009	770.03	0.0012	P	21.5
3	☐	500.000	552.430	1653.43	0.0025	P	10.3
4	☐	1000.000	1172.486	3440.38	0.0051	P	4.6
5	☐	10000.00	9677.030	27600.77	0.0414	P	3.3
6	☐	20000.00	20151.140	55897.58	0.0860	P	0.7
7	☐	100.000					

y = 4.2598E-006 * x + 1.3493E-004
R = 0.9998
DL = 18.14
BEC = 31.67

Weight: <None>
Min Conc: <None>

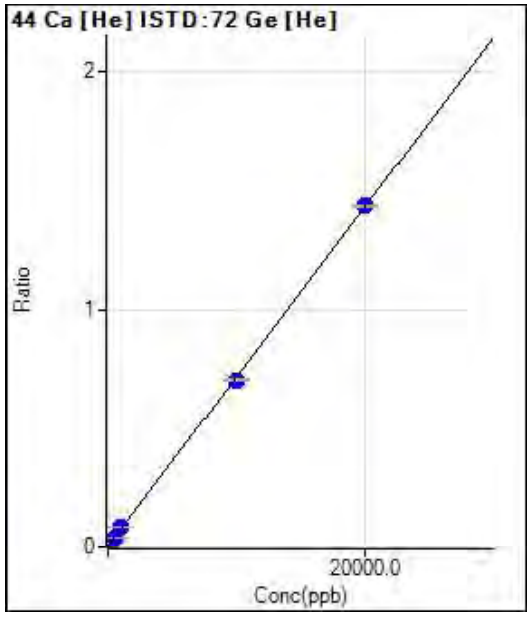


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	92259.35	0.0406	P	1.1
2	☐	200.000	210.621	202478.30	0.0902	P	2.5
3	☐	500.000	521.264	369978.69	0.1633	P	1.4
4	☐	1000.000	1084.086	662571.90	0.2959	P	0.9
5	☐	10000.00	9823.941	5211506.07	2.3541	A	3.6
6	☐	20000.00	20083.188	10393991.09	4.7702	A	0.9
7	☐	100.000					

y = 2.3550E-004 * x + 0.0406
R = 0.9999
DL = 5.438
BEC = 172.3

Weight: <None>
Min Conc: <None>

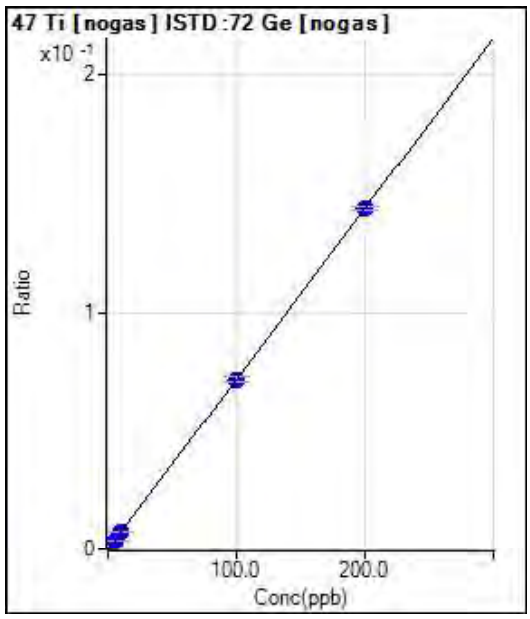
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2503.54	0.0038	P	2.4
2	☐	200.000	207.490	12361.01	0.0186	P	3.0
3	☐	500.000	525.186	27420.45	0.0412	P	0.8
4	☐	1000.000	1086.579	54493.46	0.0813	P	2.5
5	☐	10000.00	9815.676	469804.43	0.7039	P	1.7
6	☐	20000.00	20087.129	933970.25	1.4365	P	0.8
7	☐	100.000					

y = 7.1326E-005 * x + 0.0038
R = 0.9999
DL = 3.824
BEC = 52.64

Weight: <None>
Min Conc: <None>

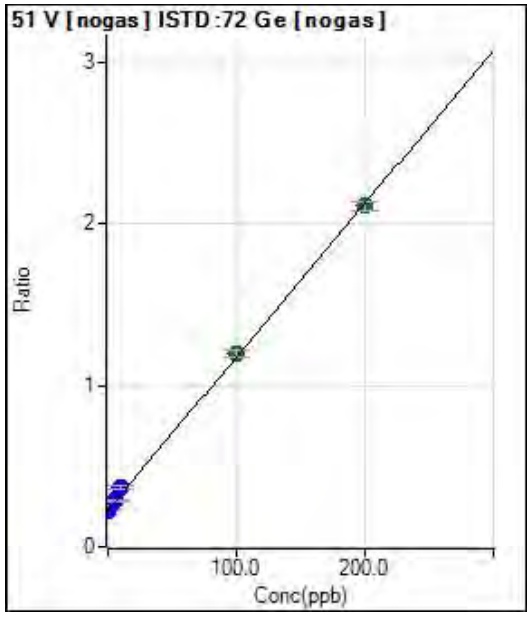


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	183.33	0.0001	P	3.1
2	☐	2.000	2.173	3687.09	0.0016	P	2.6
3	☐	5.000	5.491	9115.78	0.0040	P	3.3
4	☐	10.000	10.598	17231.50	0.0077	P	1.0
5	☐	100.000	99.985	159170.55	0.0719	P	4.0
6	☐	200.000	199.964	313134.18	0.1437	P	1.2
7	☐	1.000					

y = 7.1834E-004 * x + 8.0646E-005
R = 1.0000
DL = 0.01033
BEC = 0.1123

Weight: <None>
Min Conc: <None>

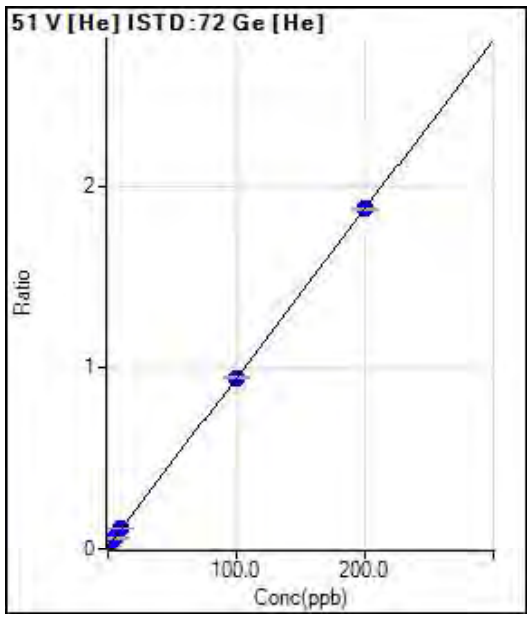
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	518181.13	0.2280	P	2.6
2	☐	2.000	3.293	581857.89	0.2591	P	1.5
3	☐	5.000	6.440	654432.29	0.2889	P	3.2
4	☐	10.000	14.848	824713.01	0.3686	P	5.1
5	☐	100.000	102.402	2652361.26	1.1978	A	4.2
6	☐	200.000	198.508	4591933.56	2.1080	A	2.8
7	☐	1.000					

y = 0.0095 * x + 0.2280
R = 0.9997
DL = 1.896
BEC = 24.07

Weight: <None>
Min Conc: <None>

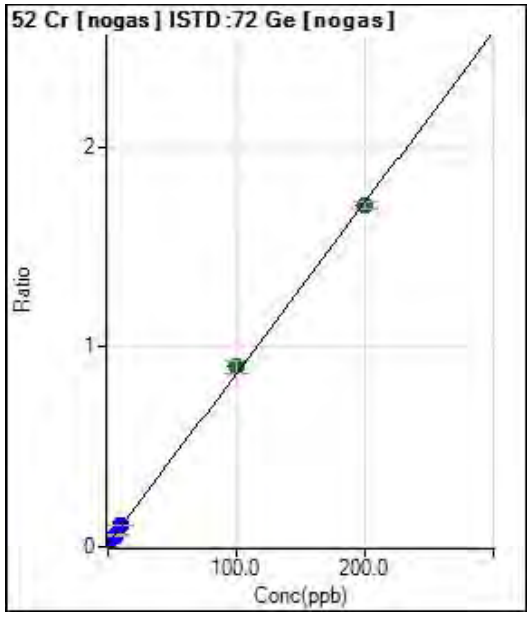


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.270	10659.06	0.0160	P	2.2
2	☐	2.000	1.883	23915.29	0.0359	P	5.0
3	☐	5.000	5.054	43461.14	0.0653	P	3.4
4	☐	10.000	10.447	77356.97	0.1153	P	1.2
5	☐	100.000	99.815	630080.75	0.9439	P	1.2
6	☐	200.000	200.070	1218079.33	1.8735	P	0.8
7	☐	1.000					

y = 0.0093 * x + 0.0185
R = 1.0000
DL = 0.1132
BEC = 1.994

Weight: <None>
Min Conc: <None>

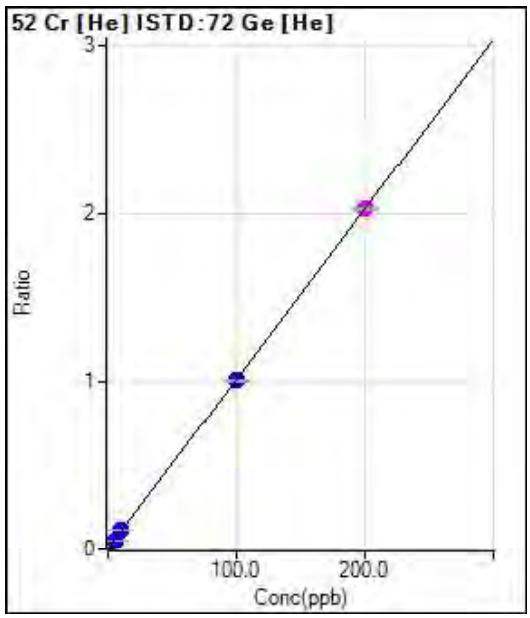
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	31807.62	0.0140	P	1.0
2	☐	2.000	2.195	73503.24	0.0327	P	2.3
3	☐	5.000	5.146	131160.12	0.0579	P	3.6
4	☐	10.000	10.915	239803.99	0.1072	P	3.6
5	☐	100.000	103.701	1989852.99	0.8991	A	6.3
6	☐	200.000	198.098	3713992.13	1.7048	A	2.1
7	☐	1.000					

y = 0.0085 * x + 0.0140
R = 0.9998
DL = 0.04893
BEC = 1.639

Weight: <None>
Min Conc: <None>

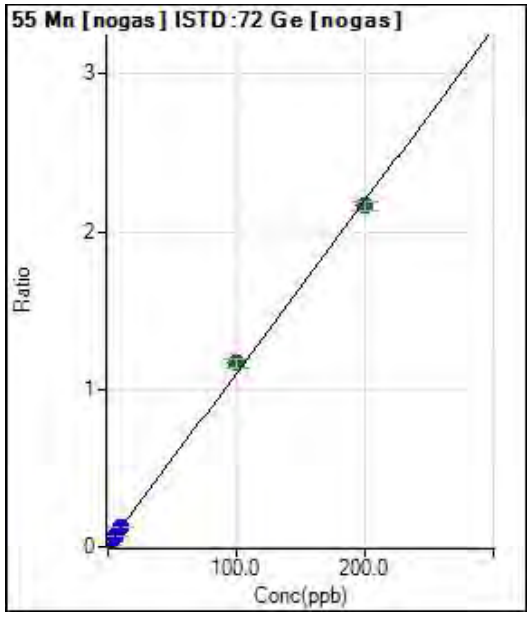


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4120.52	0.0062	P	8.7
2	☐	2.000	2.058	17972.20	0.0270	P	3.9
3	☐	5.000	5.204	39115.06	0.0588	P	0.5
4	☐	10.000	10.791	77291.88	0.1153	P	3.8
5	☐	100.000	99.343	674601.06	1.0106	P	1.2
6	☐	200.000	200.283	1320535.55	2.0311	M	0.7
7	☐	1.000					

y = 0.0101 * x + 0.0062
R = 1.0000
DL = 0.1592
BEC = 0.6109

Weight: <None>
Min Conc: <None>

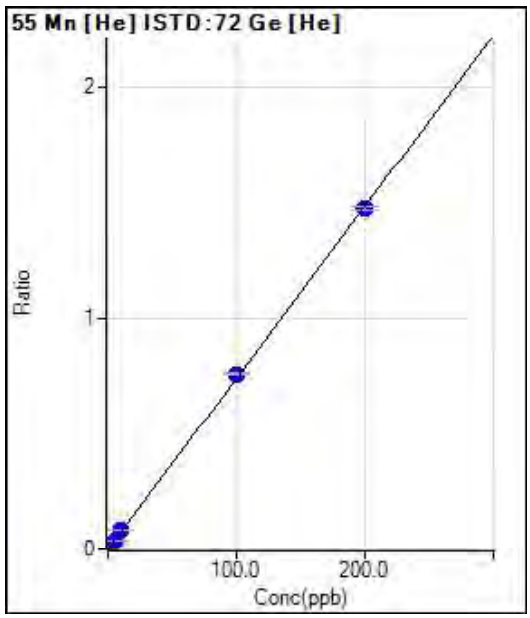
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	21619.53	0.0095	P	1.7
2	☐	2.000	2.153	74156.02	0.0330	P	0.9
3	☐	5.000	5.235	151038.96	0.0667	P	1.9
4	☐	10.000	10.921	288271.34	0.1288	P	2.6
5	☐	100.000	105.653	2575453.56	1.1634	A	4.0
6	☐	200.000	197.120	4710586.08	2.1624	A	2.8
7	☐	1.000					

y = 0.0109 * x + 0.0095
R = 0.9994
DL = 0.04386
BEC = 0.8707

Weight: <None>
Min Conc: <None>

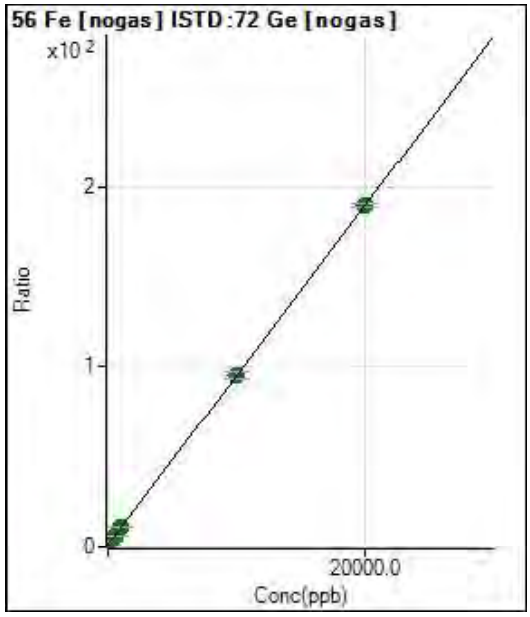


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	696.69	0.0010	P	16.1
2	☐	2.000	2.153	11320.32	0.0170	P	3.3
3	☐	5.000	5.421	27443.94	0.0412	P	1.3
4	☐	10.000	11.207	56419.96	0.0841	P	4.1
5	☐	100.000	102.395	507513.20	0.7603	P	1.0
6	☐	200.000	198.730	958718.21	1.4746	P	1.2
7	☐	1.000					

y = 0.0074 * x + 0.0010
R = 0.9999
DL = 0.06805
BEC = 0.1408

Weight: <None>
Min Conc: <None>

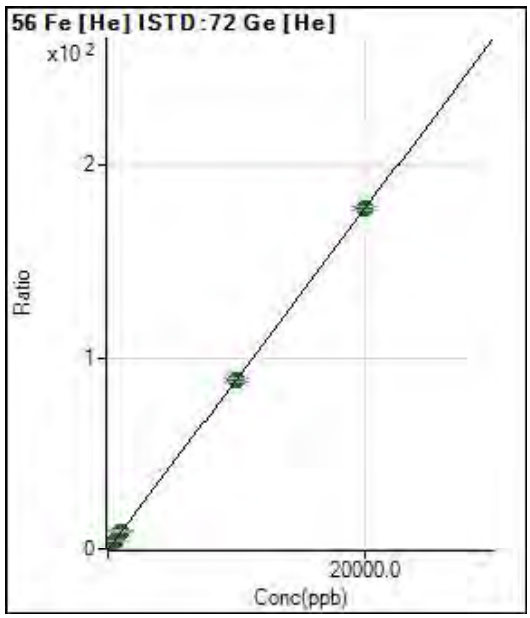
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2667202.79	1.1733	A	3.6
2	☐	200.000	215.250	7179570.21	3.1971	A	0.4
3	☐	500.000	519.122	13714081.04	6.0540	A	1.2
4	☐	1000.000	1073.523	25222366.71	11.2664	A	2.6
5	☐	10000.00	9974.049	210163238.0	94.9481	A	4.0
6	☐	20000.00	20008.669	412437434.2	189.292	A	1.1
7	☐	100.000					

y = 0.0094 * x + 1.1733
R = 1.0000
DL = 13.52
BEC = 124.8

Weight: <None>
Min Conc: <None>

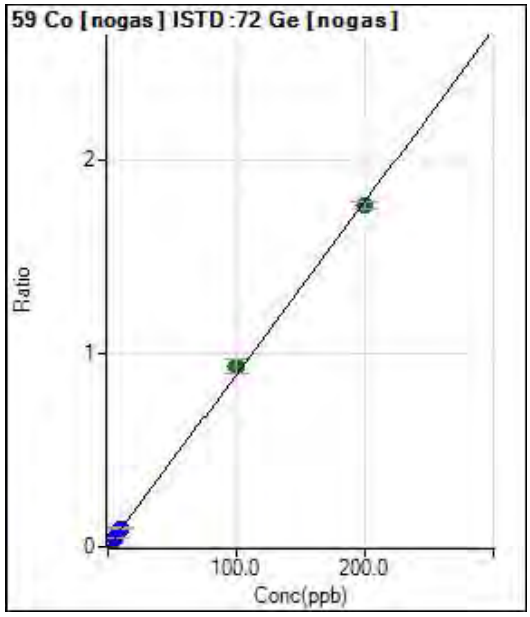


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	28512.27	0.0428	P	2.7
2	☐	200.000	229.162	1379306.49	2.0725	A	3.7
3	☐	500.000	544.850	3238645.37	4.8687	A	1.6
4	☐	1000.000	1107.735	6609643.23	9.8543	A	0.4
5	☐	10000.00	9989.527	59083220.79	88.5231	A	2.2
6	☐	20000.00	19998.437	115195751.6	177.175	A	1.1
7	☐	100.000					

y = 0.0089 * x + 0.0428
R = 1.0000
DL = 0.3902
BEC = 4.828

Weight: <None>
Min Conc: <None>

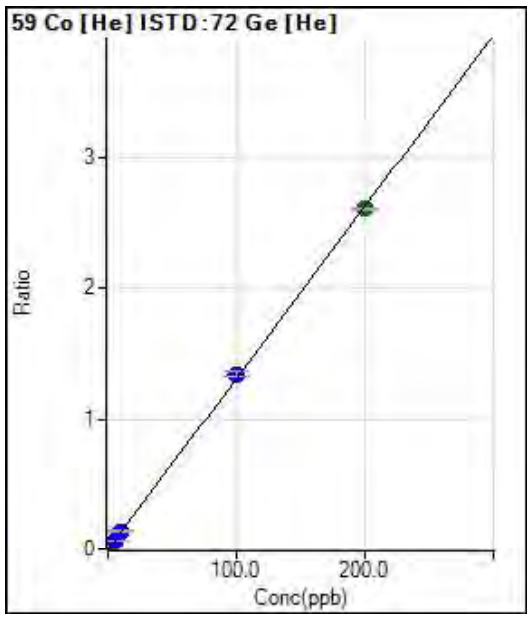
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	463.35	0.0002	P	37.2
2	☐	2.000	2.135	43268.30	0.0193	P	2.1
3	☐	5.000	5.289	107417.44	0.0474	P	2.1
4	☐	10.000	10.900	218336.28	0.0975	P	3.7
5	☐	100.000	104.677	2067495.75	0.9348	A	7.5
6	☐	200.000	197.608	3845111.09	1.7645	A	2.3
7	☐	1.000					

y = 0.0089 * x + 2.0388E-004
R = 0.9996
DL = 0.02548
BEC = 0.02283

Weight: <None>
Min Conc: <None>

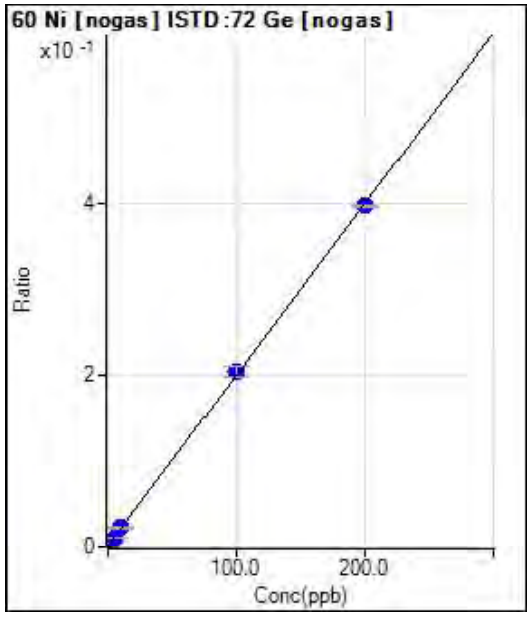


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	153.33	0.0002	P	25.1
2	☐	2.000	2.219	19513.93	0.0293	P	4.9
3	☐	5.000	5.320	46528.92	0.0700	P	3.2
4	☐	10.000	10.943	96338.76	0.1437	P	2.2
5	☐	100.000	102.364	895723.79	1.3420	P	2.9
6	☐	200.000	198.761	1694092.27	2.6056	A	0.8
7	☐	1.000					

y = 0.0131 * x + 2.3015E-004
R = 0.9999
DL = 0.01325
BEC = 0.01756

Weight: <None>
Min Conc: <None>

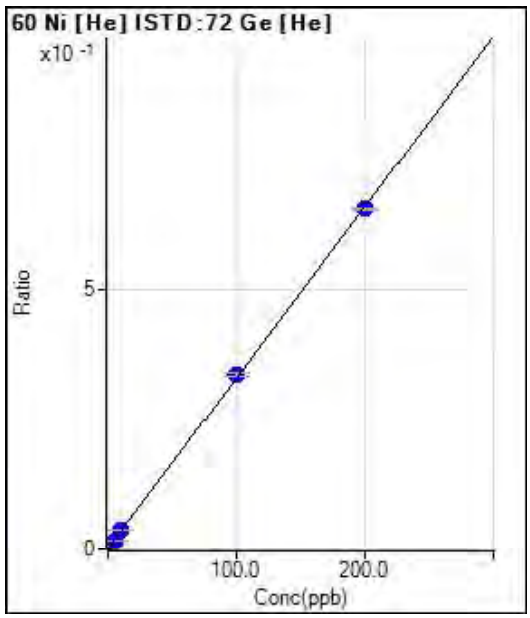
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.677	283.34	0.0001	P	12.3
2	☐	2.000	1.494	9989.54	0.0044	P	4.3
3	☐	5.000	4.630	24226.28	0.0107	P	3.5
4	☐	10.000	10.434	49821.97	0.0223	P	2.7
5	☐	100.000	102.253	453879.94	0.2052	P	5.9
6	☐	200.000	198.866	866390.69	0.3976	P	0.7
7	☐	1.000					

y = 0.0020 * x + 0.0015
R = 0.9999
DL = 0.02314
BEC = 0.7395

Weight: <None>
Min Conc: <None>

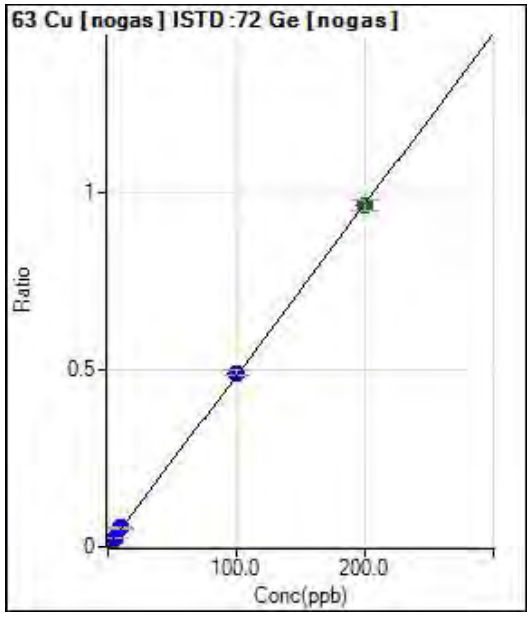


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.666	266.68	0.0004	P	7.9
2	☐	2.000	1.448	4877.39	0.0073	P	9.9
3	☐	5.000	4.661	11900.70	0.0179	P	8.3
4	☐	10.000	10.584	25040.68	0.0373	P	1.6
5	☐	100.000	101.977	225242.70	0.3374	P	2.2
6	☐	200.000	198.996	426522.56	0.6560	P	0.6
7	☐	1.000					

y = 0.0033 * x + 0.0026
R = 0.9999
DL = 0.02886
BEC = 0.7874

Weight: <None>
Min Conc: <None>

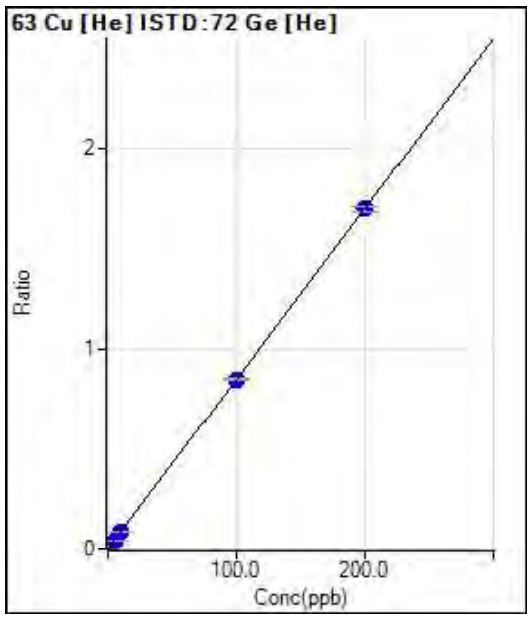
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1693.44	0.0007	P	4.9
2	☐	2.000	2.103	24496.78	0.0109	P	0.4
3	☐	5.000	5.189	58470.80	0.0258	P	4.2
4	☐	10.000	11.052	121191.08	0.0541	P	3.2
5	☐	100.000	101.657	1089112.74	0.4920	P	3.4
6	☐	200.000	199.113	2097565.28	0.9629	A	3.2
7	☐	1.000					

y = 0.0048 * x + 7.4496E-004
R = 0.9999
DL = 0.0225
BEC = 0.1542

Weight: <None>
Min Conc: <None>

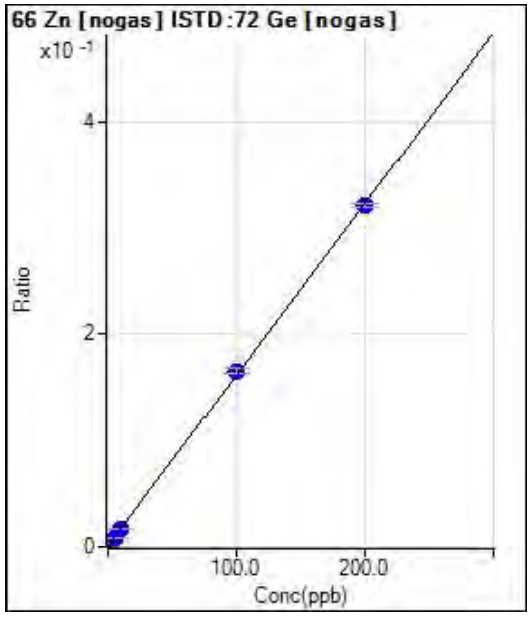


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.349	863.37	0.0013	P	19.9
2	☐	2.000	1.892	13498.55	0.0203	P	6.2
3	☐	5.000	5.045	31287.18	0.0470	P	1.1
4	☐	10.000	10.475	62413.79	0.0931	P	0.8
5	☐	100.000	99.921	568290.86	0.8514	P	1.2
6	☐	200.000	200.016	1105247.56	1.7000	P	1.4
7	☐	1.000					

y = 0.0085 * x + 0.0043
R = 1.0000
DL = 0.09123
BEC = 0.5018

Weight: <None>
Min Conc: <None>

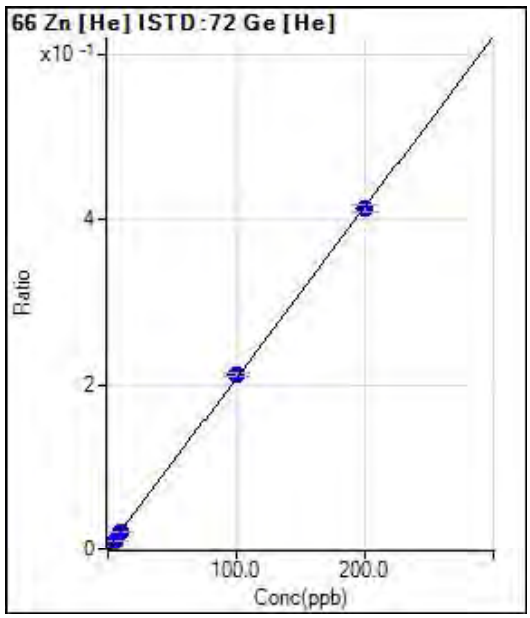
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.334	1150.06	0.0005	P	8.3
2	☐	2.000	1.761	8708.86	0.0039	P	3.1
3	☐	5.000	4.518	18833.30	0.0083	P	2.9
4	☐	10.000	9.888	37973.19	0.0170	P	0.6
5	☐	100.000	102.294	366738.85	0.1656	P	3.1
6	☐	200.000	198.873	699533.76	0.3211	P	1.2
7	☐	1.000					

y = 0.0016 * x + 0.0010
R = 0.9999
DL = 0.07855
BEC = 0.6487

Weight: <None>
Min Conc: <None>

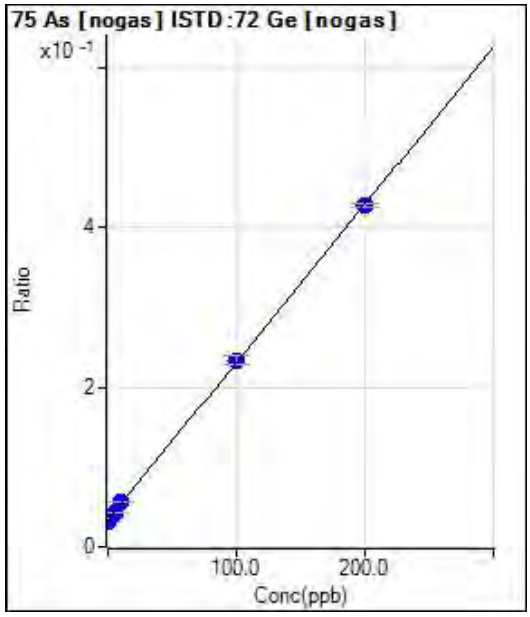


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.504	416.68	0.0006	P	5.5
2	☐	2.000	1.591	3300.34	0.0050	P	6.2
3	☐	5.000	4.740	7638.40	0.0115	P	2.0
4	☐	10.000	10.167	15229.87	0.0227	P	1.5
5	☐	100.000	102.008	142039.29	0.2128	P	1.7
6	☐	200.000	198.998	268841.20	0.4135	P	2.0
7	☐	1.000					

y = 0.0021 * x + 0.0017
R = 0.9999
DL = 0.04988
BEC = 0.8062

Weight: <None>
Min Conc: <None>

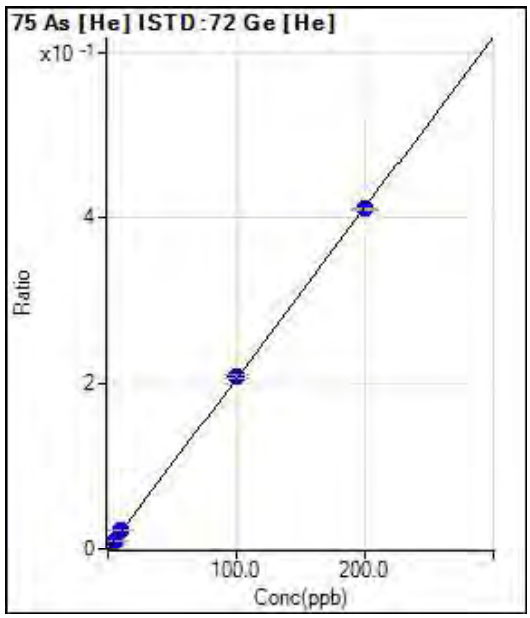
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.176	71807.68	0.0316	P	2.8
2	☐	2.000	1.240	81621.69	0.0364	P	2.0
3	☐	5.000	4.786	98156.18	0.0433	P	2.2
4	☐	10.000	11.489	126562.64	0.0565	P	3.0
5	☐	100.000	101.445	517519.38	0.2338	P	4.1
6	☐	200.000	199.216	929179.00	0.4265	P	1.2
7	☐	1.000					

y = 0.0020 * x + 0.0339
R = 0.9999
DL = 1.323
BEC = 17.21

Weight: <None>
Min Conc: <None>

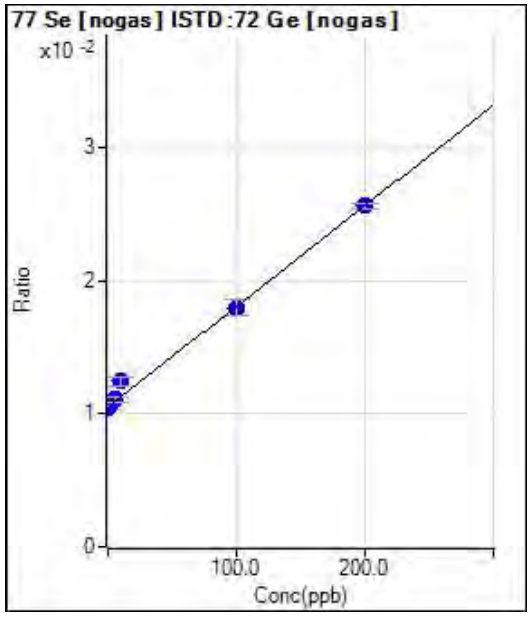


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	447.79	0.0007	P	3.4
2	☐	2.000	2.166	3414.78	0.0051	P	4.1
3	☐	5.000	5.287	7686.10	0.0116	P	3.7
4	☐	10.000	11.079	15747.97	0.0235	P	1.5
5	☐	100.000	101.259	139607.79	0.2092	P	1.6
6	☐	200.000	199.308	267239.39	0.4110	P	0.4
7	☐	1.000					

y = 0.0021 * x + 6.7153E-004
R = 1.0000
DL = 0.03347
BEC = 0.3262

Weight: <None>
Min Conc: <None>

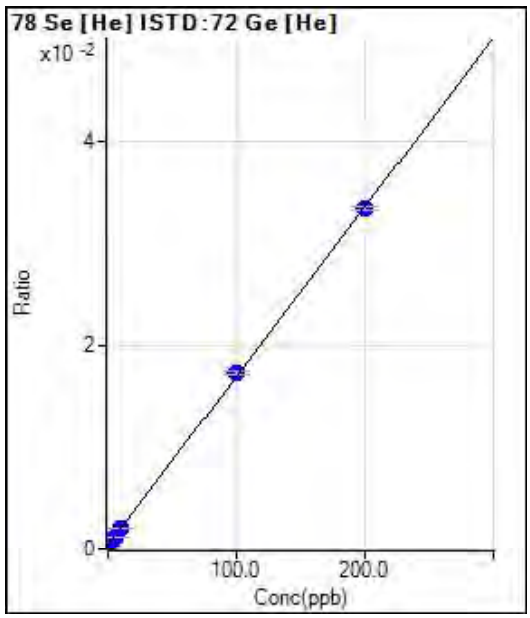
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23939.33	0.0105	P	4.5
2	☐	2.000	2.405	24059.65	0.0107	P	3.2
3	☐	5.000	7.273	25097.60	0.0111	P	3.6
4	☐	10.000	25.617	27894.95	0.0125	P	5.6
5	☐	100.000	98.816	39823.92	0.0180	P	7.4
6	☐	200.000	199.750	55872.56	0.0256	P	1.3
7	☐	1.000					

y = 7.5661E-005 * x + 0.0105
R = 0.9972
DL = 18.71
BEC = 139.2

Weight: <None>
Min Conc: <None>

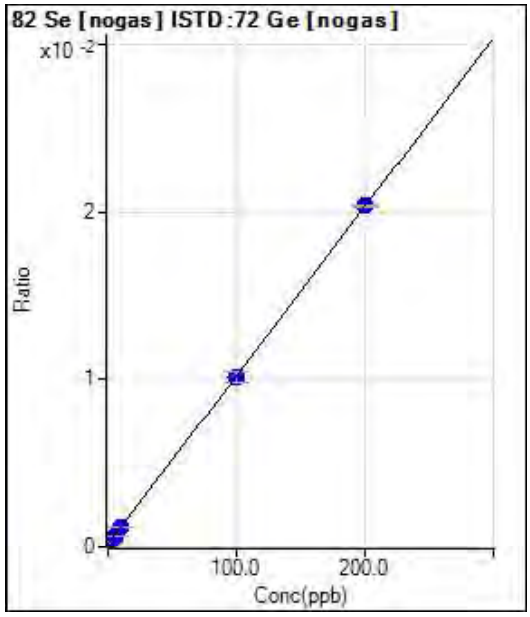


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.312	251.33	0.0004	P	7.9
2	☐	2.000	1.627	465.34	0.0007	P	3.3
3	☐	5.000	4.636	796.69	0.0012	P	3.7
4	☐	10.000	9.993	1398.73	0.0021	P	3.1
5	☐	100.000	102.087	11588.37	0.0174	P	2.1
6	☐	200.000	198.970	21736.32	0.0334	P	1.1
7	☐	1.000					

y = 1.6587E-004 * x + 4.2860E-004
R = 0.9999
DL = 0.5367
BEC = 2.584

Weight: <None>
Min Conc: <None>

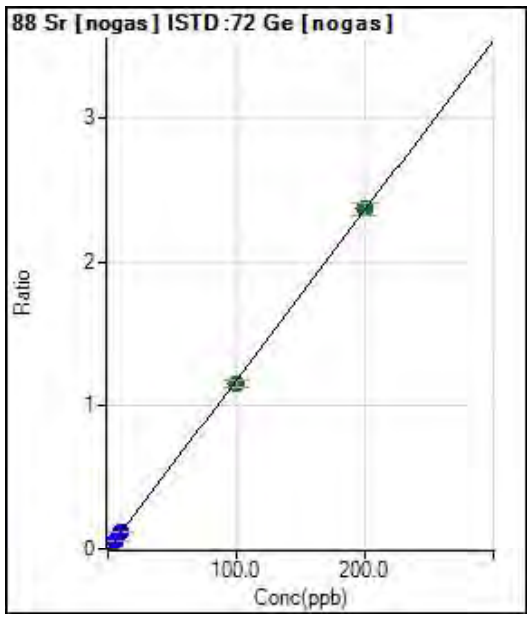
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	326.68	0.0001	P	13.8
2	☐	2.000	1.496	663.36	0.0003	P	25.0
3	☐	5.000	5.124	1496.75	0.0007	P	5.0
4	☐	10.000	10.356	2663.59	0.0012	P	8.3
5	☐	100.000	98.751	22374.13	0.0101	P	6.4
6	☐	200.000	200.608	44428.55	0.0204	P	0.3
7	☐	1.000					

y = 1.0092E-004 * x + 1.4370E-004
R = 1.0000
DL = 0.5882
BEC = 1.424

Weight: <None>
Min Conc: <None>

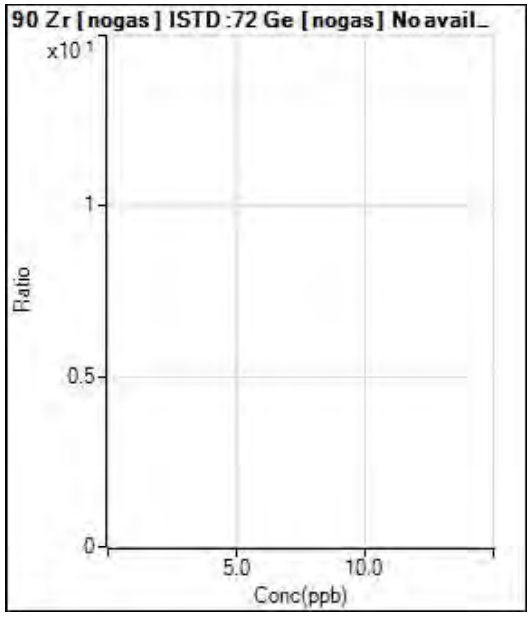


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2146.83	0.0009	P	5.0
2	☐	2.000	2.035	56065.02	0.0250	P	1.7
3	☐	5.000	5.119	139016.98	0.0614	P	1.2
4	☐	10.000	10.821	288238.03	0.1287	P	0.8
5	☐	100.000	98.217	2568439.18	1.1603	A	4.0
6	☐	200.000	200.847	5167451.59	2.3718	A	3.5
7	☐	1.000					

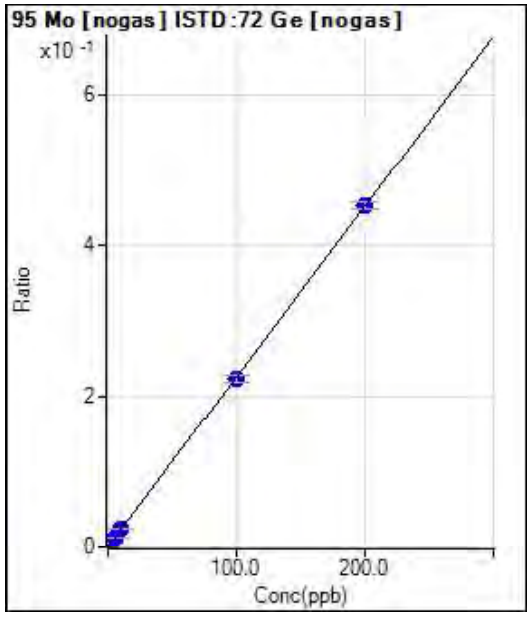
y = 0.0118 * x + 9.4439E-004
R = 0.9999
DL = 0.01198
BEC = 0.08

Weight: <None>
Min Conc: <None>

Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	123.33	0.0001	P	16.7
2	☐	2.000	2.020	10363.21	0.0046	P	1.8
3	☐	5.000	5.151	26466.78	0.0117	P	1.7
4	☐	10.000	10.360	52461.31	0.0234	P	4.7
5	☐	100.000	99.009	494940.11	0.2236	P	4.0
6	☐	200.000	200.474	986283.71	0.4527	P	2.0
7	☐	1.000					

y = 0.0023 * x + 5.4240E-005

R = 1.0000

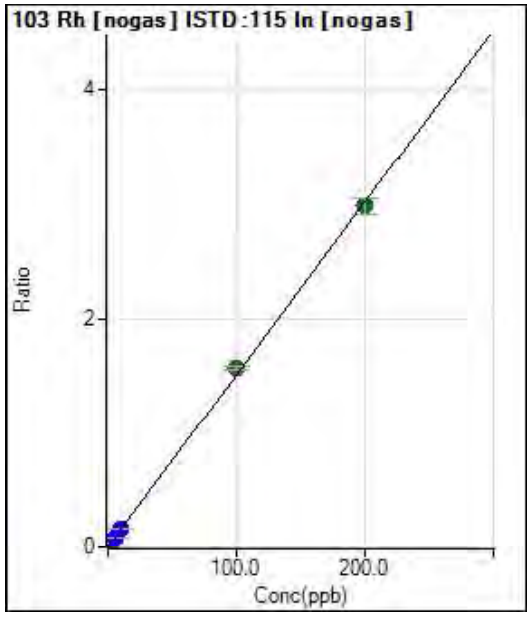
DL = 0.01202

BEC = 0.02402

Weight: <None>

Min Conc: <None>

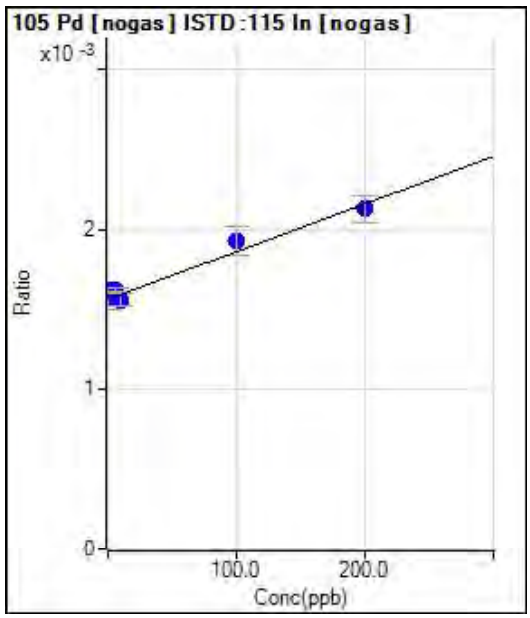
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	153.33	0.0001	P	10.8
2	☐	2.000	2.056	60303.34	0.0311	P	2.3
3	☐	5.000	5.076	151473.62	0.0766	P	0.8
4	☐	10.000	10.166	304579.52	0.1533	P	3.8
5	☐	100.000	103.999	2926641.73	1.5679	A	1.6
6	☐	200.000	197.990	5543323.46	2.9849	A	5.0
7	☐	1.000					

y = 0.0151 * x + 7.6623E-005
R = 0.9997
DL = 0.001649
BEC = 0.005083

Weight: <None>
Min Conc: <None>

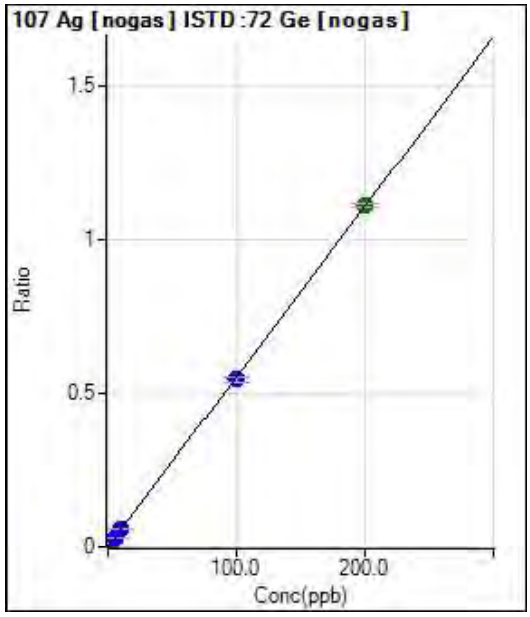


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3140.34	0.0016	P	8.4
2	☐	2.000	19.301	3153.68	0.0016	P	1.8
3	☐	5.000	19.601	3213.68	0.0016	P	1.8
4	☐	10.000	-1.026	3107.00	0.0016	P	5.5
5	☐	100.000	121.069	3600.45	0.0019	P	9.3
6	☐	200.000	189.479	3953.86	0.0021	P	8.2
7	☐	1.000					

y = 2.9797E-006 * x + 0.0016
R = 0.9847
DL = 132.4
BEC = 525.8

Weight: <None>
Min Conc: <None>

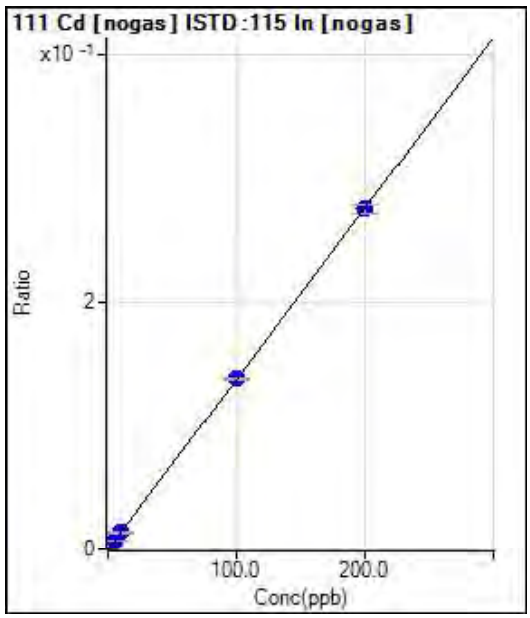
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	133.33	0.0001	P	24.0
2	☐	2.000	2.153	26911.00	0.0120	P	4.7
3	☐	5.000	5.097	64124.18	0.0283	P	0.7
4	☐	10.000	10.907	135432.38	0.0605	P	3.1
5	☐	100.000	98.780	1212209.64	0.5475	P	3.3
6	☐	200.000	200.561	2422820.90	1.1117	A	1.2
7	☐	1.000					

y = 0.0055 * x + 5.8642E-005
R = 1.0000
DL = 0.007609
BEC = 0.01058

Weight: <None>
Min Conc: <None>

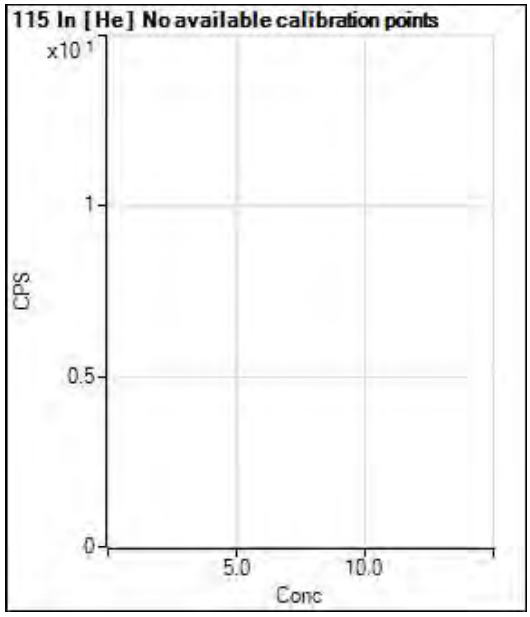


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3.33	0.0000	P	173.
2	☐	2.000	2.030	5447.62	0.0028	P	3.4
3	☐	5.000	4.959	13538.84	0.0068	P	4.0
4	☐	10.000	10.129	27789.18	0.0140	P	7.8
5	☐	100.000	100.392	258703.32	0.1386	P	1.4
6	☐	200.000	199.798	512516.93	0.2759	P	2.8
7	☐	1.000					

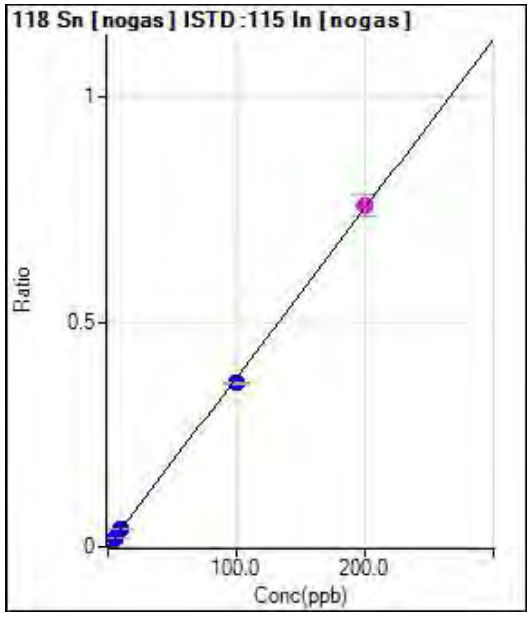
y = 0.0014 * x + 1.6335E-006
R = 1.0000
DL = 0.006147
BEC = 0.001183

Weight: <None>
Min Conc: <None>

Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			785601.71		P	2.6
2	☐			776907.06		P	4.7
3	☐			787330.44		P	1.3
4	☐			788173.91		P	2.2
5	☐			769052.56		P	1.9
6	☐			751194.68		P	1.5
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	943.37	0.0005	P	1.9
2	☐	2.000	1.996	15497.11	0.0080	P	3.5
3	☐	5.000	4.908	37474.09	0.0190	P	0.1
4	☐	10.000	10.149	76870.04	0.0387	P	2.0
5	☐	100.000	96.929	682000.43	0.3654	P	1.3
6	☐	200.000	201.530	1409486.54	0.7592	M	6.2
7	☐	1.000					

y = 0.0038 * x + 4.7104E-004

R = 0.9998

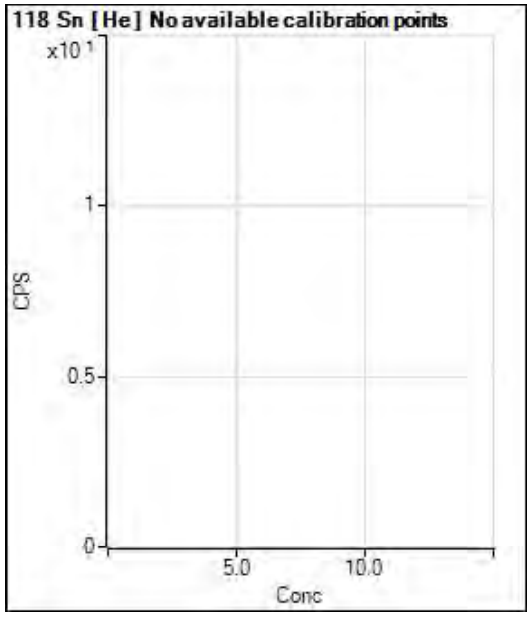
DL = 0.007162

BEC = 0.1251

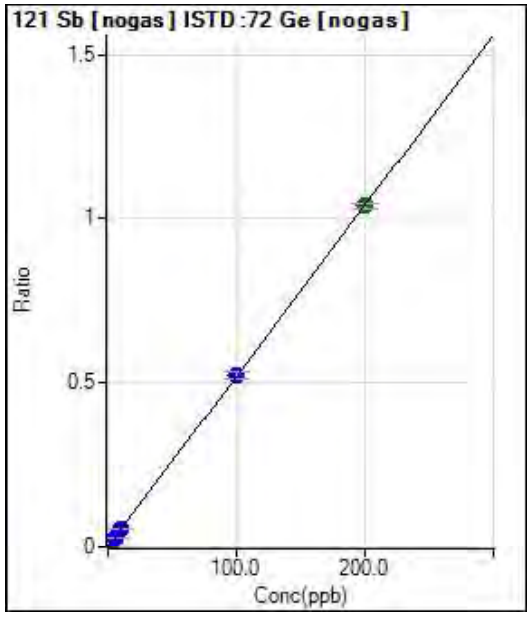
Weight: <None>

Min Conc: <None>

Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			403.35		P	21.1
2	☐			7044.87		P	4.1
3	☐			16511.40		P	3.2
4	☐			34554.49		P	1.4
5	☐			310911.99		P	1.0
6	☐			629469.12		P	1.1
7	☐						

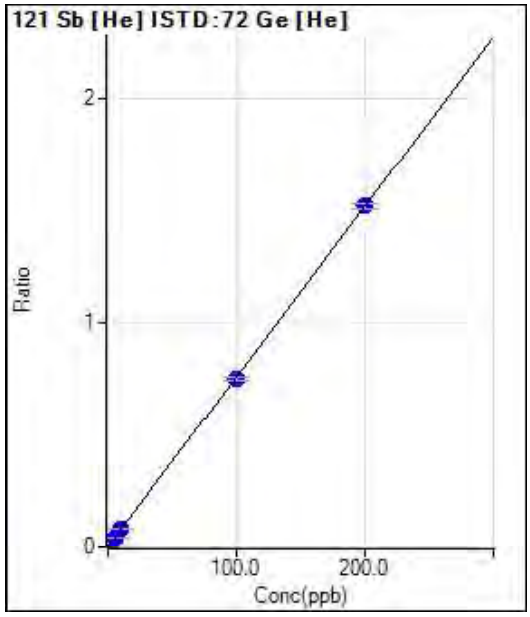


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	970.04	0.0004	P	11.3
2	☐	2.000	2.045	24818.16	0.0111	P	2.3
3	☐	5.000	4.986	59679.18	0.0263	P	2.7
4	☐	10.000	10.438	122411.66	0.0547	P	2.5
5	☐	100.000	100.231	1154116.16	0.5214	P	4.2
6	☐	200.000	199.863	2264453.04	1.0393	A	1.7
7	☐	1.000					

y = 0.0052 * x + 4.2665E-004
R = 1.0000
DL = 0.02779
BEC = 0.08208

Weight: <None>
Min Conc: <None>

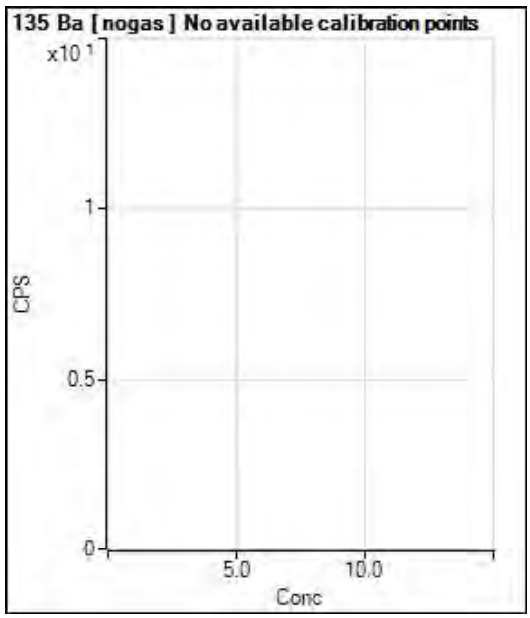
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	426.68	0.0006	P	16.2
2	☐	2.000	2.015	10590.06	0.0159	P	2.6
3	☐	5.000	4.980	25535.58	0.0384	P	0.9
4	☐	10.000	10.467	53616.25	0.0800	P	2.3
5	☐	100.000	98.829	500318.42	0.7495	P	1.2
6	☐	200.000	200.563	988548.16	1.5205	P	1.5
7	☐	1.000					

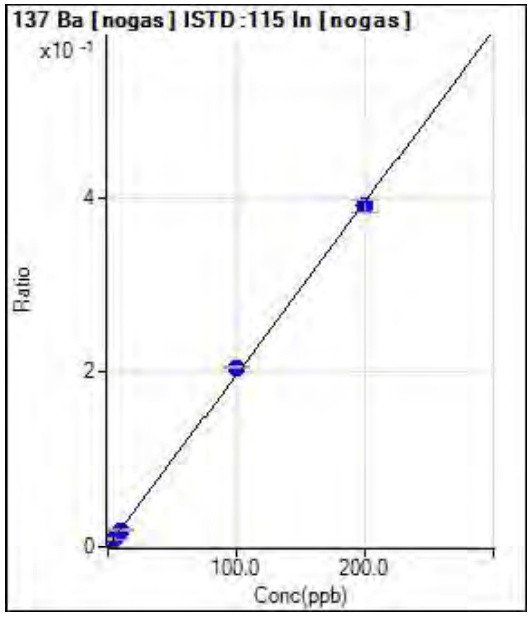
y = 0.0076 * x + 6.3957E-004
R = 1.0000
DL = 0.04112
BEC = 0.0844

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			296.67		P	38.8
2	☐			4874.09		P	5.0
3	☐			11033.73		P	0.5
4	☐			21990.97		P	4.1
5	☐			215164.52		P	1.8
6	☐			413649.40		P	1.3
7	☐						

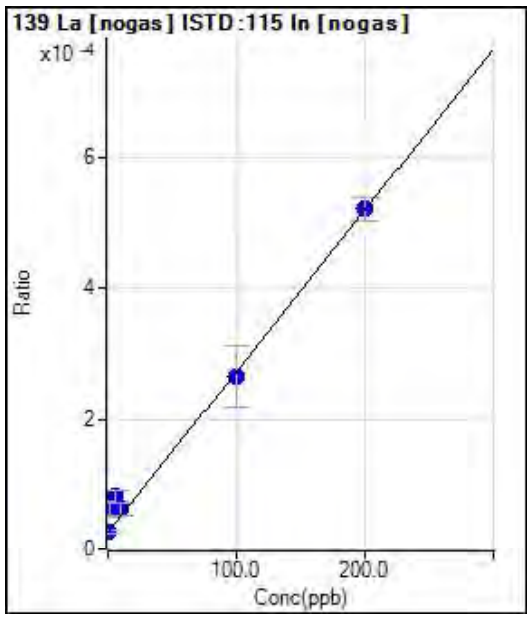
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	546.68	0.0003	P	14.9
2	☐	2.000	1.974	8075.37	0.0042	P	1.5
3	☐	5.000	4.596	18437.01	0.0093	P	1.4
4	☐	10.000	9.814	38921.25	0.0196	P	5.3
5	☐	100.000	104.155	383348.98	0.2054	P	0.4
6	☐	200.000	197.942	724528.40	0.3901	P	4.0
7	☐	1.000					

y = 0.0020 * x + 2.7284E-004
R = 0.9997
DL = 0.06178
BEC = 0.1386

Weight: <None>
Min Conc: <None>

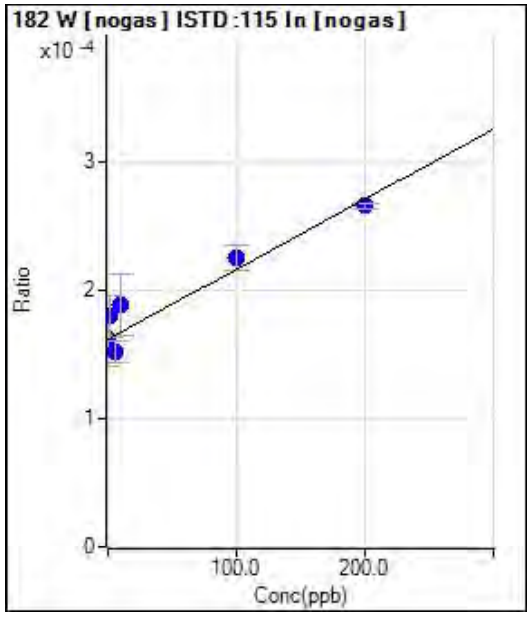


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53.33	0.0000	P	20.8
2	☐	2.000	13.612	116.67	0.0001	P	34.8
3	☐	5.000	22.774	163.33	0.0001	P	17.8
4	☐	10.000	14.537	123.33	0.0001	P	28.7
5	☐	100.000	96.686	493.35	0.0003	P	35.2
6	☐	200.000	200.870	970.04	0.0005	P	7.1
7	☐	1.000					

y = 2.4594E-006 * x + 2.6597E-005
R = 0.9961
DL = 6.732
BEC = 10.81

Weight: <None>
Min Conc: <None>

Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	323.34	0.0002	P	26.5
2	☐	2.000	33.436	350.01	0.0002	P	18.0
3	☐	5.000	-18.375	300.01	0.0002	P	11.1
4	☐	10.000	49.154	373.35	0.0002	P	26.1
5	☐	100.000	116.159	420.01	0.0002	P	8.8
6	☐	200.000	190.233	493.35	0.0003	P	1.8
7	☐	1.000					

y = 5.4492E-007 * x + 1.6163E-004

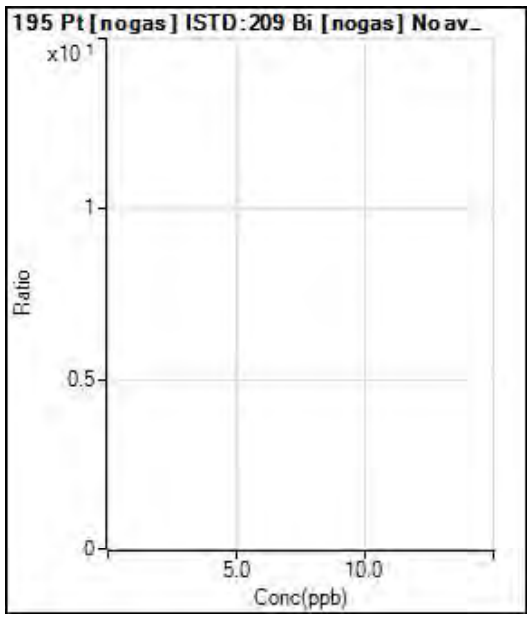
R = 0.9549

DL = 235.6

BEC = 296.6

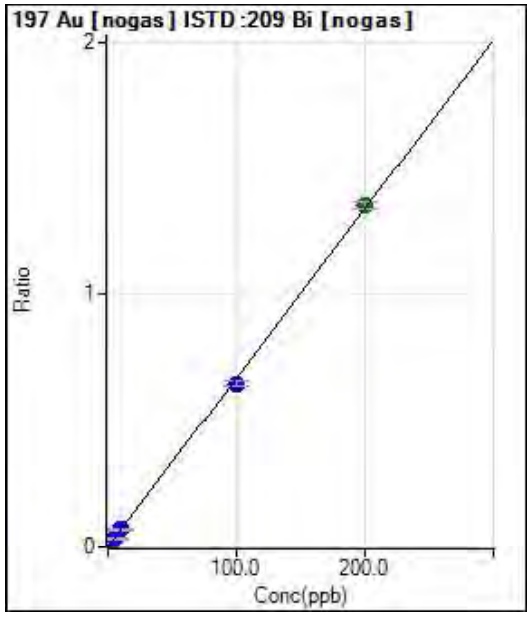
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

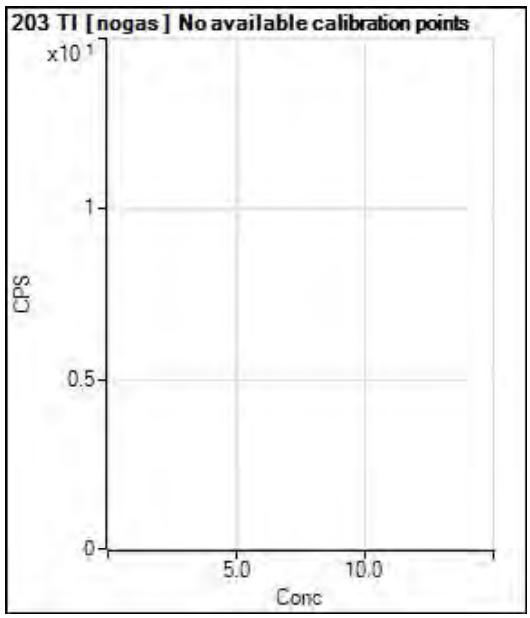
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	593.36	0.0005	P	3.3
2	☐	2.000	1.807	16662.13	0.0126	P	3.1
3	☐	5.000	4.753	41713.53	0.0323	P	1.6
4	☐	10.000	10.189	87450.30	0.0687	P	3.7
5	☐	100.000	96.373	803542.13	0.6457	P	3.1
6	☐	200.000	201.812	1709162.68	1.3517	A	2.0
7	☐	1.000					

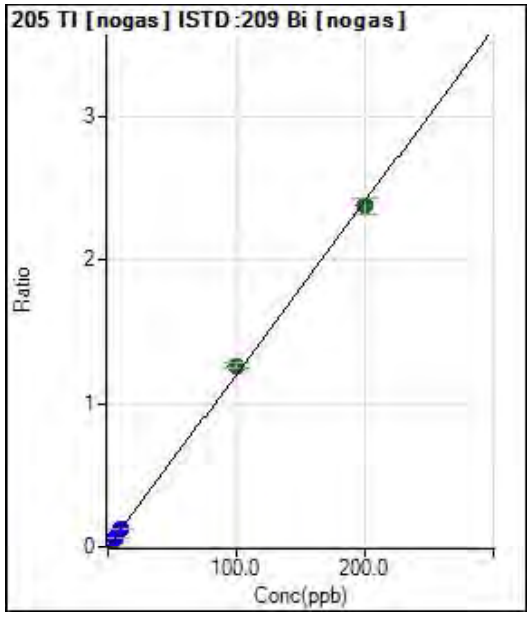
y = 0.0067 * x + 4.5708E-004
R = 0.9998
DL = 0.006786
BEC = 0.06827

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			73.33		P	39.4
2	☐			13075.54		P	4.3
3	☐			34239.78		P	0.8
4	☐			68582.24		P	1.1
5	☐			669464.86		P	2.1
6	☐			1278954.83		P	1.7
7	☐						

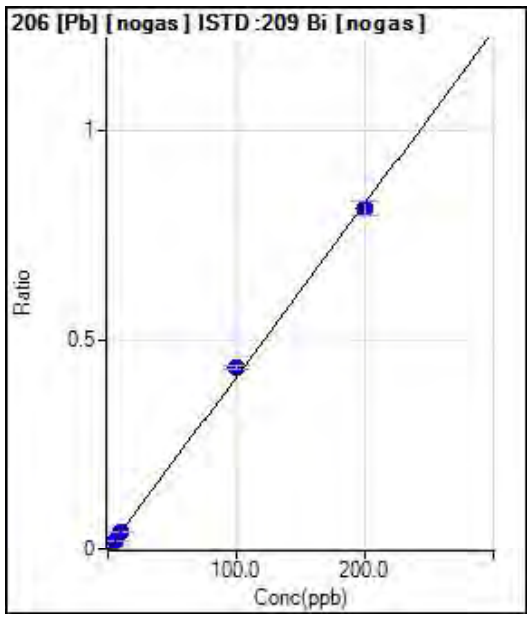
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	136.67	0.0001	P	13.1
2	☐	2.000	1.995	31998.68	0.0241	P	8.9
3	☐	5.000	5.064	78954.95	0.0611	P	3.8
4	☐	10.000	10.593	162692.58	0.1278	P	1.5
5	☐	100.000	105.019	1575136.85	1.2656	A	2.4
6	☐	200.000	197.459	3007853.18	2.3795	A	4.9
7	☐	1.000					

y = 0.0121 * x + 1.0546E-004
R = 0.9996
DL = 0.003427
BEC = 0.008752

Weight: <None>
Min Conc: <None>

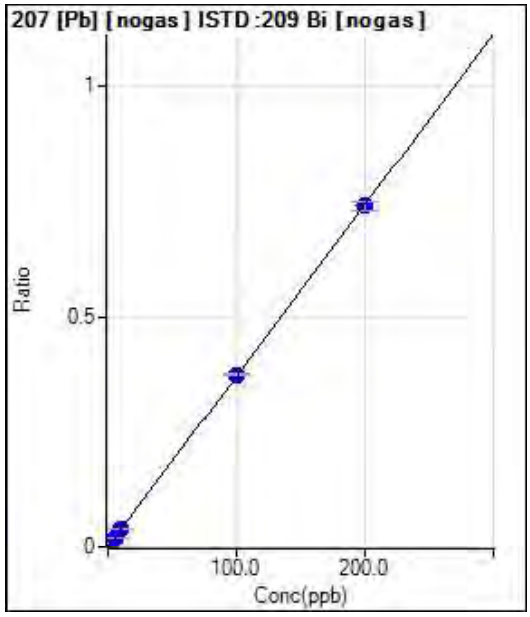


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86.67	0.0001	P	21.6
2	☐	2.000	2.011	11120.73	0.0084	P	2.1
3	☐	5.000	4.957	26558.80	0.0206	P	0.4
4	☐	10.000	10.592	55823.06	0.0438	P	3.7
5	☐	100.000	105.754	544092.96	0.4372	P	2.3
6	☐	200.000	197.094	1029892.17	0.8147	P	4.4
7	☐	1.000					

y = 0.0041 * x + 6.6537E-005
R = 0.9994
DL = 0.01044
BEC = 0.0161

Weight: <None>
Min Conc: <None>

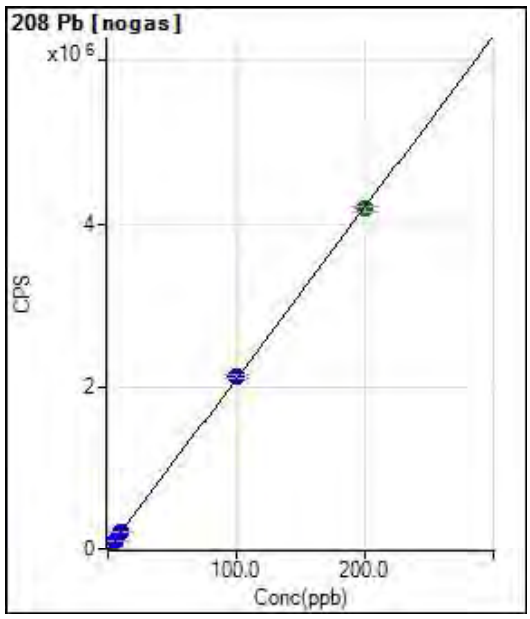
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	66.67	0.0001	P	47.1
2		2.000	2.045	10140.03	0.0076	P	5.2
3		5.000	4.984	23951.36	0.0185	P	1.9
4		10.000	10.512	49723.72	0.0391	P	3.7
5		100.000	100.867	465925.76	0.3743	P	1.7
6		200.000	199.541	936077.51	0.7404	P	2.9
7		1.000					

y = 0.0037 * x + 5.1486E-005
R = 1.0000
DL = 0.01961
BEC = 0.01388

Weight: <None>
Min Conc: <None>

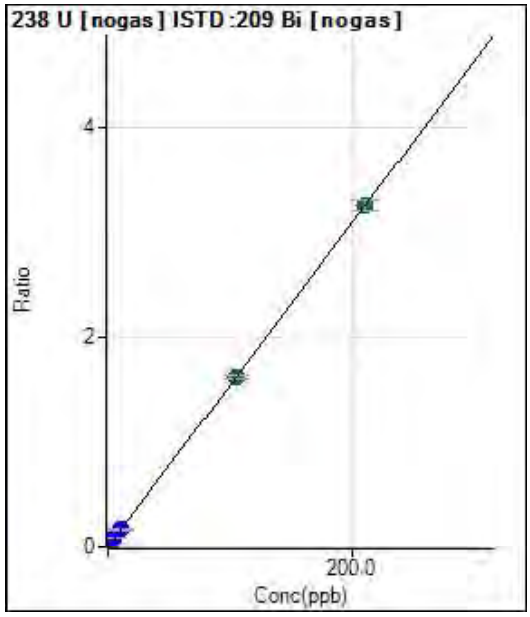


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		0.000	0.000	346.67		P	20.5
2		2.000	2.143	45355.87		P	1.2
3		5.000	5.135	108216.95		P	2.5
4		10.000	10.656	224186.37		P	2.5
5		100.000	101.720	2137079.98		P	2.3
6		200.000	199.102	4182697.00		A	1.5
7		1.000					

y = 21006.0277 * x + 346.6700
R = 0.9999
DL = 0.01013
BEC = 0.0165

Weight: <None>
Min Conc: <None>

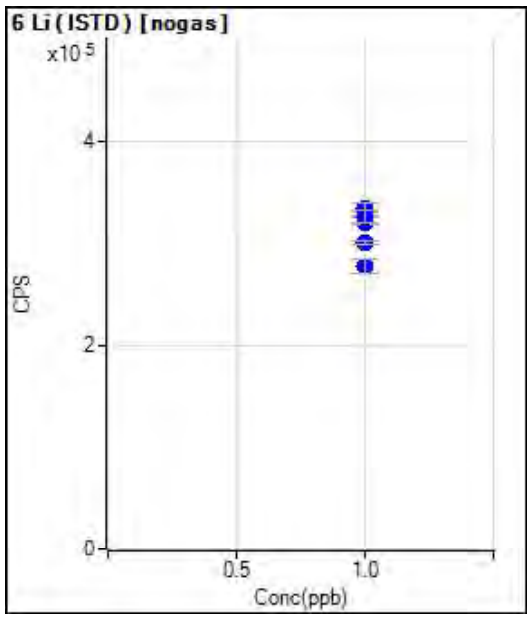
Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	146.67	0.0001	P	10.7
2	☐	2.000	2.035	42003.25	0.0317	P	4.8
3	☐	5.000	5.107	102445.37	0.0793	P	2.1
4	☐	10.000	10.677	210976.32	0.1656	P	2.7
5	☐	105.000	104.683	2020561.90	1.6228	A	1.6
6	☐	210.000	210.124	4118274.42	3.2573	A	3.2
7	☐	1.000					

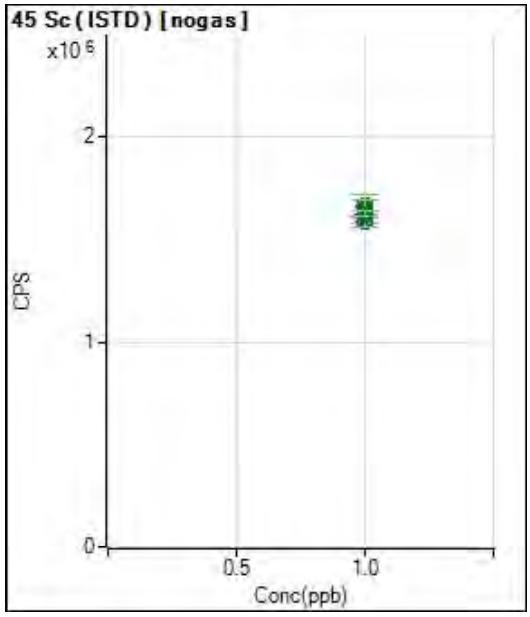
y = 0.0155 * x + 1.1300E-004
R = 1.0000
DL = 0.002342
BEC = 0.00729

Weight: <None>
Min Conc: <None>

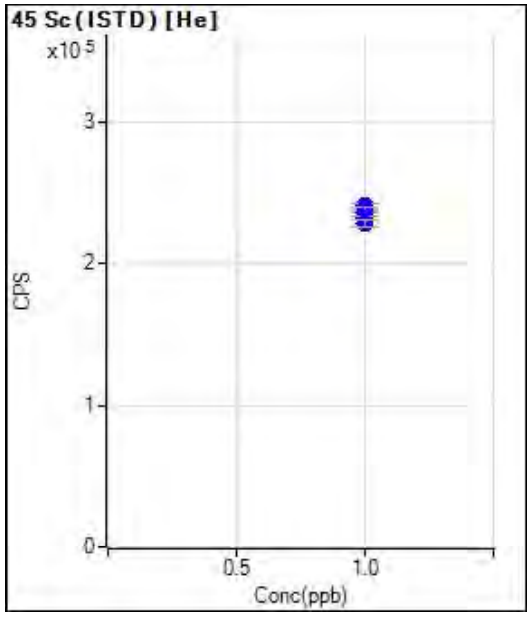


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		327201.35		P	1.5
2	☐	1.000		319047.86		P	0.8
3	☐	1.000		333196.82		P	3.4
4	☐	1.000		325385.57		P	4.0
5	☐	1.000		300627.07		P	1.3
6	☐	1.000		277796.32		P	5.0
7	☐	1.000					

Calibration for 073_ICV.d

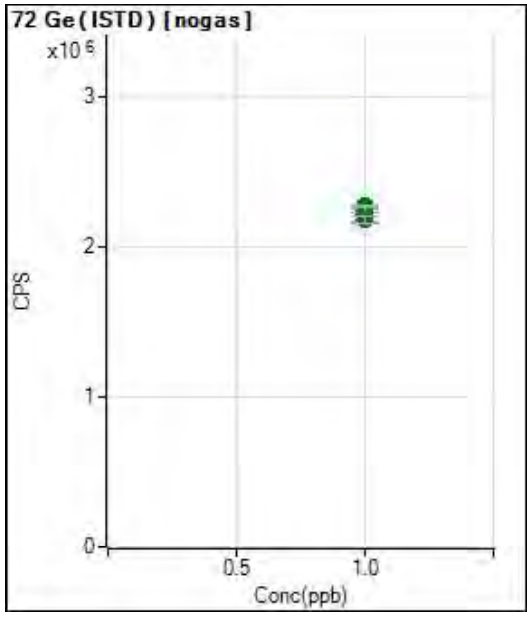


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1664305.18		A	6.8
2	☐	1.000		1627285.76		A	2.0
3	☐	1.000		1655779.71		A	4.1
4	☐	1.000		1610876.70		A	4.3
5	☐	1.000		1591201.33		A	3.9
6	☐	1.000		1627098.67		A	1.8
7	☐	1.000					

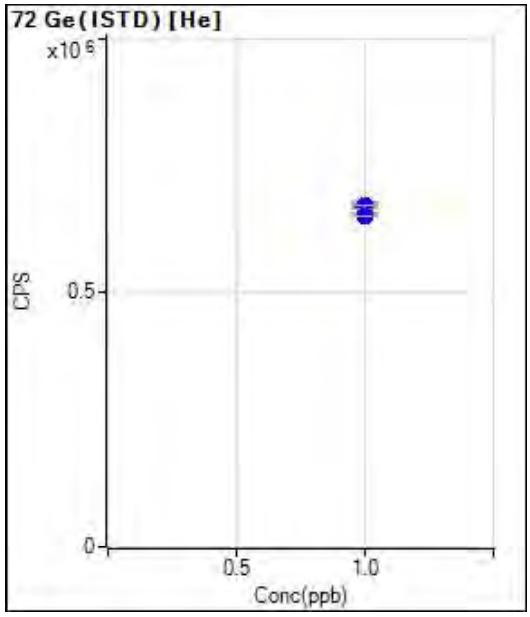


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		236562.61		P	0.5
2	☐	1.000		240959.14		P	0.9
3	☐	1.000		238377.85		P	0.3
4	☐	1.000		236880.97		P	2.7
5	☐	1.000		232669.65		P	1.2
6	☐	1.000		228611.74		P	1.8
7	☐	1.000					

Calibration for 073_ICV.d

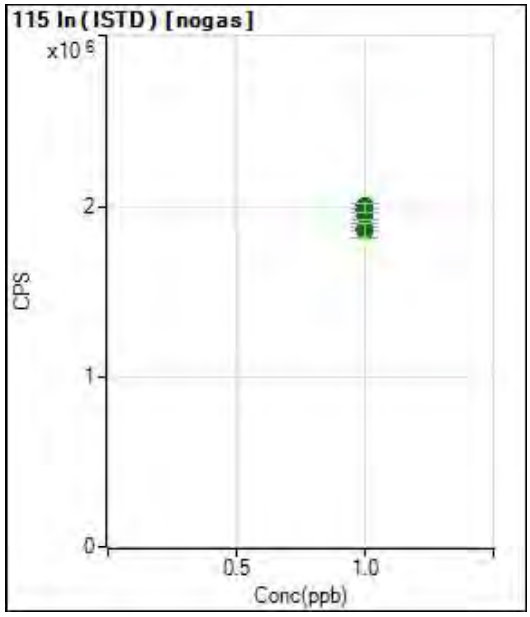


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2273263.92		A	0.2
2	☐	1.000		2245628.98		A	1.4
3	☐	1.000		2265171.06		A	0.8
4	☐	1.000		2239589.70		A	3.1
5	☐	1.000		2215763.25		A	3.9
6	☐	1.000		2179120.90		A	2.1
7	☐	1.000					

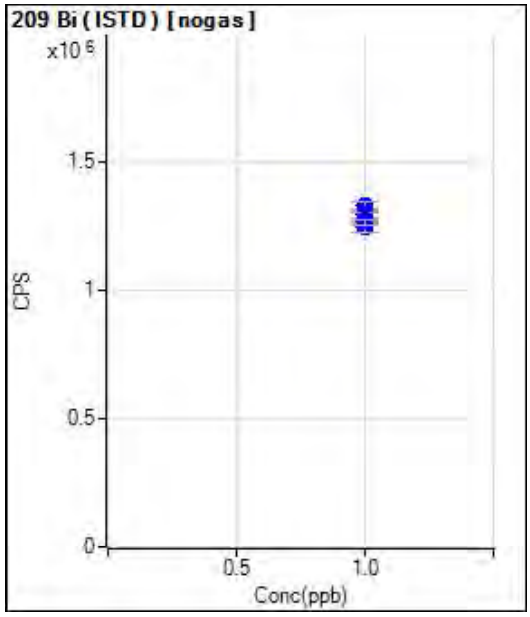


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		666869.00		P	0.6
2	☐	1.000		666072.55		P	3.5
3	☐	1.000		665326.21		P	1.8
4	☐	1.000		670720.77		P	1.8
5	☐	1.000		667563.92		P	1.3
6	☐	1.000		650172.61		P	0.4
7	☐	1.000					

Calibration for 073_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2002390.57		A	1.7
2	☐	1.000		1941545.93		A	2.1
3	☐	1.000		1977494.71		A	0.9
4	☐	1.000		1987590.82		A	2.6
5	☐	1.000		1866605.98		A	1.3
6	☐	1.000		1859429.03		A	4.4
7	☐	1.000					



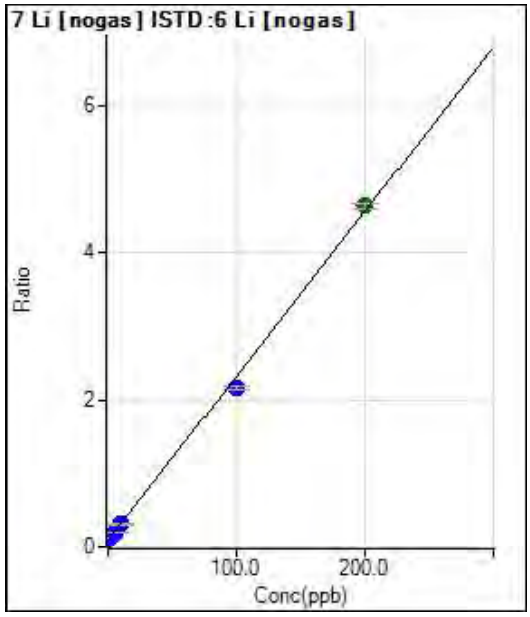
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1298307.32		P	2.3
2	☐	1.000		1327726.21		P	2.7
3	☐	1.000		1292066.62		P	1.4
4	☐	1.000		1273671.86		P	1.4
5	☐	1.000		1245147.64		P	2.9
6	☐	1.000		1264743.42		P	1.7
7	☐	1.000					

Calibration for 127_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\061118A.b\
Analysis File: 061118A.batch.bin
DA Date-Time: 2018-06-12 08:56:14
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	120CALB.d	CAL BLK	2018-06-11 21:56:36
2	121CALS.d	2/10/200	2018-06-11 21:58:37
3	122CALS.d	5/25/500	2018-06-11 22:00:37
4	123CALS.d	10/50/1000	2018-06-11 22:02:36
5	124CALS.d	100/500/10K	2018-06-11 22:04:34
6	125CALS.d	200/1000/20K	2018-06-11 22:06:32
7			

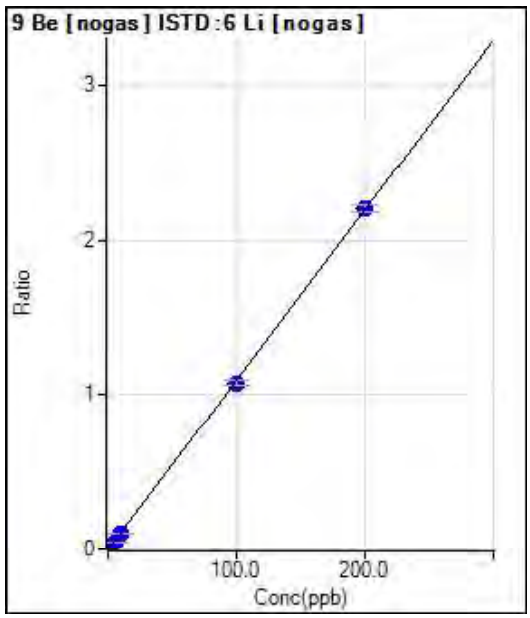
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	42368.09	0.0881	P	4.1
2	☐	2.000	2.046	60807.81	0.1339	P	0.6
3	☐	5.000	4.910	88941.43	0.1979	P	2.2
4	☐	10.000	9.810	139478.94	0.3074	P	0.5
5	☐	100.000	93.004	886010.87	2.1667	P	1.7
6	☐	200.000	203.510	1761165.81	4.6365	A	1.3
7	☐	1.000					

y = 0.0223 * x + 0.0881
R = 0.9991
DL = 0.4902
BEC = 3.944

Weight: <None>
Min Conc: <None>

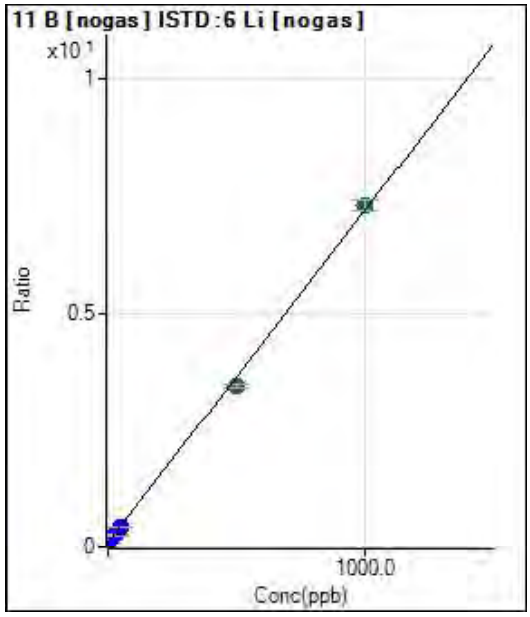


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	56.67	0.0001	P	57.3
2	☐	2.000	1.786	8958.95	0.0197	P	0.8
3	☐	5.000	4.664	23057.64	0.0513	P	3.9
4	☐	10.000	9.607	47890.72	0.1056	P	4.3
5	☐	100.000	98.430	441798.03	1.0808	P	3.4
6	☐	200.000	200.815	837192.02	2.2048	P	2.1
7	☐	1.000					

y = 0.0110 * x + 1.1821E-004
R = 1.0000
DL = 0.0185
BEC = 0.01077

Weight: <None>
Min Conc: <None>

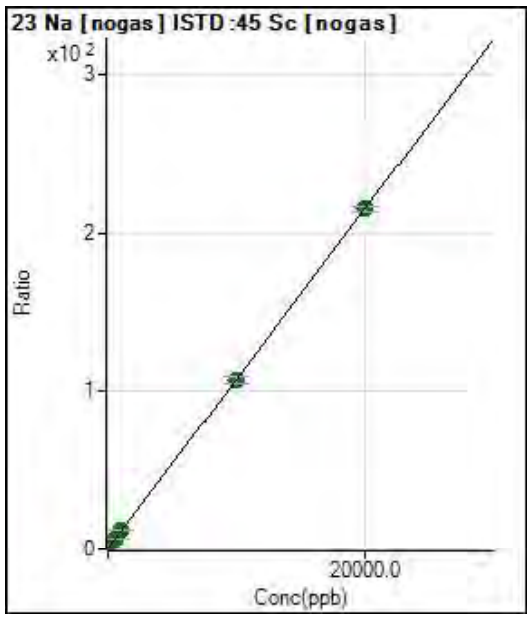
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	44508.96	0.0926	P	4.4
2	☐	10.000	8.851	70557.25	0.1554	P	3.6
3	☐	25.000	22.947	114755.18	0.2555	P	4.5
4	☐	50.000	45.483	188373.37	0.4154	P	3.1
5	☐	500.000	471.735	1406705.35	3.4401	A	1.4
6	☐	1000.000	1014.421	2768176.94	7.2910	A	3.3
7	☐	5.000					

y = 0.0071 * x + 0.0926
R = 0.9995
DL = 1.739
BEC = 13.05

Weight: <None>
Min Conc: <None>

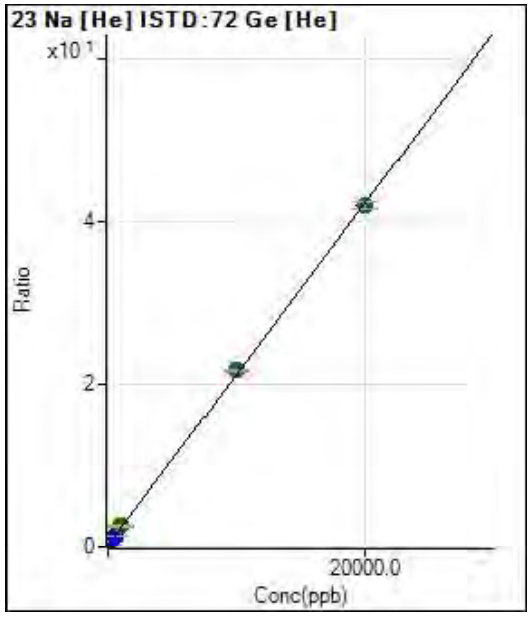


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1278076.27	0.6886	A	3.6
2	☐	200.000	209.870	5432142.96	2.9380	A	2.1
3	☐	500.000	546.367	11944906.78	6.5447	A	4.7
4	☐	1000.000	1103.663	23159251.04	12.5180	A	1.4
5	☐	10000.00	9954.389	201944383.6	107.383	A	3.5
6	☐	20000.00	20016.365	389516583.7	215.231	A	1.9
7	☐	100.000					

y = 0.0107 * x + 0.6886
R = 1.0000
DL = 6.937
BEC = 64.24

Weight: <None>
Min Conc: <None>

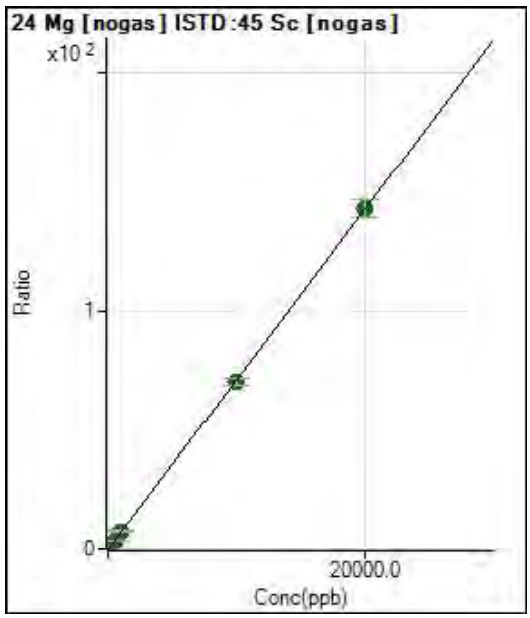
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	164614.22	0.2089	P	0.9
2	☐	200.000	225.456	532798.60	0.6830	P	0.9
3	☐	500.000	571.173	1091967.54	1.4099	P	1.1
4	☐	1000.000	1123.675	2019538.04	2.5716	A	3.0
5	☐	10000.00	10232.632	16892096.83	21.7242	A	1.3
6	☐	20000.00	19875.467	32114004.52	41.9993	A	2.0
7	☐	100.000					

y = 0.0021 * x + 0.2089
R = 0.9999
DL = 2.656
BEC = 99.35

Weight: <None>
Min Conc: <None>

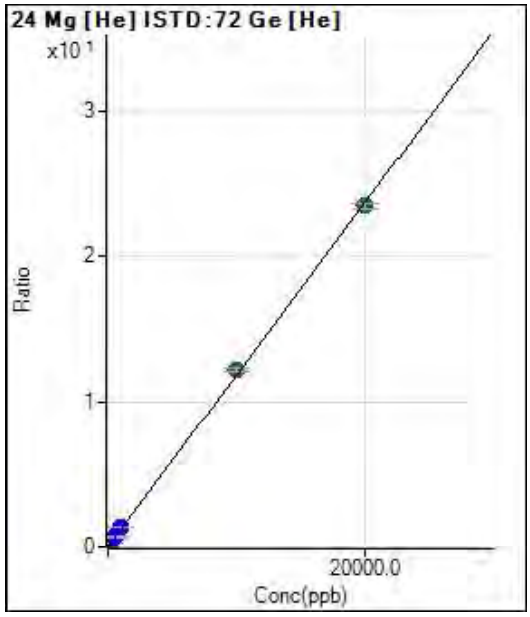


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	16009.85	0.0086	P	7.9
2	☐	200.000	222.481	2944966.34	1.5927	A	3.9
3	☐	500.000	551.866	7187528.29	3.9380	A	4.8
4	☐	1000.000	1107.087	14600128.45	7.8913	A	3.0
5	☐	10000.00	9869.214	132166494.6	70.2795	A	3.6
6	☐	20000.00	20058.517	258284164.1	142.829	A	5.2
7	☐	100.000					

y = 0.0071 * x + 0.0086
R = 1.0000
DL = 0.2861
BEC = 1.21

Weight: <None>
Min Conc: <None>

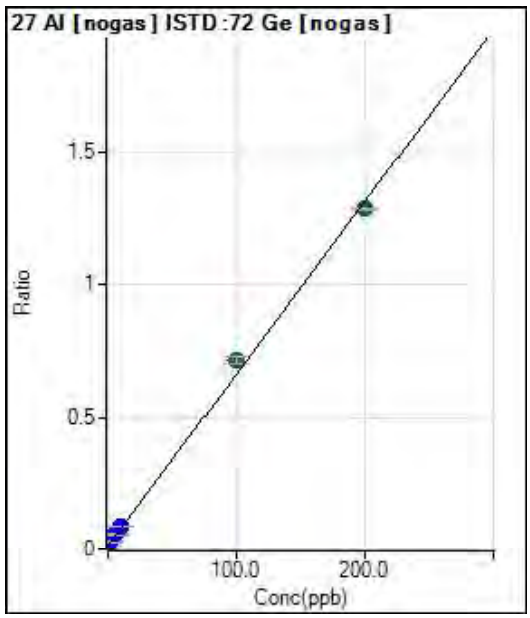
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1753.44	0.0022	P	14.2
2	☐	200.000	230.473	214504.91	0.2749	P	0.1
3	☐	500.000	578.818	532145.11	0.6872	P	2.5
4	☐	1000.000	1140.753	1061965.89	1.3521	P	2.1
5	☐	10000.00	10310.189	9487915.27	12.2025	A	1.7
6	☐	20000.00	19835.593	17949073.07	23.4741	A	1.9
7	☐	100.000					

y = 0.0012 * x + 0.0022
R = 0.9998
DL = 0.8004
BEC = 1.881

Weight: <None>
Min Conc: <None>

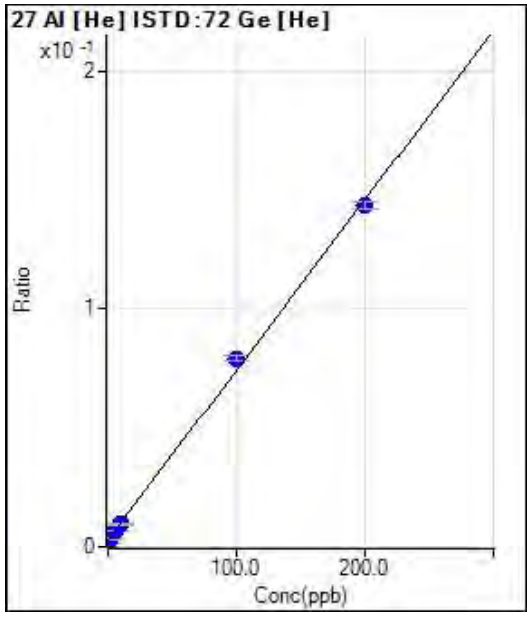


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	35711.09	0.0142	P	2.1
2	☐	2.000	2.591	78102.24	0.0310	P	2.7
3	☐	5.000	6.881	151081.49	0.0589	P	5.4
4	☐	10.000	11.775	228210.74	0.0906	P	2.0
5	☐	100.000	108.000	1782029.97	0.7153	A	3.6
6	☐	200.000	195.858	3250244.22	1.2857	A	0.3
7	☐	1.000					

y = 0.0065 * x + 0.0142
R = 0.9989
DL = 0.135
BEC = 2.188

Weight: <None>
Min Conc: <None>

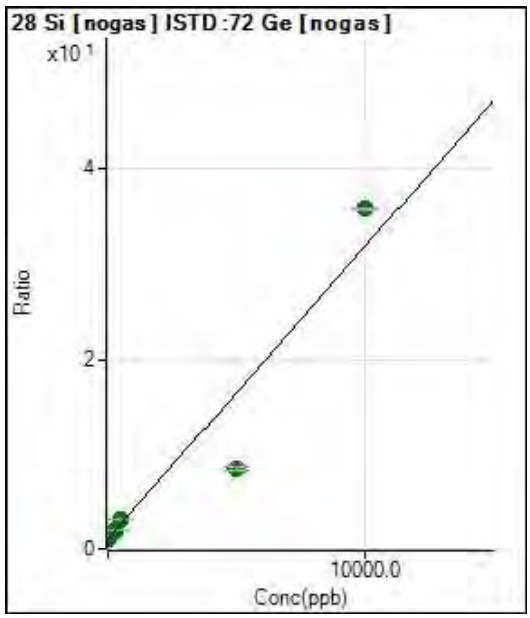
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.928	1243.40	0.0016	P	1.4
2	☐	2.000	0.571	2623.56	0.0034	P	5.6
3	☐	5.000	5.500	5330.83	0.0069	P	3.5
4	☐	10.000	9.418	7601.66	0.0097	P	6.0
5	☐	100.000	106.816	61620.67	0.0793	P	2.5
6	☐	200.000	196.623	109652.49	0.1434	P	2.1
7	☐	1.000					

y = 7.1428E-004 * x + 0.0030
R = 0.9990
DL = 0.09535
BEC = 4.137

Weight: <None>
Min Conc: <None>

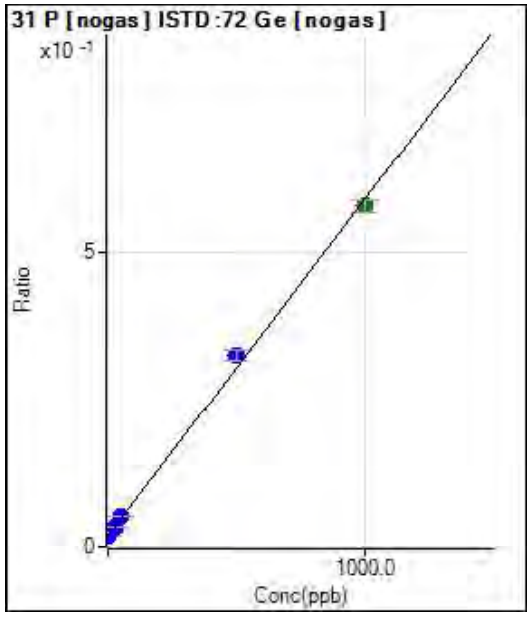


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3004909.23	1.1971	A	6.3
2	☐	100.000	130.120	4016226.61	1.5956	A	2.6
3	☐	250.000	287.154	5329732.94	2.0765	A	4.5
4	☐	500.000	641.842	7962083.21	3.1626	A	1.9
5	☐	5000.000	2401.074	21280214.68	8.5496	A	5.7
6	☐	10000.00	11291.141	90424148.65	35.7723	A	0.5
7	☐	5.000					

y = 0.0031 * x + 1.1971
R = 0.9573
DL = 74.4
BEC = 391

Weight: <None>
Min Conc: <None>

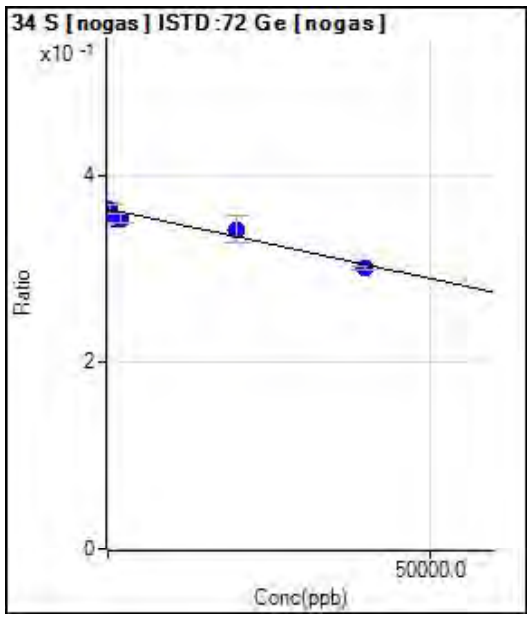
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	47005.46	0.0187	P	3.3
2	☐	10.000	11.166	63168.80	0.0251	P	2.8
3	☐	25.000	25.640	85730.83	0.0334	P	1.2
4	☐	50.000	58.043	130696.54	0.0519	P	1.7
5	☐	500.000	536.772	810548.58	0.3257	P	6.4
6	☐	1000.000	981.184	1465665.19	0.5799	A	3.5
7	☐	5.000					

y = 5.7199E-004 * x + 0.0187
R = 0.9990
DL = 3.287
BEC = 32.71

Weight: <None>
Min Conc: <None>

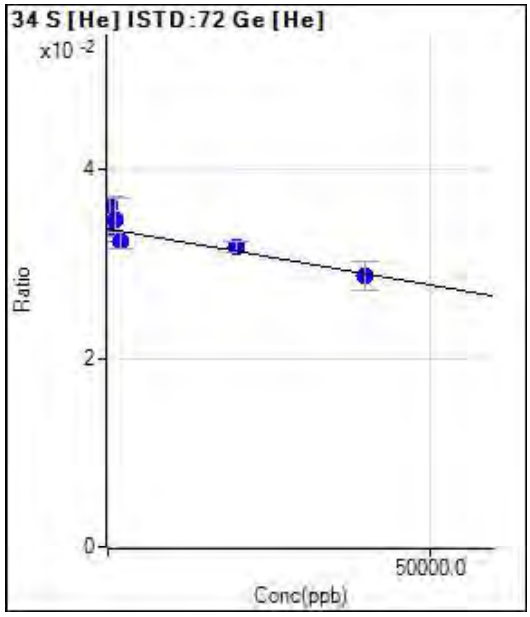


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	915756.92	0.3645	M	3.9
2	☐	400.000	1249.202	912718.28	0.3626	P	3.1
3	☐	1000.000	7458.742	907323.56	0.3534	P	3.7
4	☐	2000.000	7160.789	890907.99	0.3539	P	2.7
5	☐	20000.00	14616.844	852234.00	0.3428	P	8.9
6	☐	40000.00	42263.578	762794.94	0.3018	P	1.5
7	☐	100.000					

y = -1.4830E-006 * x + 0.3645
R = -0.9663
DL = -2.875E+04
BEC = -2.458E+05

Weight: <None>
Min Conc: <None>

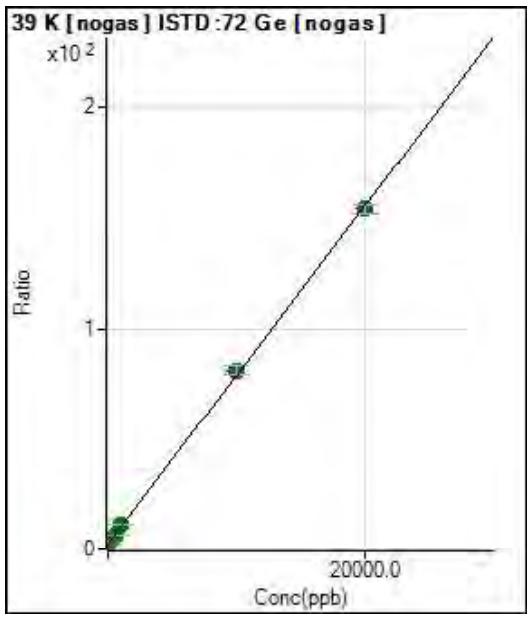
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26556.74	0.0337	P	4.6
2	☐	400.000	-20523.33	28193.61	0.0361	P	5.7
3	☐	1000.000	-8105.734	26824.59	0.0347	P	13.0
4	☐	2000.000	10892.647	25456.21	0.0324	P	5.5
5	☐	20000.00	16471.102	24687.10	0.0318	P	3.8
6	☐	40000.00	41756.693	21984.49	0.0288	P	10.5
7	☐	100.000					

y = -1.1847E-007 * x + 0.0337
R = -0.8910
DL = -3.899E+04
BEC = -2.845E+05

Weight: <None>
Min Conc: <None>

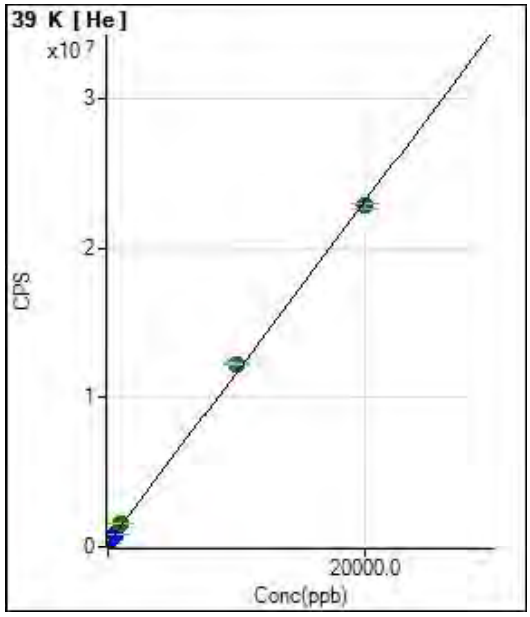


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6465222.15	2.5741	A	4.1
2	☐	200.000	219.935	10708718.73	4.2546	A	2.7
3	☐	500.000	536.399	17134043.09	6.6726	A	2.8
4	☐	1000.000	1134.991	28315150.63	11.2464	A	0.3
5	☐	10000.00	10283.621	202049779.5	81.1501	A	5.0
6	☐	20000.00	19850.331	389825292.0	154.248	A	2.4
7	☐	100.000					

y = 0.0076 * x + 2.5741
R = 0.9999
DL = 41.8
BEC = 336.9

Weight: <None>
Min Conc: <None>

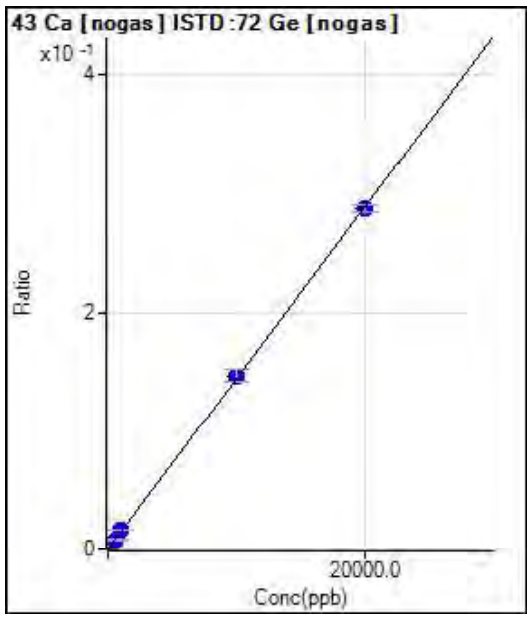
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	228961.33		P	0.6
2	☐	200.000	225.910	487663.92		P	0.7
3	☐	500.000	567.081	878358.68		P	1.2
4	☐	1000.000	1153.022	1549353.46		A	1.2
5	☐	10000.00	10486.812	12238018.57		A	1.0
6	☐	20000.00	19747.007	22842404.66		A	1.6
7	☐	100.000					

y = 1145.1580 * x + 228961.3300
R = 0.9996
DL = 3.897
BEC = 199.9

Weight: <None>
Min Conc: <None>

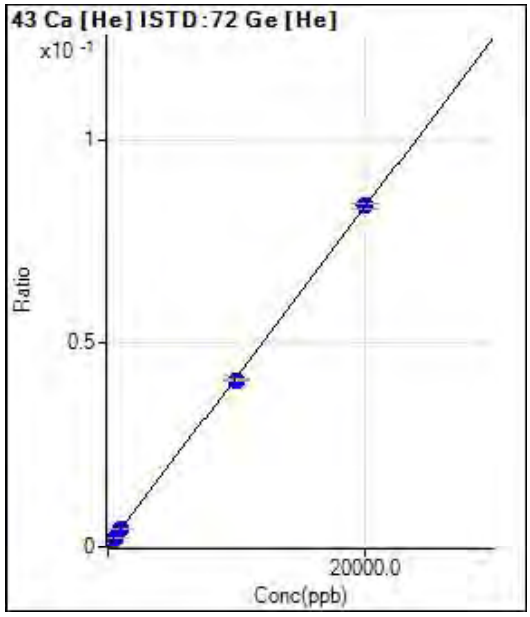


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1116.72	0.0004	P	18.9
2	☐	200.000	213.751	8875.58	0.0035	P	0.8
3	☐	500.000	543.896	21259.07	0.0083	P	5.6
4	☐	1000.000	1118.935	41730.71	0.0166	P	0.8
5	☐	10000.00	10164.066	365638.12	0.1470	P	7.1
6	☐	20000.00	19910.785	726526.55	0.2875	P	2.1
7	☐	100.000					

y = 1.4417E-005 * x + 4.4366E-004
R = 0.9999
DL = 17.48
BEC = 30.77

Weight: <None>
Min Conc: <None>

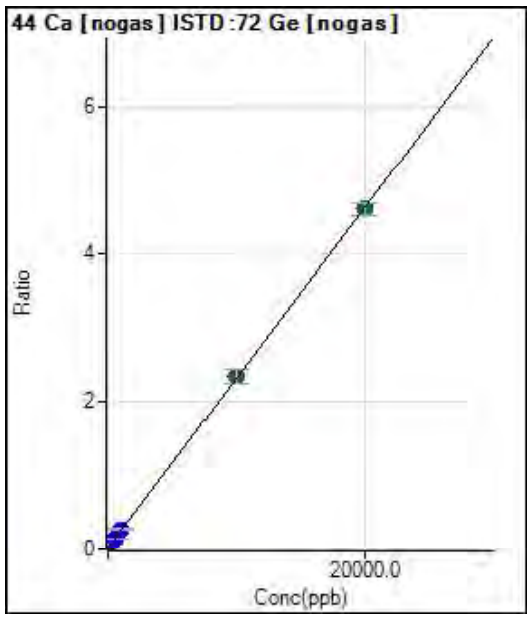
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	86.67	0.0001	P	74.9
2	☐	200.000	225.041	816.70	0.0010	P	15.5
3	☐	500.000	519.759	1760.11	0.0023	P	5.3
4	☐	1000.000	1021.867	3427.03	0.0044	P	3.9
5	☐	10000.00	9813.203	31844.34	0.0409	P	1.5
6	☐	20000.00	20091.561	64019.60	0.0837	P	1.7
7	☐	100.000					

y = 4.1615E-006 * x + 1.1010E-004
R = 0.9999
DL = 59.46
BEC = 26.46

Weight: <None>
Min Conc: <None>

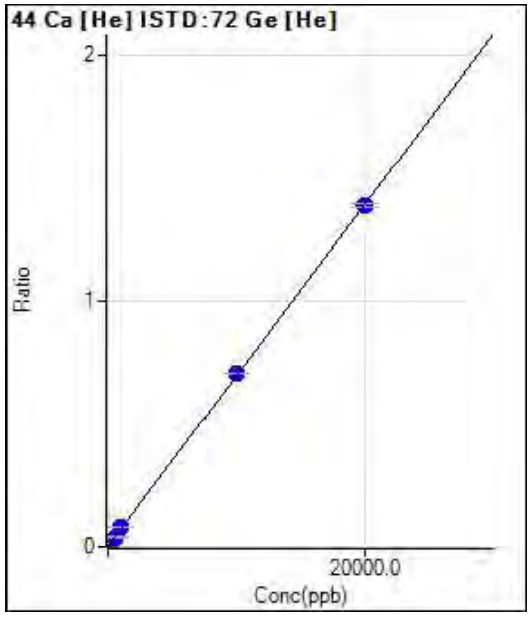


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	54790.23	0.0218	P	2.6
2	☐	200.000	216.387	180273.50	0.0716	P	2.7
3	☐	500.000	545.419	378078.22	0.1473	P	4.9
4	☐	1000.000	1126.128	707319.55	0.2809	P	1.8
5	☐	10000.00	10096.775	5833700.96	2.3452	A	7.9
6	☐	20000.00	19944.007	11651453.16	4.6113	A	3.9
7	☐	100.000					

y = 2.3012E-004 * x + 0.0218
R = 1.0000
DL = 7.418
BEC = 94.75

Weight: <None>
Min Conc: <None>

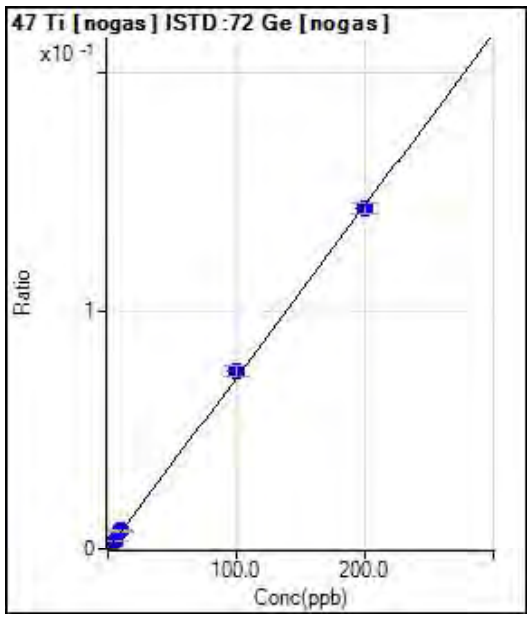
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1916.80	0.0024	P	4.8
2	☐	200.000	220.277	13848.66	0.0178	P	2.2
3	☐	500.000	546.759	31326.63	0.0405	P	3.4
4	☐	1000.000	1092.367	61574.75	0.0784	P	2.2
5	☐	10000.00	10103.847	548316.88	0.7051	P	0.3
6	☐	20000.00	19942.086	1062329.33	1.3893	P	1.1
7	☐	100.000					

y = 6.9544E-005 * x + 0.0024
R = 1.0000
DL = 5.012
BEC = 34.97

Weight: <None>
Min Conc: <None>

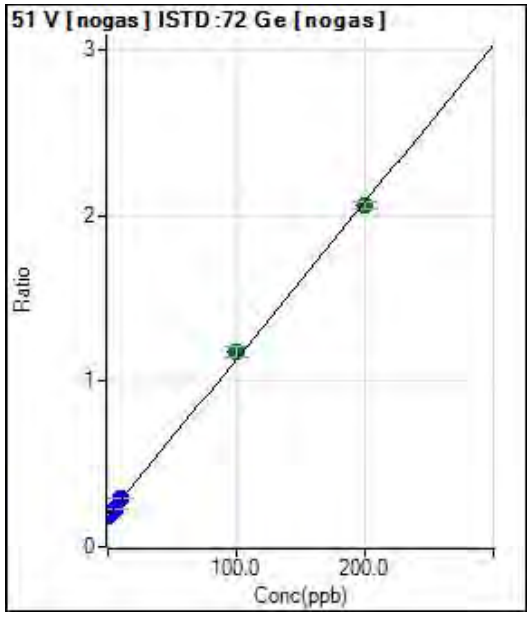


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	230.01	0.0001	P	20.3
2	☐	2.000	2.146	4128.88	0.0016	P	3.7
3	☐	5.000	5.296	10039.54	0.0039	P	6.3
4	☐	10.000	11.011	20224.65	0.0080	P	5.0
5	☐	100.000	103.663	186326.65	0.0749	P	6.3
6	☐	200.000	198.109	361388.34	0.1430	P	3.1
7	☐	1.000					

y = 7.2141E-004 * x + 9.0944E-005
R = 0.9998
DL = 0.0766
BEC = 0.1261

Weight: <None>
Min Conc: <None>

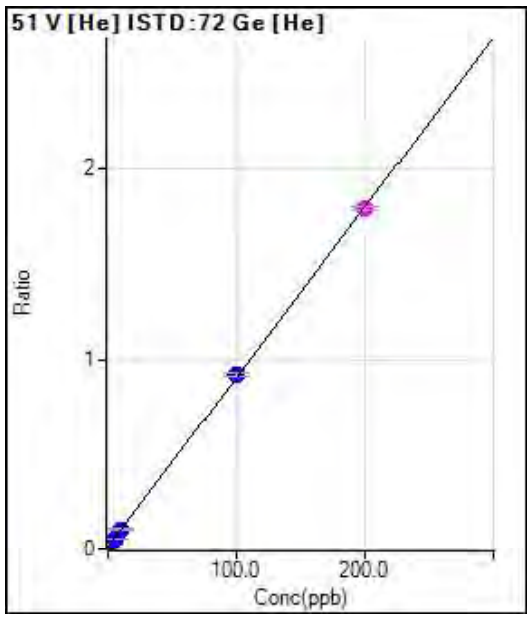
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	467840.07	0.1862	P	4.7
2	☐	2.000	1.645	508169.69	0.2018	P	0.7
3	☐	5.000	4.687	592634.06	0.2307	P	1.3
4	☐	10.000	11.691	748062.03	0.2971	P	1.2
5	☐	100.000	104.717	2936639.72	1.1796	A	5.4
6	☐	200.000	197.568	5206826.68	2.0604	A	2.1
7	☐	1.000					

y = 0.0095 * x + 0.1862
R = 0.9996
DL = 2.753
BEC = 19.63

Weight: <None>
Min Conc: <None>

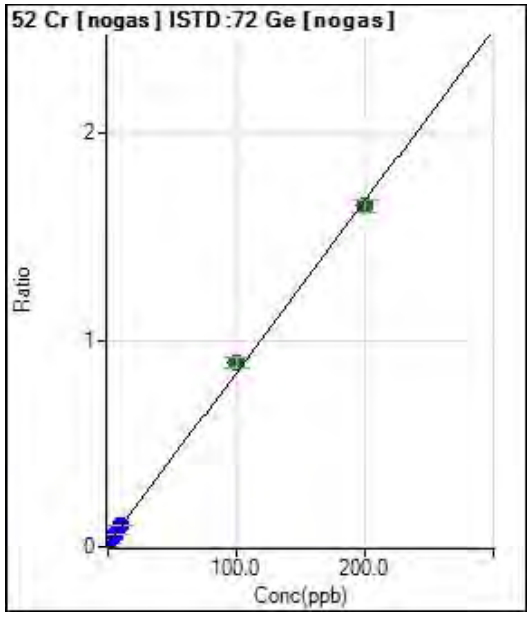


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.484	9779.91	0.0124	P	1.3
2	☐	2.000	1.671	24663.63	0.0316	P	1.2
3	☐	5.000	4.773	45895.58	0.0593	P	0.9
4	☐	10.000	10.263	84957.01	0.1082	P	3.6
5	☐	100.000	101.562	716779.54	0.9218	P	1.6
6	☐	200.000	199.215	1370410.96	1.7921	M	1.0
7	☐	1.000					

y = 0.0089 * x + 0.0167
R = 0.9999
DL = 0.05586
BEC = 1.876

Weight: <None>
Min Conc: <None>

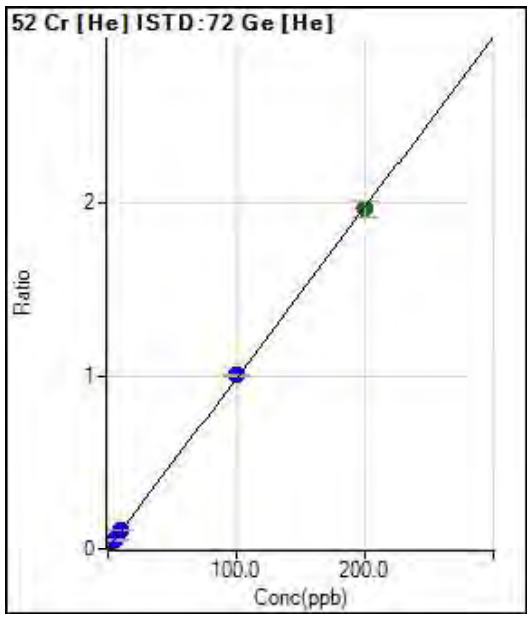
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36008.51	0.0143	P	4.3
2	☐	2.000	2.270	83444.88	0.0332	P	2.5
3	☐	5.000	5.309	149840.95	0.0583	P	1.8
4	☐	10.000	11.073	267140.77	0.1061	P	1.2
5	☐	100.000	105.505	2211970.80	0.8887	A	5.9
6	☐	200.000	197.183	4165190.25	1.6485	A	3.7
7	☐	1.000					

y = 0.0083 * x + 0.0143
R = 0.9995
DL = 0.2245
BEC = 1.73

Weight: <None>
Min Conc: <None>

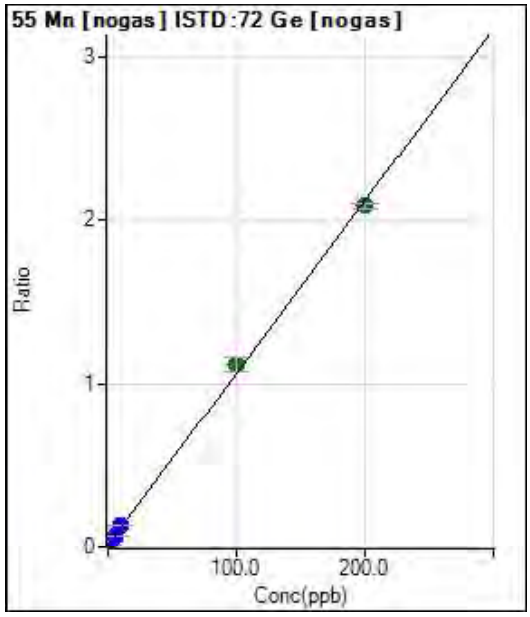


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5440.89	0.0069	P	2.9
2	☐	2.000	2.072	21302.57	0.0273	P	1.7
3	☐	5.000	5.194	44941.51	0.0580	P	3.5
4	☐	10.000	10.632	87640.41	0.1116	P	1.1
5	☐	100.000	101.541	782666.03	1.0065	P	1.2
6	☐	200.000	199.192	1505095.65	1.9679	A	5.1
7	☐	1.000					

y = 0.0098 * x + 0.0069
R = 1.0000
DL = 0.06082
BEC = 0.7013

Weight: <None>
Min Conc: <None>

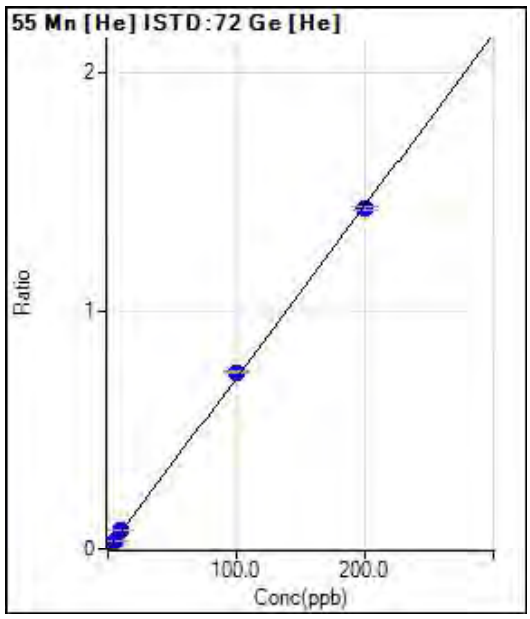
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26035.26	0.0104	P	3.0
2	☐	2.000	2.210	84620.35	0.0336	P	1.5
3	☐	5.000	5.385	172089.47	0.0670	P	2.3
4	☐	10.000	11.182	322237.65	0.1280	P	0.1
5	☐	100.000	105.361	2782451.10	1.1187	A	7.5
6	☐	200.000	197.249	5270023.26	2.0853	A	1.9
7	☐	1.000					

y = 0.0105 * x + 0.0104
R = 0.9995
DL = 0.08733
BEC = 0.985

Weight: <None>
Min Conc: <None>

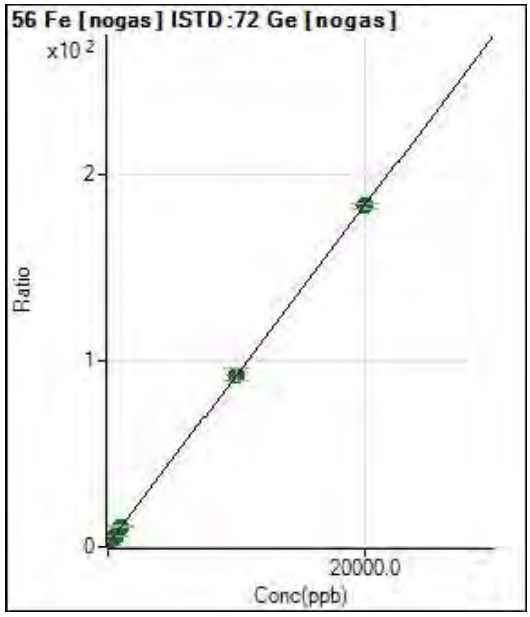


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	586.69	0.0007	P	17.4
2	☐	2.000	2.209	12978.09	0.0166	P	6.2
3	☐	5.000	5.482	31123.34	0.0402	P	0.9
4	☐	10.000	11.074	63161.72	0.0804	P	1.2
5	☐	100.000	103.293	578319.38	0.7438	P	1.6
6	☐	200.000	198.286	1091247.12	1.4271	P	1.0
7	☐	1.000					

y = 0.0072 * x + 7.4465E-004
R = 0.9998
DL = 0.05395
BEC = 0.1035

Weight: <None>
Min Conc: <None>

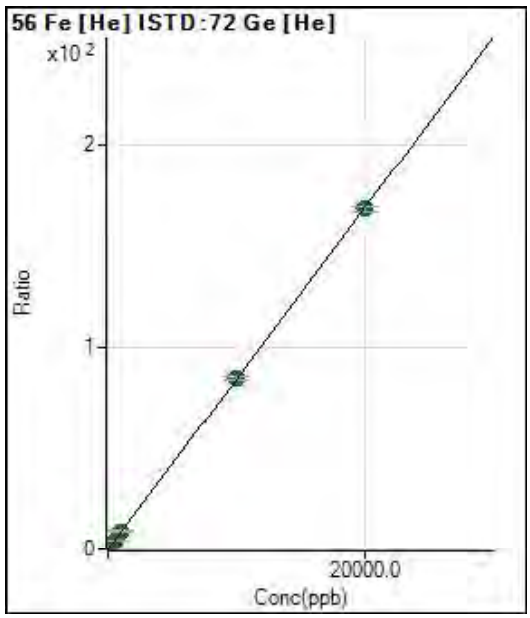
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2960279.10	1.1778	A	1.9
2	☐	200.000	211.422	7819491.32	3.1062	A	1.7
3	☐	500.000	519.167	15181025.86	5.9131	A	3.4
4	☐	1000.000	1084.814	27874792.29	11.0724	A	2.8
5	☐	10000.00	10043.161	230865188.4	92.7811	A	6.5
6	☐	20000.00	19973.585	463416060.3	183.356	A	1.5
7	☐	100.000					

y = 0.0091 * x + 1.1778
R = 1.0000
DL = 7.172
BEC = 129.1

Weight: <None>
Min Conc: <None>

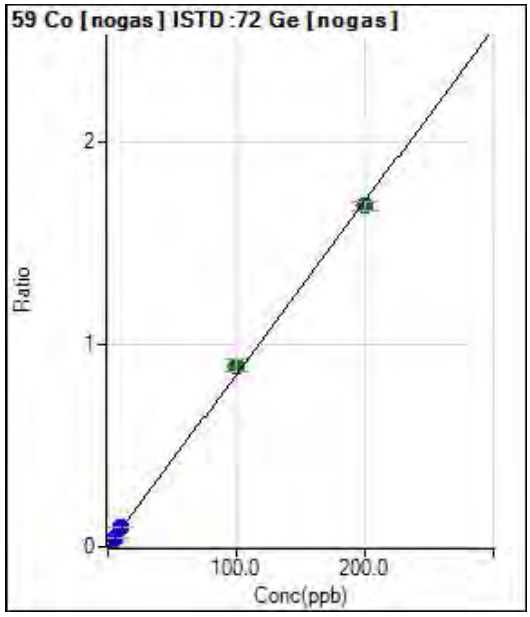


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26088.67	0.0331	P	3.9
2	☐	200.000	223.695	1497711.07	1.9198	A	1.3
3	☐	500.000	559.234	3679003.59	4.7498	A	0.7
4	☐	1000.000	1099.010	7308461.76	9.3024	A	1.8
5	☐	10000.00	10075.535	66101147.35	85.0126	A	1.9
6	☐	20000.00	19955.564	128725311.4	168.343	A	1.4
7	☐	100.000					

y = 0.0084 * x + 0.0331
R = 1.0000
DL = 0.4625
BEC = 3.926

Weight: <None>
Min Conc: <None>

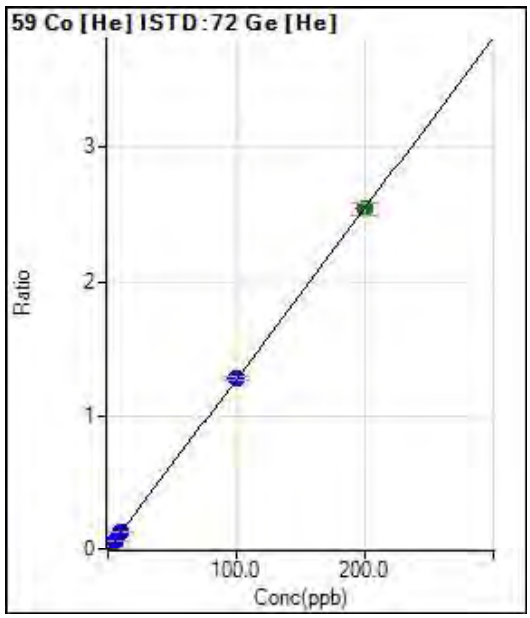
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	446.68	0.0002	P	14.3
2	☐	2.000	2.292	49617.38	0.0197	P	2.7
3	☐	5.000	5.490	120629.10	0.0470	P	2.3
4	☐	10.000	11.620	249781.57	0.0992	P	3.3
5	☐	100.000	104.943	2225994.66	0.8946	A	6.6
6	☐	200.000	197.433	4252842.75	1.6830	A	2.5
7	☐	1.000					

y = 0.0085 * x + 1.7717E-004
R = 0.9996
DL = 0.008925
BEC = 0.02079

Weight: <None>
Min Conc: <None>

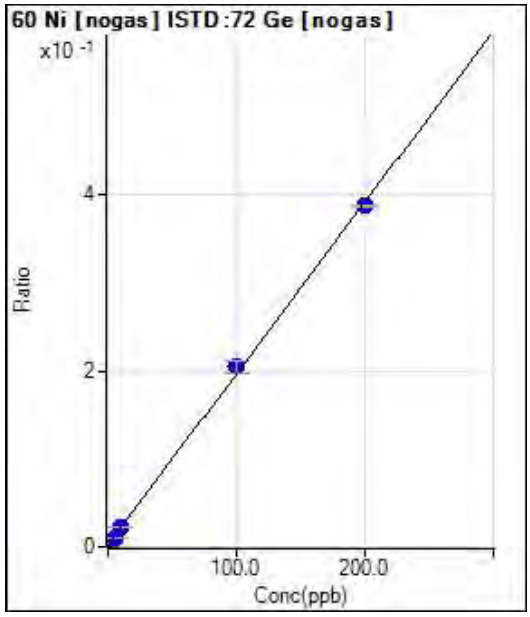


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	63.33	0.0001	P	48.3
2	☐	2.000	2.163	21546.23	0.0276	P	1.7
3	☐	5.000	5.558	54862.11	0.0708	P	4.7
4	☐	10.000	10.665	106712.36	0.1358	P	1.7
5	☐	100.000	100.500	994899.39	1.2795	P	1.8
6	☐	200.000	199.701	1943993.15	2.5423	A	3.9
7	☐	1.000					

y = 0.0127 * x + 8.0449E-005
R = 1.0000
DL = 0.009158
BEC = 0.00632

Weight: <None>
Min Conc: <None>

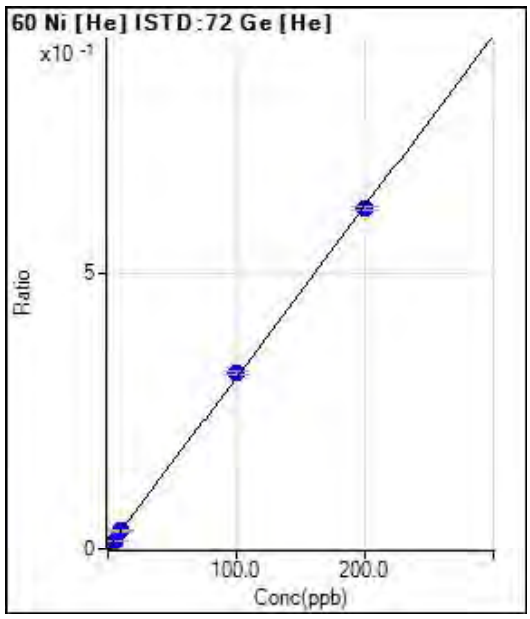
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.048	326.68	0.0001	P	21.8
2	☐	2.000	1.200	11350.35	0.0045	P	7.0
3	☐	5.000	4.481	27995.14	0.0109	P	1.4
4	☐	10.000	10.348	56206.61	0.0223	P	4.4
5	☐	100.000	104.029	509444.12	0.2048	P	7.0
6	☐	200.000	197.989	980144.31	0.3878	P	0.9
7	☐	1.000					

y = 0.0019 * x + 0.0022
R = 0.9997
DL = 0.0438
BEC = 1.115

Weight: <None>
Min Conc: <None>

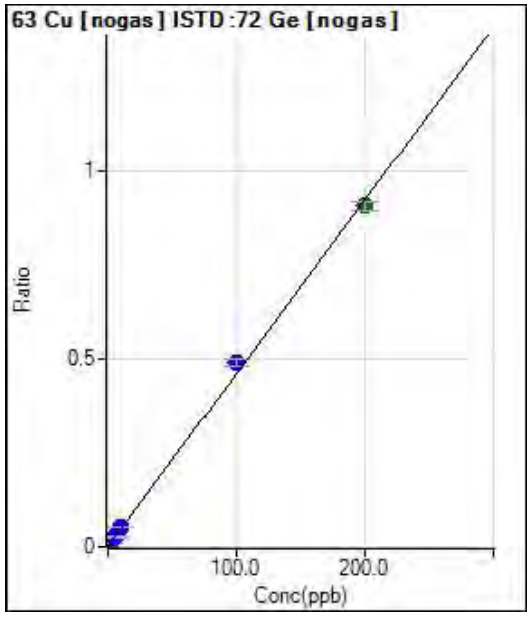


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.836	176.67	0.0002	P	31.7
2	☐	2.000	1.394	5567.59	0.0071	P	2.8
3	☐	5.000	4.730	13535.19	0.0175	P	3.3
4	☐	10.000	10.245	27147.20	0.0346	P	4.4
5	☐	100.000	102.931	250268.37	0.3218	P	2.1
6	☐	200.000	198.535	472684.49	0.6181	P	1.0
7	☐	1.000					

y = 0.0031 * x + 0.0028
R = 0.9998
DL = 0.0688
BEC = 0.9083

Weight: <None>
Min Conc: <None>

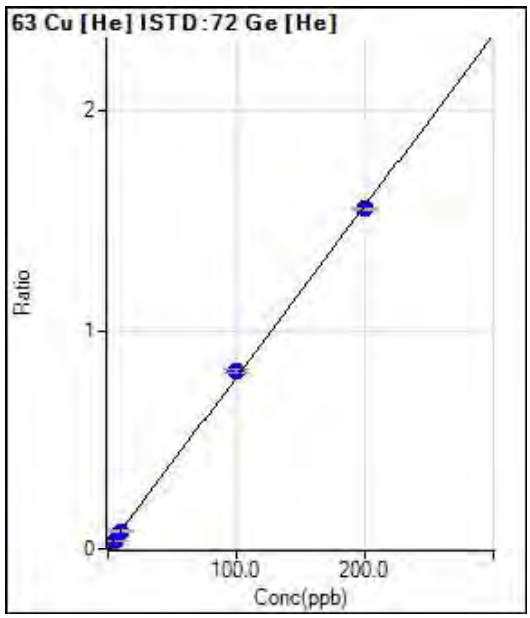
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1723.44	0.0007	P	20.7
2	☐	2.000	2.357	29020.00	0.0115	P	1.9
3	☐	5.000	5.653	68522.34	0.0267	P	4.3
4	☐	10.000	11.523	135175.57	0.0537	P	4.3
5	☐	100.000	106.290	1219084.49	0.4895	P	4.7
6	☐	200.000	196.759	2288361.11	0.9056	A	3.0
7	☐	1.000					

y = 0.0046 * x + 6.8848E-004
R = 0.9993
DL = 0.09311
BEC = 0.1497

Weight: <None>
Min Conc: <None>

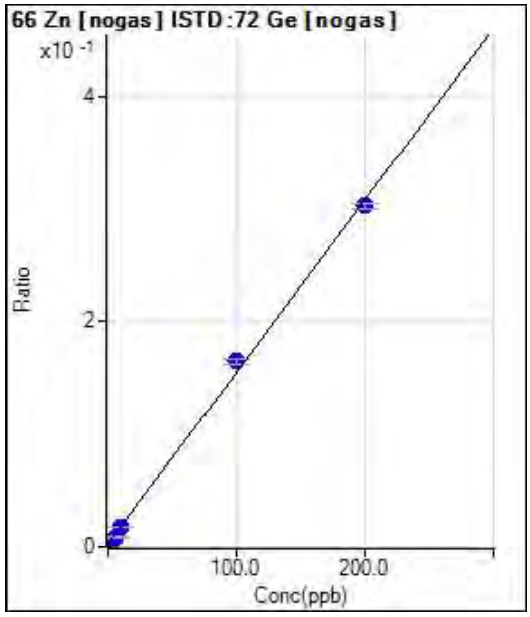


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.825	916.70	0.0012	P	15.2
2	☐	2.000	1.404	14469.23	0.0185	P	2.1
3	☐	5.000	4.645	33931.79	0.0438	P	3.7
4	☐	10.000	10.089	67758.53	0.0863	P	2.7
5	☐	100.000	103.355	632597.40	0.8136	P	1.8
6	☐	200.000	198.333	1188488.66	1.5542	P	0.4
7	☐	1.000					

y = 0.0078 * x + 0.0076
R = 0.9998
DL = 0.0682
BEC = 0.9746

Weight: <None>
Min Conc: <None>

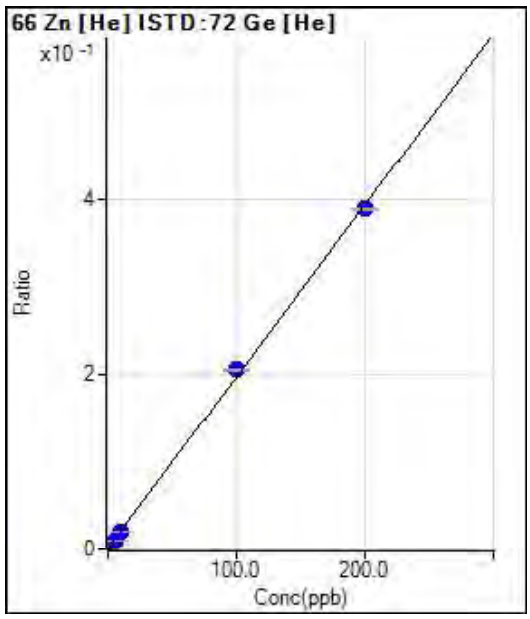
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.254	1350.07	0.0005	P	6.2
2	☐	2.000	0.854	9449.25	0.0038	P	1.0
3	☐	5.000	4.144	22530.92	0.0088	P	1.5
4	☐	10.000	9.949	44380.97	0.0176	P	1.4
5	☐	100.000	106.544	411103.01	0.1650	P	3.1
6	☐	200.000	196.764	764823.35	0.3026	P	1.8
7	☐	1.000					

y = 0.0015 * x + 0.0025
R = 0.9991
DL = 0.06542
BEC = 1.606

Weight: <None>
Min Conc: <None>

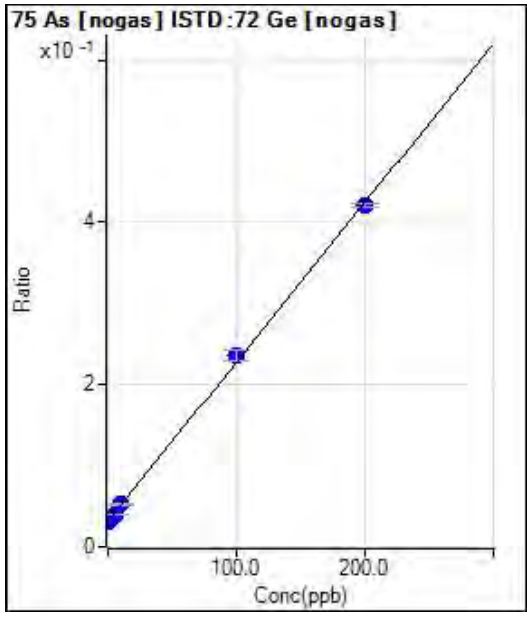


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.619	636.69	0.0008	P	19.8
2	☐	2.000	1.451	3787.12	0.0049	P	7.0
3	☐	5.000	4.374	8188.62	0.0106	P	2.8
4	☐	10.000	9.651	16407.62	0.0209	P	2.2
5	☐	100.000	104.210	159993.00	0.2058	P	0.9
6	☐	200.000	197.934	297461.75	0.3890	P	0.2
7	☐	1.000					

y = 0.0020 * x + 0.0020
R = 0.9997
DL = 0.2457
BEC = 1.032

Weight: <None>
Min Conc: <None>

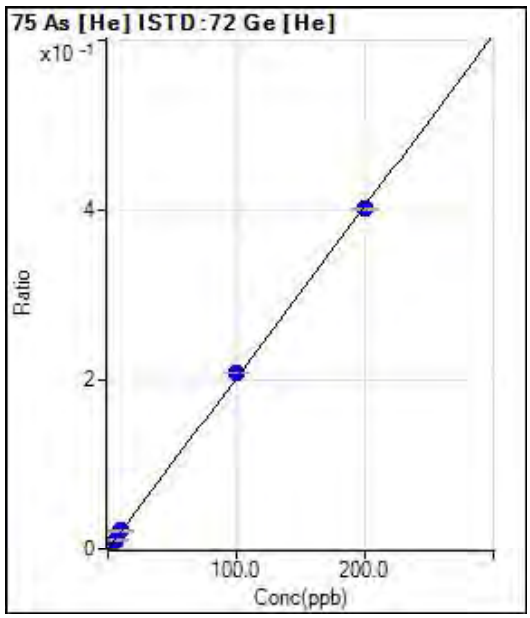
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.676	77504.59	0.0308	P	3.2
2	☐	2.000	1.203	86906.38	0.0345	P	1.4
3	☐	5.000	4.086	103180.24	0.0402	P	1.6
4	☐	10.000	10.417	132386.30	0.0526	P	1.0
5	☐	100.000	103.921	587077.47	0.2359	P	5.7
6	☐	200.000	198.049	1062453.65	0.4204	P	1.1
7	☐	1.000					

y = 0.0020 * x + 0.0322
R = 0.9997
DL = 1.515
BEC = 16.41

Weight: <None>
Min Conc: <None>

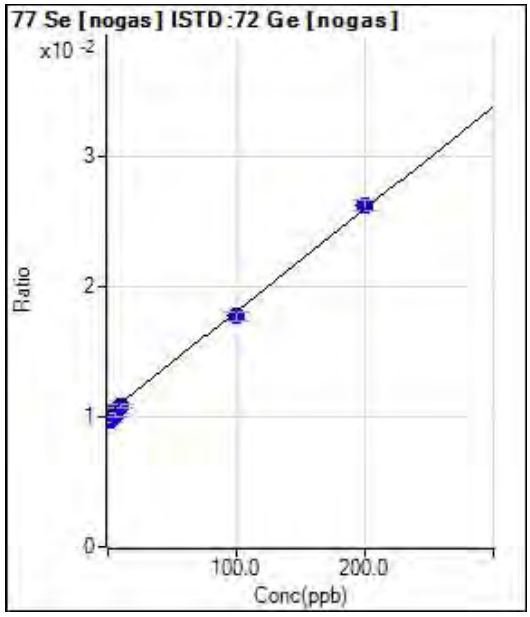


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	515.57	0.0007	P	5.6
2	☐	2.000	2.160	3912.66	0.0050	P	1.4
3	☐	5.000	5.443	9018.92	0.0116	P	1.9
4	☐	10.000	10.765	17584.08	0.0224	P	3.6
5	☐	100.000	102.851	162009.47	0.2083	P	0.3
6	☐	200.000	198.523	307025.46	0.4015	P	0.8
7	☐	1.000					

y = 0.0020 * x + 6.5440E-004
R = 0.9999
DL = 0.05452
BEC = 0.3241

Weight: <None>
Min Conc: <None>

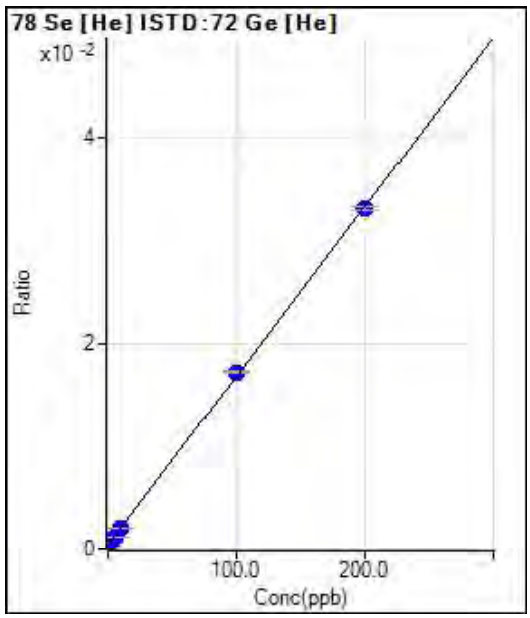
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25785.15	0.0103	P	3.4
2	☐	2.000	-7.124	24423.31	0.0097	P	2.8
3	☐	5.000	-1.688	26002.05	0.0101	P	3.8
4	☐	10.000	7.820	27377.56	0.0109	P	2.3
5	☐	100.000	94.934	44096.88	0.0177	P	4.5
6	☐	200.000	202.901	66136.66	0.0262	P	3.2
7	☐	1.000					

y = 7.8437E-005 * x + 0.0103
R = 0.9991
DL = 13.47
BEC = 130.8

Weight: <None>
Min Conc: <None>

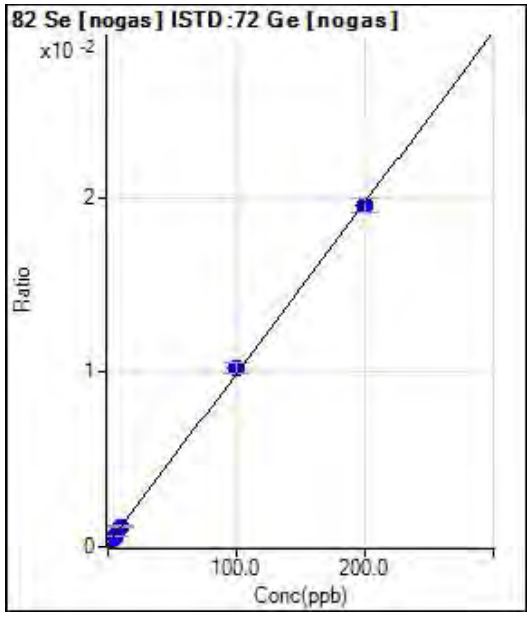


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.536	314.00	0.0004	P	18.4
2	☐	2.000	1.502	572.01	0.0007	P	6.1
3	☐	5.000	4.708	974.70	0.0013	P	5.4
4	☐	10.000	10.197	1695.42	0.0022	P	3.1
5	☐	100.000	102.254	13416.31	0.0173	P	1.5
6	☐	200.000	198.876	25309.54	0.0331	P	1.0
7	☐	1.000					

y = 1.6398E-004 * x + 4.8673E-004
R = 0.9999
DL = 1.342
BEC = 2.968

Weight: <None>
Min Conc: <None>

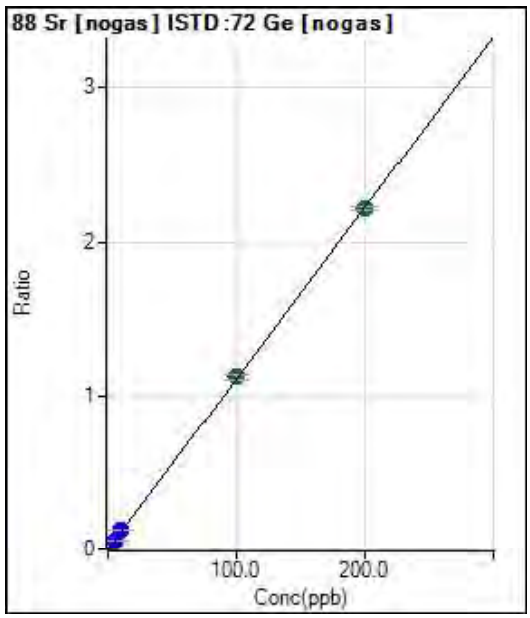
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	373.35	0.0001	P	25.4
2	☐	2.000	2.164	903.37	0.0004	P	9.5
3	☐	5.000	4.606	1533.42	0.0006	P	9.6
4	☐	10.000	10.348	2920.29	0.0012	P	6.7
5	☐	100.000	103.757	25625.18	0.0103	P	6.0
6	☐	200.000	198.112	49324.16	0.0195	P	4.3
7	☐	1.000					

y = 9.7807E-005 * x + 1.4759E-004
R = 0.9997
DL = 1.151
BEC = 1.509

Weight: <None>
Min Conc: <None>

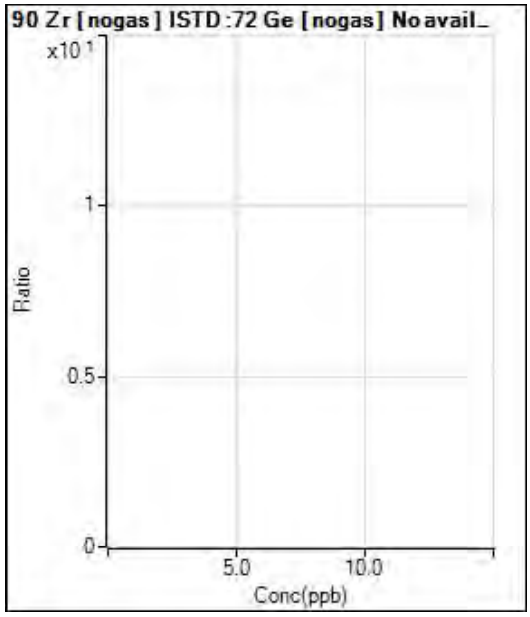


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1616.76	0.0006	P	12.5
2	☐	2.000	2.196	62965.37	0.0250	P	3.3
3	☐	5.000	5.298	152672.41	0.0594	P	2.1
4	☐	10.000	11.331	318266.40	0.1264	P	1.7
5	☐	100.000	101.037	2795810.58	1.1221	A	3.3
6	☐	200.000	199.405	5596110.75	2.2140	A	1.0
7	☐	1.000					

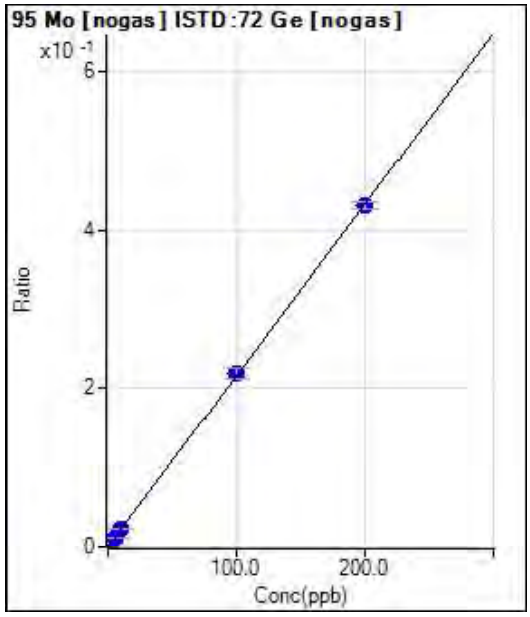
y = 0.0111 * x + 6.4410E-004
R = 1.0000
DL = 0.02175
BEC = 0.05803

Weight: <None>
Min Conc: <None>

Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	180.00	0.0001	P	47.6
2	☐	2.000	2.065	11420.51	0.0045	P	1.1
3	☐	5.000	5.086	28426.54	0.0111	P	2.6
4	☐	10.000	10.938	59707.03	0.0237	P	0.7
5	☐	100.000	101.514	546264.59	0.2195	P	6.1
6	☐	200.000	199.193	1088213.21	0.4306	P	2.2
7	☐	1.000					

y = 0.0022 * x + 7.2476E-005

R = 1.0000

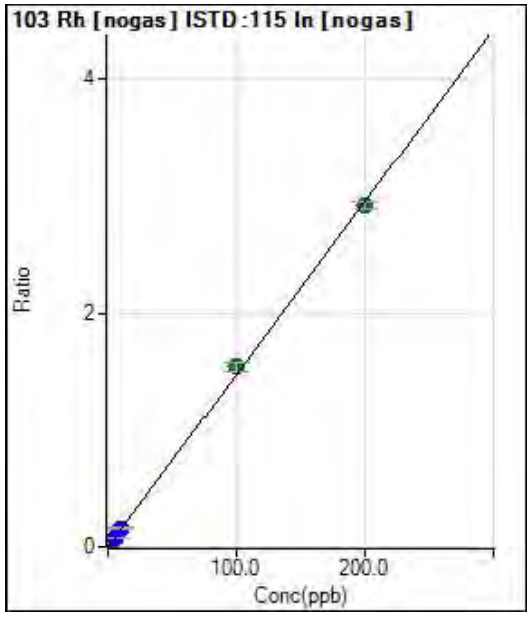
DL = 0.04789

BEC = 0.03353

Weight: <None>

Min Conc: <None>

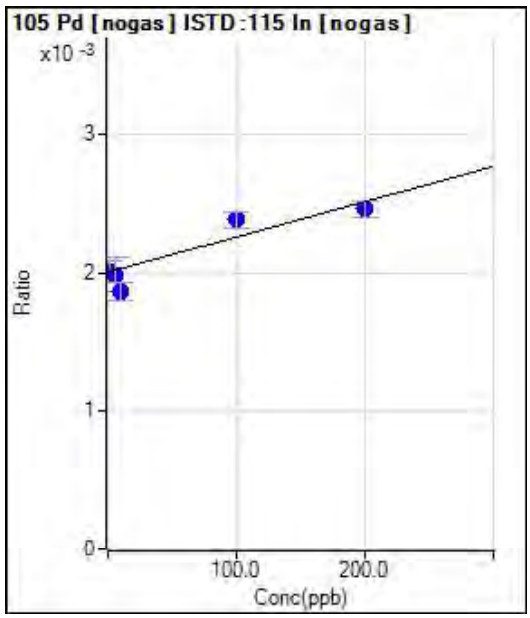
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	106.67	0.0000	P	29.5
2	☐	2.000	2.119	66783.82	0.0313	P	4.4
3	☐	5.000	5.438	167766.60	0.0802	P	4.0
4	☐	10.000	10.985	340158.70	0.1620	P	2.1
5	☐	100.000	104.419	3079799.02	1.5396	A	5.5
6	☐	200.000	197.729	5932701.58	2.9153	A	2.2
7	☐	1.000					

y = 0.0147 * x + 4.9734E-005
R = 0.9997
DL = 0.002983
BEC = 0.003373

Weight: <None>
Min Conc: <None>

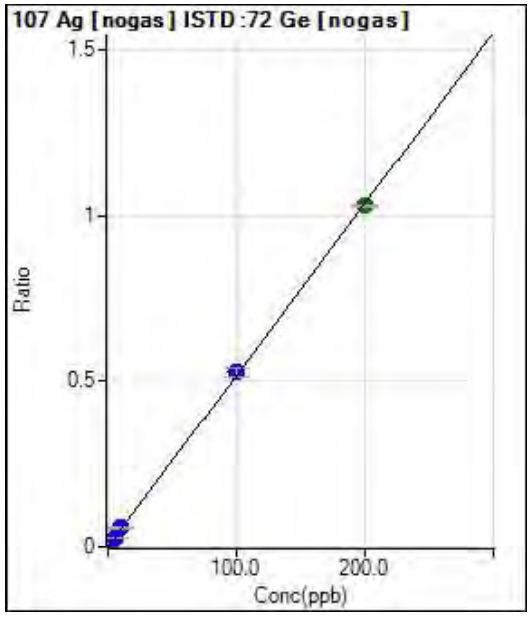


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4297.28	0.0020	P	7.6
2	☐	2.000	0.128	4280.60	0.0020	P	7.8
3	☐	5.000	-6.548	4150.56	0.0020	P	12.9
4	☐	10.000	-54.402	3913.85	0.0019	P	7.3
5	☐	100.000	148.265	4764.07	0.0024	P	4.7
6	☐	200.000	179.395	5004.13	0.0025	P	4.8
7	☐	1.000					

y = 2.5418E-006 * x + 0.0020
R = 0.9266
DL = 178.8
BEC = 788.3

Weight: <None>
Min Conc: <None>

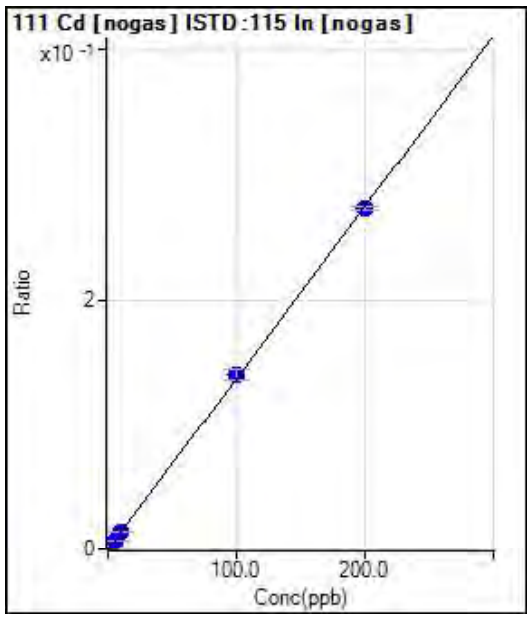
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	133.33	0.0001	P	41.6
2	☐	2.000	2.266	29662.20	0.0118	P	2.4
3	☐	5.000	5.352	71278.64	0.0278	P	3.2
4	☐	10.000	11.103	144868.07	0.0575	P	1.4
5	☐	100.000	102.147	1317012.16	0.5289	P	5.1
6	☐	200.000	198.860	2602613.19	1.0297	A	0.8
7	☐	1.000					

y = 0.0052 * x + 5.2387E-005
R = 0.9999
DL = 0.01262
BEC = 0.01012

Weight: <None>
Min Conc: <None>

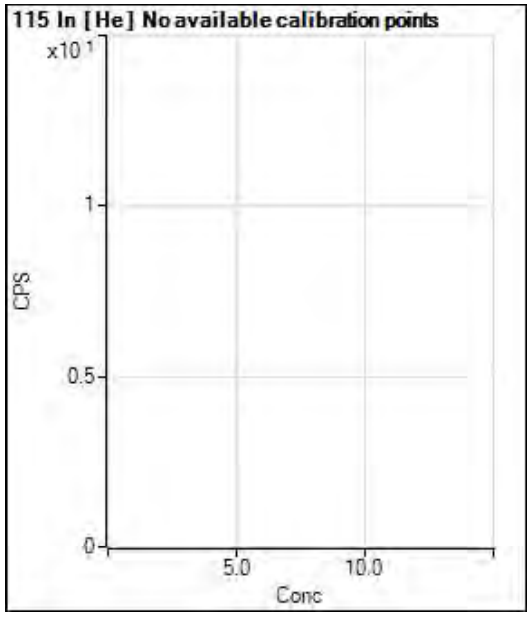


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	6.67	0.0000	P	86.7
2	☐	2.000	2.033	5947.75	0.0028	P	8.4
3	☐	5.000	5.359	15370.34	0.0073	P	3.5
4	☐	10.000	10.412	29955.98	0.0143	P	3.9
5	☐	100.000	102.106	279900.61	0.1400	P	5.8
6	☐	200.000	198.917	554946.09	0.2726	P	1.0
7	☐	1.000					

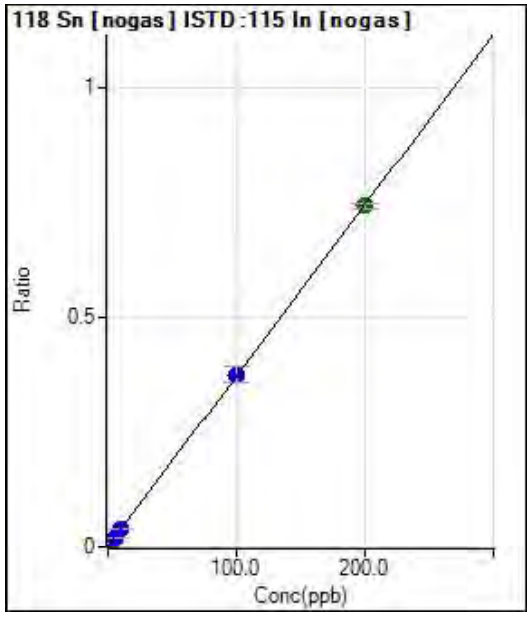
y = 0.0014 * x + 3.0776E-006
R = 0.9999
DL = 0.005839
BEC = 0.002245

Weight: <None>
Min Conc: <None>

Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			917070.81		P	3.1
2	☐			902353.37		P	0.5
3	☐			894257.23		P	2.0
4	☐			907893.13		P	0.7
5	☐			878677.87		P	0.8
6	☐			873015.23		P	1.5
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1390.08	0.0006	P	3.6
2	☐	2.000	1.935	16761.65	0.0079	P	1.7
3	☐	5.000	4.982	40153.06	0.0192	P	0.3
4	☐	10.000	10.513	83503.00	0.0398	P	1.9
5	☐	100.000	100.794	750225.51	0.3758	P	9.2
6	☐	200.000	199.578	1513359.56	0.7435	A	1.3
7	☐	1.000					

y = 0.0037 * x + 6.4769E-004

R = 1.0000

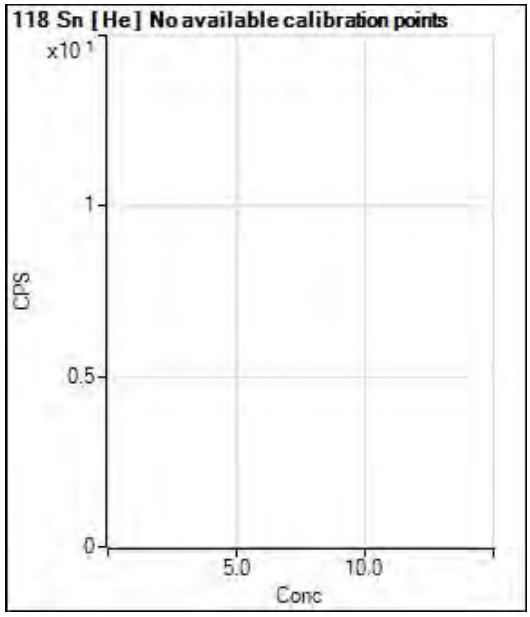
DL = 0.0186

BEC = 0.174

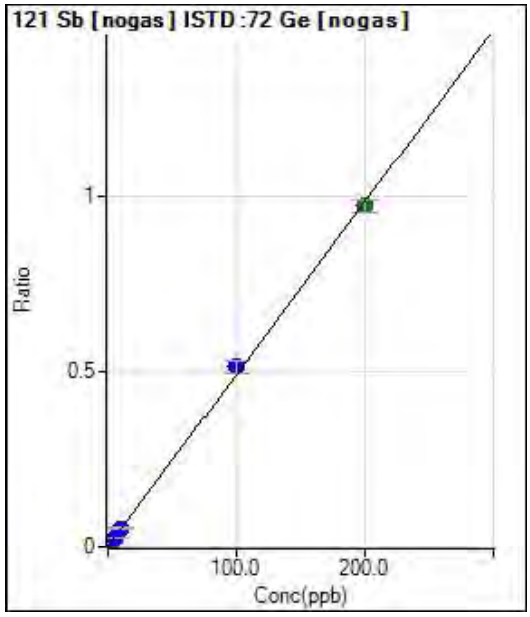
Weight: <None>

Min Conc: <None>

Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			490.01		P	30.5
2	☐			8225.40		P	5.9
3	☐			18803.68		P	4.3
4	☐			39040.46		P	0.5
5	☐			352271.34		P	0.6
6	☐			695538.48		P	0.6
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1890.13	0.0008	P	8.7
2	☐	2.000	2.086	27715.84	0.0110	P	0.4
3	☐	5.000	5.085	66132.98	0.0257	P	2.8
4	☐	10.000	10.817	135768.37	0.0539	P	2.9
5	☐	100.000	104.289	1277221.68	0.5134	P	7.4
6	☐	200.000	197.811	2459072.78	0.9732	A	3.7
7	☐	1.000					

y = 0.0049 * x + 7.5218E-004

R = 0.9997

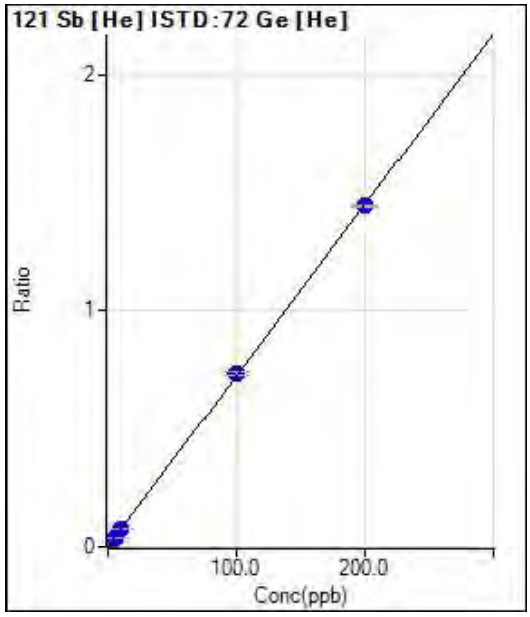
DL = 0.03985

BEC = 0.153

Weight: <None>

Min Conc: <None>

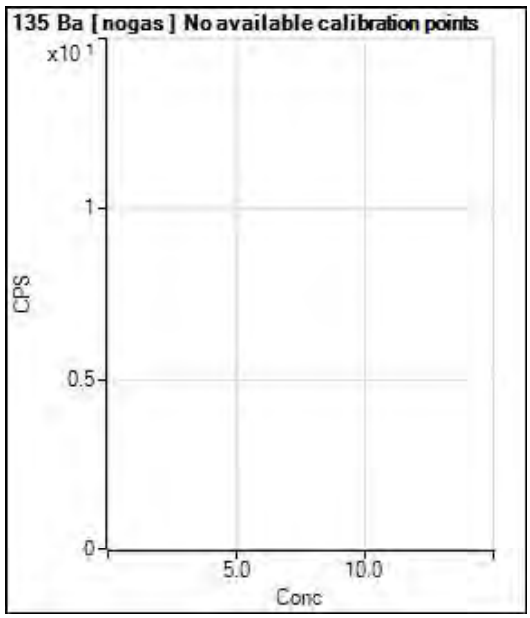
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	876.70	0.0011	P	7.9
2	☐	2.000	2.079	12621.42	0.0162	P	3.0
3	☐	5.000	5.325	30750.68	0.0397	P	0.8
4	☐	10.000	10.492	60585.58	0.0771	P	1.3
5	☐	100.000	101.169	570834.94	0.7341	P	1.5
6	☐	200.000	199.382	1105486.49	1.4457	P	0.6
7	☐	1.000					

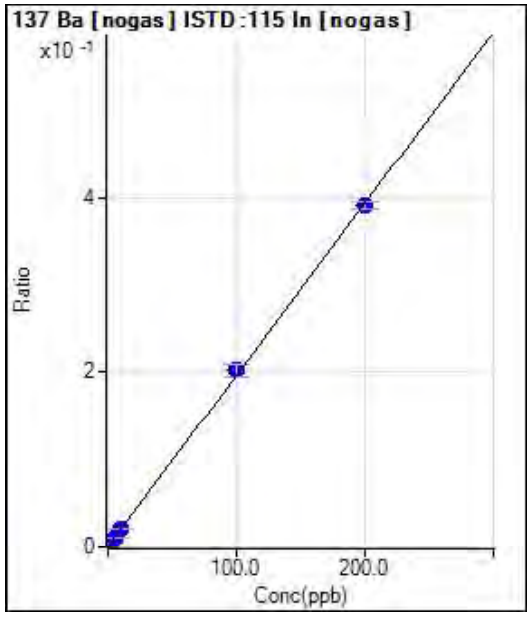
y = 0.0072 * x + 0.0011
R = 1.0000
DL = 0.03649
BEC = 0.1536

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			276.68		P	12.7
2	☐			5210.87		P	3.8
3	☐			12247.88		P	1.9
4	☐			25088.65		P	1.1
5	☐			236813.99		P	2.3
6	☐			461577.25		P	1.4
7	☐						

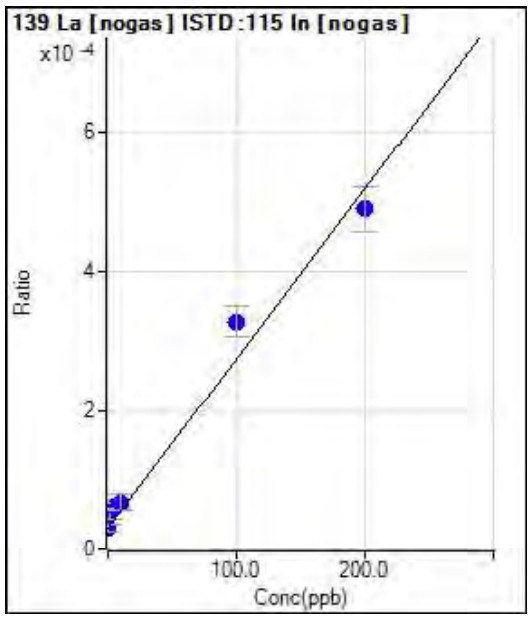
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	560.02	0.0003	P	15.8
2	☐	2.000	2.004	8969.16	0.0042	P	0.5
3	☐	5.000	5.054	21320.34	0.0102	P	5.1
4	☐	10.000	10.355	43267.95	0.0206	P	2.3
5	☐	100.000	102.636	403504.96	0.2020	P	7.7
6	☐	200.000	198.663	795101.73	0.3907	P	2.3
7	☐	1.000					

y = 0.0020 * x + 2.6154E-004
R = 0.9999
DL = 0.06322
BEC = 0.1331

Weight: <None>
Min Conc: <None>

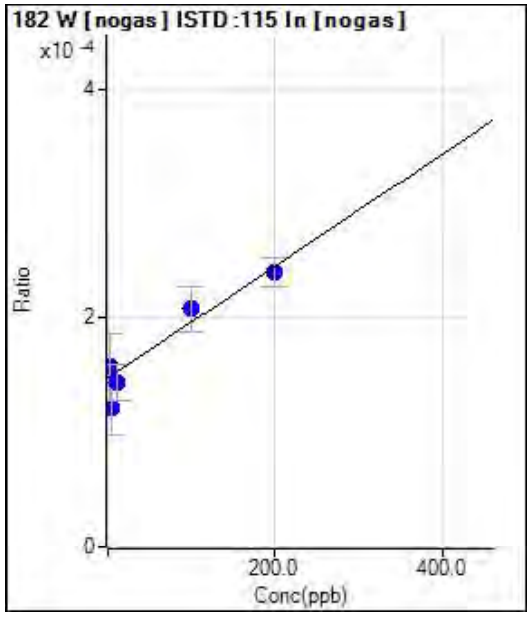


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	66.67	0.0000	P	32.3
2	☐	2.000	11.052	123.33	0.0001	P	46.7
3	☐	5.000	13.358	133.33	0.0001	P	10.0
4	☐	10.000	15.292	143.33	0.0001	P	35.2
5	☐	100.000	122.031	663.36	0.0003	P	13.4
6	☐	200.000	188.421	1000.05	0.0005	P	12.9
7	☐	1.000					

y = 2.4378E-006 * x + 3.1102E-005
R = 0.9914
DL = 12.35
BEC = 12.76

Weight: <None>
Min Conc: <None>

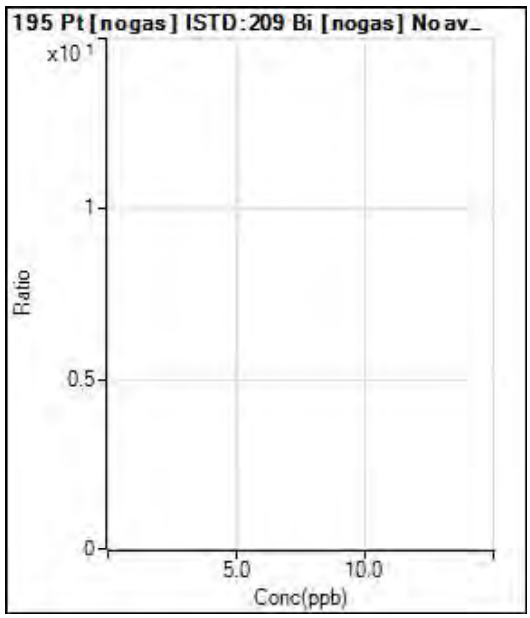
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	316.68	0.0001	P	10.4
2	☐	2.000	20.156	336.67	0.0002	P	36.9
3	☐	5.000	-53.408	253.34	0.0001	P	37.8
4	☐	10.000	-6.812	303.34	0.0001	P	21.8
5	☐	100.000	123.440	413.35	0.0002	P	18.7
6	☐	200.000	190.399	490.01	0.0002	P	10.5
7	☐	1.000					

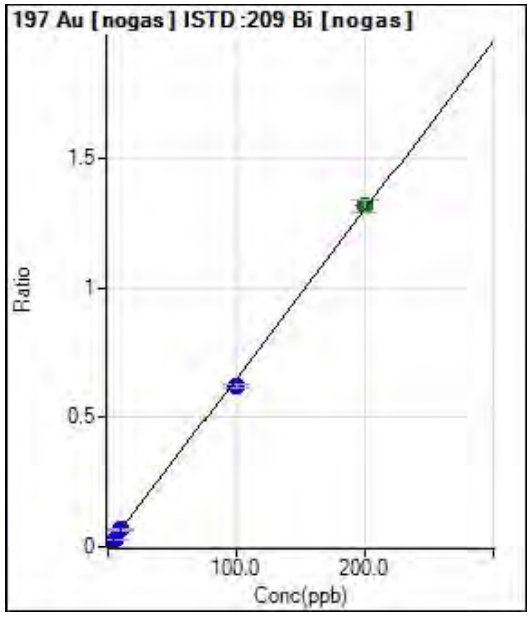
y = 4.8929E-007 * x + 1.4776E-004
R = 0.9491
DL = 94.4
BEC = 302

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

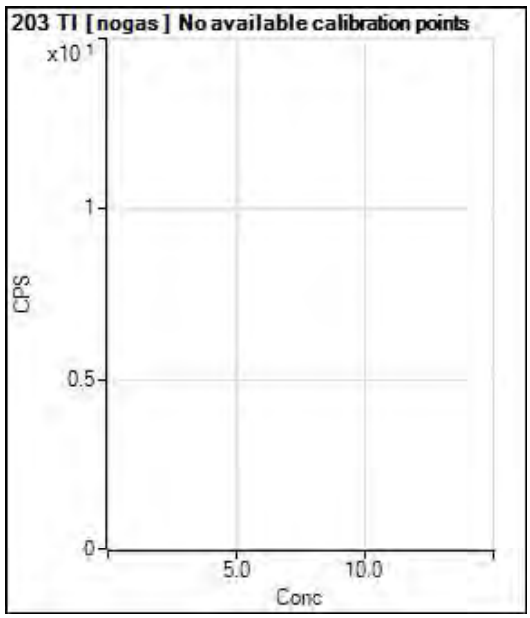
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	400.01	0.0003	P	7.9
2	☐	2.000	1.824	17713.26	0.0122	P	9.6
3	☐	5.000	4.670	43227.30	0.0307	P	2.9
4	☐	10.000	10.158	93819.34	0.0665	P	3.5
5	☐	100.000	95.391	867528.63	0.6222	P	1.4
6	☐	200.000	202.307	1836208.41	1.3193	A	3.9
7	☐	1.000					

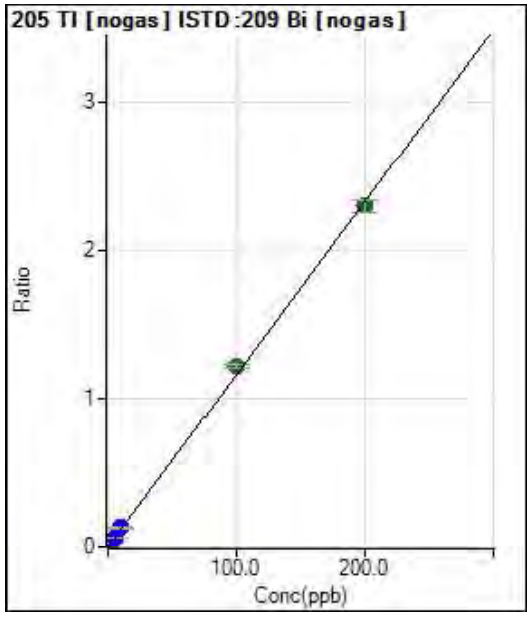
y = 0.0065 * x + 2.8965E-004
R = 0.9996
DL = 0.01049
BEC = 0.04442

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			96.67		P	48.9
2	☐			14566.84		P	1.8
3	☐			36314.09		P	2.6
4	☐			75921.76		P	3.2
5	☐			719339.44		P	0.3
6	☐			1408985.92		M	1.6
7	☐						

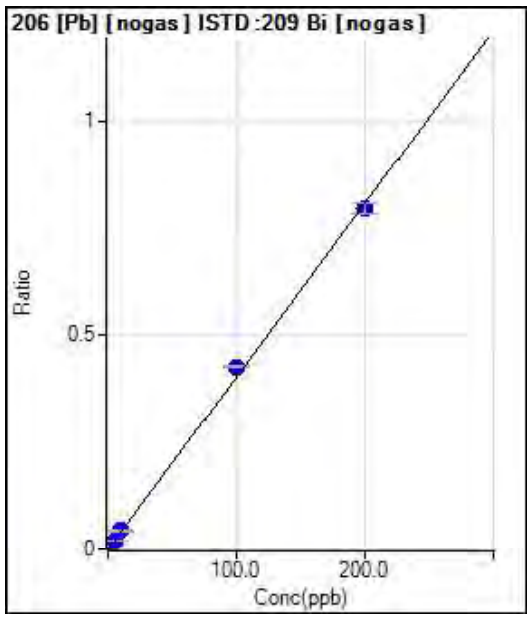
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	213.34	0.0002	P	29.0
2	☐	2.000	1.988	33812.41	0.0232	P	5.0
3	☐	5.000	5.400	88371.87	0.0629	P	4.7
4	☐	10.000	11.071	181458.95	0.1287	P	4.8
5	☐	100.000	104.327	1688709.14	1.2114	A	2.0
6	☐	200.000	197.773	3196799.43	2.2963	A	3.4
7	☐	1.000					

y = 0.0116 * x + 1.5455E-004
R = 0.9997
DL = 0.01158
BEC = 0.01331

Weight: <None>
Min Conc: <None>

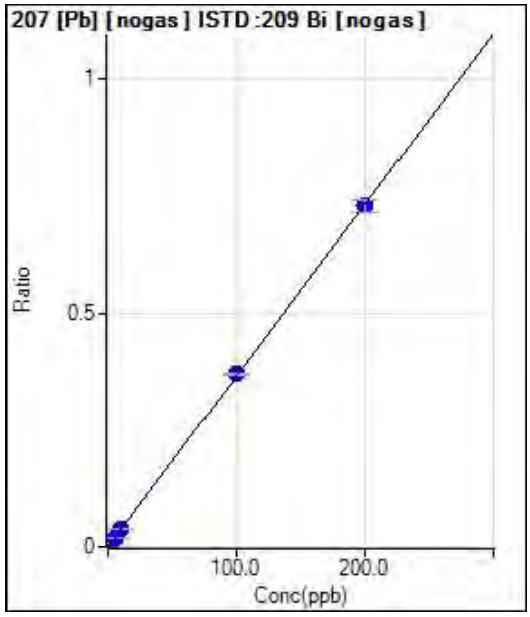


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	63.33	0.0000	P	61.5
2	☐	2.000	2.009	11884.53	0.0082	P	4.3
3	☐	5.000	5.353	30452.43	0.0217	P	5.8
4	☐	10.000	11.001	62705.25	0.0445	P	4.7
5	☐	100.000	105.734	595237.73	0.4270	P	0.8
6	☐	200.000	197.074	1107707.35	0.7958	P	3.3
7	☐	1.000					

y = 0.0040 * x + 4.6579E-005
R = 0.9994
DL = 0.02127
BEC = 0.01154

Weight: <None>
Min Conc: <None>

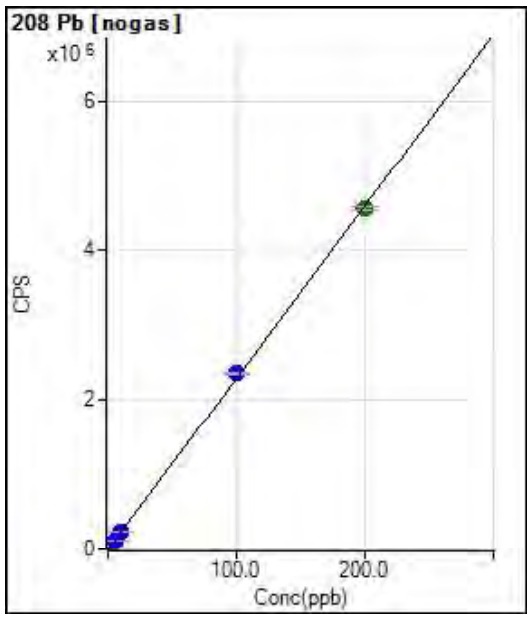
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	73.33	0.0001	P	38.9
2	☐	2.000	2.042	10930.56	0.0075	P	7.0
3	☐	5.000	5.301	27310.07	0.0194	P	3.4
4	☐	10.000	10.665	55020.89	0.0390	P	5.1
5	☐	100.000	101.067	514857.74	0.3693	P	1.8
6	☐	200.000	199.425	1014372.69	0.7287	P	3.6
7	☐	1.000					

y = 0.0037 * x + 5.2666E-005
R = 1.0000
DL = 0.01681
BEC = 0.01441

Weight: <None>
Min Conc: <None>

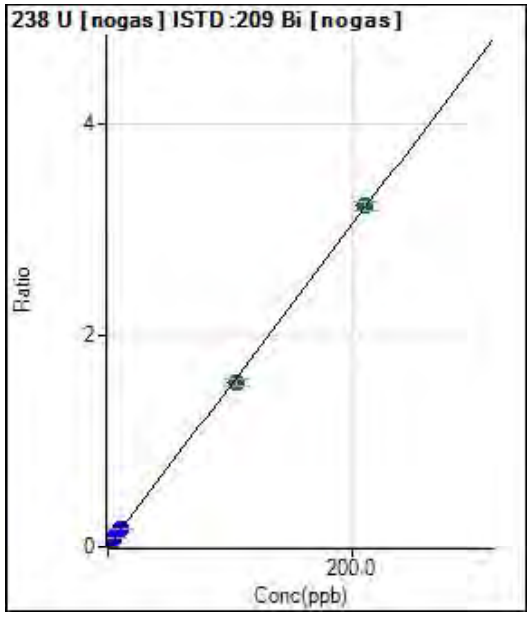


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	323.34		P	20.6
2	☐	2.000	2.117	48906.57		P	2.3
3	☐	5.000	5.307	122101.40		P	0.6
4	☐	10.000	10.824	248691.96		P	1.3
5	☐	100.000	102.751	2358006.20		P	1.4
6	☐	200.000	198.574	4556717.40		A	1.0
7	☐	1.000					

y = 22945.5373 * x + 323.3367
R = 0.9999
DL = 0.008706
BEC = 0.01409

Weight: <None>
Min Conc: <None>

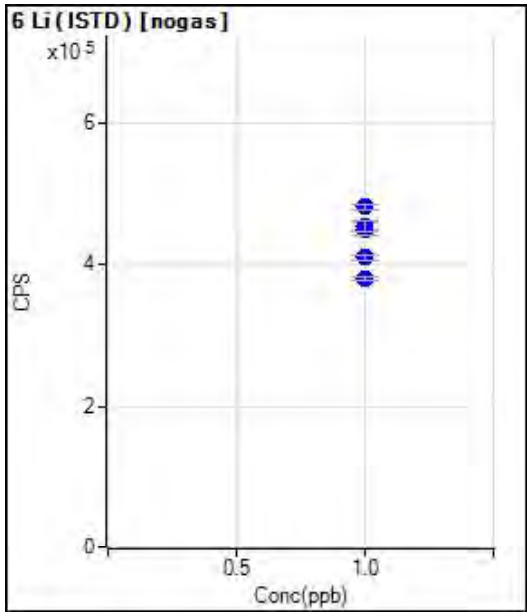
Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	100.00	0.0001	P	17.0
2	☐	2.000	2.054	45790.38	0.0314	P	2.3
3	☐	5.000	5.332	114649.18	0.0815	P	1.5
4	☐	10.000	11.068	238593.88	0.1691	P	2.7
5	☐	105.000	102.052	2173079.97	1.5586	A	3.6
6	☐	210.000	211.415	4496616.18	3.2287	A	2.5
7	☐	1.000					

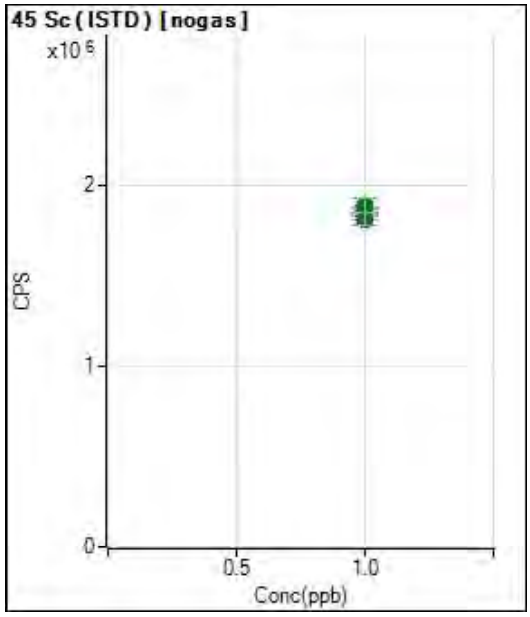
y = 0.0153 * x + 7.2416E-005
R = 0.9998
DL = 0.002418
BEC = 0.004742

Weight: <None>
Min Conc: <None>

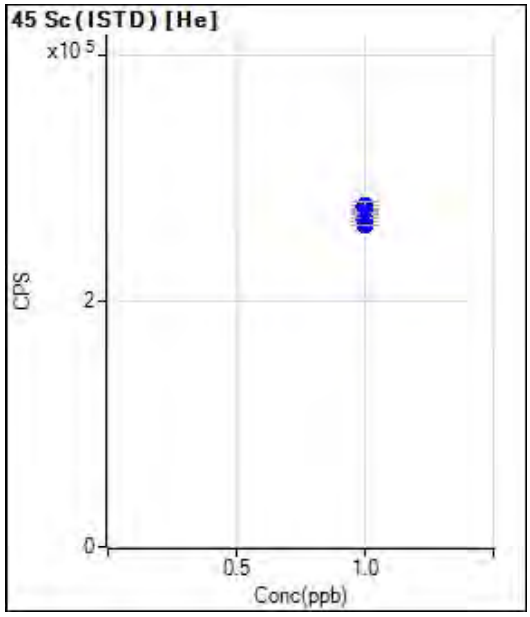


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		480713.64		P	1.4
2	☐	1.000		454196.82		P	2.6
3	☐	1.000		449682.42		P	3.8
4	☐	1.000		453732.62		P	3.0
5	☐	1.000		409002.50		P	2.4
6	☐	1.000		379796.43		P	1.6
7	☐	1.000					

Calibration for 127_ICV.d

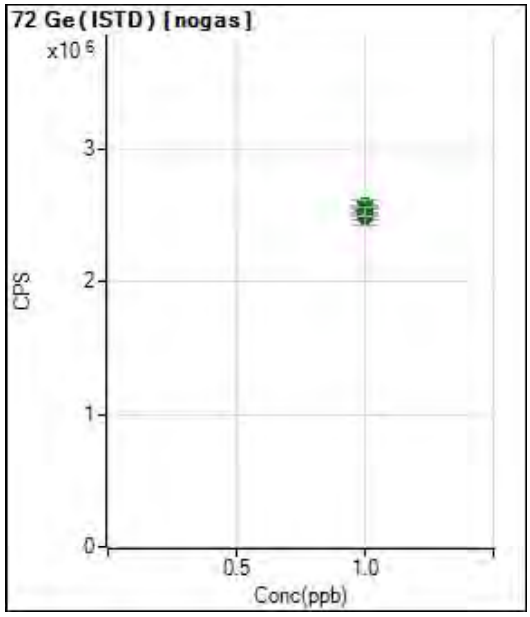


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1856870.86		A	1.7
2	☐	1.000		1848741.74		A	2.4
3	☐	1.000		1826176.22		A	2.0
4	☐	1.000		1850243.88		A	1.2
5	☐	1.000		1882488.04		A	4.3
6	☐	1.000		1810450.86		A	3.4
7	☐	1.000					

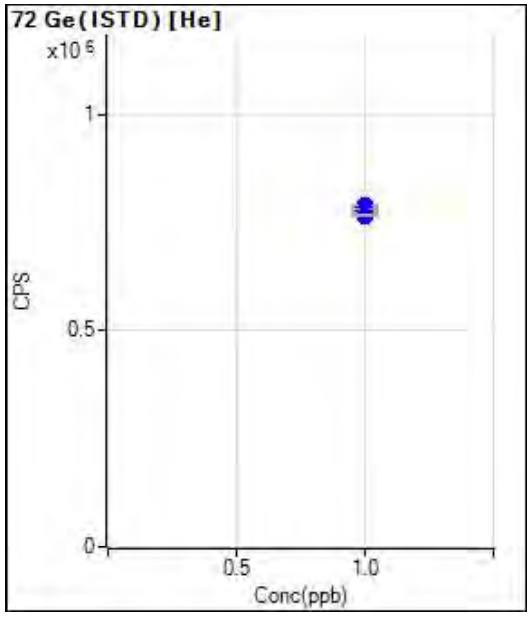


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		274512.26		P	0.6
2	☐	1.000		276417.06		P	1.1
3	☐	1.000		277224.10		P	2.5
4	☐	1.000		271160.53		P	1.0
5	☐	1.000		266478.06		P	1.1
6	☐	1.000		261160.41		P	0.1
7	☐	1.000					

Calibration for 127_ICV.d

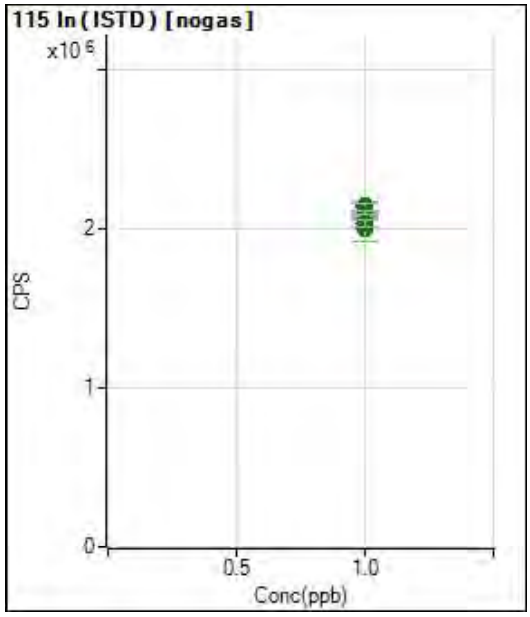


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2514734.18		A	4.4
2	☐	1.000		2518024.70		A	2.3
3	☐	1.000		2569334.54		A	3.5
4	☐	1.000		2517729.75		A	0.5
5	☐	1.000		2494924.08		A	6.2
6	☐	1.000		2527934.44		A	2.3
7	☐	1.000					

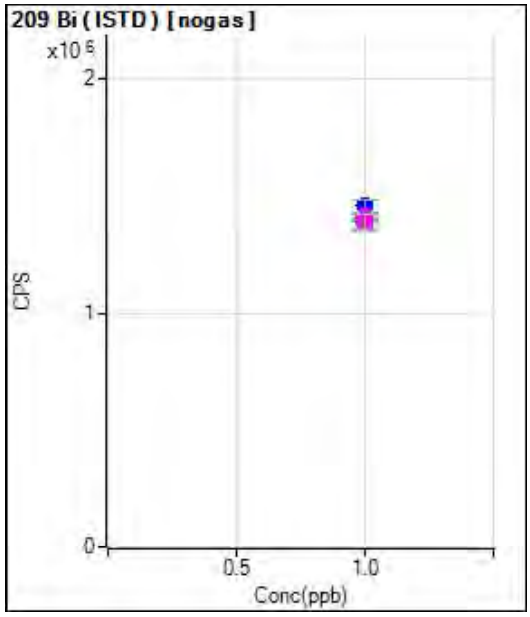


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		788017.31		P	0.7
2	☐	1.000		780157.33		P	0.4
3	☐	1.000		774602.04		P	1.5
4	☐	1.000		785569.36		P	1.5
5	☐	1.000		777635.28		P	1.1
6	☐	1.000		764688.27		P	0.6
7	☐	1.000					

Calibration for 127_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		1.000		2147199.99		A	2.9
2		1.000		2135421.71		A	2.8
3		1.000		2092368.82		A	2.0
4		1.000		2099443.06		A	1.4
5		1.000		2006487.23		A	8.5
6		1.000		2035775.33		A	2.7
7		1.000					



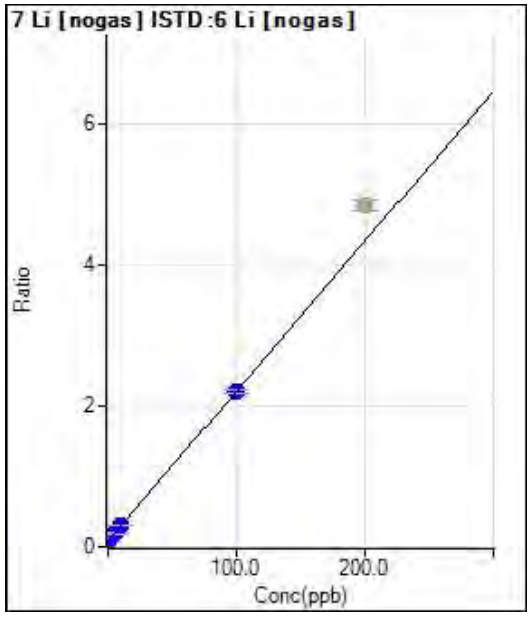
	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1		1.000		1380753.26		M	3.7
2		1.000		1457164.87		P	3.9
3		1.000		1406849.51		P	1.9
4		1.000		1411191.18		M	2.4
5		1.000		1394120.71		M	0.6
6		1.000		1393272.01		M	4.4
7		1.000					

Calibration for 149_ICV.d

Batch Folder: C:\Agilent\ICPMH\1\DATA\061118A.b\
Analysis File: 061118A.batch.bin
DA Date-Time: 2018-06-12 09:03:48
Calibration Title:
Calibration Method: External Calibration
VIS Interpolation Fit:

Level	Standard Data File	Sample Name	Acq. Date-Time
1	142CALB.d	CAL BLK	2018-06-11 22:54:37
2	143CALS.d	2/10/200	2018-06-11 22:56:37
3	144CALS.d	5/25/500	2018-06-11 22:58:38
4	145CALS.d	10/50/1000	2018-06-11 23:00:37
5	147CALS.d	100/500/10K	2018-06-11 23:04:47
6	148CALS.d	200/1000/20K	2018-06-11 23:06:43
7			

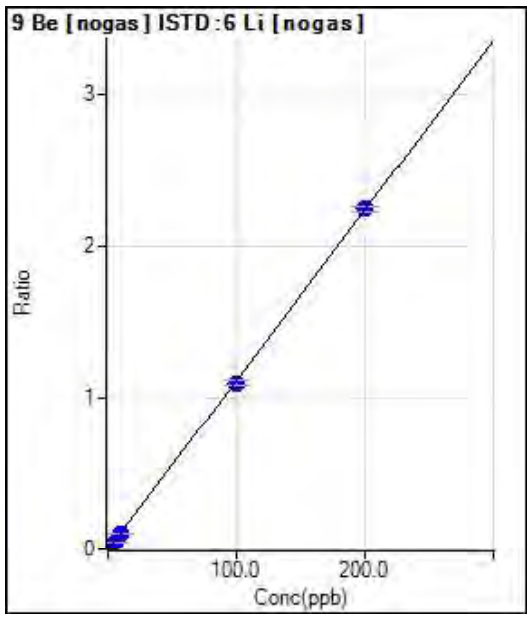
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	29072.52	0.0857	P	5.4
2	☐	2.000	2.567	44994.81	0.1403	P	6.3
3	☐	5.000	5.194	68163.42	0.1961	P	4.8
4	☐	10.000	10.577	109859.40	0.3105	P	0.2
5	☐	100.000	99.921	742588.04	2.2087	P	1.7
6	☑	200.000		1466752.89	4.8364	A	3.1
7	☐	1.000					

y = 0.0212 * x + 0.0857
R = 1.0000
DL = 0.6549
BEC = 4.035

Weight: <None>
Min Conc: <None>

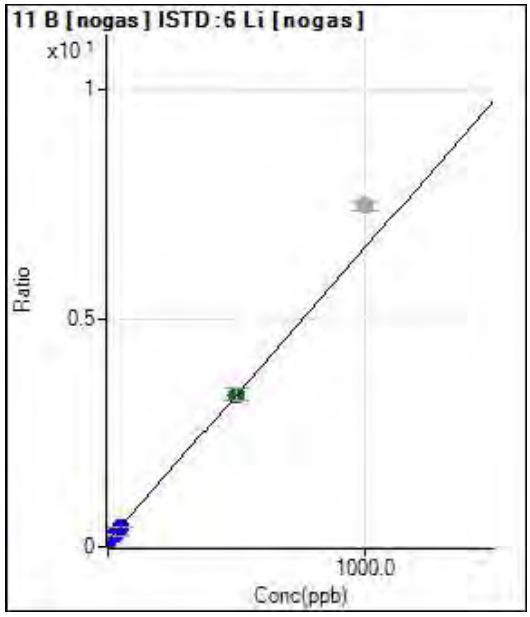


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	53.33	0.0002	P	22.0
2	☐	2.000	2.071	7321.54	0.0233	P	23.7
3	☐	5.000	4.431	17254.76	0.0497	P	6.9
4	☐	10.000	9.542	37761.24	0.1068	P	3.2
5	☐	100.000	98.172	368762.91	1.0972	P	3.6
6	☐	200.000	200.950	680859.96	2.2456	P	1.8
7	☐	1.000					

y = 0.0112 * x + 1.5734E-004
R = 0.9999
DL = 0.009288
BEC = 0.01408

Weight: <None>
Min Conc: <None>

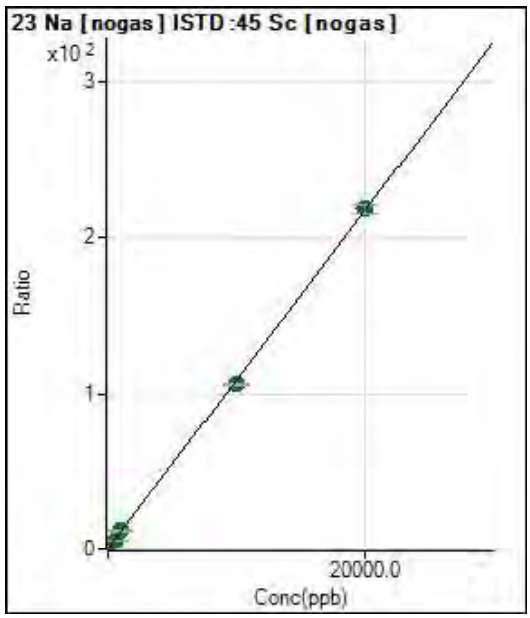
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	41238.31	0.1216	P	1.1
2	☐	10.000	9.574	57815.00	0.1830	P	18.2
3	☐	25.000	21.773	90755.91	0.2614	P	8.0
4	☐	50.000	47.765	151352.79	0.4282	P	5.3
5	☐	500.000	500.393	1120493.52	3.3339	A	8.7
6	☑	1000.000		2261568.82	7.4606	A	2.5
7	☐	5.000					

y = 0.0064 * x + 0.1216
R = 1.0000
DL = 0.6222
BEC = 18.94

Weight: <None>
Min Conc: <None>

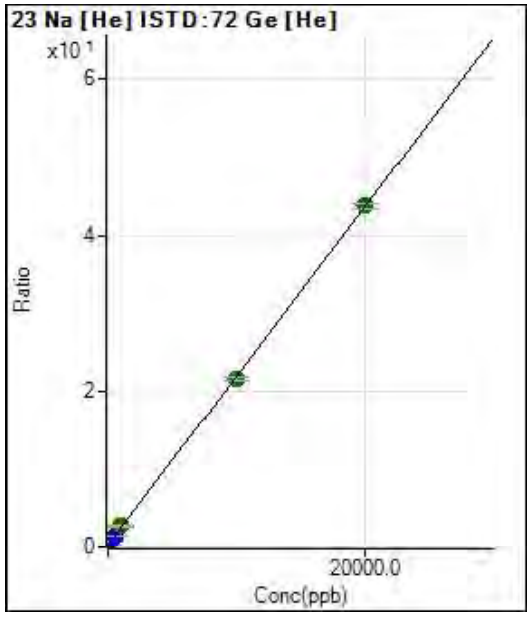


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1201687.27	0.7293	M	7.0
2	☐	200.000	222.612	4624209.48	3.1349	A	22.9
3	☐	500.000	502.183	10011204.39	6.1561	A	3.4
4	☐	1000.000	1061.480	19631959.30	12.2001	A	1.1
5	☐	10000.00	9744.386	173866374.7	106.031	A	0.8
6	☐	20000.00	20124.452	338924290.9	218.202	A	2.9
7	☐	100.000					

y = 0.0108 * x + 0.7293
R = 0.9999
DL = 14.22
BEC = 67.49

Weight: <None>
Min Conc: <None>

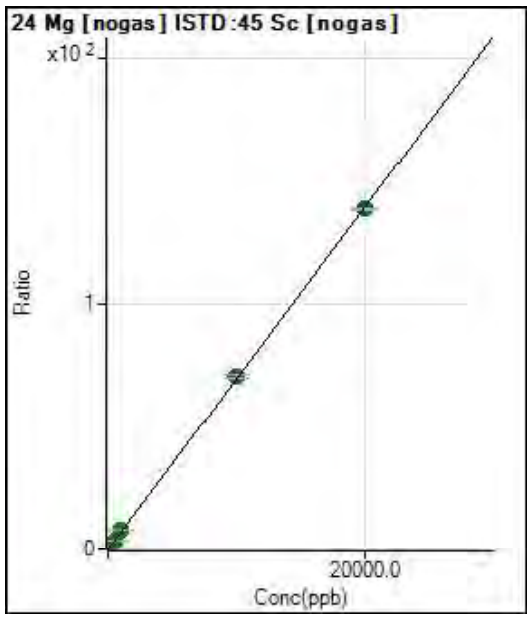
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	158418.69	0.2337	P	2.4
2	☐	200.000	224.094	471890.11	0.7195	P	1.8
3	☐	500.000	542.751	968312.54	1.4104	P	1.3
4	☐	1000.000	1124.495	1787319.25	2.6716	A	4.9
5	☐	10000.00	9837.588	14339196.87	21.5615	A	1.9
6	☐	20000.00	20073.672	27928500.42	43.7532	A	1.8
7	☐	100.000					

y = 0.0022 * x + 0.2337
R = 0.9999
DL = 7.855
BEC = 107.8

Weight: <None>
Min Conc: <None>

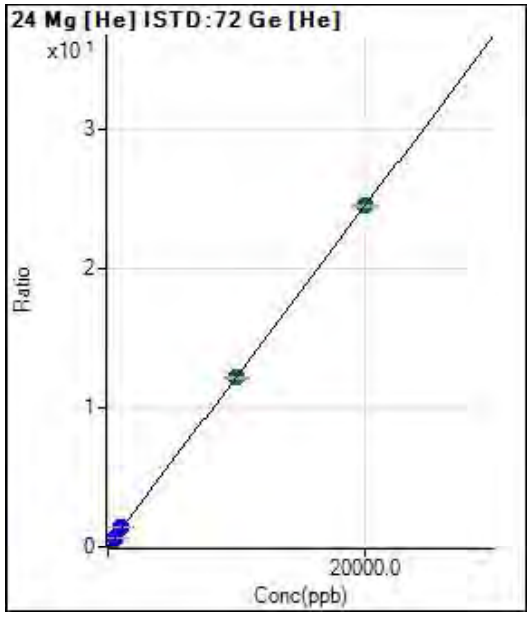


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	25955.67	0.0157	P	5.3
2	☐	200.000	235.931	2447037.23	1.6585	A	22.9
3	☐	500.000	530.158	6031939.59	3.7073	A	1.2
4	☐	1000.000	1113.489	12503207.83	7.7691	A	0.4
5	☐	10000.00	10132.706	115704127.5	70.5706	A	1.6
6	☐	20000.00	19926.859	215594138.1	138.768	A	0.6
7	☐	100.000					

y = 0.0070 * x + 0.0157
R = 1.0000
DL = 0.3593
BEC = 2.26

Weight: <None>
Min Conc: <None>

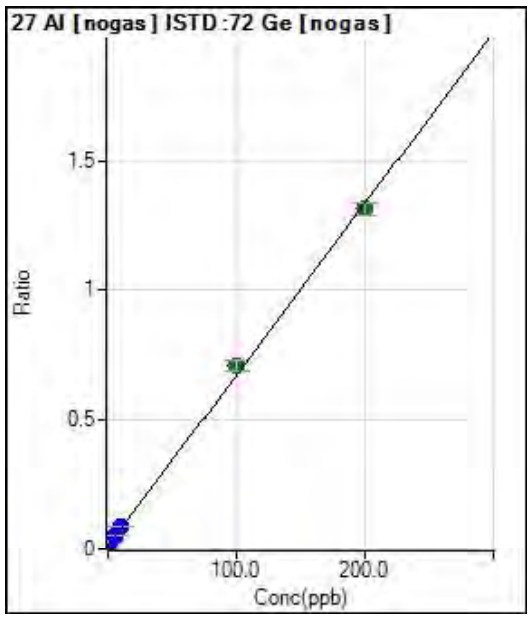
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2530.21	0.0037	P	13.5
2	☐	200.000	227.532	184850.52	0.2818	P	1.2
3	☐	500.000	548.721	463024.19	0.6744	P	1.7
4	☐	1000.000	1146.133	940003.32	1.4046	P	2.7
5	☐	10000.00	9936.881	8080507.79	12.1495	A	1.4
6	☐	20000.00	20022.759	15623922.68	24.4773	A	0.7
7	☐	100.000					

y = 0.0012 * x + 0.0037
R = 1.0000
DL = 1.237
BEC = 3.058

Weight: <None>
Min Conc: <None>

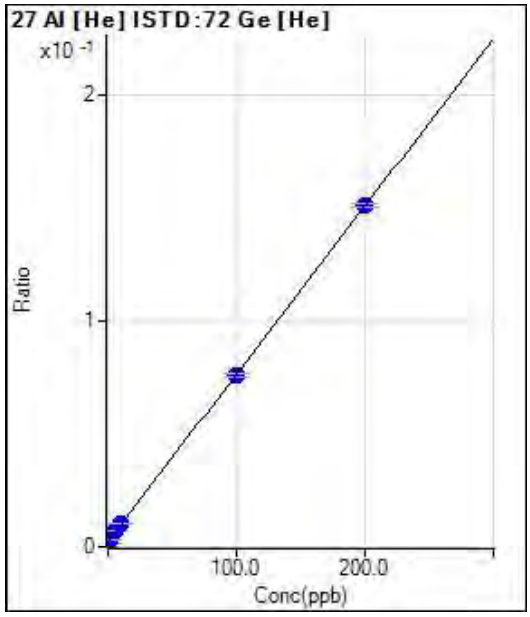


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	30010.92	0.0140	P	6.7
2	☐	2.000	2.923	64259.96	0.0332	P	25.8
3	☐	5.000	6.696	128955.73	0.0581	P	1.5
4	☐	10.000	11.297	195691.45	0.0885	P	2.1
5	☐	100.000	105.781	1538268.94	0.7118	A	5.7
6	☐	200.000	196.993	2769938.92	1.3135	A	3.9
7	☐	1.000					

y = 0.0066 * x + 0.0140
R = 0.9994
DL = 0.4262
BEC = 2.115

Weight: <None>
Min Conc: <None>

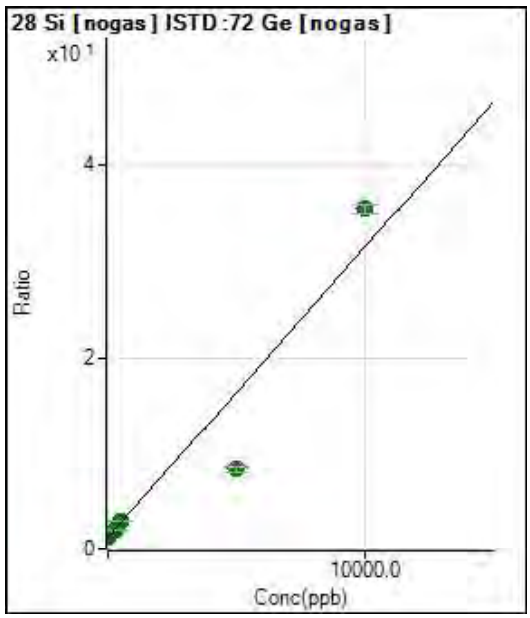
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.015	1086.72	0.0016	P	7.7
2	☐	2.000	1.470	2260.18	0.0034	P	1.4
3	☐	5.000	6.299	4824.02	0.0070	P	1.5
4	☐	10.000	10.682	6878.04	0.0103	P	0.8
5	☐	100.000	99.251	50503.97	0.0759	P	1.4
6	☐	200.000	200.313	96289.91	0.1509	P	0.9
7	☐	1.000					

y = 7.4134E-004 * x + 0.0024
R = 0.9999
DL = 0.5014
BEC = 3.178

Weight: <None>
Min Conc: <None>

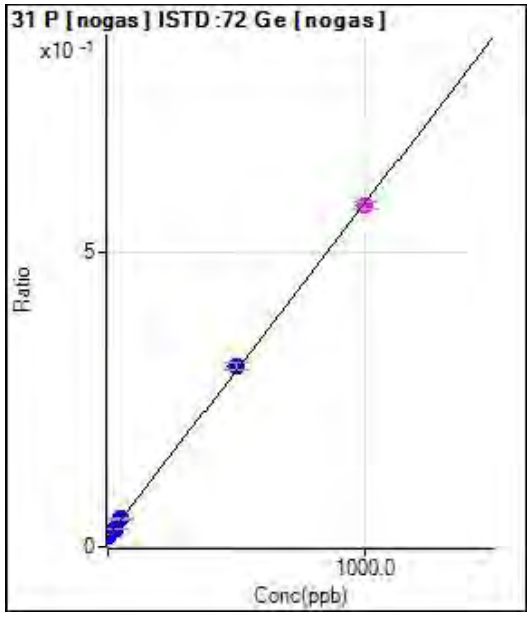


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2830194.44	1.3172	A	10.4
2	☐	100.000	151.340	3469438.38	1.7736	A	17.5
3	☐	250.000	267.846	4714231.08	2.1249	A	1.4
4	☐	500.000	582.736	6800413.44	3.0745	A	1.5
5	☐	5000.000	2347.365	18144276.40	8.3961	A	6.2
6	☐	10000.00	11321.221	74789512.22	35.4586	A	2.8
7	☐	5.000					

y = 0.0030 * x + 1.3172
R = 0.9561
DL = 136.4
BEC = 436.8

Weight: <None>
Min Conc: <None>

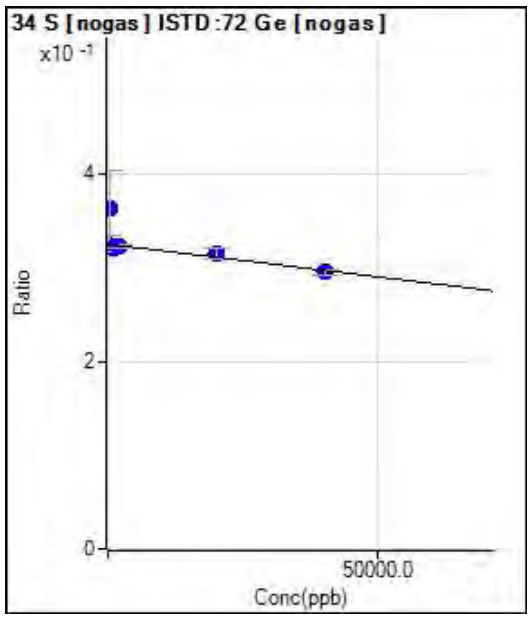
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36515.87	0.0170	P	8.5
2	☐	10.000	15.263	49699.01	0.0256	P	23.4
3	☐	25.000	24.996	69052.97	0.0311	P	0.6
4	☐	50.000	54.140	105285.42	0.0476	P	0.5
5	☐	500.000	514.147	665186.11	0.3076	P	3.9
6	☐	1000.000	992.667	1219580.74	0.5781	M	2.1
7	☐	5.000					

y = 5.6529E-004 * x + 0.0170
R = 0.9999
DL = 7.675
BEC = 30.06

Weight: <None>
Min Conc: <None>

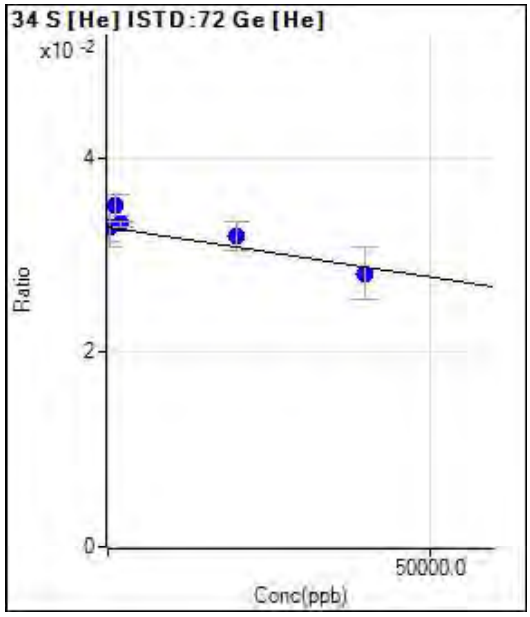


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	700719.70	0.3257	P	5.9
2	☐	400.000	-53565.24	705439.21	0.3632	P	22.5
3	☐	1000.000	5401.025	714139.57	0.3219	P	2.6
4	☐	2000.000	4476.745	713510.33	0.3226	P	1.3
5	☐	20000.00	14206.385	682773.41	0.3158	P	4.2
6	☐	40000.00	43202.597	623314.29	0.2955	P	2.6
7	☐	100.000					

y = -6.9926E-007 * x + 0.3257
R = -0.7232
DL = -8.21E+04
BEC = -4.658E+05

Weight: <None>
Min Conc: <None>

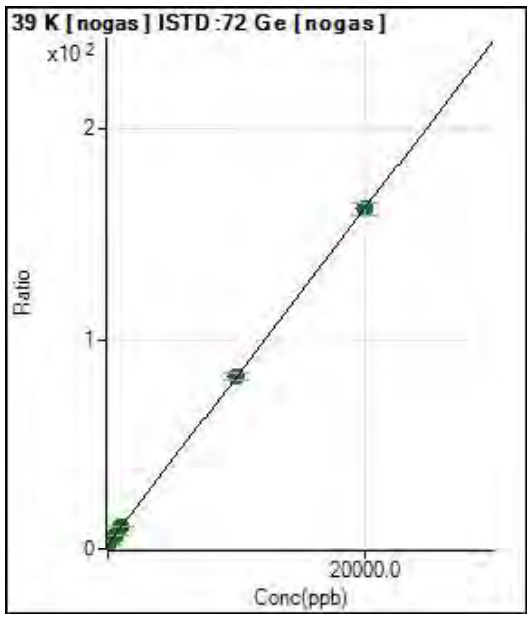
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22249.90	0.0328	P	8.9
2	☐	400.000	-643.058	21549.50	0.0329	P	12.3
3	☐	1000.000	-21556.21	24052.91	0.0350	P	6.2
4	☐	2000.000	-3582.606	22215.96	0.0332	P	1.6
5	☐	20000.00	8987.190	21250.43	0.0319	P	9.0
6	☐	40000.00	46359.871	17945.81	0.0281	P	19.0
7	☐	100.000					

y = -1.0184E-007 * x + 0.0328
R = -0.9152
DL = -8.609E+04
BEC = -3.223E+05

Weight: <None>
Min Conc: <None>

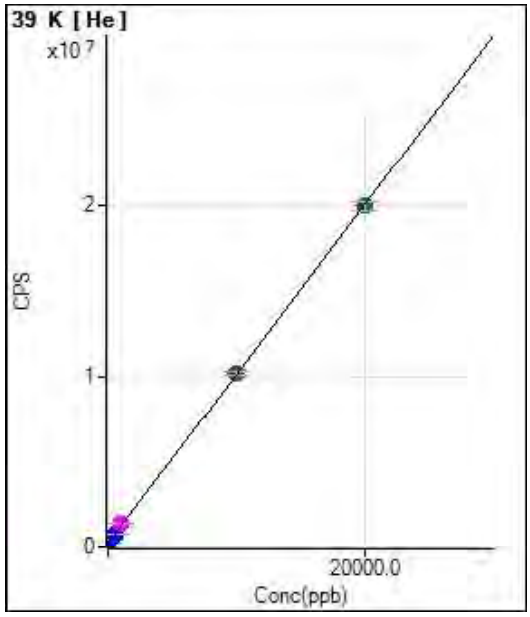


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	5562145.31	2.5852	A	5.6
2	☐	200.000	275.931	9279869.48	4.7873	A	23.9
3	☐	500.000	518.417	14911205.54	6.7225	A	3.0
4	☐	1000.000	1080.789	24796789.62	11.2105	A	1.1
5	☐	10000.00	10013.694	178350316.4	82.5001	A	4.8
6	☐	20000.00	19987.894	341855540.9	162.099	A	3.7
7	☐	100.000					

y = 0.0080 * x + 2.5852
R = 1.0000
DL = 54.33
BEC = 323.9

Weight: <None>
Min Conc: <None>

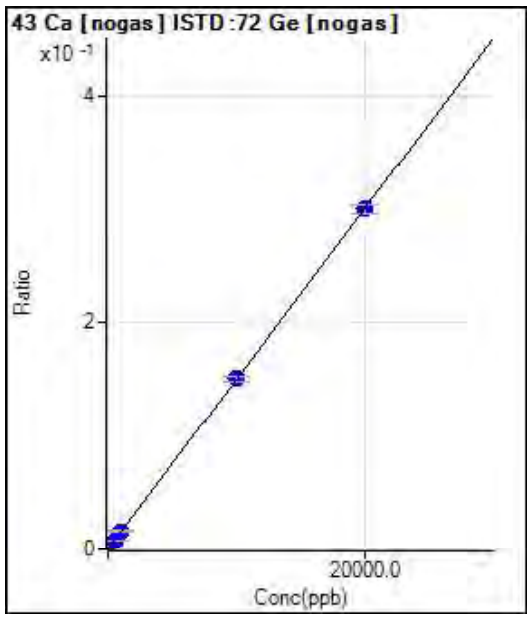
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	201229.73		P	1.2
2	☐	200.000	229.489	428804.81		P	0.6
3	☐	500.000	573.644	770088.01		P	0.3
4	☐	1000.000	1146.650	1338314.51		M	1.4
5	☐	10000.00	10083.461	10200576.51		A	1.9
6	☐	20000.00	19948.801	19983621.78		A	2.3
7	☐	100.000					

y = 991.6582 * x + 201229.7300
R = 1.0000
DL = 7.368
BEC = 202.9

Weight: <None>
Min Conc: <None>

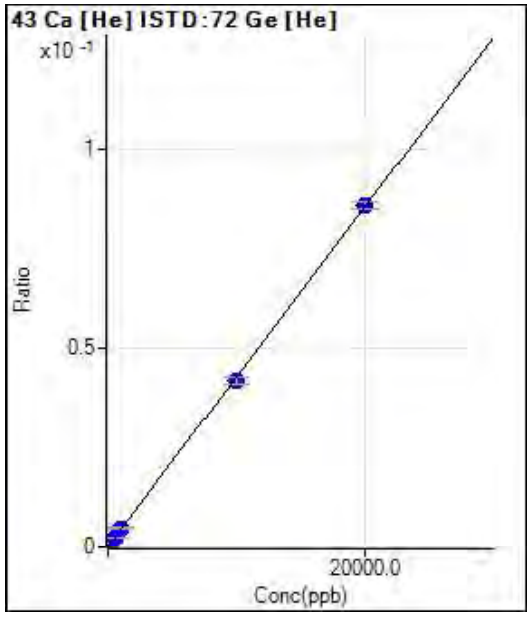


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	983.38	0.0005	P	17.5
2	☐	200.000	240.222	7895.15	0.0041	P	22.3
3	☐	500.000	513.439	18092.37	0.0082	P	4.6
4	☐	1000.000	1075.754	36679.85	0.0166	P	3.1
5	☐	10000.00	10001.708	325188.33	0.1504	P	4.2
6	☐	20000.00	19994.620	633235.32	0.3002	P	2.7
7	☐	100.000					

y = 1.4992E-005 * x + 4.5865E-004
R = 1.0000
DL = 16.05
BEC = 30.59

Weight: <None>
Min Conc: <None>

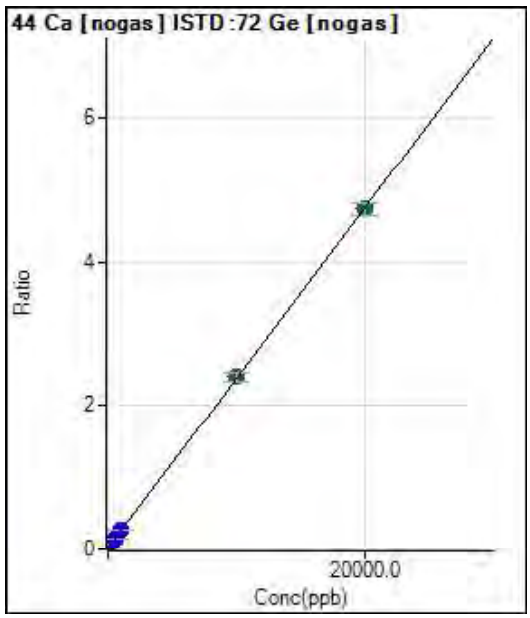
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	43.33	0.0001	P	49.8
2	☐	200.000	211.135	633.35	0.0010	P	25.2
3	☐	500.000	491.384	1483.42	0.0022	P	6.8
4	☐	1000.000	1093.426	3160.32	0.0047	P	10.1
5	☐	10000.00	9811.068	27854.51	0.0419	P	4.7
6	☐	20000.00	20089.899	54713.57	0.0857	P	2.2
7	☐	100.000					

y = 4.2636E-006 * x + 6.4409E-005
R = 0.9999
DL = 22.55
BEC = 15.11

Weight: <None>
Min Conc: <None>

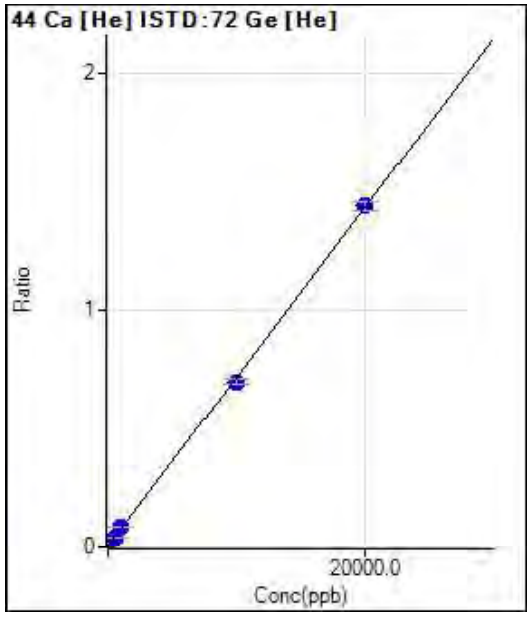


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	47400.32	0.0220	P	5.0
2	☐	200.000	255.638	159571.92	0.0825	P	25.5
3	☐	500.000	535.928	330159.74	0.1488	P	2.9
4	☐	1000.000	1115.874	632770.03	0.2860	P	0.8
5	☐	10000.00	10066.102	5195064.93	2.4037	A	5.7
6	☐	20000.00	19959.701	10005626.31	4.7446	A	3.8
7	☐	100.000					

y = 2.3660E-004 * x + 0.0220
R = 1.0000
DL = 13.91
BEC = 93.09

Weight: <None>
Min Conc: <None>

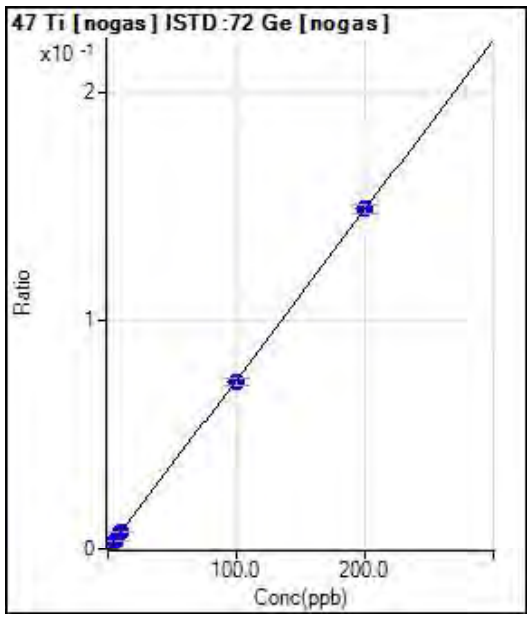
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1843.45	0.0027	P	6.6
2	☐	200.000	230.860	12604.44	0.0192	P	5.6
3	☐	500.000	531.099	27921.27	0.0407	P	5.7
4	☐	1000.000	1106.165	54723.84	0.0818	P	3.5
5	☐	10000.00	9732.229	464355.79	0.6983	P	3.4
6	☐	20000.00	20127.491	919988.50	1.4413	P	2.6
7	☐	100.000					

y = 7.1473E-005 * x + 0.0027
R = 0.9998
DL = 7.558
BEC = 38.07

Weight: <None>
Min Conc: <None>

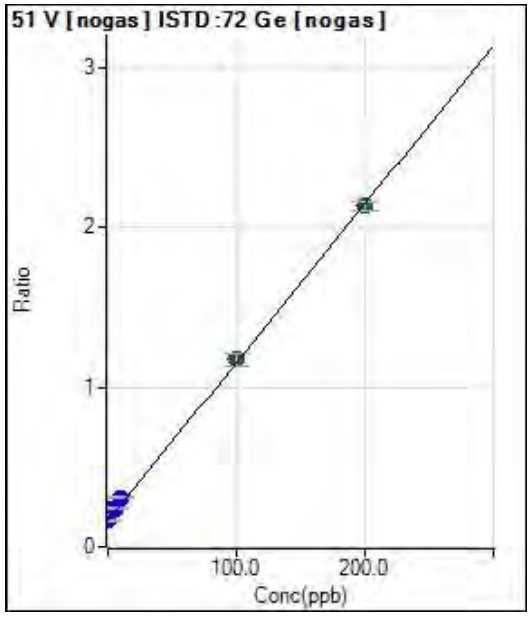


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	263.34	0.0001	P	16.2
2	☐	2.000	2.316	3573.74	0.0018	P	23.1
3	☐	5.000	5.047	8575.47	0.0039	P	7.7
4	☐	10.000	10.351	17261.58	0.0078	P	1.5
5	☐	100.000	98.879	158863.39	0.0735	P	4.6
6	☐	200.000	200.538	314114.94	0.1489	P	2.7
7	☐	1.000					

y = 7.4190E-004 * x + 1.2285E-004
R = 1.0000
DL = 0.08039
BEC = 0.1656

Weight: <None>
Min Conc: <None>

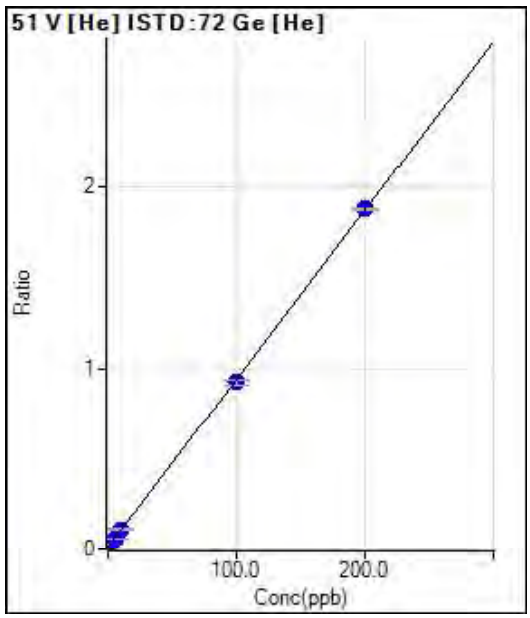
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	354519.07	0.1646	P	6.1
2	☐	2.000	6.900	449238.20	0.2330	P	28.2
3	☐	5.000	7.663	533407.43	0.2406	P	6.4
4	☐	10.000	14.348	678880.69	0.3069	P	3.6
5	☐	100.000	101.613	2532789.64	1.1722	A	6.9
6	☐	200.000	198.860	4506486.30	2.1364	A	2.4
7	☐	1.000					

y = 0.0099 * x + 0.1646
R = 0.9998
DL = 3.019
BEC = 16.6

Weight: <None>
Min Conc: <None>

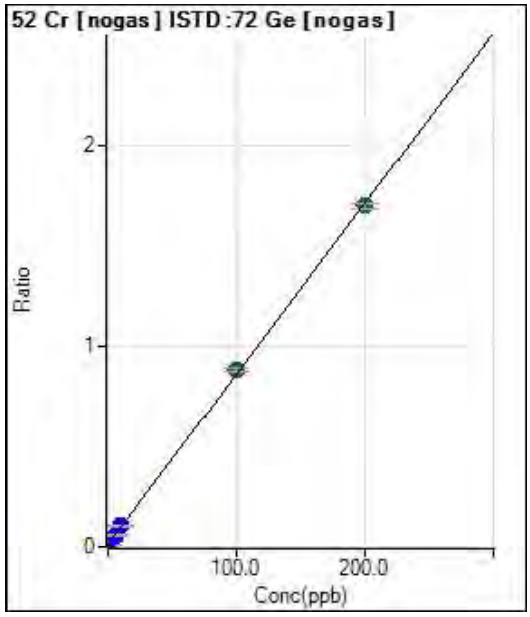


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.126	7848.32	0.0116	P	2.9
2	☐	2.000	2.105	21173.34	0.0323	P	2.4
3	☐	5.000	5.166	41687.71	0.0607	P	0.4
4	☐	10.000	10.956	76618.43	0.1145	P	2.4
5	☐	100.000	97.902	613013.81	0.9218	P	2.3
6	☐	200.000	200.996	1199412.08	1.8791	P	0.6
7	☐	1.000					

y = 0.0093 * x + 0.0127
R = 0.9999
DL = 0.1097
BEC = 1.373

Weight: <None>
Min Conc: <None>

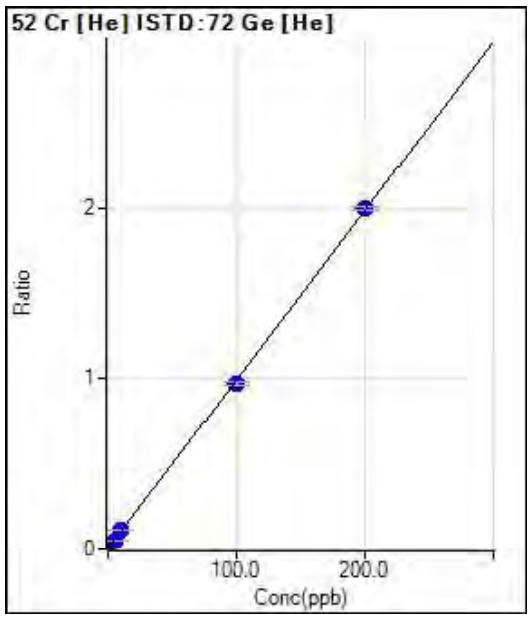
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	27003.17	0.0126	P	7.9
2	☐	2.000	2.706	68711.36	0.0356	P	26.0
3	☐	5.000	5.341	128500.36	0.0579	P	5.1
4	☐	10.000	10.792	230641.31	0.1043	P	2.0
5	☐	100.000	102.561	1913547.63	0.8842	A	1.7
6	☐	200.000	198.664	3589472.97	1.7009	A	1.4
7	☐	1.000					

y = 0.0085 * x + 0.0126
R = 0.9999
DL = 0.3485
BEC = 1.477

Weight: <None>
Min Conc: <None>

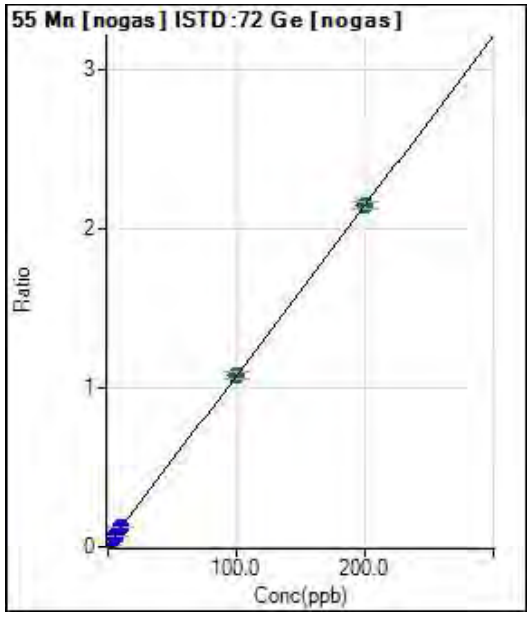


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	4407.27	0.0065	P	11.4
2	☐	2.000	2.164	18292.63	0.0279	P	3.2
3	☐	5.000	5.083	38954.78	0.0567	P	1.5
4	☐	10.000	10.995	77070.64	0.1151	P	1.5
5	☐	100.000	97.449	644648.81	0.9693	P	2.0
6	☐	200.000	201.222	1273184.05	1.9946	P	1.1
7	☐	1.000					

y = 0.0099 * x + 0.0065
R = 0.9999
DL = 0.226
BEC = 0.6587

Weight: <None>
Min Conc: <None>

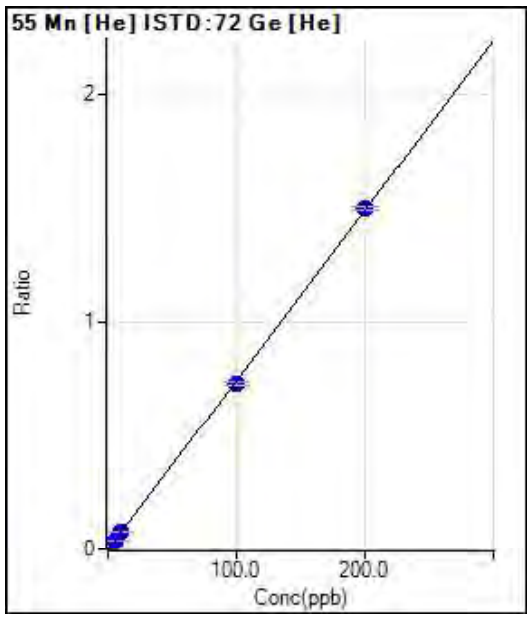
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	22523.97	0.0105	P	6.3
2	☐	2.000	2.611	74128.90	0.0384	P	26.1
3	☐	5.000	5.421	151691.30	0.0684	P	2.9
4	☐	10.000	11.127	286099.29	0.1293	P	0.8
5	☐	100.000	99.964	2335140.12	1.0785	A	3.7
6	☐	200.000	199.945	4528589.62	2.1466	A	2.2
7	☐	1.000					

y = 0.0107 * x + 0.0105
R = 1.0000
DL = 0.1846
BEC = 0.98

Weight: <None>
Min Conc: <None>

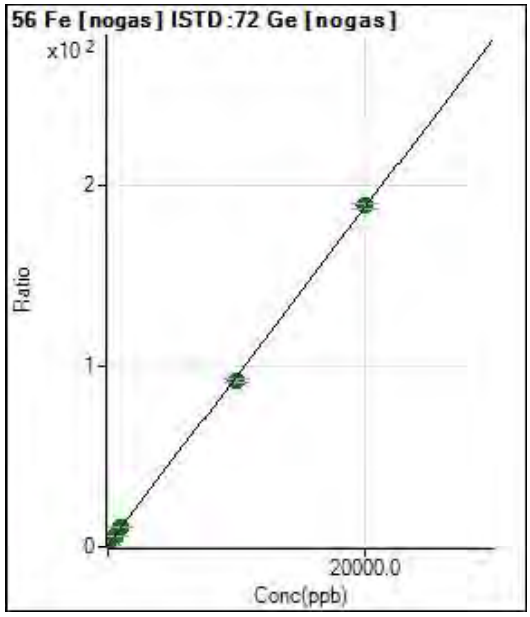


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	670.02	0.0010	P	14.1
2	☐	2.000	2.235	11557.13	0.0176	P	4.4
3	☐	5.000	5.206	27293.88	0.0397	P	0.9
4	☐	10.000	10.852	54751.30	0.0818	P	0.8
5	☐	100.000	97.875	485351.58	0.7297	P	2.9
6	☐	200.000	201.012	955965.33	1.4977	P	1.2
7	☐	1.000					

y = 0.0074 * x + 9.8680E-004
R = 0.9999
DL = 0.05603
BEC = 0.1325

Weight: <None>
Min Conc: <None>

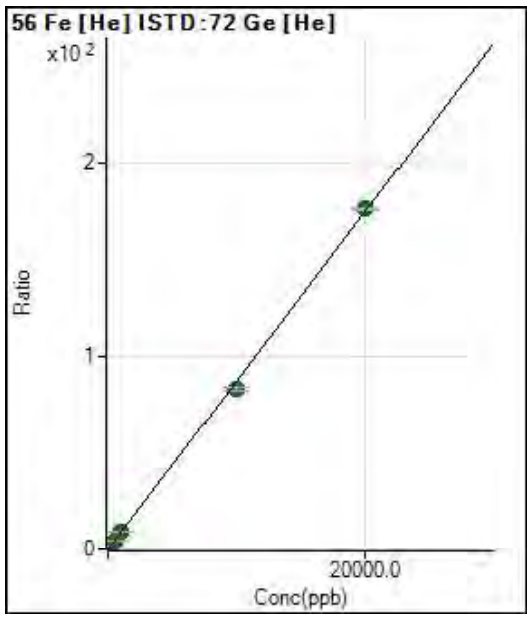
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2469975.38	1.1465	A	2.5
2	☐	200.000	261.423	6938908.49	3.5822	A	24.4
3	☐	500.000	523.209	13358035.98	6.0212	A	3.9
4	☐	1000.000	1075.591	24702080.24	11.1678	A	1.1
5	☐	10000.00	9770.870	199426171.1	92.1822	A	2.4
6	☐	20000.00	20109.591	397685417.2	188.508	A	1.8
7	☐	100.000					

y = 0.0093 * x + 1.1465
R = 0.9999
DL = 9.293
BEC = 123.1

Weight: <None>
Min Conc: <None>

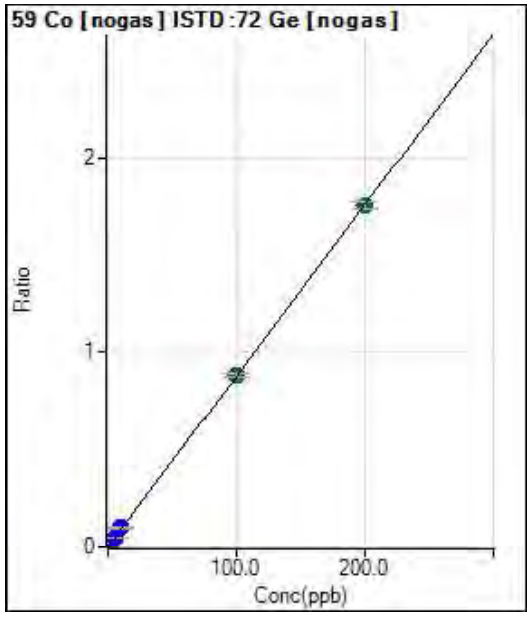


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	26622.74	0.0393	P	3.8
2	☐	200.000	223.601	1306149.22	1.9917	P	2.2
3	☐	500.000	532.689	3220284.02	4.6906	A	3.4
4	☐	1000.000	1087.336	6379754.28	9.5336	A	3.0
5	☐	10000.00	9575.471	55632179.17	83.6495	A	2.3
6	☐	20000.00	20206.844	112645481.6	176.479	A	0.6
7	☐	100.000					

y = 0.0087 * x + 0.0393
R = 0.9997
DL = 0.5159
BEC = 4.499

Weight: <None>
Min Conc: <None>

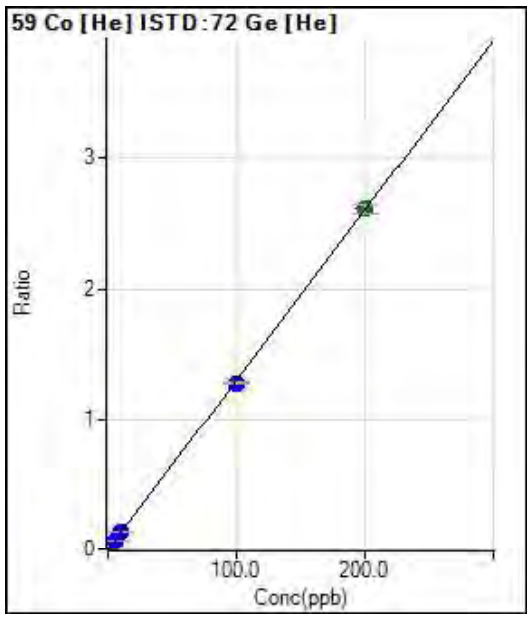
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	446.68	0.0002	P	11.7
2	☐	2.000	2.550	43779.34	0.0226	P	24.7
3	☐	5.000	5.506	107758.74	0.0486	P	3.2
4	☐	10.000	11.211	218263.34	0.0987	P	3.4
5	☐	100.000	100.737	1917057.84	0.8852	A	2.1
6	☐	200.000	199.553	3698480.88	1.7533	A	2.3
7	☐	1.000					

y = 0.0088 * x + 2.0757E-004
R = 1.0000
DL = 0.008303
BEC = 0.02363

Weight: <None>
Min Conc: <None>

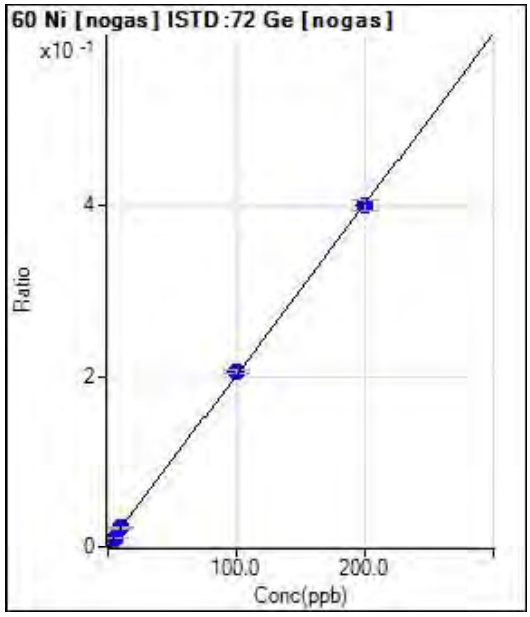


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	173.34	0.0003	P	36.5
2	☐	2.000	2.185	18816.57	0.0287	P	1.4
3	☐	5.000	5.254	47117.20	0.0686	P	1.3
4	☐	10.000	10.770	93949.39	0.1404	P	3.6
5	☐	100.000	98.248	850502.83	1.2787	P	1.3
6	☐	200.000	200.829	1668231.59	2.6136	A	3.0
7	☐	1.000					

y = 0.0130 * x + 2.5472E-004
R = 0.9999
DL = 0.02146
BEC = 0.01957

Weight: <None>
Min Conc: <None>

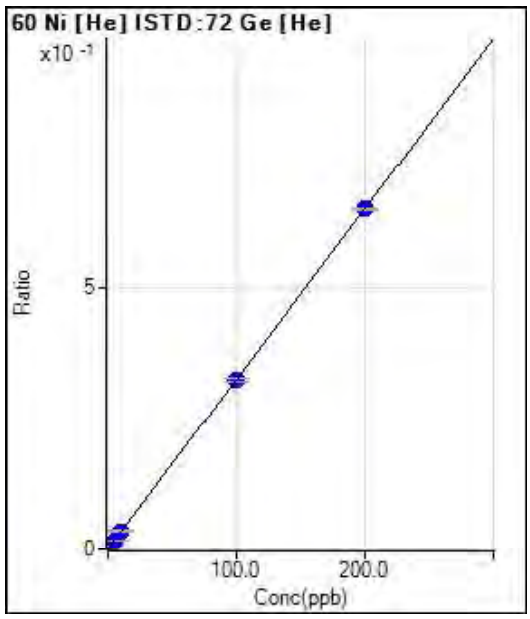
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.764	326.68	0.0002	P	16.3
2	☐	2.000	1.637	9606.05	0.0050	P	23.3
3	☐	5.000	4.754	24813.83	0.0112	P	3.5
4	☐	10.000	10.464	49988.60	0.0226	P	5.6
5	☐	100.000	101.845	444364.07	0.2053	P	1.9
6	☐	200.000	199.064	843182.38	0.3998	P	3.0
7	☐	1.000					

y = 0.0020 * x + 0.0017
R = 0.9999
DL = 0.03684
BEC = 0.8391

Weight: <None>
Min Conc: <None>

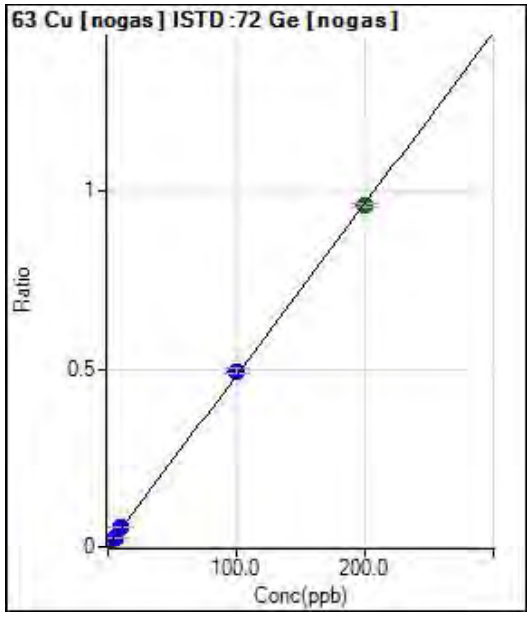


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.293	233.34	0.0003	P	23.3
2	☐	2.000	1.878	4860.73	0.0074	P	3.8
3	☐	5.000	4.962	11974.07	0.0174	P	1.8
4	☐	10.000	10.608	23959.18	0.0358	P	3.9
5	☐	100.000	99.745	216661.66	0.3258	P	2.2
6	☐	200.000	200.099	416336.83	0.6523	P	0.8
7	☐	1.000					

y = 0.0033 * x + 0.0013
R = 1.0000
DL = 0.07404
BEC = 0.3989

Weight: <None>
Min Conc: <None>

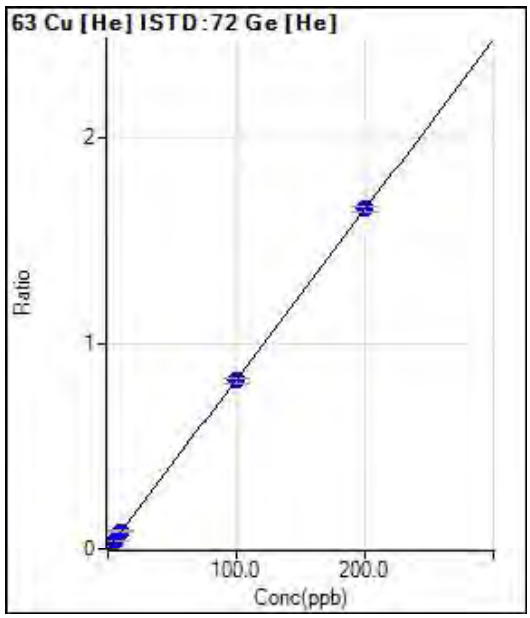
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1543.43	0.0007	P	14.6
2	☐	2.000	2.531	24910.61	0.0129	P	27.5
3	☐	5.000	5.546	60905.24	0.0275	P	1.9
4	☐	10.000	11.124	120203.93	0.0543	P	0.3
5	☐	100.000	102.317	1068509.88	0.4939	P	3.3
6	☐	200.000	198.766	2023084.97	0.9588	A	0.9
7	☐	1.000					

y = 0.0048 * x + 7.1991E-004
R = 0.9999
DL = 0.06529
BEC = 0.1494

Weight: <None>
Min Conc: <None>

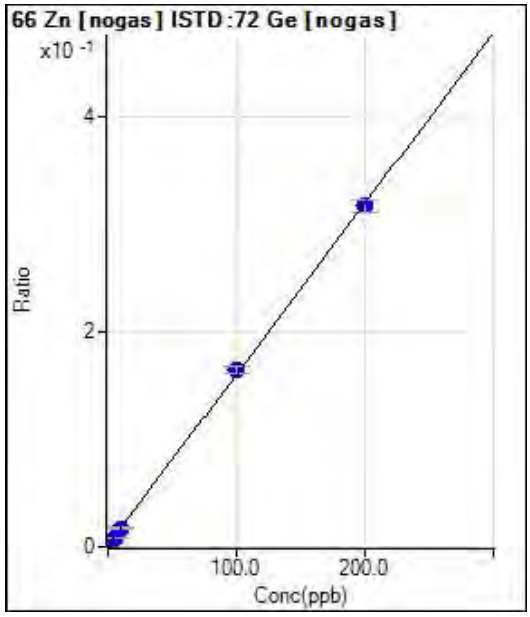


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.277	770.03	0.0011	P	3.3
2	☐	2.000	1.924	12631.17	0.0193	P	2.4
3	☐	5.000	5.068	30993.29	0.0451	P	3.0
4	☐	10.000	10.758	61586.78	0.0920	P	1.4
5	☐	100.000	99.133	544982.40	0.8197	P	4.0
6	☐	200.000	200.395	1055431.91	1.6535	P	1.5
7	☐	1.000					

y = 0.0082 * x + 0.0034
R = 1.0000
DL = 0.01349
BEC = 0.4151

Weight: <None>
Min Conc: <None>

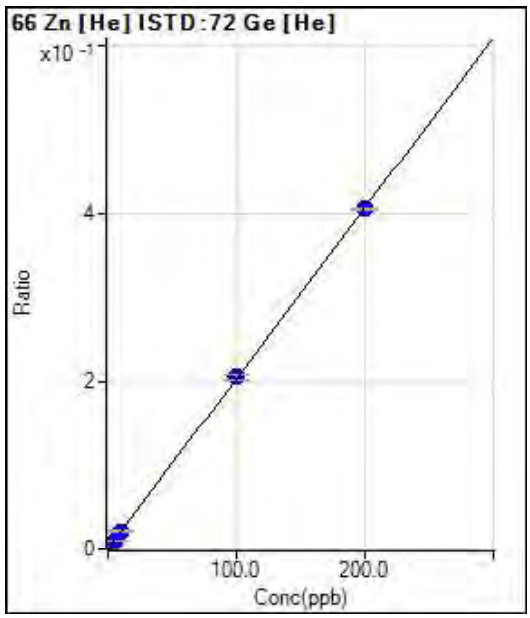
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.630	1210.06	0.0006	P	0.2
2	☐	2.000	1.618	7981.87	0.0041	P	26.6
3	☐	5.000	4.521	19413.86	0.0087	P	1.3
4	☐	10.000	10.117	39042.10	0.0176	P	3.7
5	☐	100.000	102.727	356484.07	0.1649	P	3.9
6	☐	200.000	198.646	669346.88	0.3173	P	3.4
7	☐	1.000					

y = 0.0016 * x + 0.0016
R = 0.9998
DL = 0.002327
BEC = 0.9825

Weight: <None>
Min Conc: <None>

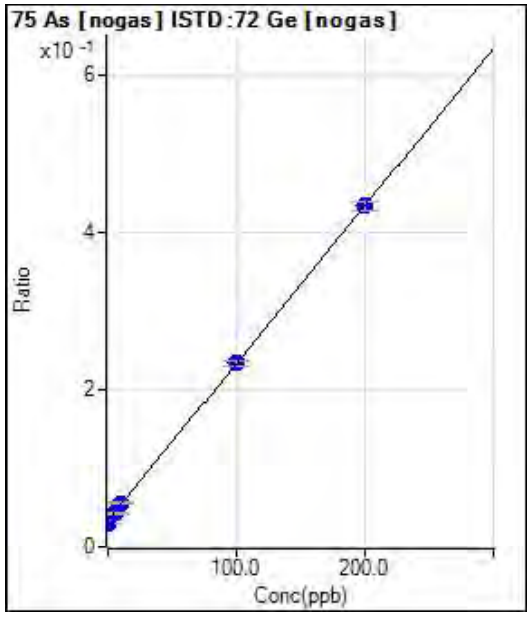


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.361	450.01	0.0007	P	18.8
2	☐	2.000	1.879	3415.37	0.0052	P	10.8
3	☐	5.000	4.681	7474.97	0.0109	P	5.5
4	☐	10.000	10.411	15069.75	0.0225	P	3.0
5	☐	100.000	100.802	136898.95	0.2059	P	3.3
6	☐	200.000	199.587	259330.51	0.4063	P	0.6
7	☐	1.000					

y = 0.0020 * x + 0.0014
R = 1.0000
DL = 0.1844
BEC = 0.6879

Weight: <None>
Min Conc: <None>

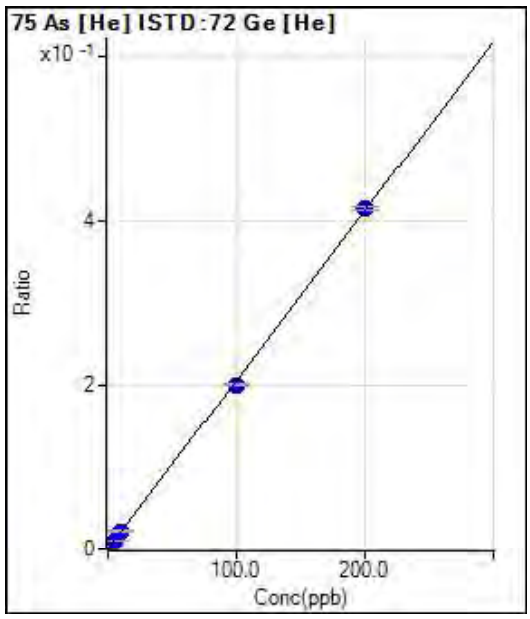
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-1.858	64290.00	0.0299	P	4.2
2	☐	2.000	3.144	76931.52	0.0398	P	26.9
3	☐	5.000	4.730	95401.48	0.0430	P	3.9
4	☐	10.000	11.083	123233.46	0.0557	P	2.3
5	☐	100.000	99.920	504223.65	0.2331	P	3.3
6	☐	200.000	199.981	913317.41	0.4330	P	2.7
7	☐	1.000					

y = 0.0020 * x + 0.0336
R = 0.9999
DL = 1.877
BEC = 16.81

Weight: <None>
Min Conc: <None>

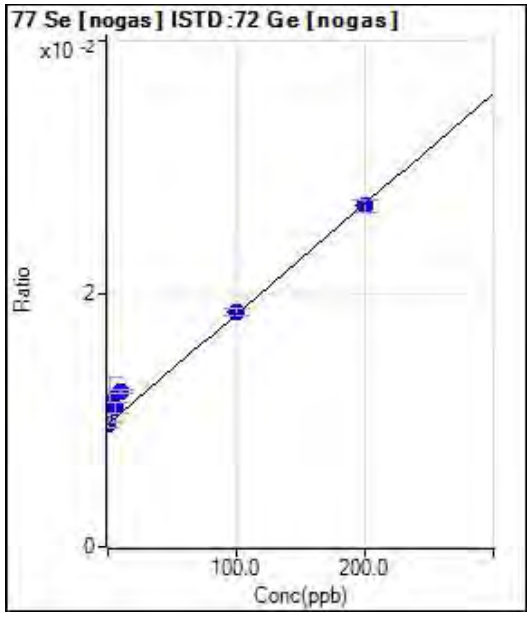


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	528.90	0.0008	P	4.2
2	☐	2.000	2.101	3346.99	0.0051	P	0.8
3	☐	5.000	5.040	7653.86	0.0111	P	1.0
4	☐	10.000	10.632	15155.24	0.0227	P	4.4
5	☐	100.000	97.357	133724.87	0.2011	P	1.8
6	☐	200.000	201.288	264826.98	0.4149	P	1.0
7	☐	1.000					

y = 0.0021 * x + 7.7950E-004
R = 0.9999
DL = 0.04727
BEC = 0.3789

Weight: <None>
Min Conc: <None>

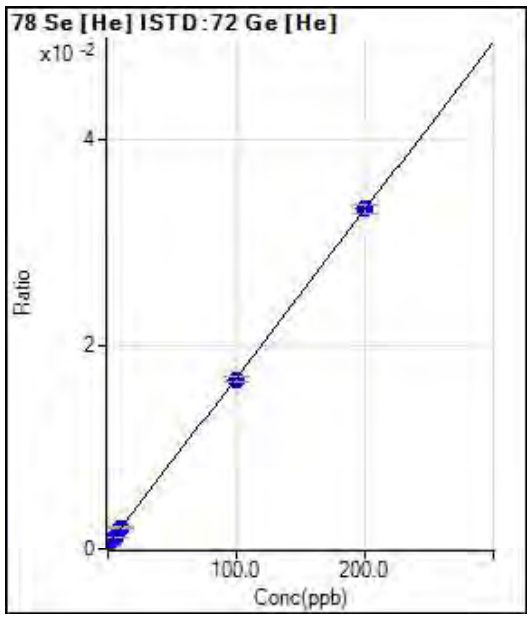
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	20862.16	0.0097	P	6.1
2	☐	2.000	21.900	22270.56	0.0116	P	30.9
3	☐	5.000	15.589	24496.84	0.0110	P	7.6
4	☐	10.000	29.326	27090.41	0.0122	P	2.1
5	☐	100.000	101.182	40017.62	0.0185	P	3.0
6	☐	200.000	197.979	56791.96	0.0269	P	3.5
7	☐	1.000					

y = 8.7061E-005 * x + 0.0097
R = 0.9950
DL = 20.44
BEC = 111.3

Weight: <None>
Min Conc: <None>

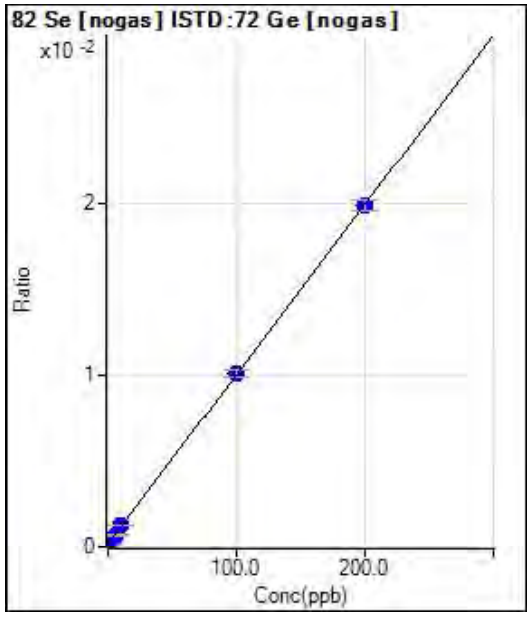


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	-0.027	316.67	0.0005	P	14.3
2	☐	2.000	2.270	552.68	0.0008	P	11.9
3	☐	5.000	4.820	865.35	0.0013	P	1.8
4	☐	10.000	10.506	1466.07	0.0022	P	4.8
5	☐	100.000	98.909	11066.72	0.0166	P	3.7
6	☐	200.000	200.522	21226.34	0.0333	P	2.8
7	☐	1.000					

y = 1.6349E-004 * x + 4.7225E-004
R = 1.0000
DL = 1.227
BEC = 2.889

Weight: <None>
Min Conc: <None>

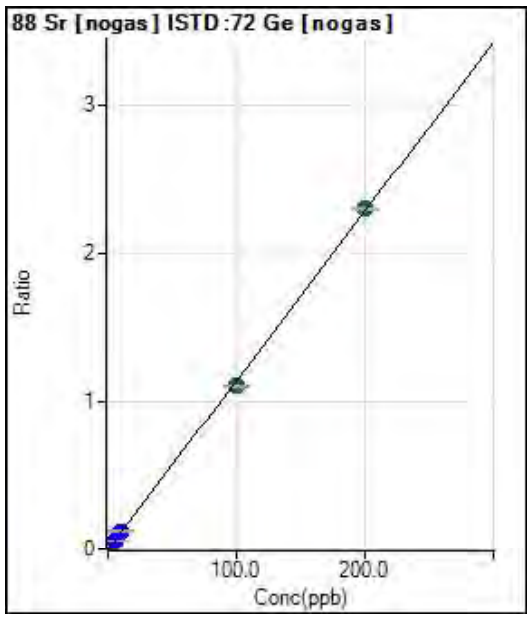
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	353.34	0.0002	P	8.2
2	☐	2.000	2.351	786.70	0.0004	P	11.9
3	☐	5.000	5.023	1463.42	0.0007	P	13.4
4	☐	10.000	10.915	2746.92	0.0012	P	1.3
5	☐	100.000	100.975	21926.90	0.0101	P	3.8
6	☐	200.000	199.463	41922.40	0.0199	P	3.3
7	☐	1.000					

y = 9.8808E-005 * x + 1.6330E-004
R = 1.0000
DL = 0.4067
BEC = 1.653

Weight: <None>
Min Conc: <None>

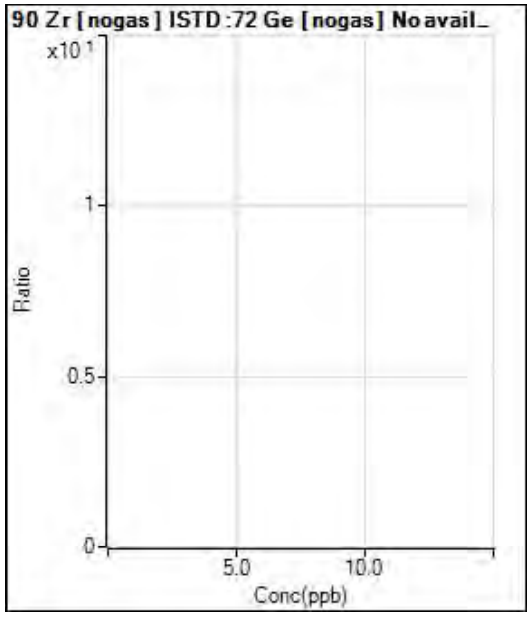


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	2163.50	0.0010	P	11.9
2	☐	2.000	2.456	55931.20	0.0290	P	26.9
3	☐	5.000	5.287	135815.96	0.0612	P	2.4
4	☐	10.000	11.105	282026.12	0.1275	P	1.8
5	☐	100.000	96.677	2384906.37	1.1021	A	2.0
6	☐	200.000	201.595	4847348.58	2.2970	A	0.9
7	☐	1.000					

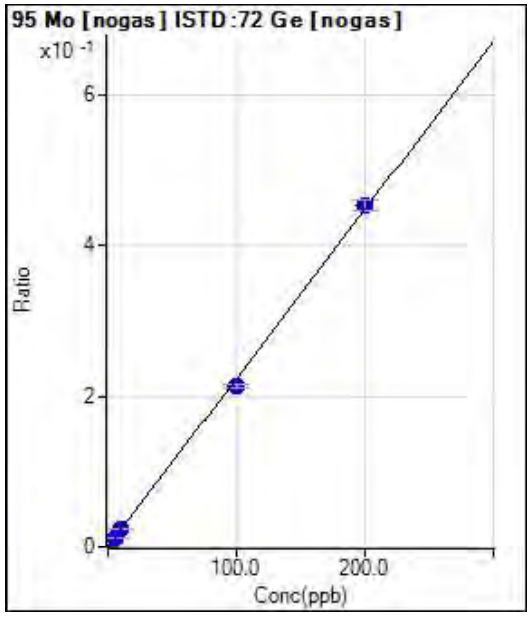
y = 0.0114 * x + 0.0010
R = 0.9998
DL = 0.03162
BEC = 0.08828

Weight: <None>
Min Conc: <None>

Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	263.34	0.0001	P	32.1
2	☐	2.000	2.459	10743.48	0.0056	P	34.1
3	☐	5.000	5.006	25131.40	0.0113	P	1.2
4	☐	10.000	10.700	53239.80	0.0241	P	2.1
5	☐	100.000	95.292	461596.31	0.2134	P	2.9
6	☐	200.000	202.314	955400.06	0.4529	P	3.2
7	☐	1.000					

y = 0.0022 * x + 1.2123E-004

R = 0.9996

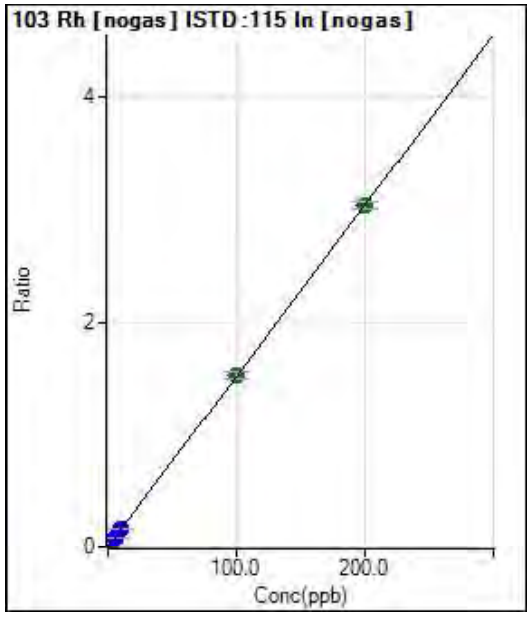
DL = 0.05208

BEC = 0.05416

Weight: <None>

Min Conc: <None>

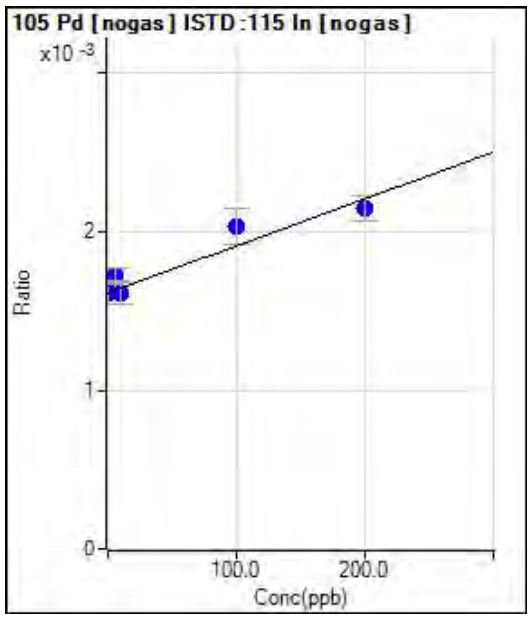
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	156.67	0.0001	P	28.3
2	☐	2.000	2.300	58755.21	0.0350	P	25.9
3	☐	5.000	5.026	145843.43	0.0763	P	1.5
4	☐	10.000	10.643	302405.05	0.1616	P	1.0
5	☐	100.000	100.384	2644498.92	1.5232	A	3.8
6	☐	200.000	199.772	5212370.75	3.0313	A	2.0
7	☐	1.000					

y = 0.0152 * x + 8.0216E-005
R = 1.0000
DL = 0.004484
BEC = 0.005287

Weight: <None>
Min Conc: <None>

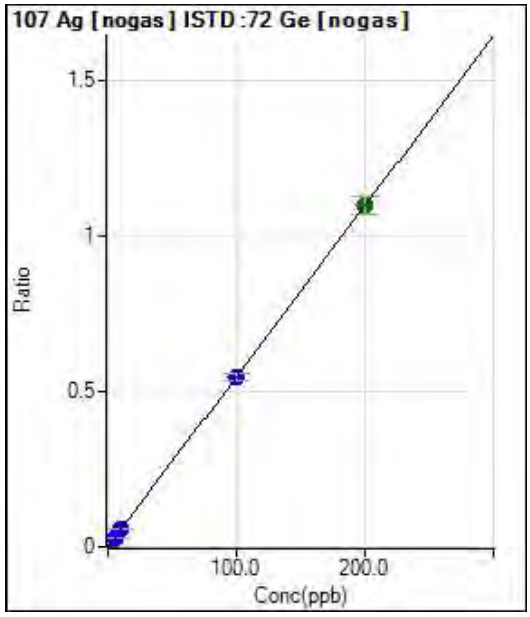


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	3123.66	0.0016	P	9.3
2	☐	2.000	28.260	2950.31	0.0017	P	3.7
3	☐	5.000	38.699	3303.69	0.0017	P	4.3
4	☐	10.000	-2.321	3010.31	0.0016	P	8.3
5	☐	100.000	142.061	3540.42	0.0020	P	11.2
6	☐	200.000	178.480	3683.79	0.0021	P	7.6
7	☐	1.000					

y = 2.9495E-006 * x + 0.0016
R = 0.9472
DL = 153.3
BEC = 547.8

Weight: <None>
Min Conc: <None>

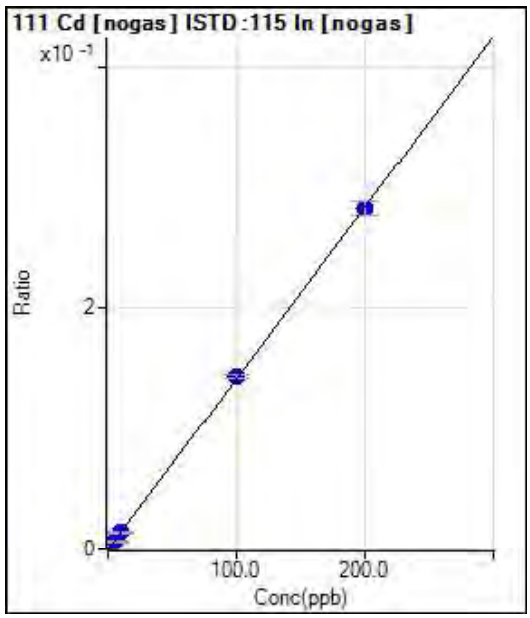
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	173.33	0.0001	P	2.6
2	☐	2.000	2.422	25845.99	0.0133	P	24.2
3	☐	5.000	5.219	63518.23	0.0286	P	2.2
4	☐	10.000	10.852	131496.58	0.0594	P	1.4
5	☐	100.000	99.624	1178823.52	0.5451	P	3.6
6	☐	200.000	200.136	2308658.72	1.0950	A	5.3
7	☐	1.000					

y = 0.0055 * x + 8.0291E-005
R = 1.0000
DL = 0.001129
BEC = 0.01468

Weight: <None>
Min Conc: <None>

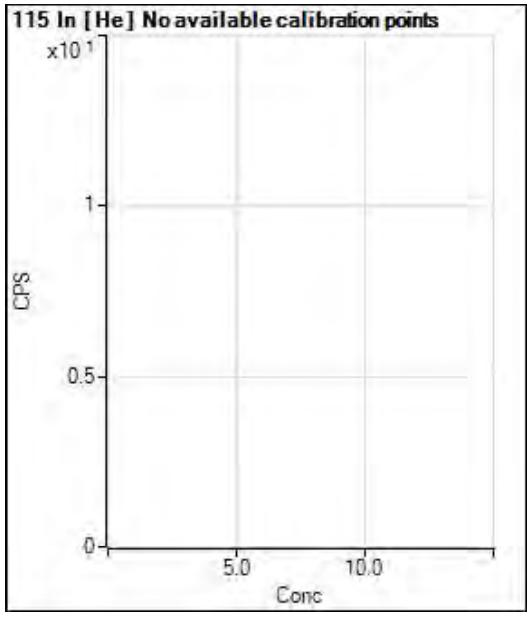


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	23.33	0.0000	P	64.5
2	☐	2.000	2.173	5127.51	0.0031	P	34.8
3	☐	5.000	4.815	13061.75	0.0068	P	2.9
4	☐	10.000	10.068	26734.05	0.0143	P	2.3
5	☐	100.000	101.504	249807.50	0.1439	P	2.1
6	☐	200.000	199.247	485442.14	0.2824	P	4.2
7	☐	1.000					

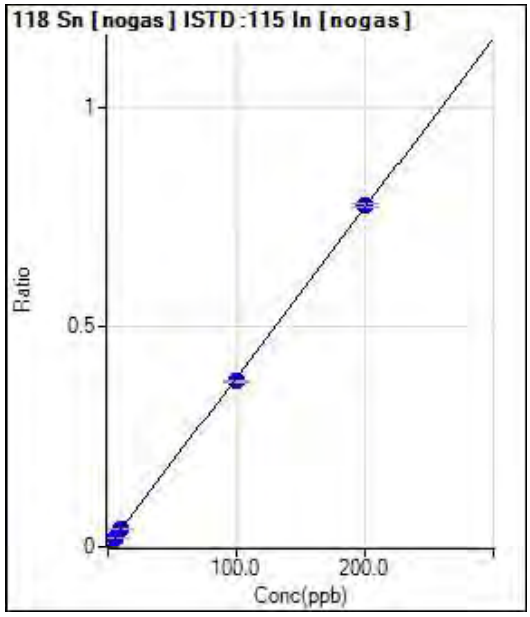
y = 0.0014 * x + 1.1932E-005
R = 1.0000
DL = 0.0163
BEC = 0.008418

Weight: <None>
Min Conc: <None>

Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			790015.14		P	1.4
2	☐			770953.65		P	4.5
3	☐			800570.90		P	2.1
4	☐			782074.28		P	0.5
5	☐			754741.80		P	1.7
6	☐			734582.64		P	1.7
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1206.73	0.0006	P	4.8
2	☐	2.000	2.162	15060.03	0.0089	P	24.6
3	☐	5.000	4.846	36856.10	0.0193	P	0.9
4	☐	10.000	10.110	74047.20	0.0396	P	2.1
5	☐	100.000	97.612	653851.48	0.3766	P	1.9
6	☐	200.000	201.191	1333957.58	0.7756	P	0.9
7	☐	1.000					

y = 0.0039 * x + 6.2176E-004

R = 0.9999

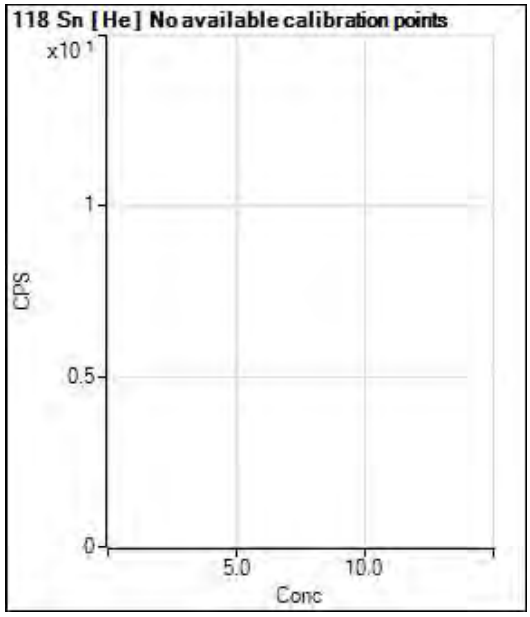
DL = 0.02309

BEC = 0.1614

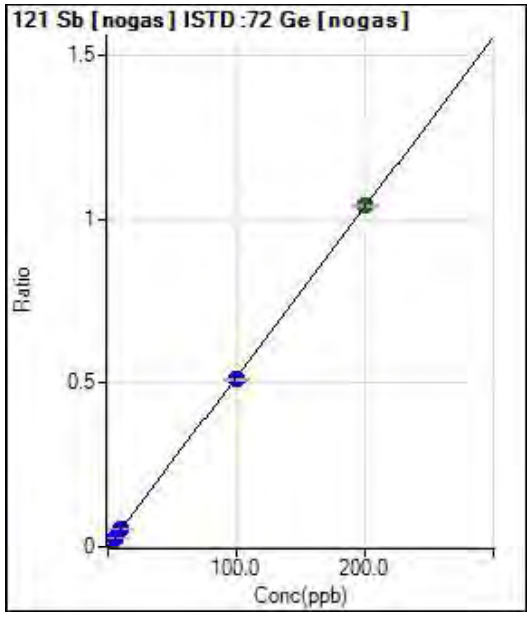
Weight: <None>

Min Conc: <None>

Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			556.69		P	27.5
2	☐			7234.95		P	2.0
3	☐			16845.07		P	7.8
4	☐			33756.26		P	2.7
5	☐			297560.52		P	3.9
6	☐			614483.67		P	0.6
7	☐						



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	920.04	0.0004	P	16.5
2	☐	2.000	2.224	23262.45	0.0119	P	21.0
3	☐	5.000	4.964	57993.95	0.0261	P	5.2
4	☐	10.000	10.169	117478.33	0.0531	P	0.5
5	☐	100.000	98.571	1105784.62	0.5110	P	1.4
6	☐	200.000	200.705	2194615.28	1.0401	A	0.6
7	☐	1.000					

y = 0.0052 * x + 4.2938E-004

R = 1.0000

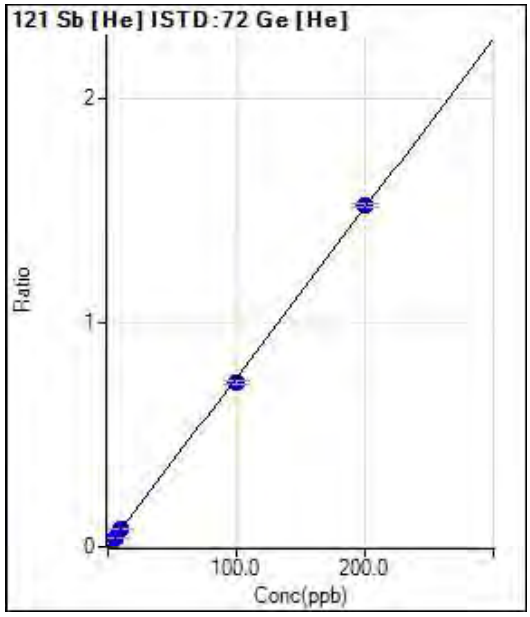
DL = 0.04095

BEC = 0.08289

Weight: <None>

Min Conc: <None>

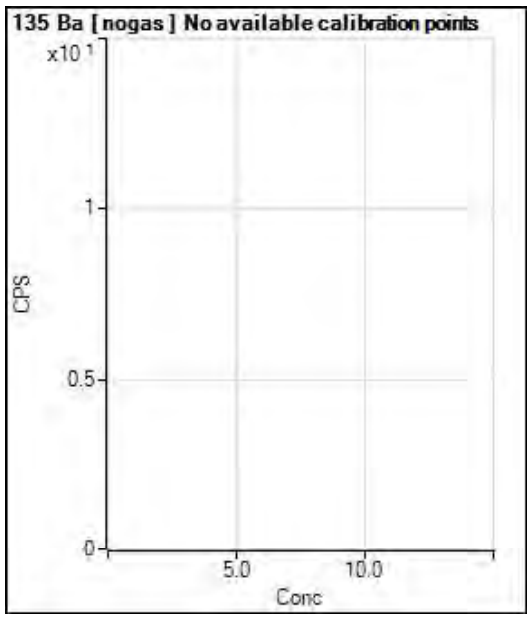
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	423.34	0.0006	P	7.9
2	☐	2.000	2.085	10740.18	0.0164	P	6.1
3	☐	5.000	4.871	25705.99	0.0374	P	0.7
4	☐	10.000	10.489	53465.53	0.0799	P	3.5
5	☐	100.000	97.254	489244.67	0.7357	P	2.8
6	☐	200.000	201.351	971769.31	1.5225	P	0.9
7	☐	1.000					

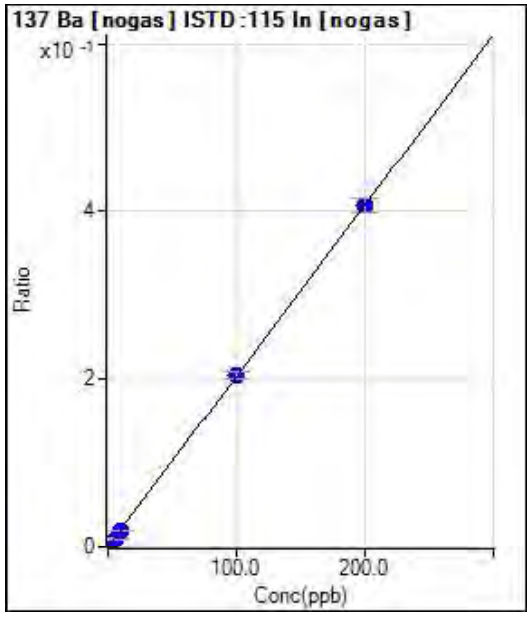
y = 0.0076 * x + 6.2456E-004
R = 0.9999
DL = 0.01958
BEC = 0.08263

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			270.01		P	3.7
2	☐			4800.75		P	5.0
3	☐			10686.83		P	3.5
4	☐			22177.93		P	2.2
5	☐			207351.03		P	2.3
6	☐			404913.04		P	2.7
7	☐						

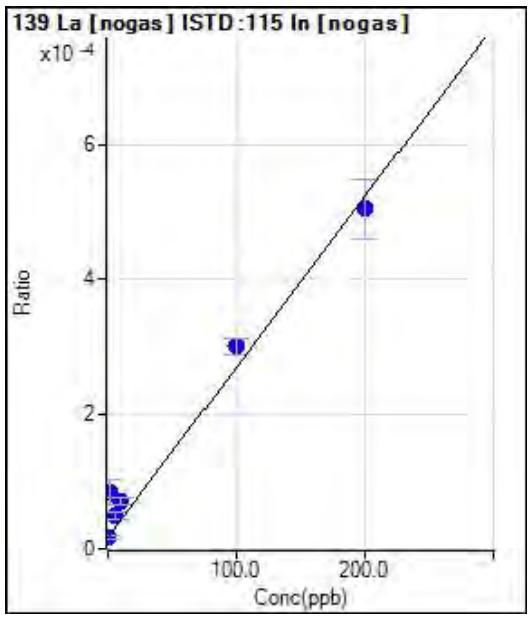
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	426.68	0.0002	P	13.2
2	☐	2.000	2.189	7878.57	0.0047	P	24.0
3	☐	5.000	4.594	18293.20	0.0096	P	2.7
4	☐	10.000	9.759	37598.21	0.0201	P	2.3
5	☐	100.000	100.612	355881.19	0.2051	P	3.6
6	☐	200.000	199.714	699363.35	0.4068	P	4.3
7	☐	1.000					

y = 0.0020 * x + 2.2094E-004
R = 1.0000
DL = 0.04304
BEC = 0.1085

Weight: <None>
Min Conc: <None>

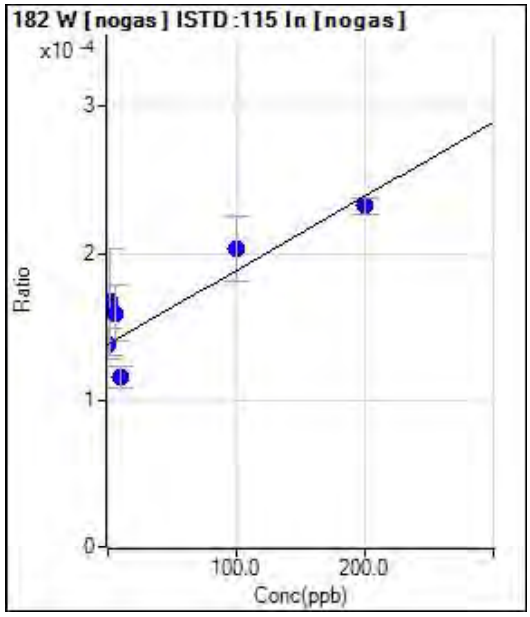


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	36.67	0.0000	P	30.6
2	☐	2.000	26.428	140.00	0.0001	P	44.7
3	☐	5.000	12.652	96.67	0.0001	P	23.8
4	☐	10.000	20.754	133.33	0.0001	P	14.7
5	☐	100.000	112.309	523.35	0.0003	P	7.9
6	☐	200.000	192.872	870.04	0.0005	P	17.3
7	☐	1.000					

y = 2.5180E-006 * x + 1.8900E-005
R = 0.9931
DL = 6.884
BEC = 7.506

Weight: <None>
Min Conc: <None>

Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	266.68	0.0001	P	15.3
2	☐	2.000	57.251	273.34	0.0002	P	43.5
3	☐	5.000	41.854	303.34	0.0002	P	23.8
4	☐	10.000	-44.431	216.67	0.0001	P	13.2
5	☐	100.000	128.810	353.34	0.0002	P	22.0
6	☐	200.000	186.843	400.01	0.0002	P	4.5
7	☐	1.000					

y = 5.0486E-007 * x + 1.3811E-004

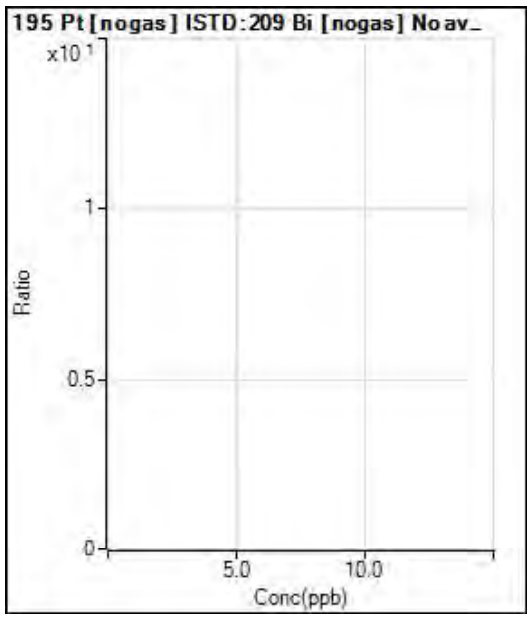
R = 0.8860

DL = 125.9

BEC = 273.6

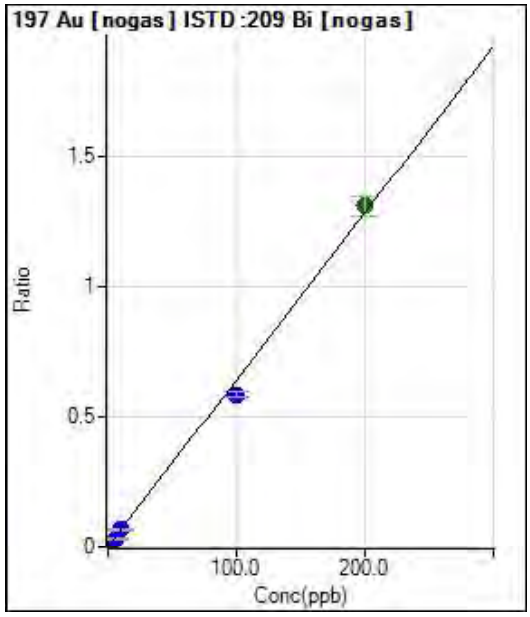
Weight: <None>

Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000					
2	☐	2.000					
3	☐	5.000					
4	☐	10.000					
5	☐	100.000					
6	☐	200.000					
7	☐	1.000					

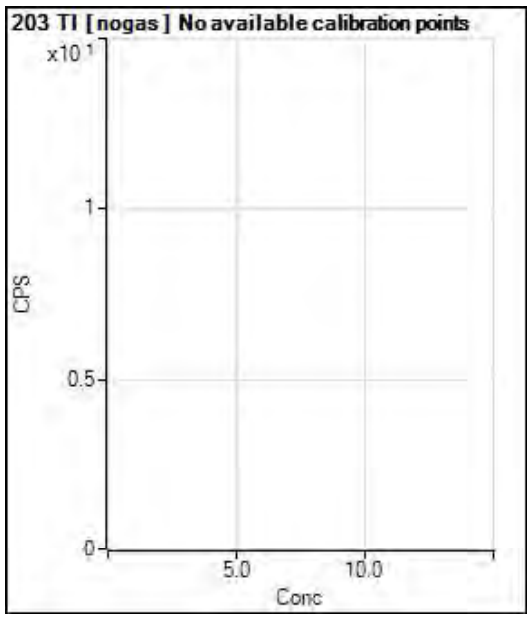
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	1986.82	0.0016	P	13.1
2	☐	2.000	1.956	16104.92	0.0141	P	27.3
3	☐	5.000	4.553	38699.64	0.0308	P	5.3
4	☐	10.000	10.137	81123.83	0.0665	P	2.7
5	☐	100.000	91.300	757019.10	0.5864	P	4.1
6	☐	200.000	204.355	1553974.97	1.3105	A	6.0
7	☐	1.000					

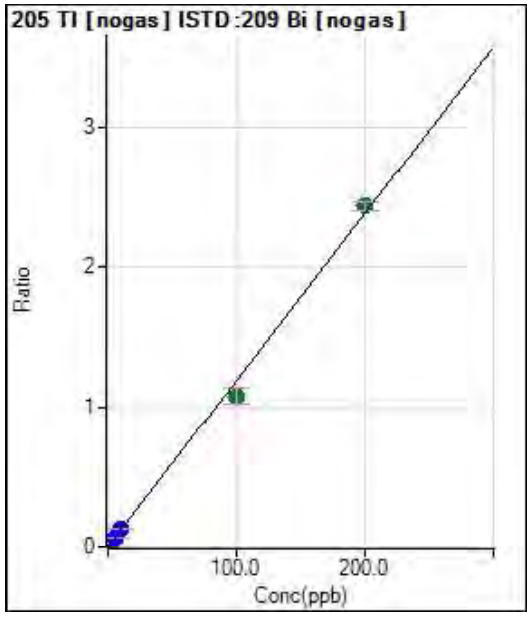
y = 0.0064 * x + 0.0016
R = 0.9987
DL = 0.09813
BEC = 0.2505

Weight: <None>
Min Conc: <None>



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐			213.34		P	17.7
2	☐			13455.76		P	3.9
3	☐			32005.29		P	4.8
4	☐			66449.44		P	1.9
5	☐			623016.12		P	1.4
6	☐			1225501.80		P	1.7
7	☐						

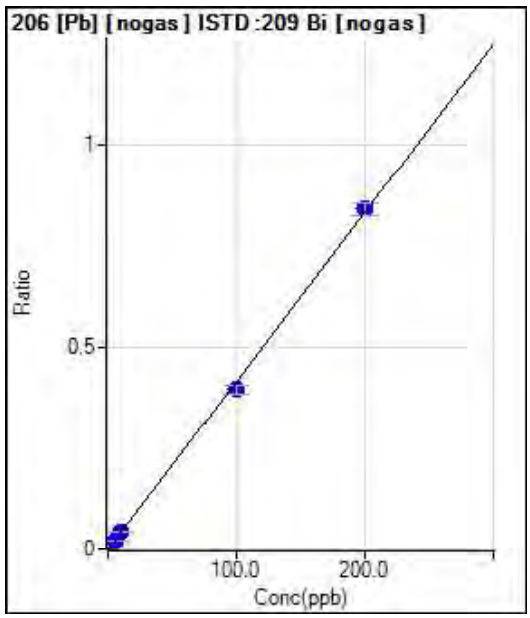
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	396.68	0.0003	P	22.2
2	☐	2.000	2.193	30165.28	0.0264	P	25.5
3	☐	5.000	5.111	76859.78	0.0611	P	6.0
4	☐	10.000	10.932	158931.77	0.1303	P	2.5
5	☐	100.000	90.322	1385185.89	1.0746	A	10.7
6	☐	200.000	204.788	2891009.12	2.4361	A	2.8
7	☐	1.000					

y = 0.0119 * x + 3.2130E-004
R = 0.9983
DL = 0.01799
BEC = 0.02701

Weight: <None>
Min Conc: <None>

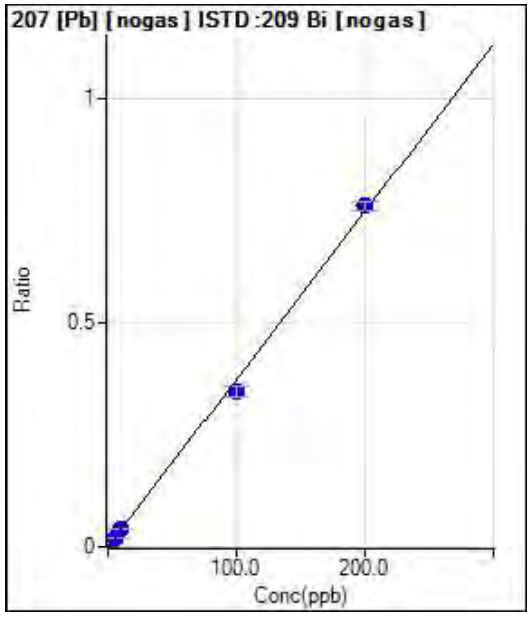


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	146.67	0.0001	P	27.0
2	☐	2.000	2.149	10376.88	0.0091	P	23.6
3	☐	5.000	5.023	26425.20	0.0210	P	6.5
4	☐	10.000	10.573	53779.61	0.0441	P	1.5
5	☐	100.000	95.244	511547.04	0.3964	P	5.5
6	☐	200.000	202.347	998970.87	0.8420	P	3.6
7	☐	1.000					

y = 0.0042 * x + 1.1826E-004
R = 0.9996
DL = 0.02302
BEC = 0.02843

Weight: <None>
Min Conc: <None>

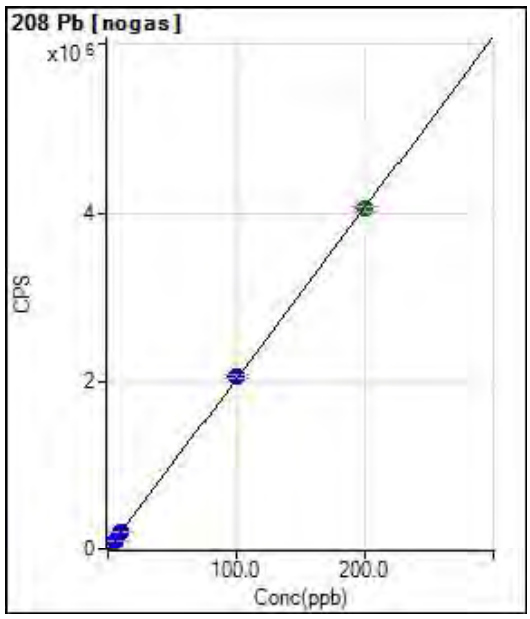
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	143.33	0.0001	P	8.5
2	☐	2.000	2.132	9212.74	0.0081	P	28.0
3	☐	5.000	4.935	23383.75	0.0186	P	2.8
4	☐	10.000	10.678	48881.20	0.0401	P	4.8
5	☐	100.000	92.860	448497.03	0.3475	P	6.0
6	☐	200.000	203.536	903738.35	0.7616	P	2.7
7	☐	1.000					

y = 0.0037 * x + 1.1603E-004
R = 0.9991
DL = 0.007908
BEC = 0.03102

Weight: <None>
Min Conc: <None>

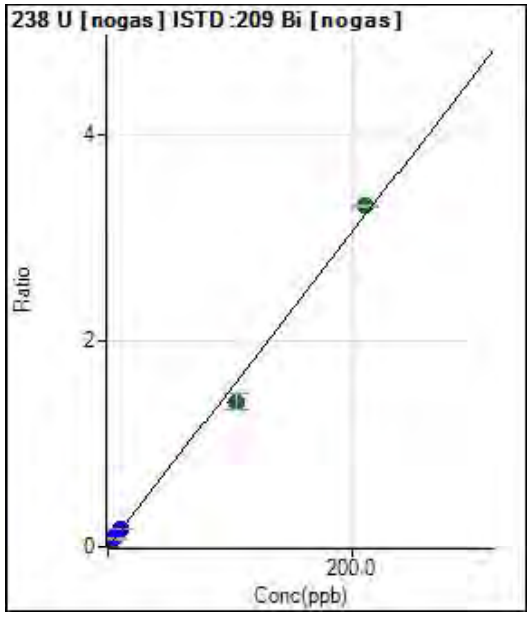


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	476.67		P	14.0
2	☐	2.000	2.074	42586.34		P	0.9
3	☐	5.000	5.194	105940.37		P	1.3
4	☐	10.000	10.668	217108.39		P	2.9
5	☐	100.000	101.286	2057252.93		P	2.5
6	☐	200.000	199.318	4047956.68		A	1.8
7	☐	1.000					

y = 20306.6385 * x + 476.6733
R = 1.0000
DL = 0.009838
BEC = 0.02347

Weight: <None>
Min Conc: <None>

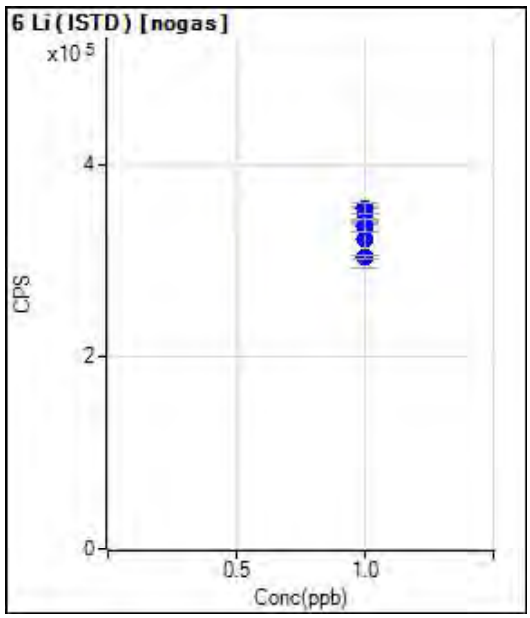
Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	0.000	0.000	243.34	0.0002	P	45.9
2	☐	2.000	2.274	40074.72	0.0350	P	24.2
3	☐	5.000	5.187	99988.38	0.0795	P	6.7
4	☐	10.000	11.062	206629.22	0.1694	P	1.9
5	☐	105.000	92.229	1818500.23	1.4111	A	11.5
6	☐	210.000	216.328	3929548.48	3.3096	A	0.8
7	☐	1.000					

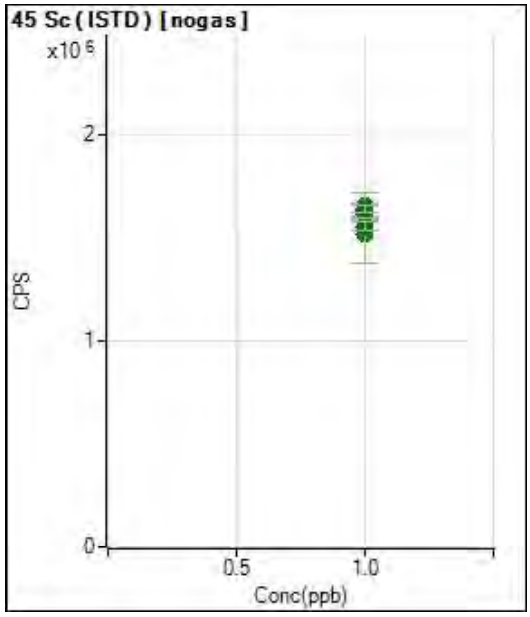
y = 0.0153 * x + 1.9523E-004
R = 0.9974
DL = 0.01757
BEC = 0.01276

Weight: <None>
Min Conc: <None>

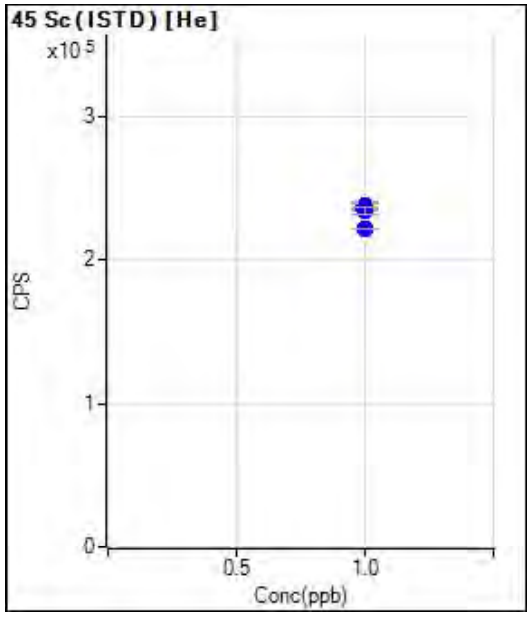


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		339172.61		P	0.8
2	☐	1.000		323319.91		P	19.1
3	☐	1.000		348136.86		P	4.8
4	☐	1.000		353841.64		P	3.1
5	☐	1.000		336354.51		P	3.9
6	☐	1.000		303199.30		P	1.3
7	☐	1.000					

Calibration for 149_ICV.d

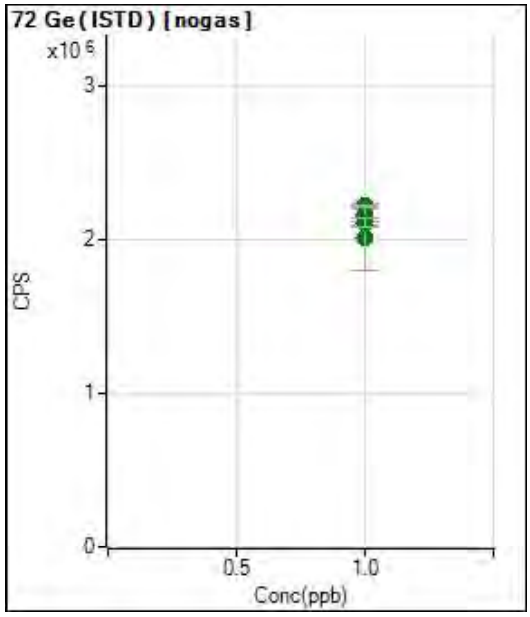


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1653942.27		A	8.1
2	☐	1.000		1518974.27		A	19.3
3	☐	1.000		1627468.93		A	3.4
4	☐	1.000		1609346.75		A	1.7
5	☐	1.000		1639953.57		A	2.3
6	☐	1.000		1553774.14		A	2.8
7	☐	1.000					

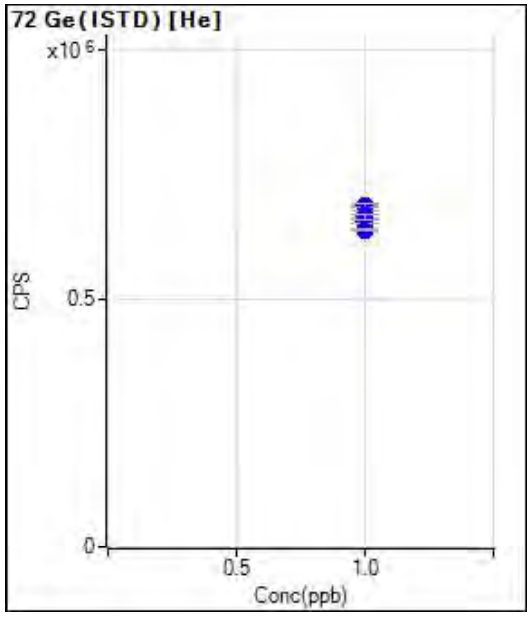


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		238025.68		P	1.8
2	☐	1.000		236692.95		P	4.0
3	☐	1.000		236675.48		P	2.2
4	☐	1.000		235853.40		P	1.4
5	☐	1.000		234349.29		P	1.9
6	☐	1.000		222106.99		P	0.4
7	☐	1.000					

Calibration for 149_ICV.d

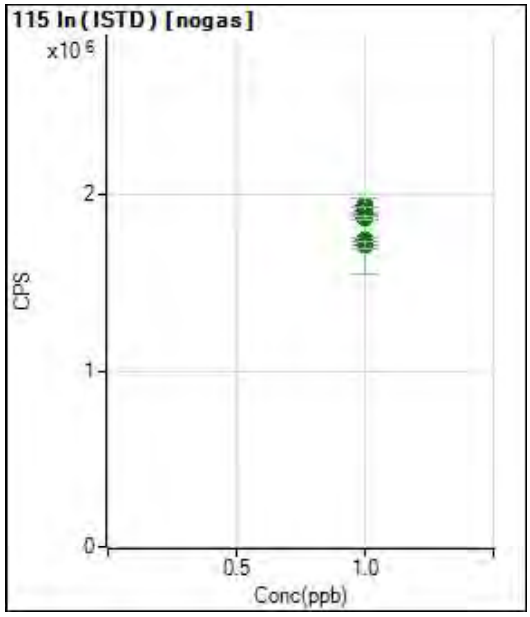


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		2156532.68		A	6.2
2	☐	1.000		2005433.98		A	21.0
3	☐	1.000		2218912.67		A	1.8
4	☐	1.000		2212064.97		A	1.4
5	☐	1.000		2164682.31		A	4.2
6	☐	1.000		2110220.02		A	2.6
7	☐	1.000					

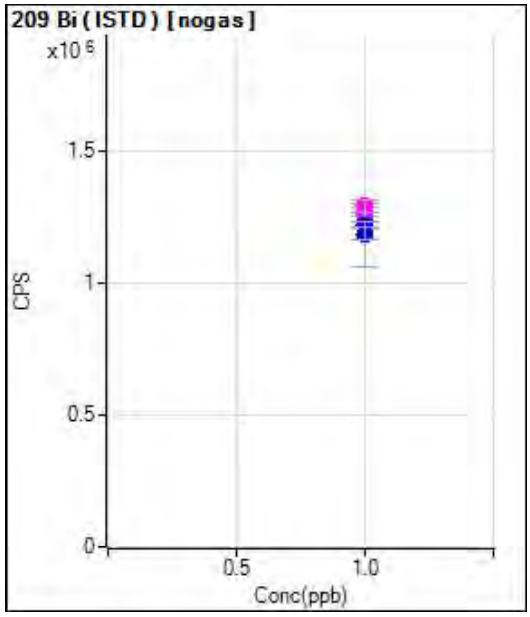


	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		678117.26		P	2.6
2	☐	1.000		655914.09		P	1.4
3	☐	1.000		686615.62		P	1.0
4	☐	1.000		669454.73		P	2.1
5	☐	1.000		665189.35		P	1.8
6	☐	1.000		638298.01		P	0.3
7	☐	1.000					

Calibration for 149_ICV.d



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1938279.43		A	4.2
2	☐	1.000		1745257.36		A	21.8
3	☐	1.000		1910901.38		A	2.1
4	☐	1.000		1871851.59		A	1.4
5	☐	1.000		1736681.42		A	2.8
6	☐	1.000		1719953.21		A	2.3
7	☐	1.000					



	Rjct	Conc.	Calc Conc.	CPS	Ratio	Det.	RSD
1	☐	1.000		1236024.25		P	3.3
2	☐	1.000		1183422.61		M	20.4
3	☐	1.000		1259615.09		M	4.5
4	☐	1.000		1219508.16		P	1.8
5	☐	1.000		1292360.27		M	3.8
6	☐	1.000		1187566.88		P	4.1
7	☐	1.000					

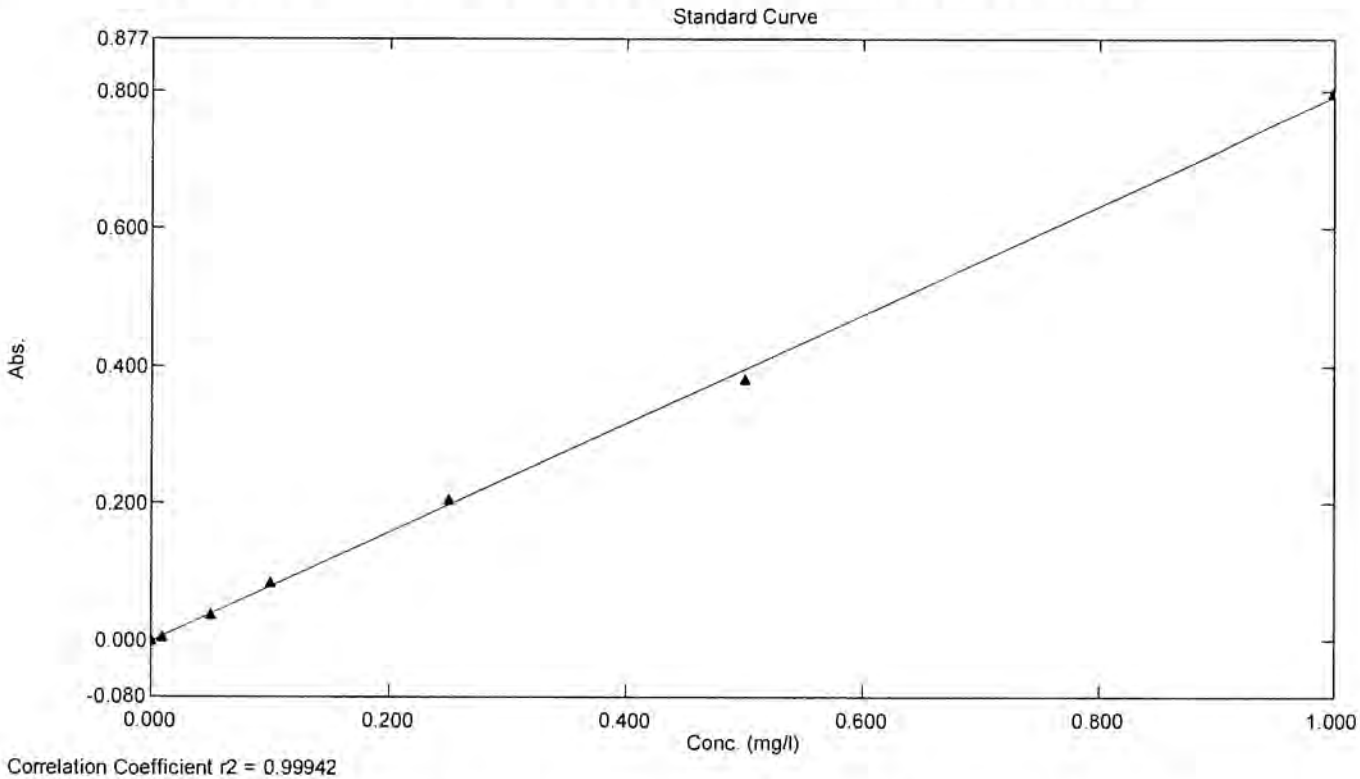
Wet Chemistry Raw Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT PLANT
ALS WO# HS18060308

Standard Table Report

06/27/2018 09:06:14 AM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\CR6+_UNKNOWN\180607_CR6_W.pho



Correlation Coefficient r2 = 0.99942

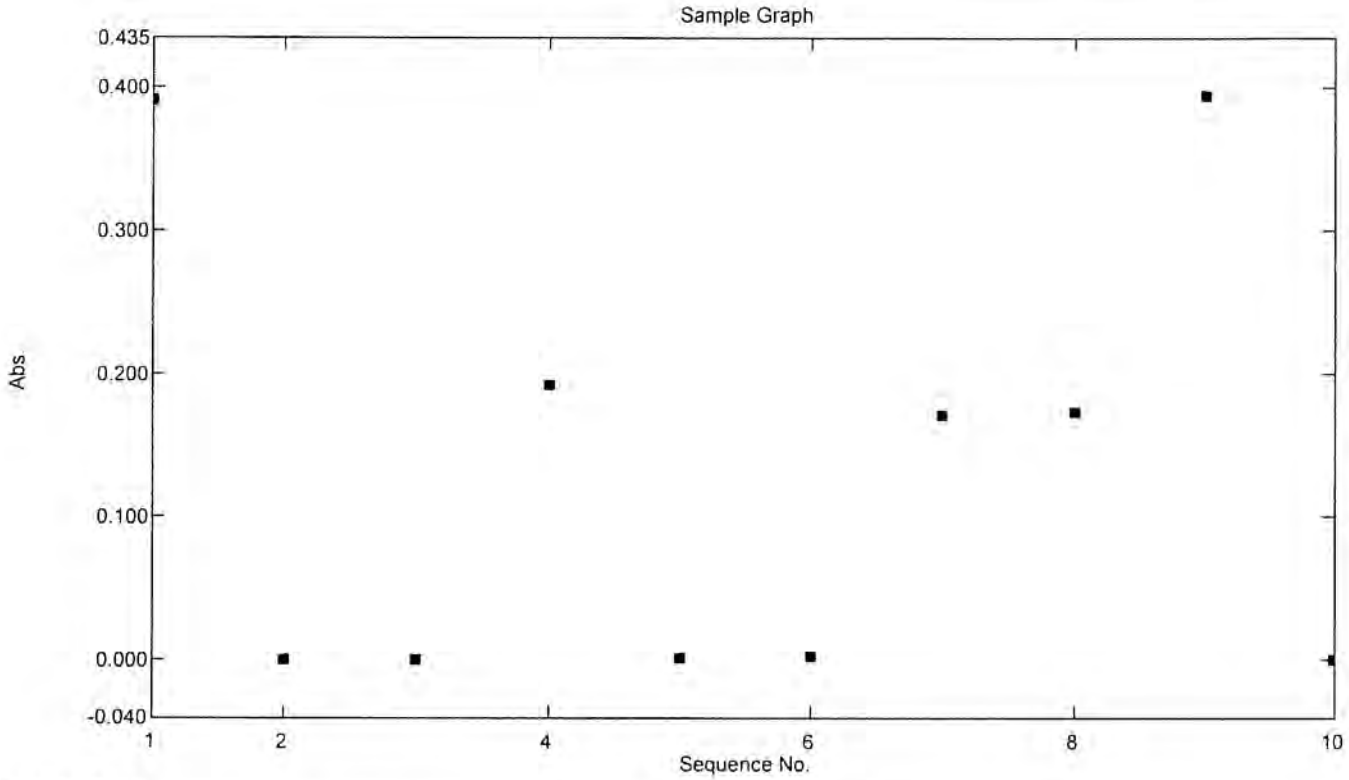
Standard Table

	Sample ID	Type	Ex	Conc	WL540.0	Wgt.Factor	Comments
1	STD1	Standard		0.000	0.000	1.000	
2	STD2	Standard		0.010	0.006	1.000	
3	STD3	Standard		0.050	0.038	1.000	
4	STD4	Standard		0.100	0.084	1.000	
5	STD5	Standard		0.250	0.204	1.000	
6	STD6	Standard		0.500	0.382	1.000	
7	STD7	Standard		1.000	0.797	1.000	
8							

Sample Table Report

06/27/2018 09:06:17 AM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\CR6+_UNKNOWN\180607_CR6_W.pho



Sample Table

	Sample ID	Type	Ex	Conc	WL540.0	Comments
1	CCV	Unknown		0.495	0.392	
2	CCB	Unknown		0.000	-0.000	
3	MBLK	Unknown		-0.000	-0.000	
4	LCS	Unknown		0.243	0.193	
5	18060306.01	Unknown		0.002	0.002	FILTER,11:55AM
6	18060308.01	Unknown		0.003	0.002	FILTER
7	18060308.01MS	Unknown		0.216	0.171	
8	18060308.01MSD	Unknown		0.220	0.174	
9	CCV2	Unknown		0.499	0.395	
10	CCB2	Unknown		0.000	0.000	
11						

Sub Contract Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT PLANT
ALS WO# HS18060308

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 1815740; 1815988; 1815991; 1815992; 1815993; 1816534

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2101 (216711)

General Set Information: There were fourteen field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: The following samples were analyzed and reported at various dilutions. 1815740001/1815988001-05/1815992001 - 1:1,000. 1815740002/05 – 1:100. 1815740003 – 10,000. Samples 1815991001/1815993001/1816534001 failed the 50-150% method requirement for ISTD recoveries. These samples were re-analyzed and reported from 1:5 dilutions. The reporting limits have been adjusted accordingly.

Method QC data: The method blank (LMB 605275) was less than 1/2 the CRDL. The recovery for the LCS (605276) was within acceptable parameters.

MS/MSD Analysis: The matrix spike and matrix spike duplicate (MS/MSD) was performed on samples 1815988004/05 (Client ID: MW8-060518). The parent sample and the MS/MSD were analyzed at 1:1,000 dilutions. The effective spike target was 5,000.µg/L. The Matrix Spike and duplicate (MS/MSD) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected. The MS/MSD relative percent difference (RPD) was within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1. Manual Integrations was performed for datafiles 14JUND18/19/21-23/33/35/36 and 15JUND03/05.

Thomas Bosch June 18, 2018
Analyst Date

ANALYTICAL REPORT

Report Date: June 18, 2018

RJ Masahisa
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-1815992**
Project ID: HS18060308 060618
Purchase Order: HS18060308
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
LH18/24-SP140_060618	1815992001	06/06/18	06/08/18	

ANALYTICAL REPORT

Workorder: 34-1815992
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **LH18/24-SP140_060618**	Sampling Site: NA	Collected: 06/06/2018
Lab ID: 1815992001	Media: 125 mL Nalgene	Received: 06/08/2018
Matrix: Water	Sampling Parameter: NA	

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable	**Analysis:** EPA 6850, DoD QSM Water	**Instrument ID:** LCMS04
	Batch: ELMS/2101 (HBN: 216711)	**Percent Solid:** NA
	Analyzed: 06/14/2018 19:08	**Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	**21000**	1000	2000	4000	1000	

Comments

Workorder: 1815992

Sample 1815992001 was analyzed and reported from a 1:1,000 dilution. The reporting limit has been adjusted accordingly.

Quality Control: EPA 6850, DoD QSM - (HBN: 216711)

The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 06/17/2018 13:08	/S/ Stephen Brose 06/18/2018 15:12

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

ANALYTICAL REPORT

Workorder: 34-1815992
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body	Certificate Number	Website
Environmental	PJLA (DoD ELAP)		
	Utah (TNI)		
	Nevada		
	Oklahoma		
	Iowa		

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< This testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 1815992

Limits: Client SOW/Contract Specified
Basis: DoD QSM
Preparation: NA
Batch: NA
Prepared By: NA
Analysis: EPA 6850
Batch: ELMS/2101 (HBN: 216711)
Analyzed By: Thomas Bosch

Blank

LMB: 605275
Analyzed: 06/14/2018 12:28
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 605276
Analyzed: 06/14/2018 12:42
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	5.26	5.00	105	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

Sample: 1815988001
Analyzed: 06/14/2018 17:13
Dilution: 1000
Units: ug/L

MS: 1815988004
Analyzed: 06/14/2018 18:25
Dilution: 1000
Units: ug/L

MSD: 1815988005
Analyzed: 06/14/2018 18:39
Dilution: 1000
Units: ug/L

Analyte	Sample Result	MS Result	Target	% Rec	QC Limits		MSD Result	% Rec	RPD	QC Limits	
Perchlorate	8800	16400	5000 #	152	78.8	123.8	16400 #	152	0.018	0.0	20.0

Continuing Calibration Verification

CCV: 605272
Analyzed: 06/14/2018 11:45
Units: ug/L
Criteria: ± 15%

CCV: 605277
Analyzed: 06/14/2018 17:27
Units: ug/L
Criteria: ± 15%

CCV: 605342
Analyzed: 06/14/2018 20:33
Units: ug/L
Criteria: ± 15%

Analyte	Result	Target	% Rec.	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	25.7	25.0	103	28.0	25.0	112	27.9	25.0	112

CCV: 605457
Analyzed: 06/15/2018 10:37
Units: ug/L
Criteria: ± 15%

CCV: 605459
Analyzed: 06/15/2018 12:03
Units: ug/L
Criteria: ± 15%

Analyte	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	27.6	25.0	110	27.9	25.0	112

Interference Check Sample

ICSA: 605274
Analyzed: 06/14/2018 13:13
Units: ug/L
Criteria: ± 30%

Analyte	Result	Target	% Rec.
Perchlorate	1.09	1.00	109

Quality Control Sample Batch Report

Analysis Information

Workorder: 1815992

Limits:	Client SOW/Contract Specified	**Preparation:**	NA
Basis:	DoD QSM	**Batch:**	NA
		Prepared By:	NA
Analysis:	EPA 6850		
Batch:	ELMS/2101 (HBN: 216711)		
Analyzed By:	Thomas Bosch		

Limit of Detection Verification

LODV: 605273 Analyzed: 06/14/2018 11:59 Units: ug/L Criteria: ± 50%				LODV: 605278 Analyzed: 06/14/2018 17:56 Units: ug/L Criteria: ± 50%			LODV: 605343 Analyzed: 06/14/2018 20:48 Units: ug/L Criteria: ± 50%		
Analyte	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**
Perchlorate	1.03	1.00	103	1.18	1.00	118	1.20	1.00	120

LODV: 605458 Analyzed: 06/15/2018 10:51 Units: ug/L Criteria: ± 50%				LODV: 605460 Analyzed: 06/15/2018 12:17 Units: ug/L Criteria: ± 50%		
Analyte	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**
Perchlorate	0.895	1.00	89.5	0.868	1.00	86.8

Comments

The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
06/17/2018 13:08	06/18/2018 15:12

Symbols and Definitions

* - Analyte above reporting limit or outside of control limits
▲ - Sample result is greater than 4 times the spike added
◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
● - Result is above the calibration range
- The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

18693/#2

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

1815992

Subcontract Chain of Custody

COC ID: 9241

1815992

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS18060308
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS18060308-01**	**LH18/24-SP140_060618**	**Water**	**06 Jun 2018 14:00**
	SUB_Perch-6850			15 Jun 2018

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 6/7/18 1800.

Received By: Jennifer Jessee Date/Time: 06-08-18 9:40

Cooler ID(s): _____ Temperature(s): _____

ALS-Salt Lake City-Related Information Report (CRIR)

Cooler or Container Information Checklist (Fill In or Circle)

Client Name: ALS Houston

Project/Task/Site: 18159992

Date/Time of Receipt: 06-08-18 9:40

Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.
1	C18 8593	3 °C	4	C18	°C	7	C18	°C
2	C18	°C	5	C18	°C	8	C18	°C
3	C18	°C	6	C18	°C	9	C18	°C

Taken By: Tanu VanTassell (Signature) Tanu VanTassell (Printed Name) 06-08-18 (Date)

Client-Related Information

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

Briefly Describe the Problem and the Action Taken:

NO Paperwork
TV 06-08-18

Client Notified? Yes ☐ No ☐

Response Required Within 24 Hours

Project Management

Project Manager Comments:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

ORIGIN ID:SGRA (281) 530-5656
CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 07JUN18
ACTWGT: 17.30 LB
CAD: 3001 3D/CAFE3111
DIMS: 14x11x10 IN.

BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS18060281/306/08/10/52-RJ

FedEx Express

FRI - 08 JUN 3:00P
STANDARD OVERNIGHT

TRK# 0201 4380 9529 8878

AX BTFA

84123
UT-US SLC

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS18060308	Split:	Workorder ID: 1815992	Level: ENV_LVL4	Requested Analysis
Client: ALS Environmental (Houston)		Account: 8101	Type: 125Poly	
Comments:			Preservatives	

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	COOL	EPA 6850, DoD QSM
1	06/06/2018 14:00	LH18/24-SP140_060618	1815992001		Water	A	1		A
2									
3									
4									
5									
6									
7									
8									
9									
10									

387 of 525

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	06/08/2018 09:40	ALS Sample Receiving	Sample Login
Julie Warath 6/8/18 1400		15C	storage
R.33.1	6.14.18/12:50	T.Bash	6850

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

Batch Worklist

Batch: ELMS/ 2101
Rule: EPA 6850, DoD QSM Water
Created: 6/14/2018 08:55
Analyst: T. Bosch
Instrument: LCMS04
Status: WP
HBN: 216711

Workorder: 1815740 [ENV_LVL4]
Workorder: 1815988 [ENV_LVL4]
Workorder: 1815991 [ENV_LVL4]
Workorder: 1815992 [ENV_LVL4]
Workorder: 1815993 [ENV_LVL4]
Workorder: 1816534 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	605272	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
2	605273	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
3	605275	LMB for HBN 216711 [ELMS/2101]				LMB	3		E6850Q413Q	5311		6/19/2018	6/14/2018
4	605276	LCS for HBN 216711 [ELMS/2101]				LCS	3		E6850Q413Q	5311		6/19/2018	6/14/2018
5	1815740001	MW5_060418				SAMPLE	3	1815740001-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
6	605274	ICS for HBN 216711 [ELMS/2101]				ICS	3		E6850..D3Q	5311		6/19/2018	6/14/2018
7	1815740004	18CPTMW23SW-060418				SAMPLE	3	1815740004-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
8	1815740006	18WW24_060418				SAMPLE	3	1815740006-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
9	1815740007	18WW25_060418				SAMPLE	3	1815740007-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
10	1815988002	MW21_060518				SAMPLE	3	1815988002-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
11	1815988003	MW21_060518-a				SAMPLE	3	1815988003-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
12	1815988001	MW8_060518				SAMPLE	3	1815988001-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
13	605277	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
14	605278	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
15	1815988004	MW8_060518MS				MS	3	1815988004-A	E6850Q413Q	5480		6/19/2018	6/14/2018
16	1815988005	MW8_060518MSD				MSD	3	1815988005-A	E6850Q413Q	5480		6/19/2018	6/14/2018
17	1815992001	LH18/24-SP140_060618				SAMPLE	3	1815992001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/14/2018
18	1815740002	18CPTMW08DW-060418				SAMPLE	3	1815740002-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
19	1815740003	18CPTMW08SW-060418				SAMPLE	3	1815740003-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
20	1815740005	18CPTMW23-060418				SAMPLE	3	1815740005-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
21	605342	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
22	605343	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
23	605457	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/15/2018
24	605458	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/15/2018

Batch Worklist

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
25	1815991001	LH18/24-SP650_060618				SAMPLE	3	1815991001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/15/2018
26	1815993001	LH18/24-SP650_060618				SAMPLE	3	1815993001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/15/2018
27	1816534001	LH18/24-SP650_061218				SAMPLE	3	1816534001-A	E6850Q41.3	5480	7/10/2018	6/15/2018	6/15/2018
28	605459	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/15/2018
29	605460	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/15/2018

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

ALS Work Order #'s & Sample #( )'s: 1815740 (001-07); 1815988 (001-05); 1815991 (001); 1815992 (001); 1815993 (001); 1816534 (001) ELMS Batch/HBN ID: 2101 (216711)
Prep Date: 06/14/2018 Analysis Date: 06/14,15/2018 Analyst: T. Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2018\JUN\14JUN18D.s & 15JUN18D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by TNB. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/ 5% ACN (B&J Lot DI735)/0.1% glacial acetic acid (JT-Baker Lot 04802).
Eluent B1: 95% ACN (B&J Lot DI735)/ 5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 04802).

STANDARDS: Internal Standard Spiking Solution Horizon# 41827. Dilutions of Working Standard Solution ID 41829 used for CCV's, LODV's, RLVS and IPC.

CALIBRATION CURVE: Used curve from 06/14/2018, sequence 14JU18D.s Offline Quantitation Method: CLO4-DPR.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-DOD.M Fragmentor: 160 Output Gain: 3 Injection Volume: 25µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.80
4.0	0.80
5.0	0.25
10.0	0.25
10.5	0.80
13.0	0.80

QC DATA: 5.0µL of QC Solution Horizon ID 41830 was used for LCS 605276; Target = 5.0µg/L. ASTM type II water was used for LMB 605275.

MS/MSD: MS/MSD was performed on samples 1815988004/05 (Client ID: MW8_060518). 5.0µl of Working Standard Solution Horizon ID 41828 was added to 10.0mL of sample preparation. Spike target = 5.0µg/L. The parent sample and the MS/MSD were analyzed at 1:1,000 dilutions. The effective spike target was 5,000.µg/L.

COMMENTS:

1) Results reported in µg/L. The following samples were analyzed and reported at various dilutions. 1815740001/1815988001-05/1815992001 - 1:1,000. 1815740002/05 – 1:100. 1815740003 – 10,000. Samples 1815991001/1815993001/1816534001 failed the 50-150% method requirement for ISTD recoveries. These samples were re-analyzed and reported from 1:5 dilutions. The reporting limits have been adjusted accordingly.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters, except for the following. The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2018\JUN\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations was performed for datafiles 14JUND18/19/21-23/33/35/36 and 15JUND03/05.
5) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2018\216711-DOD-ALS-HSTN-LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK	Description - 6850 WKG Std 100.ug/L

Standard: 41829
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
41828	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	10/04/2018

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK	Description - 6850 Stock AccStd 1,000ug/mL

Standard: 36733
MFG: AccuStandard
MFG Lot: 216095148
Part ID: IC-PER-10X-1

Created By: Thomas Bosch
Create Date: 05/10/2017 11:05AM

Amount: 100 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 41828
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36733	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	10/04/2018

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		Description - ASTM Type II Water
Standard: 109	Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House	Create Date: 10/06/2005 09:10AM	Expires: 11/07/2025
MFG Lot: Not Provided		Usable: Yes
Part ID: Not Provided		Lab Lot: LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 41827	Created By: Thomas Bosch	Amount: 10 mL
MFG: ALS/SLC	Create Date: 05/09/2018 10:05AM	Expires: 05/09/2019
MFG Lot: TNB: 05/09/2018	Verified By: Thomas Bosch	Usable: Yes
Pipette ID: Not Provided	Verify Date:	Lab Lot: CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
23118	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.1 mL	02/27/2024

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 23118	Created By: Thomas Bosch	Amount: 1 mL
MFG: Cambridge Isotope	Create Date: 04/04/2014 03:04PM	Expires: 02/27/2024
MFG Lot: SDDG-013	Verified By: Thomas Bosch	Usable: Yes
Part ID: OLM-7310-S	Verify Date: 02/05/2009 12:02AM	Lab Lot: CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK		Description - 6850 QC WKG STD 100ug/L
Standard: 41831	**Created By:** Thomas Bosch	**Amount:** 10 mL
MFG: ALS/SLC	**Create Date:** 05/09/2018 10:05AM	**Expires:** 05/09/2019
MFG Lot: TNB: 05/09/2018		**Usable:** Yes
Pipette ID: Not Provided		**Lab Lot:** CLO4 QC WRK 100.ug/L

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
41830	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	05/09/2019

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT	Description - 6850 QC Intrmdt Std-QC 10ug/mL

Standard:	41830	Created By: Thomas Bosch	Amount: 10 mL
MFG:	ALS/SLC	Create Date: 05/09/2018 10:05AM	Expires: 05/09/2019
MFG Lot:	TNB: 05/09/2018		Usable: Yes
Pipette ID:	Not Provided		Lab Lot: CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			Description - ASTM Type II Water
Standard: 109		Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House		Create Date: 10/06/2005 09:10AM	Expires: 11/07/2025
MFG Lot: Not Provided			Usable: Yes
Part ID: Not Provided			Lab Lot: LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK	Description - 6850 QC Stock STD 1,000ug/mL

Standard: 36748
MFG: Ultra Scientific
MFG Lot: CP-0860
Part ID: ICC-013

Created By: Thomas Bosch
Create Date: 05/11/2017 01:05PM

Amount: 100 mL
Expires: 03/31/2020
Usable: Yes
Lab Lot: CLO4 QC STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER
ANAB ACCREDITED TESTING LABORATORY

ALS

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

125 Market Street
New Haven, CT 06513
USA

AccuStandard® Inc.

Tel (203)786-5290
Fax (203)786-5287
www.AccuStandard.com

CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 216095148
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Signal Word: Warning

Date Certified: Oct 4, 2016
Expiration: Oct 4, 2018
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)
Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.2%. See reverse side for details.
The final solution was checked against an independent standard to verify its concentration.
We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.
All solutions are filtered through a 0.2 µm filter prior to being bottled.
All glassware used in preparation is Class A and calibrated regularly.
All weights are traceable through NIST, Test No. 822-275872-11
All bottles are triple rinsed with deionized water prior to use.
Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.
We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

Cambridge Isotope Laboratories, Inc. Certificate of Analysis

Quality Standards:
ISO Guide 34 • ISO/IEC 17025 • ISO 13485 • cGMP

23118

Product Name: (Isotopic Label & Enrichment Specification)	PERCHLORIC ACID, SODIUM SALT (18O4, 90%+) 100 UG/ML IN WATER
Lot Number:	SDDG-013
Catalog Number:	OLM-7310-S

Product Information

Chemical Purity Specification:	≥98%
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
MW*:	130.4
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

* *For isotopically labeled compounds, MW listed is for the fully enriched product.*

Approved by: T. J. Eckersley

Timothy J. Eckersley, Ph.D., Quality Assurance

Quality Control Tests and Results

QC Release Date	2/27/2014
Expiration Date	2/27/2024
Concentration Based on Gravimetry	102 µg/mL
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	109.4 ± 2.8 µg/mL (k=2)

ALS 50 Frontage Road, Andover, MA 01810-5413, USA • 1.800.322.1174 (North America) • 1.978.749.8000 (International) • isotope.com

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

00903071

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DPR.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorate RT	Perchlorate Amount
*	605272 CCV@25	Vial 75	1	Control	9	8.55224e5	10.105	25.69705
*	605273 LODV@1.	Vial 71	1	Control	10	4.09897e4	10.131	1.03151
*	605275 LMB	Vial 82	1	Control	12	0.00000	0.000	0.00000
*	605276 QC@5.0	Vial 83	1	Control	13	1.55938e5	10.234	5.25713
*	1815740001 1K	Vial 84	1	Sample	14	1.18171e6	10.224	4.09928e4
*	605274 ICS@1.0	Vial 81	1	Control	15	3.18741e4	10.039	1.08841
*	1815740002 1K	Vial 85	1	Sample	16	2.60255e4	10.232	1043.13319 RE
*	1815740003 10	Vial 86	1	Sample	17	1.10286e8	9.113	1.03926e4 RE
*	1815740004	Vial 87	1	Sample	18	6529.78760	10.005	3.41870e-1
*	1815740005	Vial 88	1	Sample	19	1.56102e8	8.623	1362.60207
*	Rinse	Vial 61	1	Sample	20	0.00000	0.000	0.00000
*	1815740006	Vial 89	1	Sample	21	1.49510e4	9.751	7.36417e-1
*	1815740007	Vial 90	1	Sample	22	5925.78320	9.939	3.37296e-1
*	1815988001	Vial 91	1	Sample	23	2.18628e8	8.116	1751.68923 DIL
*	1815988002 1K	Vial 92	1	Sample	24	8.50046e5	10.190	3.47744e4
*	1815988003 1K	Vial 93	1	Sample	25	9.54516e5	10.157	3.56346e4
*	1815988001 1K	Vial 91	1	Sample	26	2.33271e5	10.219	8833.18769
*	605277 CCV@25	Vial 75	1	Control	27	9.92094e5	10.080	28.04713
*	Rinse	Vial 61	1	Sample	28	0.00000	0.000	0.00000
*	605278 LODV@1.	Vial 71	1	Control	29	5.04056e4	10.092	1.18278
*	1815988004 MS	Vial 94	1	Sample	31	4.48410e5	10.188	1.64276e4
*	1815988005 MSD	Vial 95	1	Sample	32	4.50870e5	10.180	1.64311e4
*	ISTD 1815991001	Vial 96	1	Sample	33	0.00000	0.000	0.00000
*	1815992001 1K	Vial 97	1	Sample	34	5.79001e5	10.172	2.14202e4
	ISTD 1815993001	Vial 98	1	Sample	35	0.00000	0.000	0.00000
	ISTD 1816534001	Vial 99	1	Sample	36	1.05110e4	10.534	9.33633e-1
*	1815740002 100	Vial 51	1	Sample	37	2.67605e5	10.157	1017.20503
*	1815740003 10K	Vial 52	1	Sample	38	1.54877e5	10.186	6.09144e4
*	1815740005 100	Vial 53	1	Sample	39	1.69849e6	10.181	5684.04705
*	605342 CCV@25	Vial 75	1	Control	40	1.02581e6	10.083	27.89464
*	605343 LODV@1.	Vial 71	1	Control	41	5.21515e4	10.112	1.19702

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	605272 CCV@25	Vial 75	1	Control	9	2.90705e5	10.120	25.40469
*	605273 LODV@1.	Vial 71	1	Control	10	1.53637e4	10.143	8.94117e-1
*	605275 LMB	Vial 82	1	Control	12	0.00000	0.000	0.00000
*	605276 QC@5.0	Vial 83	1	Control	13	5.40567e4	10.252	5.12372
*	1815740001 1K	Vial 84	1	Sample	14	3.87842e5	10.241	3.93454e4
*	605274 ICS@1.0	Vial 81	1	Control	15	1.21188e4	10.051	9.73548e-1
*	1815740002 1K	Vial 85	1	Sample	16	1.07181e4	10.247	1016.14295
*	1815740003 10	Vial 86	1	Sample	17	3.87280e7	9.125	1.03585e4
*	1815740004	Vial 87	1	Sample	18	3253.03320	10.056	2.43152e-1
*	1815740005	Vial 88	1	Sample	19	5.50165e7	8.637	1359.43683
*	Rinse	Vial 61	1	Sample	20	0.00000	0.000	0.00000
*	1815740006	Vial 89	1	Sample	21	5399.54053	9.748	5.40253e-1
*	1815740007	Vial 90	1	Sample	22	1718.94263	9.940	5.26885e-2
*	1815988001	Vial 91	1	Sample	23	7.75233e7	8.128	1751.91213
*	1815988002 1K	Vial 92	1	Sample	24	2.82340e5	10.205	3.37112e4
*	1815988003 1K	Vial 93	1	Sample	25	3.13550e5	10.173	3.42054e4
*	1815988001 1K	Vial 91	1	Sample	26	7.81706e4	10.235	8476.14226
*	605277 CCV@25	Vial 75	1	Control	27	3.19001e5	10.094	26.35441
*	Rinse	Vial 61	1	Sample	28	0.00000	0.000	0.00000
*	605278 LODV@1.	Vial 71	1	Control	29	1.79565e4	10.102	9.98650e-1
*	1815988004 MS	Vial 94	1	Sample	31	1.46772e5	10.204	1.56002e4
*	1815988005 MSD	Vial 95	1	Sample	32	1.50110e5	10.195	1.58603e4
*	1815991001	Vial 96	1	Sample	33	0.00000	0.000	0.00000
*	1815992001 1K	Vial 97	1	Sample	34	1.91018e5	10.189	2.05623e4
*	1815993001	Vial 98	1	Sample	35	0.00000	0.000	0.00000
*	1816534001	Vial 99	1	Sample	36	4480.61572	10.555	9.21425e-1

00903072

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	1815740002 100	Vial 51	1	Sample	37	9.22799e4	10.173	1007.57992
*	1815740003 10K	Vial 52	1	Sample	38	5.38004e4	10.201	5.98654e4
*	1815740005 100	Vial 53	1	Sample	39	5.52737e5	10.197	5422.11462
*	605342 CCV@25	Vial 75	1	Control	40	3.32463e5	10.100	26.40234
*	605343 LODV@1.	Vial 71	1	Control	41	1.97290e4	10.138	1.08864

#	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-ISTD RT	CLO4-89-ISTD Amount
*	605272 CCV@25	Vial 75	1	Control	9	1.61026e5	10.125	5.00000
*	605273 LODV@1.	Vial 71	1	Control	10	2.16437e5	10.152	5.00000
*	605275 LMB	Vial 82	1	Control	12	1.36891e5	10.195	5.00000
*	605276 QC@5.0	Vial 83	1	Control	13	1.54534e5	10.260	5.00000
*	1815740001 1K	Vial 84	1	Sample	14	1.32839e5	10.247	5000.00000
*	605274 ICS@1.0	Vial 81	1	Control	15	1.59161e5	10.060	5.00000
*	1815740002 1K	Vial 85	1	Sample	16	1.35828e5	10.253	5000.00000
*	1815740003 10	Vial 86	1	Sample	17	1.19985e5	9.117	50.00000
*	1815740004	Vial 87	1	Sample	18	1.12834e5	10.023	5.00000
*	1815740005	Vial 88	1	Sample	19	1.04092e5	8.621	5.00000
*	Rinse	Vial 61	1	Sample	20	0.00000	0.000	0.00000
*	1815740006	Vial 89	1	Sample	21	1.12386e5	9.760	5.00000
*	1815740007	Vial 90	1	Sample	22	1.03960e5	9.934	5.00000
*	1815988001	Vial 91	1	Sample	23	9.17279e4	8.121	5.00000
*	1815988002 1K	Vial 92	1	Sample	24	1.14860e5	10.214	5000.00000
*	1815988003 1K	Vial 93	1	Sample	25	1.25521e5	10.179	5000.00000
*	1815988001 1K	Vial 91	1	Sample	26	1.35510e5	10.243	5000.00000
*	605277 CCV@25	Vial 75	1	Control	27	1.69835e5	10.101	5.00000
*	Rinse	Vial 61	1	Sample	28	0.00000	0.000	0.00000
*	605278 LODV@1.	Vial 71	1	Control	29	2.30884e5	10.116	5.00000
*	1815988004 MS	Vial 94	1	Sample	31	1.36256e5	10.210	5000.00000
*	1815988005 MSD	Vial 95	1	Sample	32	1.36973e5	10.201	5000.00000
*	1815991001	Vial 96	1	Sample	33	6.10489e4 LOW RE	10.523	5.00000
*	1815992001 1K	Vial 97	1	Sample	34	1.32654e5	10.196	5000.00000
*	1815993001	Vial 98	1	Sample	35	5.38219e4 LOW RE	10.527	5.00000
*	1816534001	Vial 99	1	Sample	36	6.15829e4 LOW RE	10.575	5.00000
*	1815740002 100	Vial 51	1	Sample	37	1.34304e5	10.180	500.00000
*	1815740003 10K	Vial 52	1	Sample	38	1.31951e5	10.207	5.00000e4
*	1815740005 100	Vial 53	1	Sample	39	1.31262e5	10.204	500.00000
*	605342 CCV@25	Vial 75	1	Control	40	1.76655e5	10.104	5.00000
*	605343 LODV@1.	Vial 71	1	Control	41	2.35935e5	10.139	5.00000

*** End of Report ***

Batch Report: C:\HPCHEM\1\DATA\15JUN18D\15JUN18D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DPR.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorate RT	Perchlorate Amount
*	605457	CCV@25	Vial 41	1	Control	1	1.09236e6	10.028	27.56422
*	605458	LODV@1.	Vial 42	1	Control	2	2.57546e4	10.186	8.94736e-1
*	1815991001	5X	Vial 43	1	Sample	3	3890.35474	10.383	1.18265
*	1815993001	5X	Vial 44	1	Sample	4	0.00000	0.000	0.00000
*	1816534001	5X	Vial 45	1	Sample	5	5786.55127	10.436	1.57816
*	605459	CCV@25	Vial 41	1	Control	6	1.07976e6	10.064	27.91581
*	605460	LODV@1.	Vial 42	1	Control	7	2.40912e4	10.209	8.67516e-1

#*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	605457	CCV@25	Vial 41	1	Control	1	3.57588e5	10.042	26.32920
*	605458	LODV@1.	Vial 42	1	Control	2	9290.92578	10.207	7.07705e-1
*	1815991001	5X	Vial 43	1	Sample	3	1978.09058	10.407	4.73045e-1
*	1815993001	5X	Vial 44	1	Sample	4	0.00000	0.000	0.00000
*	1816534001	5X	Vial 45	1	Sample	5	2493.53687	10.447	7.47861e-1
*	605459	CCV@25	Vial 41	1	Control	6	3.49017e5	10.081	26.35761
*	605460	LODV@1.	Vial 42	1	Control	7	9372.82715	10.231	7.47793e-1

#*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-ISTD RT	CLO4-89-ISTD Amount
*	605457	CCV@25	Vial 41	1	Control	1	1.90575e5	10.043	5.00000
*	605458	LODV@1.	Vial 42	1	Control	2	1.57761e5	10.209	5.00000
*	1815991001	5X	Vial 43	1	Sample	3	1.02815e5	10.409	25.00000
*	1815993001	5X	Vial 44	1	Sample	4	1.18351e5	10.398	25.00000
*	1816534001	5X	Vial 45	1	Sample	5	1.09429e5	10.457	25.00000
*	605459	CCV@25	Vial 41	1	Control	6	1.85791e5	10.087	5.00000
*	605460	LODV@1.	Vial 42	1	Control	7	1.52425e5	10.232	5.00000

*** End of Report ***

Sequence Table:

Method and Injection Info Part:

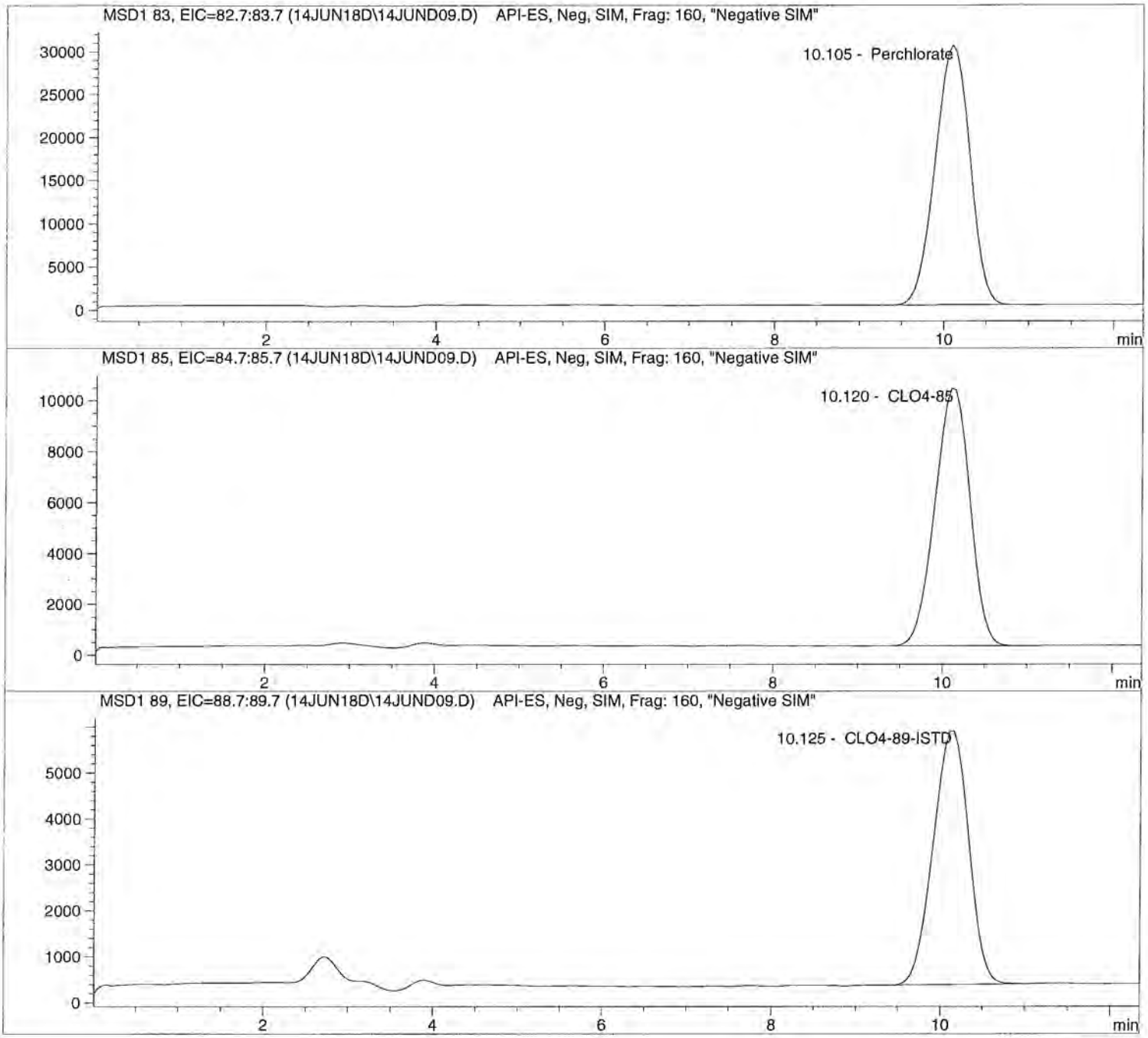
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	ICAL1@ 1.0ug/L	CLO4-DOD	1	Ctrl Samp		
2	Vial 72	ICAL2@ 2.0ug/L	CLO4-DOD	1	Ctrl Samp		
3	Vial 73	ICAL3@ 5.0ug/L	CLO4-DOD	1	Ctrl Samp		
4	Vial 74	ICAL4@ 10.ug/L	CLO4-DOD	1	Ctrl Samp		
5	Vial 75	ICAL5@ 25.ug/L	CLO4-DOD	1	Ctrl Samp		
6	Vial 76	ICAL6@ 50.ug/L	CLO4-DOD	1	Ctrl Samp		
7	Vial 77	ICAL7@ 75.ug/L	CLO4-DOD	1	Ctrl Samp		
8	Vial 78	ICAL Verf@10ug/L	CLO4-DOD	1	Ctrl Samp		
9	Vial 75	605272 CCV@25	CLO4-DOD	1	Ctrl Samp		
10	Vial 71	605273 LODV@1.	CLO4-DOD	1	Ctrl Samp		
11	Vial 81	605274 ICS@1.0	CLO4-DOD	1	Ctrl Samp		
12	Vial 82	605275 LMB	CLO4-DOD	1	Ctrl Samp		
13	Vial 83	605276 QC@5.0	CLO4-DOD	1	Ctrl Samp		
14	Vial 84	1815740001 1K	CLO4-DOD	1	Sample		
15	Vial 81	605274 ICS@1.0	CLO4-DOD	1	Ctrl Samp		
16	Vial 85	1815740002 1K	CLO4-DOD	1	Sample		
17	Vial 86	1815740003 10	CLO4-DOD	1	Sample		
18	Vial 87	1815740004	CLO4-DOD	1	Sample		
19	Vial 88	1815740005	CLO4-DOD	1	Sample		
20	Vial 61	Rinse	CLO4-DOD	1	Sample	50	
21	Vial 89	1815740006	CLO4-DOD	1	Sample		
22	Vial 90	1815740007	CLO4-DOD	1	Sample		
23	Vial 91	1815988001	CLO4-DOD	1	Sample		
24	Vial 92	1815988002 1K	CLO4-DOD	1	Sample		
25	Vial 93	1815988003 1K	CLO4-DOD	1	Sample		
26	Vial 91	1815988001 1K	CLO4-DOD	1	Sample		
27	Vial 75	605277 CCV@25	CLO4-DOD	1	Ctrl Samp		
28	Vial 61	Rinse	CLO4-DOD	1	Sample	50	
29	Vial 71	605278 LODV@1.	CLO4-DOD	1	Ctrl Samp		
30	Vial 62	605278 LODV@1.	CLO4-DOD	1	Ctrl Samp		
31	Vial 94	1815988004 MS	CLO4-DOD	1	Sample		
32	Vial 95	1815988005 MSD	CLO4-DOD	1	Sample		
33	Vial 96	1815991001	CLO4-DOD	1	Sample		
34	Vial 97	1815992001 1K	CLO4-DOD	1	Sample		
35	Vial 98	1815993001	CLO4-DOD	1	Sample		
36	Vial 99	1816534001	CLO4-DOD	1	Sample		
37	Vial 51	1815740002 100	CLO4-DOD	1	Sample		
38	Vial 52	1815740003 10K	CLO4-DOD	1	Sample		
39	Vial 53	1815740005 100	CLO4-DOD	1	Sample		
40	Vial 75	605342 CCV@25	CLO4-DOD	1	Ctrl Samp		
41	Vial 71	605343 LODV@1.	CLO4-DOD	1	Ctrl Samp		
42	Vial 62	605343 LODV@1.	CLO4-DOD	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND09.D Sample Name: 605272 CCV@25

Injection Date:	6/14/2018 11:45:33	Seq Line:	9
Sample Name:	605272 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND09.D Sample Name: 605272 CCV@25

Injection Date:	6/14/2018 11:45:33	Seq Line:	9
Sample Name:	605272 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.105	PBA	855223.9	25.6971	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.120	BBA	290705.0	25.4047	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.125	PBA	161025.8	5.0000	CLO4-89-ISTD

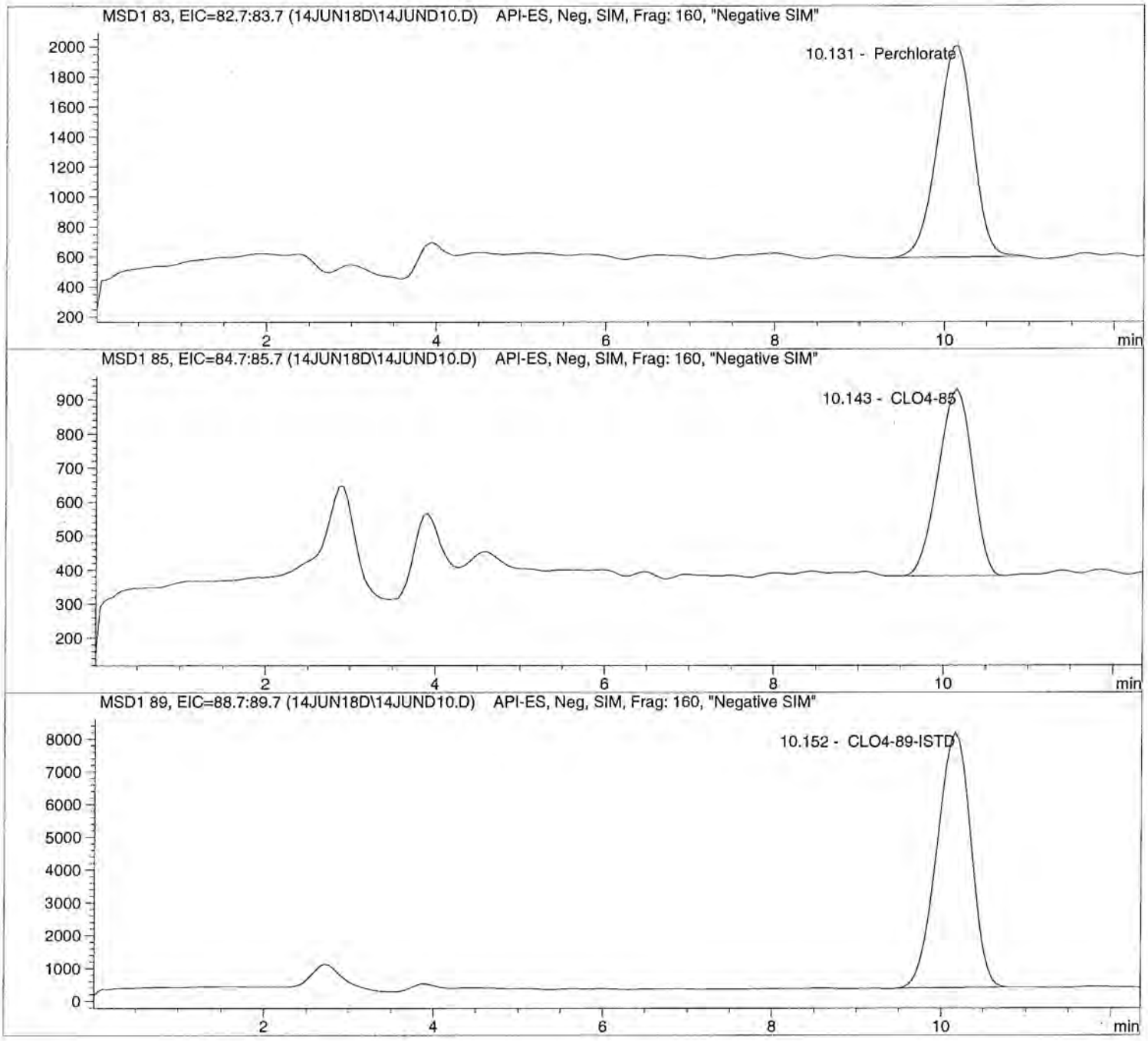
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND10.D Sample Name: 605273 LODV@1.

Injection Date:	6/14/2018 11:59:51	Seq Line:	10
Sample Name:	605273 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND10.D Sample Name: 605273 LODV@1.

Injection Date:	6/14/2018 11:59:51	Seq Line:	10
Sample Name:	605273 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.131	PBA	40989.7	1.0315	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.143	PBA	15363.7	0.8941	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.152	BBA	216437.1	5.0000	CLO4-89-ISTD

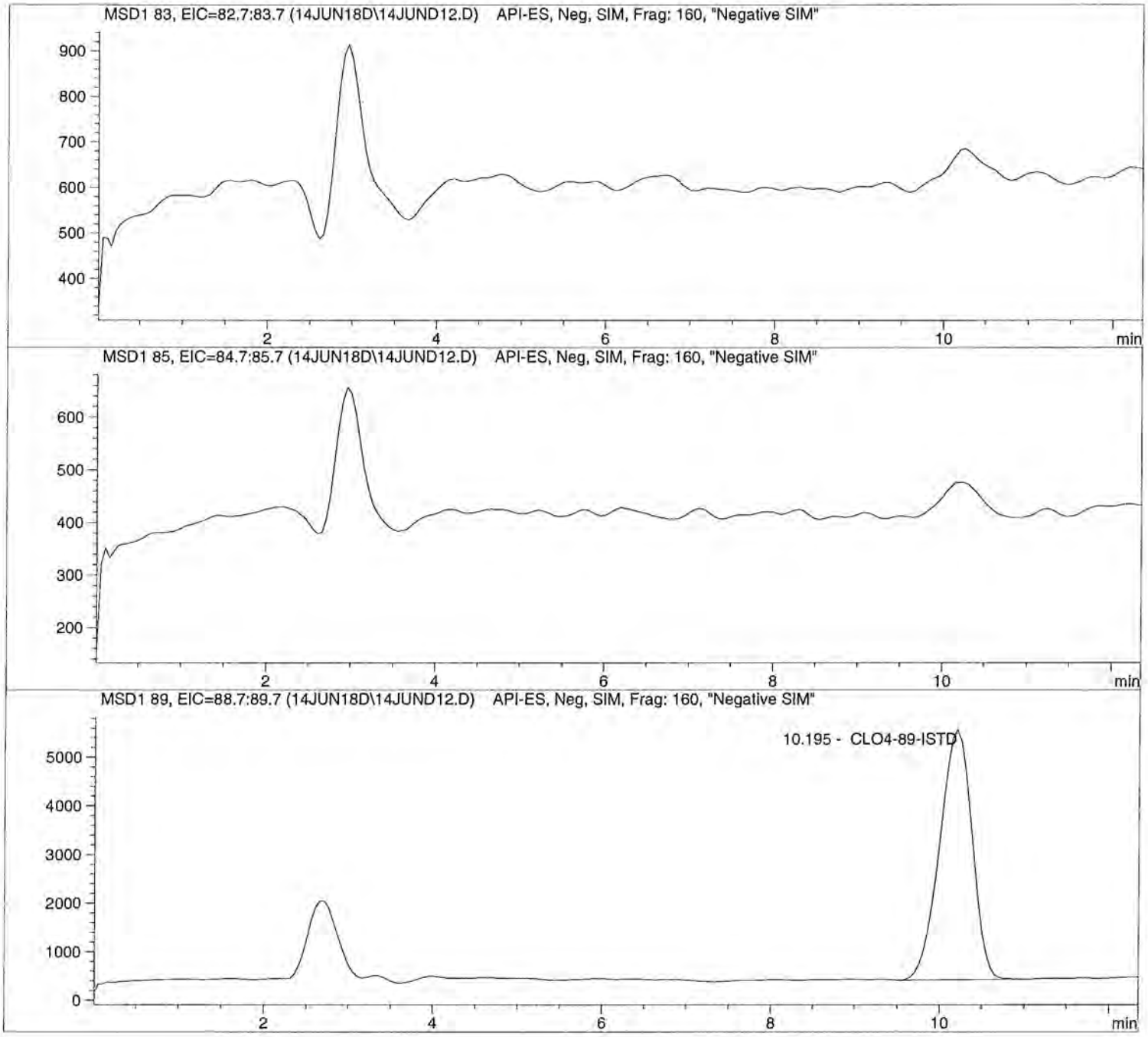
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND12.D Sample Name: 605275 LMB

Injection Date:	6/14/2018 12:28:22	Seq Line:	12
Sample Name:	605275 LMB	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND12.D Sample Name: 605275 LMB

Injection Date:	6/14/2018 12:28:22	Seq Line:	12
Sample Name:	605275 LMB	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.195	PBA	136891.5	5.0000	CLO4-89-ISTD

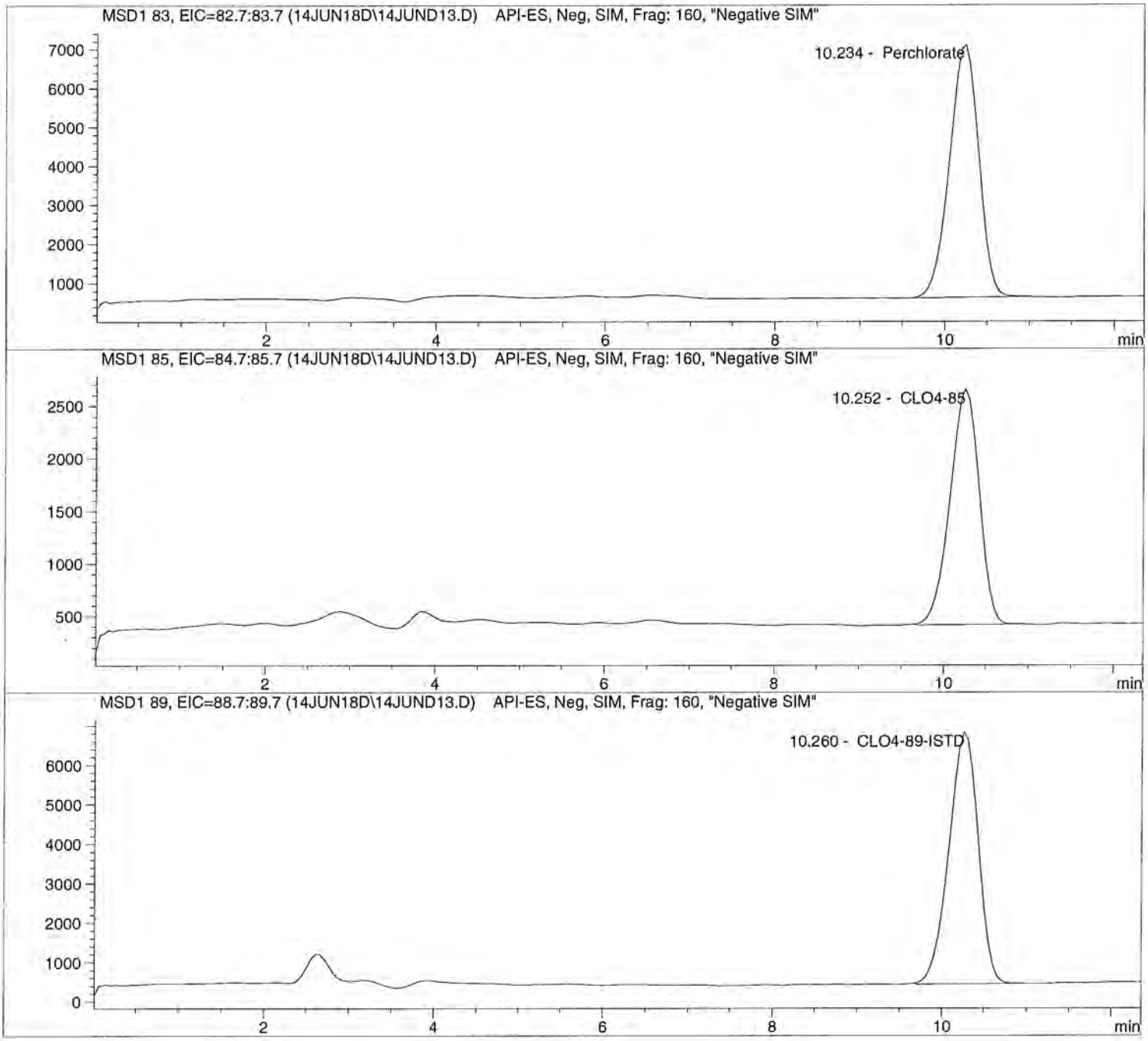
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND13.D Sample Name: 605276 QC@5.0

Injection Date:	6/14/2018 12:42:40	Seq Line:	13
Sample Name:	605276 QC@5.0	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND13.D Sample Name: 605276 QC@5.0

Injection Date:	6/14/2018 12:42:40	Seq Line:	13
Sample Name:	605276 QC@5.0	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.234	BBA	155938.1	5.2571	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.252	BBA	54056.7	5.1237	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.260	BBA	154533.9	5.0000	CLO4-89-ISTD

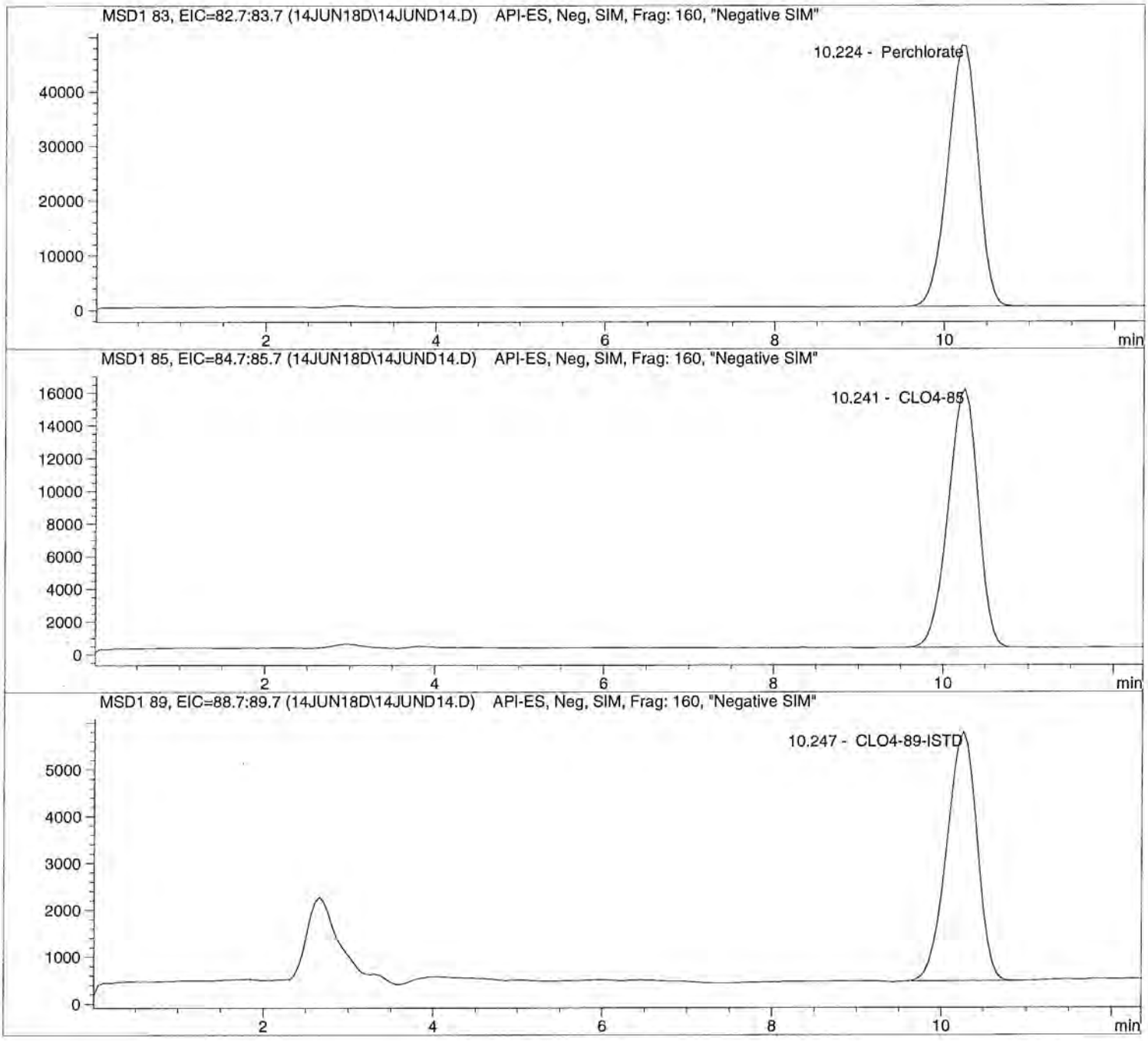
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND14.D Sample Name: 1815740001 1K

Injection Date:	6/14/2018 12:56:56	Seq Line:	14
Sample Name:	1815740001 1K	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND14.D Sample Name: 1815740001 1K

Injection Date:	6/14/2018 12:56:56	Seq Line:	14
Sample Name:	1815740001 1K	Location:	Vial 84
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.224	BBA	1181708.4	40992.8461	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.241	BBA	387841.8	39345.3921	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.247	BBA	132839.1	5000.0000	CLO4-89-ISTD

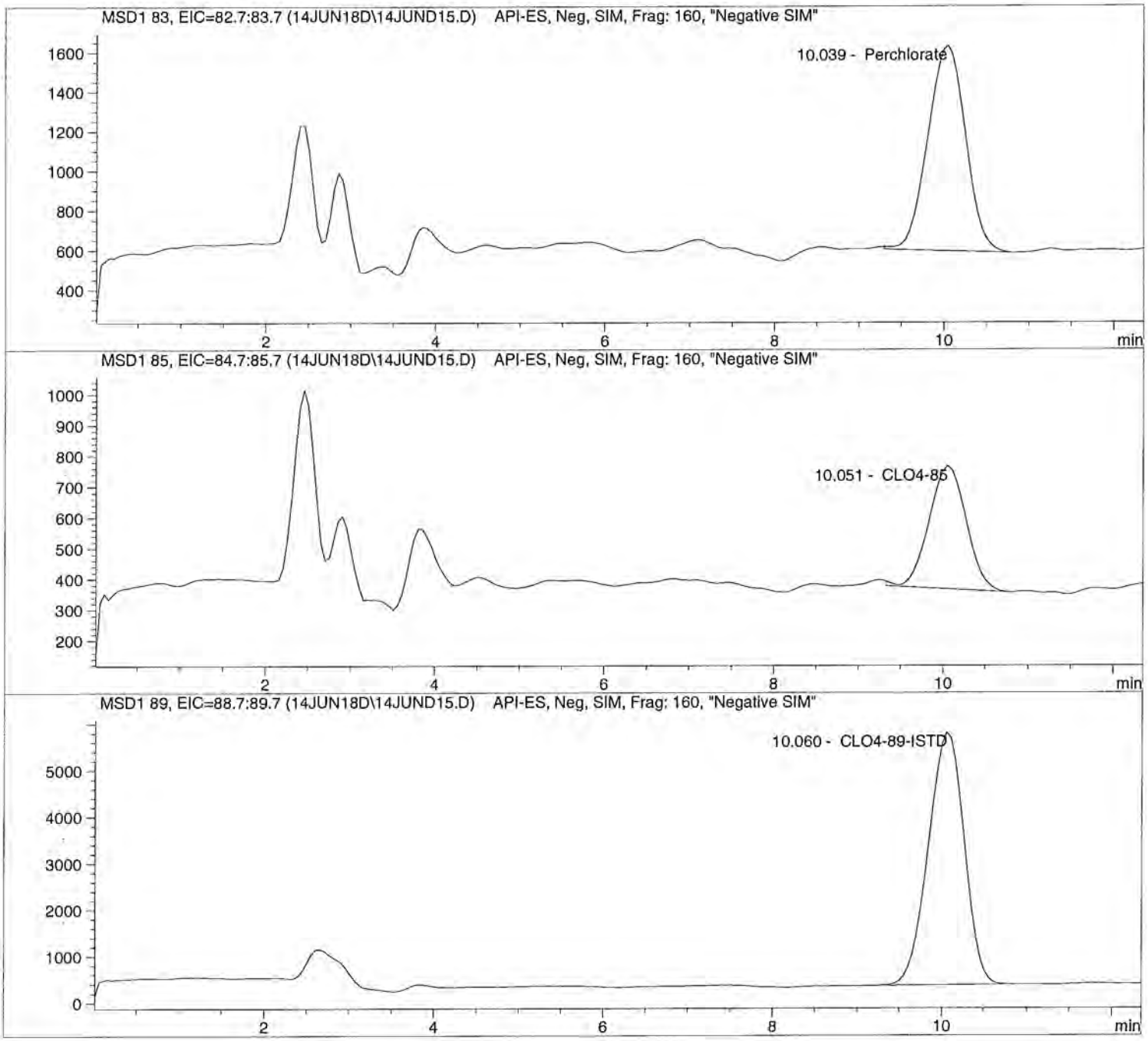
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND15.D Sample Name: 605274 ICS@1.0

Injection Date:	6/14/2018 13:13:17	Seq Line:	15
Sample Name:	605274 ICS@1.0	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND15.D Sample Name: 605274 ICS@1.0

Injection Date:	6/14/2018 13:13:17	Seq Line:	15
Sample Name:	605274 ICS@1.0	Location:	Vial 81
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.039	BBA	31874.1	1.0884	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.051	BBA	12118.8	0.9735	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.060	BBA	159160.7	5.0000	CLO4-89-ISTD

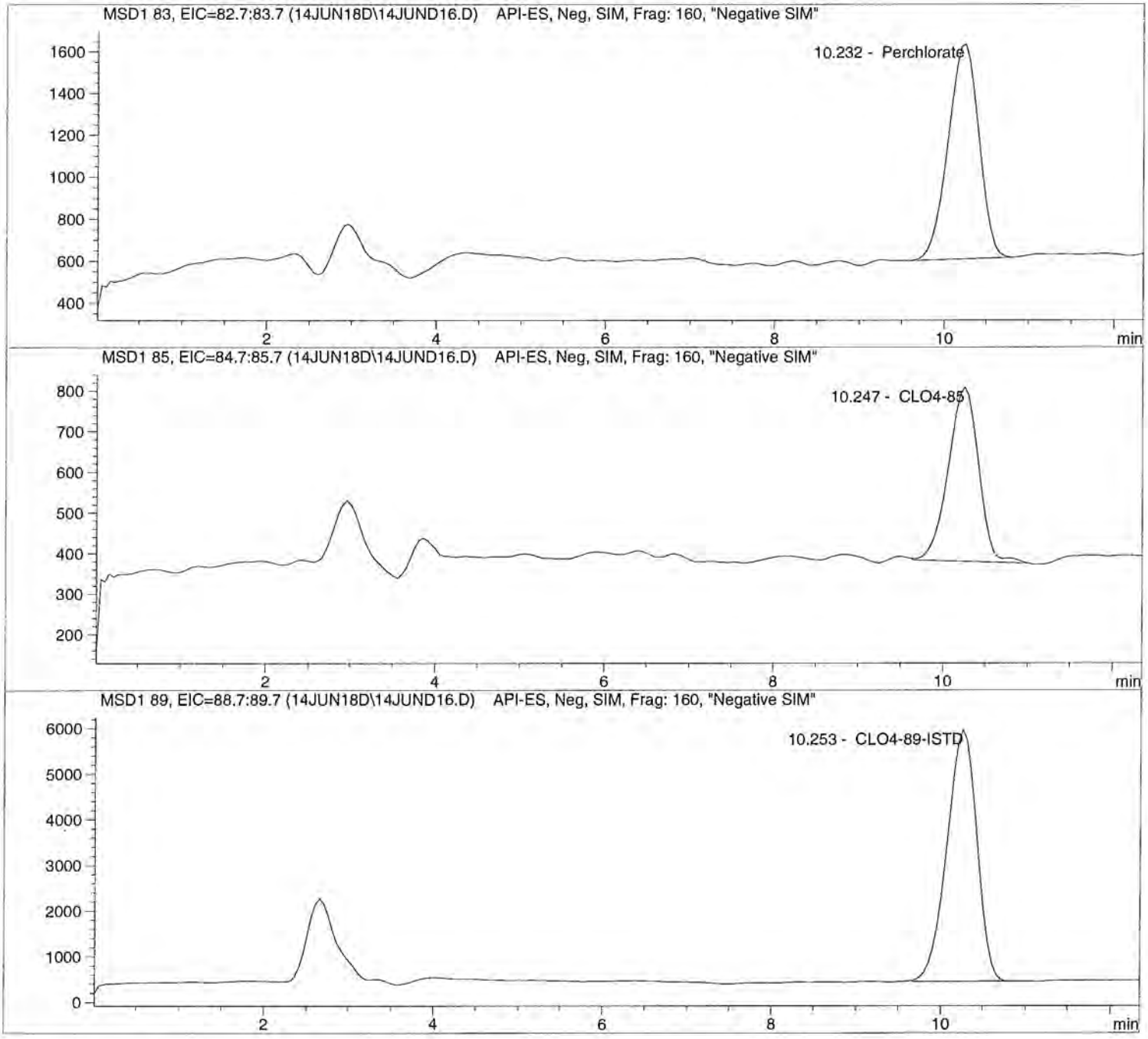
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND16.D Sample Name: 1815740002 1K

Injection Date:	6/14/2018 13:27:31	Seq Line:	16
Sample Name:	1815740002 1K	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND16.D Sample Name: 1815740002 1K

Injection Date:	6/14/2018 13:27:31	Seq Line:	16
Sample Name:	1815740002 1K	Location:	Vial 85
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.232	BBA	26025.5	1043.1332	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.247	BBA	10718.1	1016.1430	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.253	BBA	135828.4	5000.0000	CLO4-89-ISTD

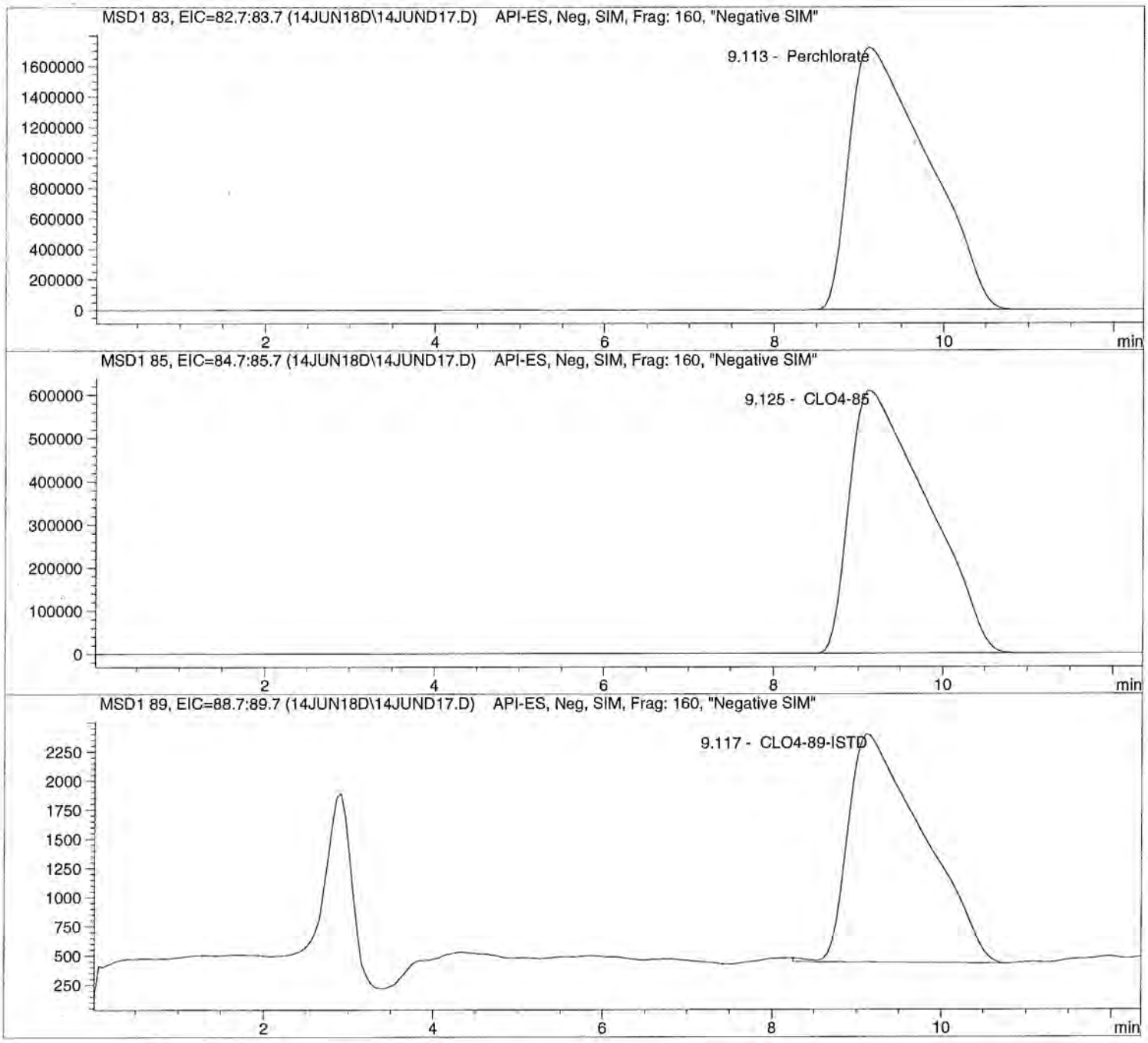
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND17.D Sample Name: 1815740003 10

Injection Date:	6/14/2018 13:41:49	Seq Line:	17
Sample Name:	1815740003 10	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND17.D Sample Name: 1815740003 10

Injection Date:	6/14/2018 13:41:49	Seq Line:	17
Sample Name:	1815740003 10	Location:	Vial 86
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	10.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.113	PBA	110285632.0	10392.5710	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.125	PBA	38727980.0	10358.5365	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.117	BBA	119984.9	50.0000	CLO4-89-ISTD

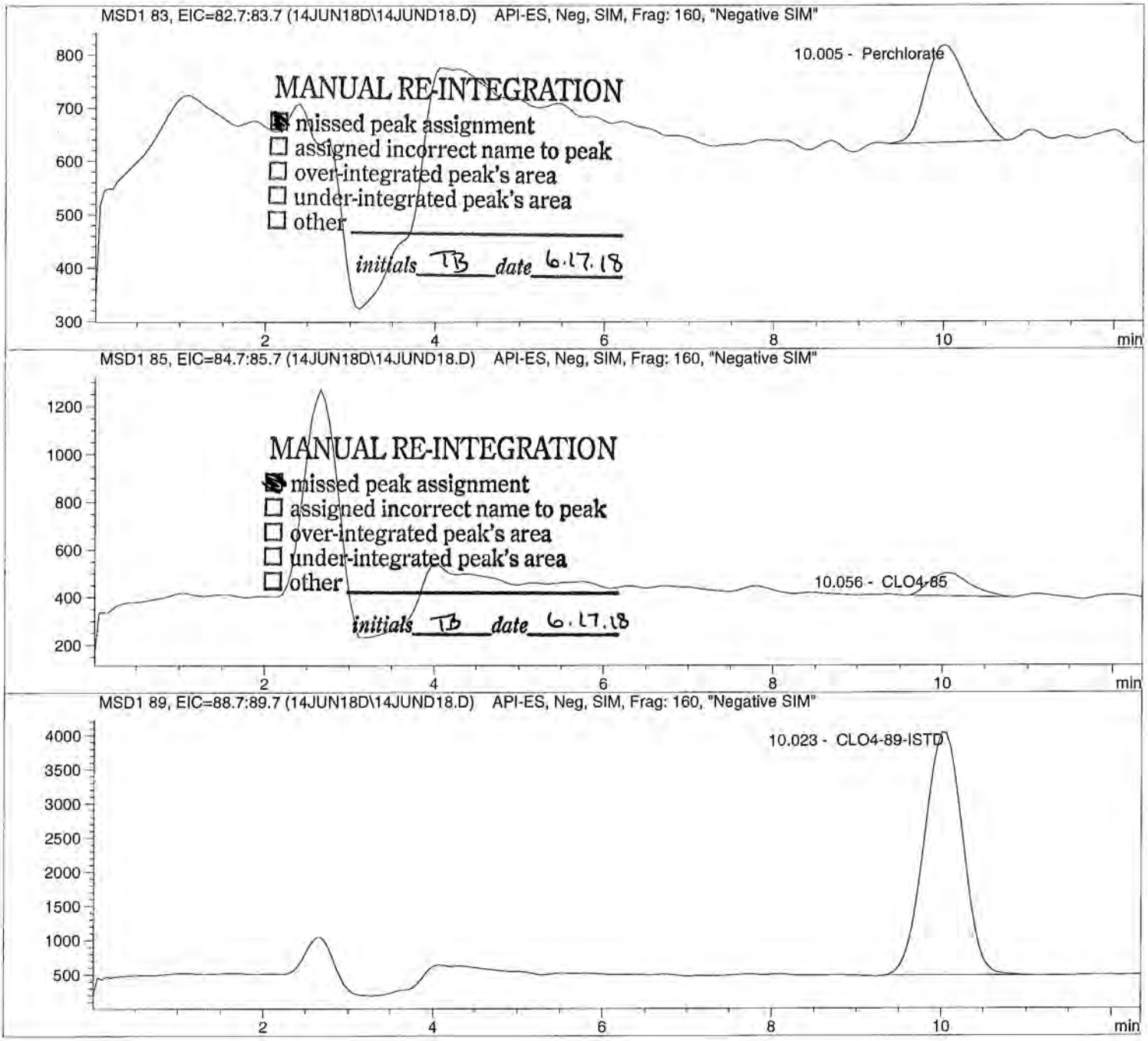
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND18.D Sample Name: 1815740004

Injection Date:	6/14/2018 13:56:06	Seq Line:	18
Sample Name:	1815740004	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND18.D Sample Name: 1815740004

Injection Date:	6/14/2018 13:56:06	Seq Line:	18
Sample Name:	1815740004	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.005	MM	6529.8	0.3419	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.056	MM	3253.0	0.2432	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.023	BBA	112834.3	5.0000	CLO4-89-ISTD

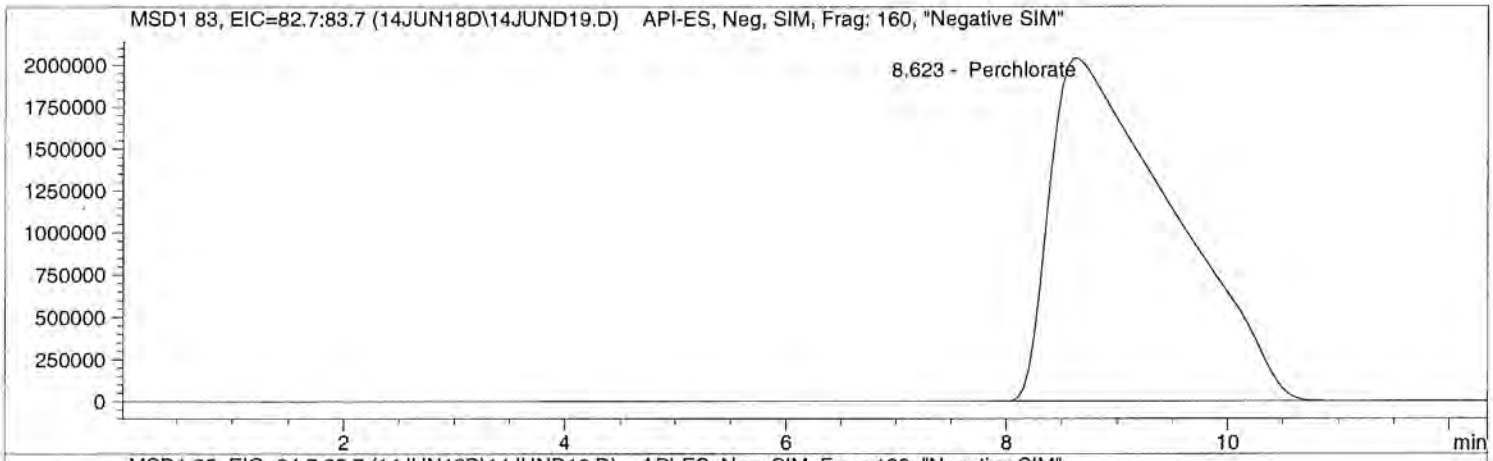
*** End of Report ***

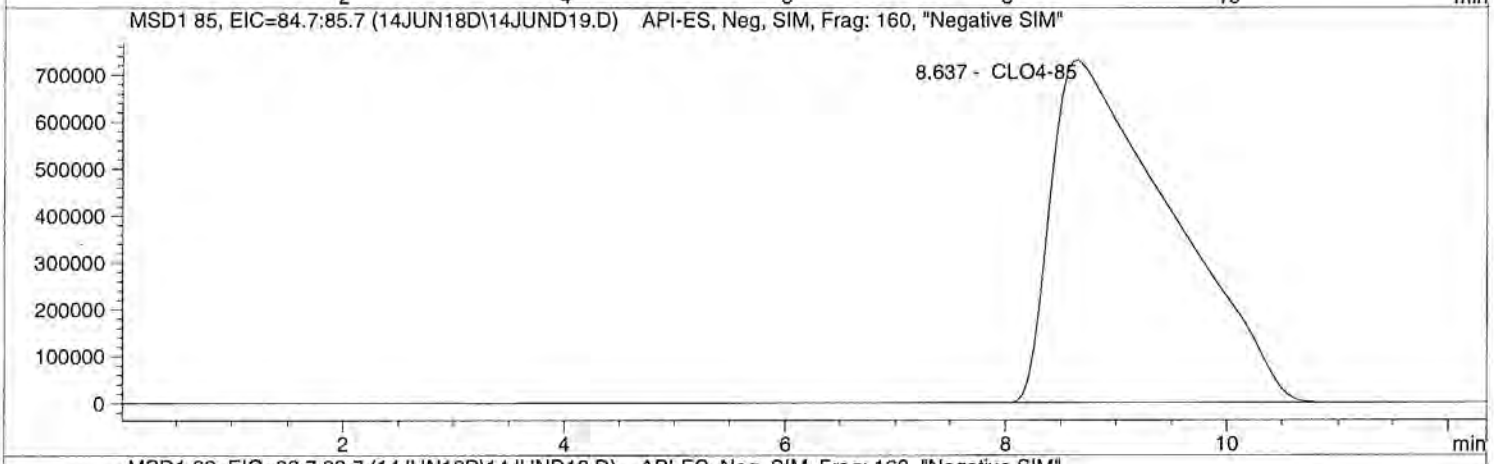
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND19.D Sample Name: 1815740005

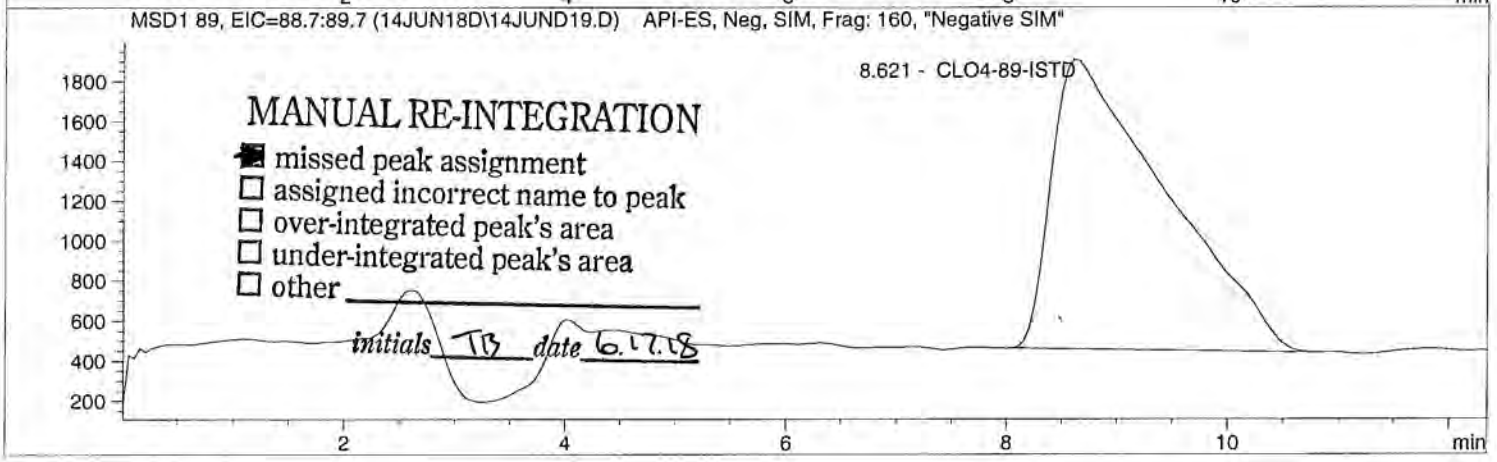
Injection Date:	6/14/2018 14:10:21	Seq Line:	19
Sample Name:	1815740005	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







MANUAL RE-INTEGRATION

- ■ missed peak assignment
- ☐ assigned incorrect name to peak
- ☐ over-integrated peak's area
- ☐ under-integrated peak's area
- ☐ other _____

initials TB *date* 6.17.18

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND19.D Sample Name: 1815740005

Injection Date:	6/14/2018 14:10:21	Seq Line:	19
Sample Name:	1815740005	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.623	PBA	156101936.0	1362.6021	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.637	PBA	55016480.0	1359.4368	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.621	MM	104092.4	5.0000	CLO4-89-ISTD

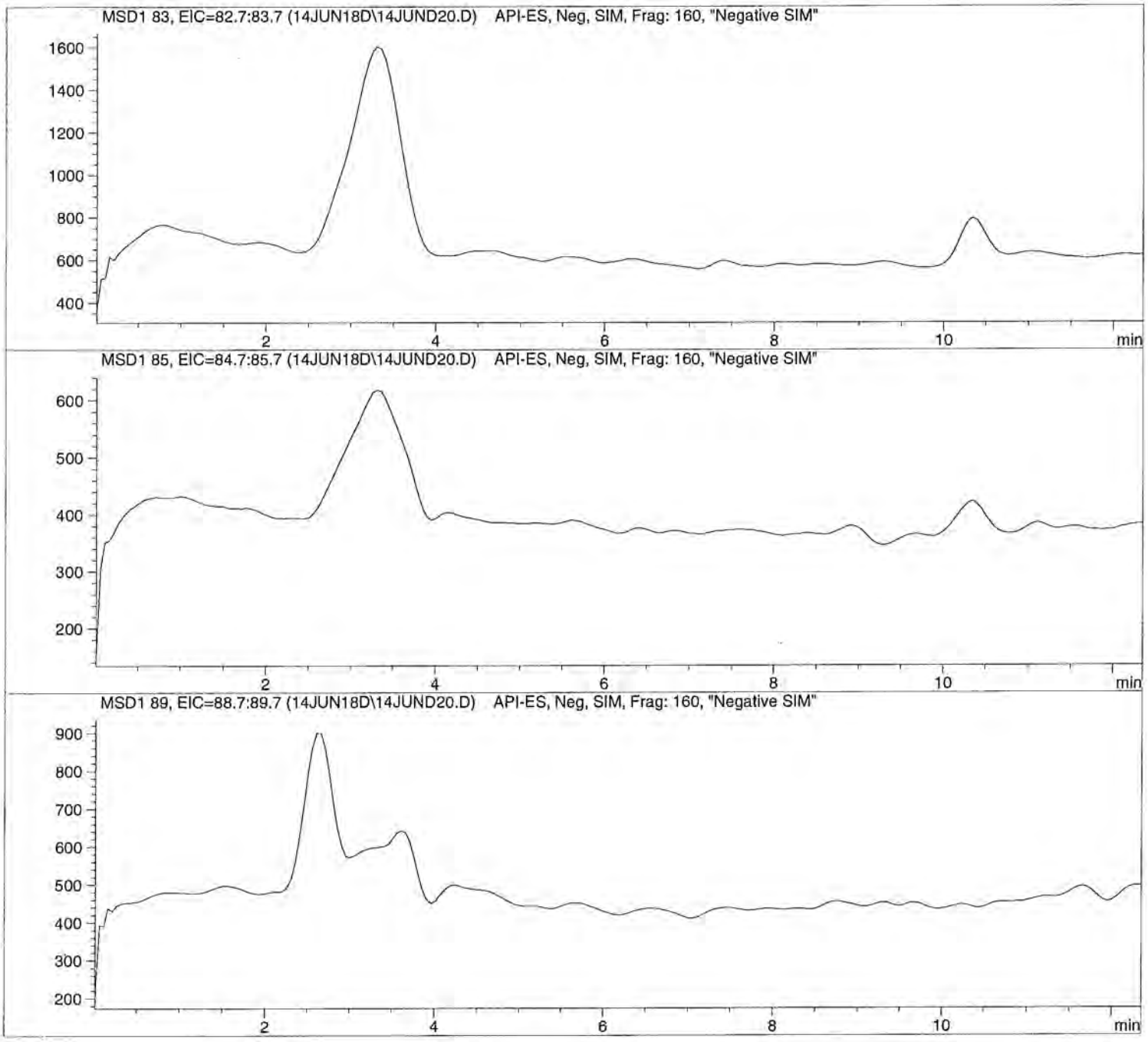
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND20.D Sample Name: Rinse

Injection Date:	6/14/2018 14:24:51	Seq Line:	20
Sample Name:	Rinse	Location:	Vial 61
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	50 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND20.D Sample Name: Rinse

Injection Date:	6/14/2018 14:24:51	Seq Line:	20
Sample Name:	Rinse	Location:	Vial 61
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	50 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-89-ISTD

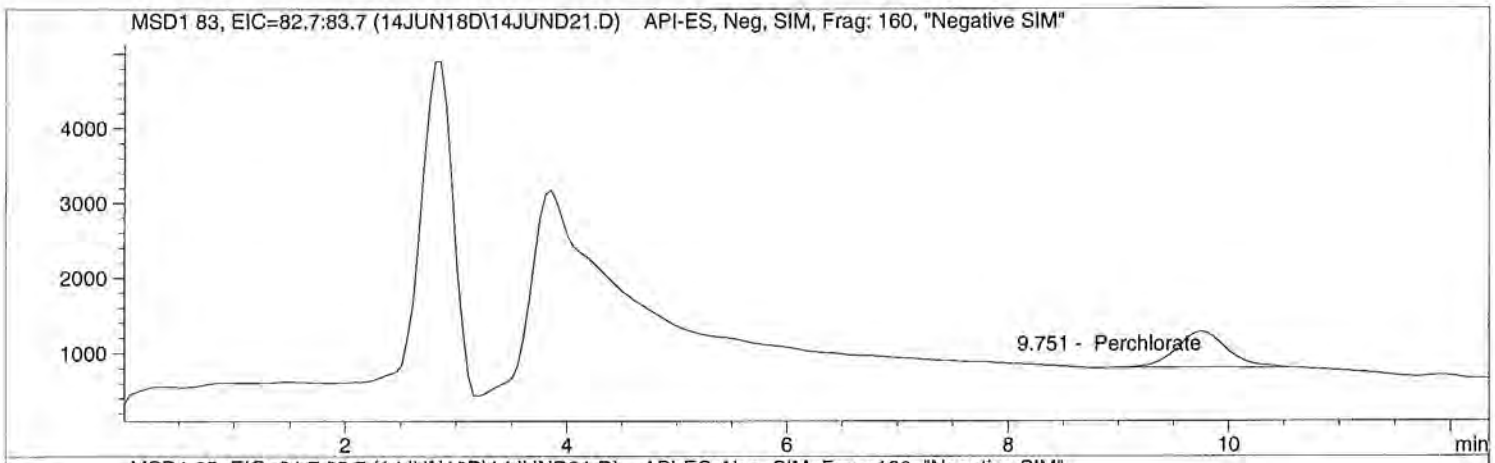
*** End of Report ***

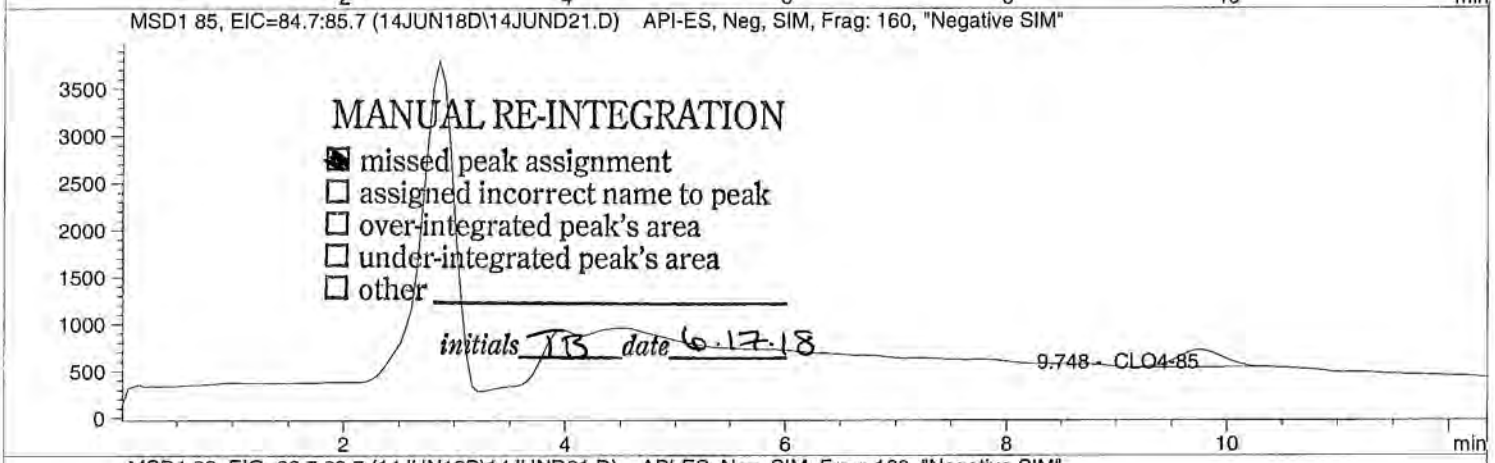
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND21.D Sample Name: 1815740006

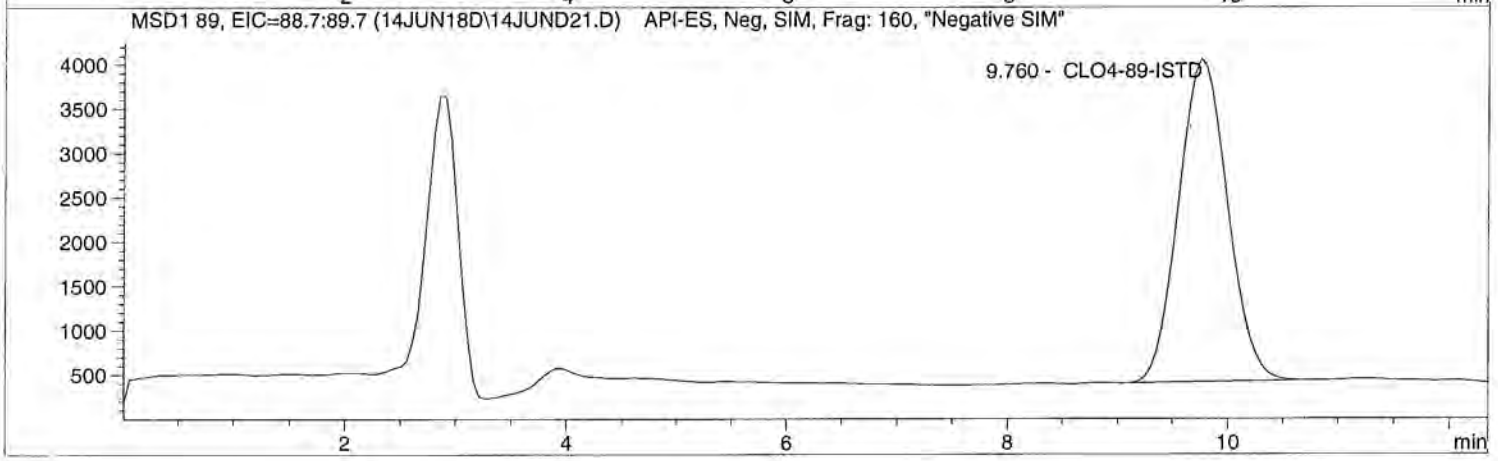
Injection Date:	6/14/2018 14:39:24	Seq Line:	21
Sample Name:	1815740006	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND21.D Sample Name: 1815740006

Injection Date:	6/14/2018 14:39:24	Seq Line:	21
Sample Name:	1815740006	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.751	PBA	14951.0	0.7364	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.748	MM	5399.5	0.5403	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.760	PBA	112386.4	5.0000	CLO4-89-ISTD

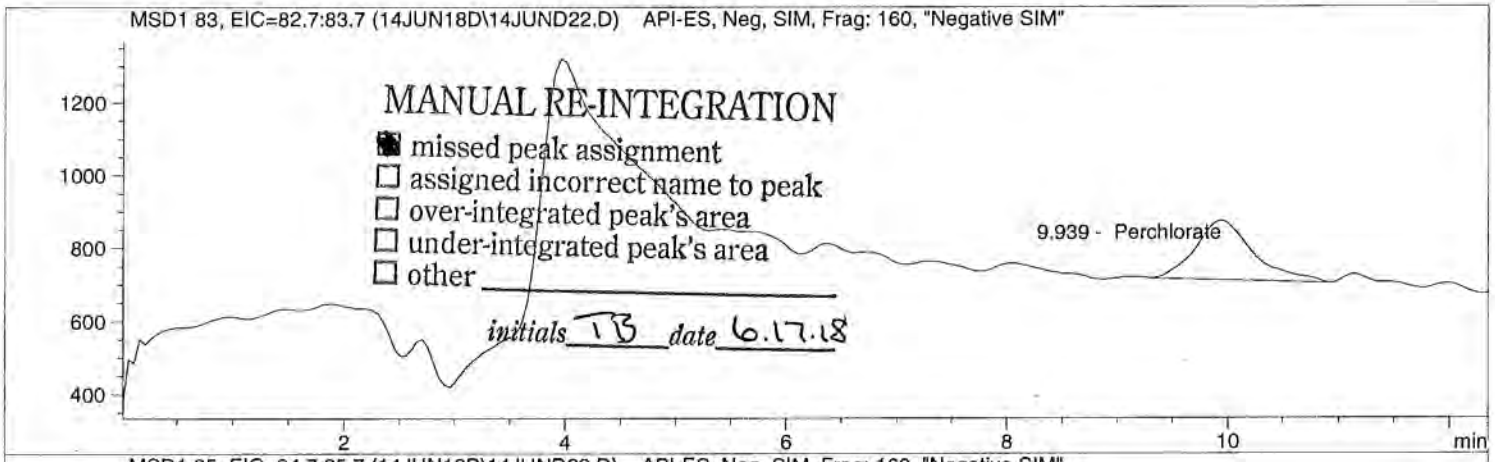
*** End of Report ***

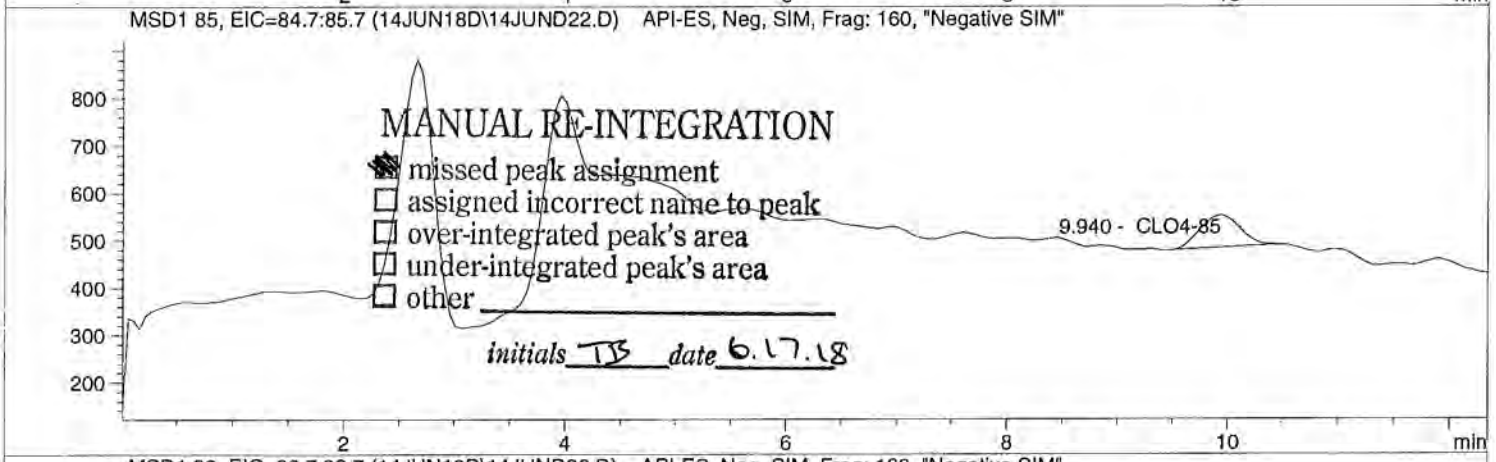
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND22.D Sample Name: 1815740007

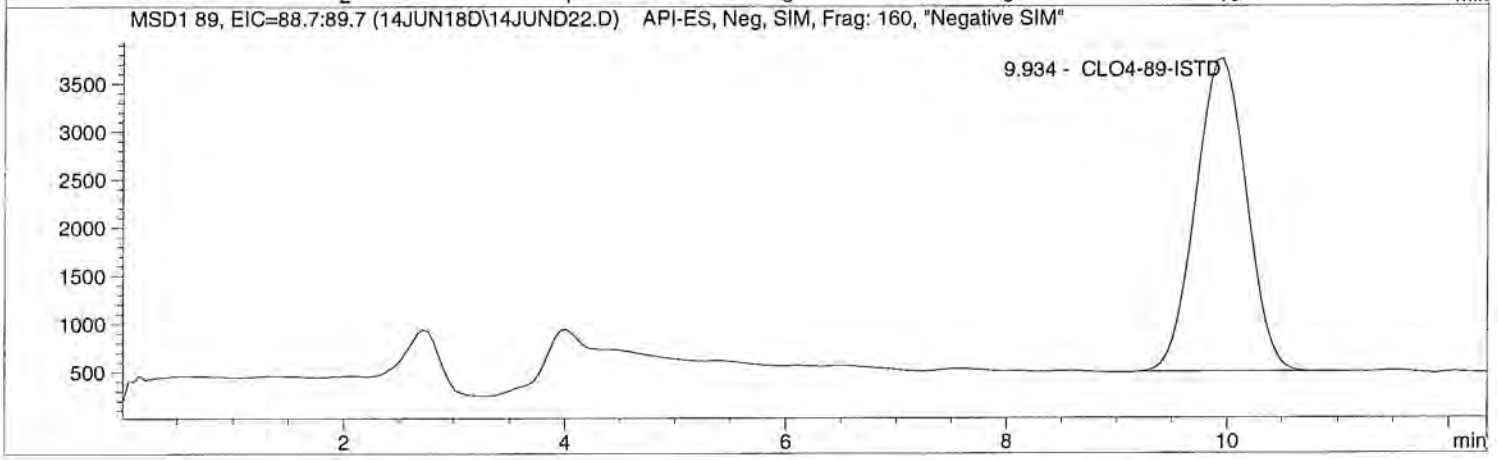
Injection Date:	6/14/2018 14:53:42	Seq Line:	22
Sample Name:	1815740007	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND22.D Sample Name: 1815740007

Injection Date:	6/14/2018 14:53:42	Seq Line:	22
Sample Name:	1815740007	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.939	MM	5925.8	0.3373	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.940	MM	1718.9	0.0527	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.934	PBA	103960.3	5.0000	CLO4-89-ISTD

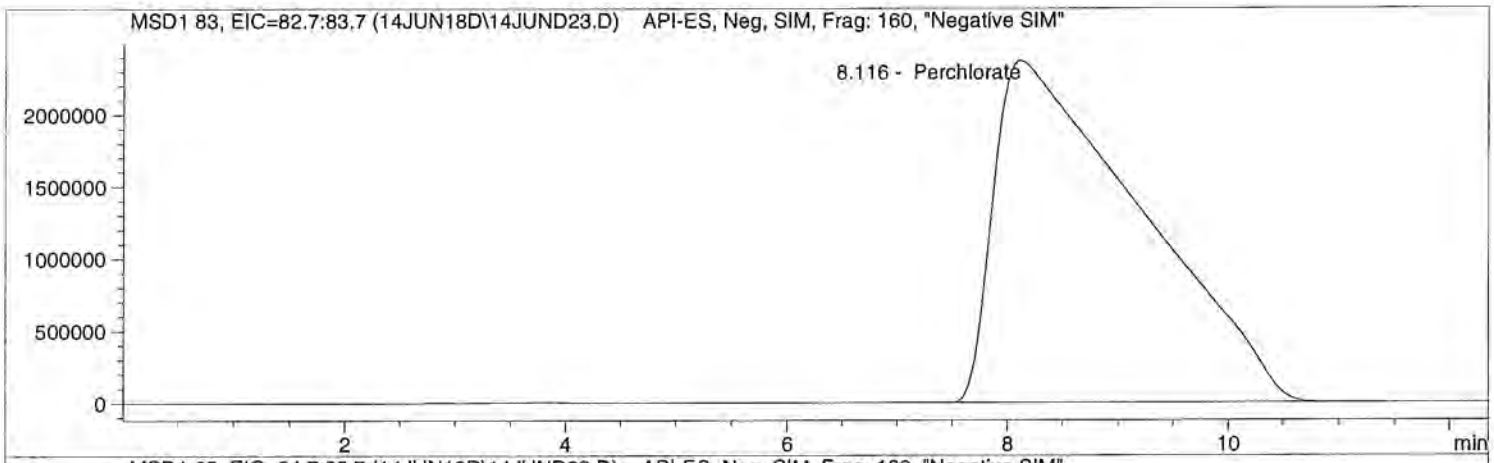
*** End of Report ***

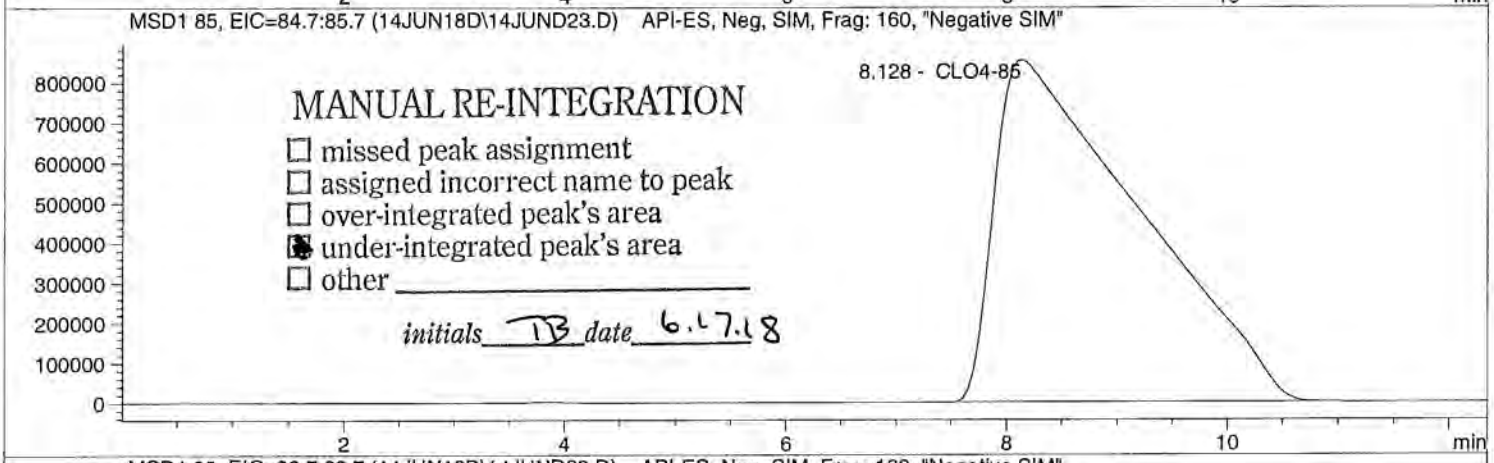
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND23.D Sample Name: 1815988001

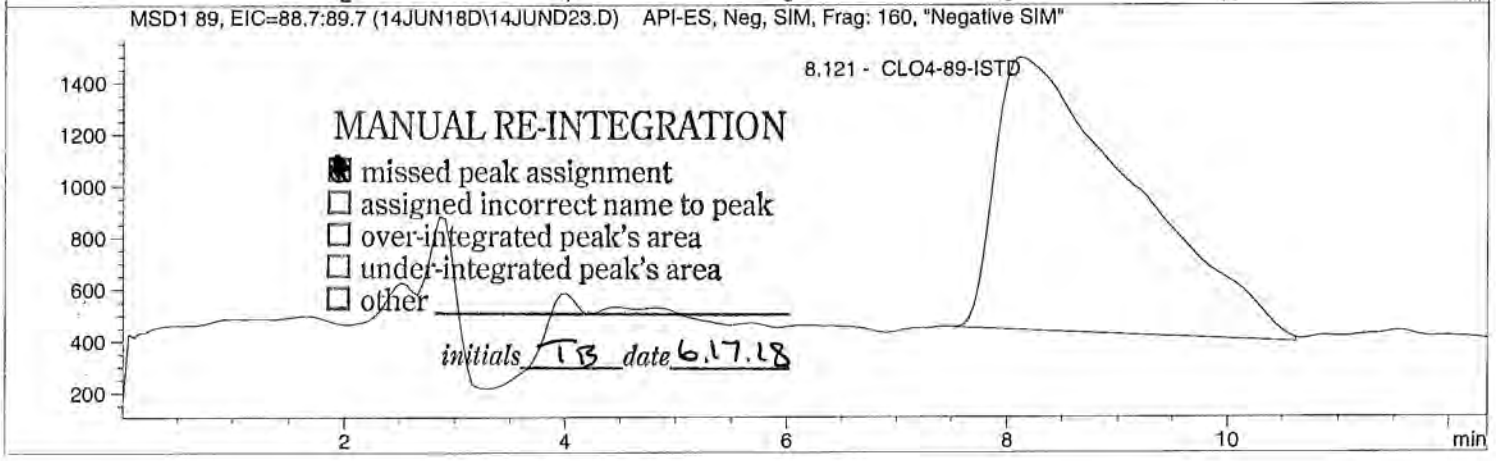
Injection Date:	6/14/2018 15:07:59	Seq Line:	23
Sample Name:	1815988001	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND23.D Sample Name: 1815988001

Injection Date:	6/14/2018 15:07:59	Seq Line:	23
Sample Name:	1815988001	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.116	PBA	218628112.0	1751.6892	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.128	MM	77523296.0	1751.9121	CLO4-85
8.841	Rsho	0.0	0.0000	
9.453	Rsho	0.0	0.0000	
9.620	Rsho	0.0	0.0000	
10.307	Rsho	0.0	0.0000	

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.121	MM	91727.9	5.0000	CLO4-89-ISTD

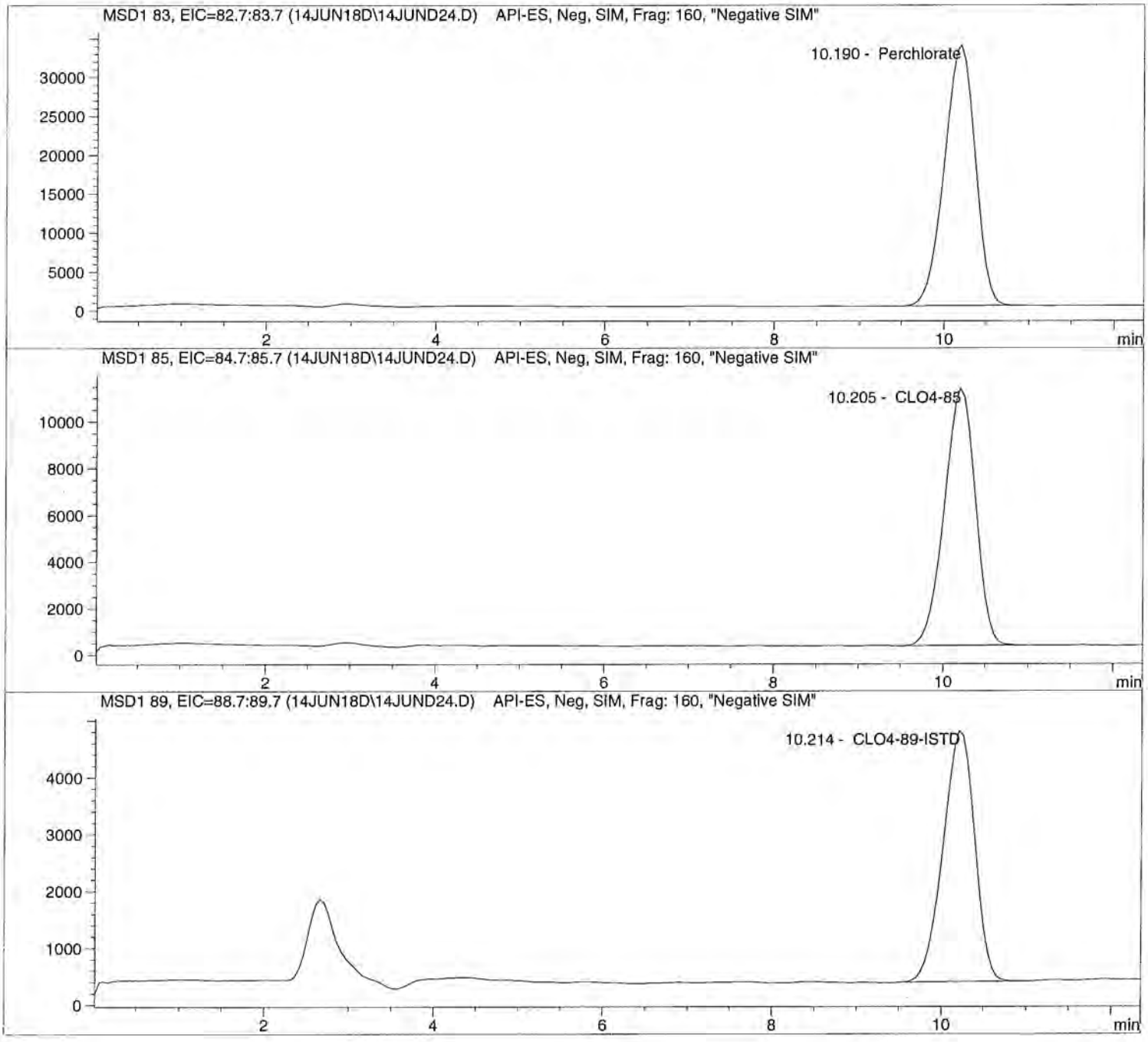
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND24.D Sample Name: 1815988002 1K

Injection Date:	6/14/2018 15:22:13	Seq Line:	24
Sample Name:	1815988002 1K	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND24.D Sample Name: 1815988002 1K

Injection Date:	6/14/2018 15:22:13	Seq Line:	24
Sample Name:	1815988002 1K	Location:	Vial 92
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.190	BBA	850046.4	34774.4113	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.205	PBA	282340.0	33711.2235	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.214	PBA	114860.0	5000.0000	CLO4-89-ISTD

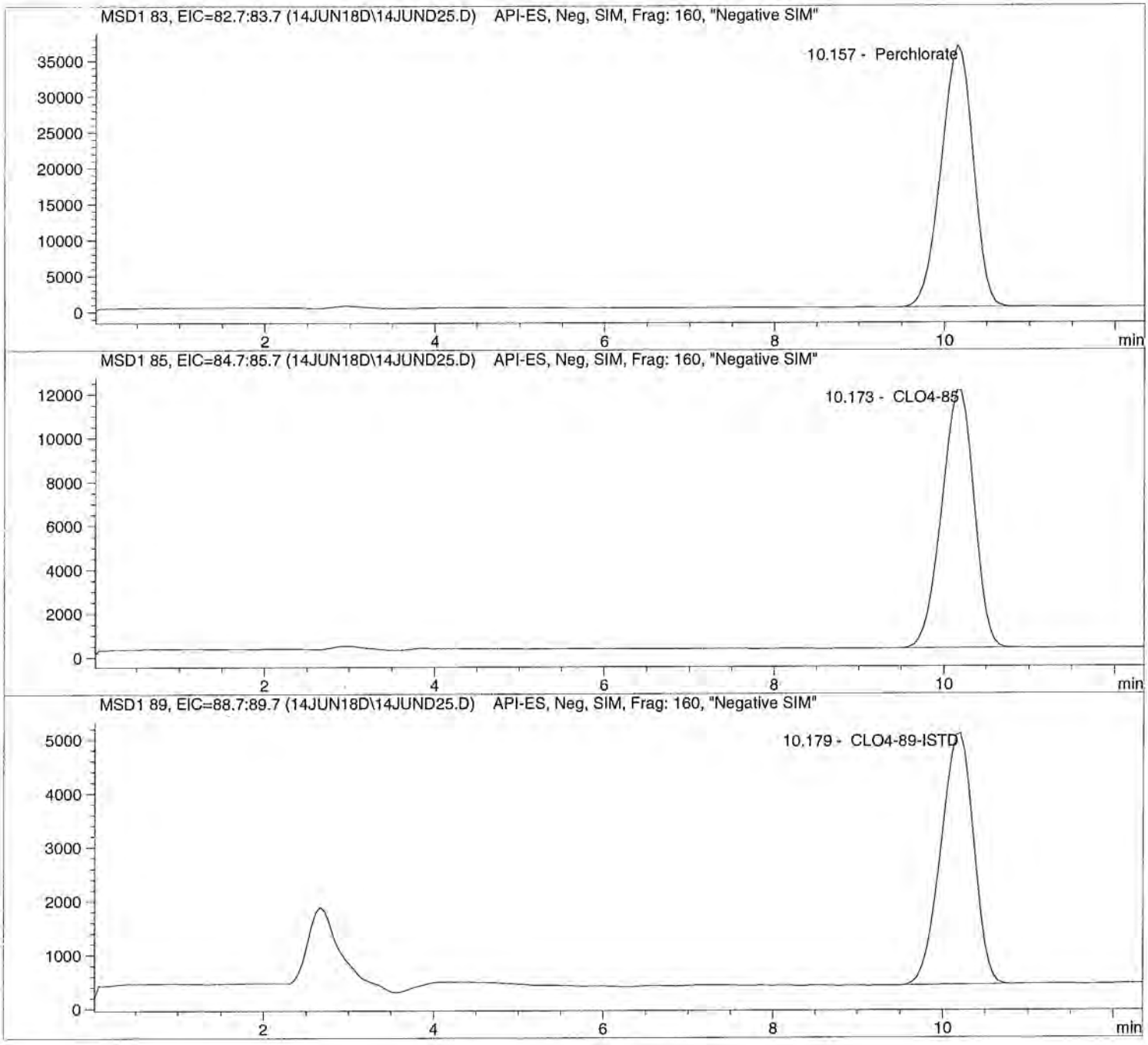
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND25.D Sample Name: 1815988003 1K

Injection Date:	6/14/2018 15:36:32	Seq Line:	25
Sample Name:	1815988003 1K	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND25.D Sample Name: 1815988003 1K

Injection Date:	6/14/2018 15:36:32	Seq Line:	25
Sample Name:	1815988003 1K	Location:	Vial 93
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.157	BBA	954515.7	35634.6466	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.173	PBA	313549.9	34205.4073	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.179	PBA	125520.5	5000.0000	CLO4-89-ISTD

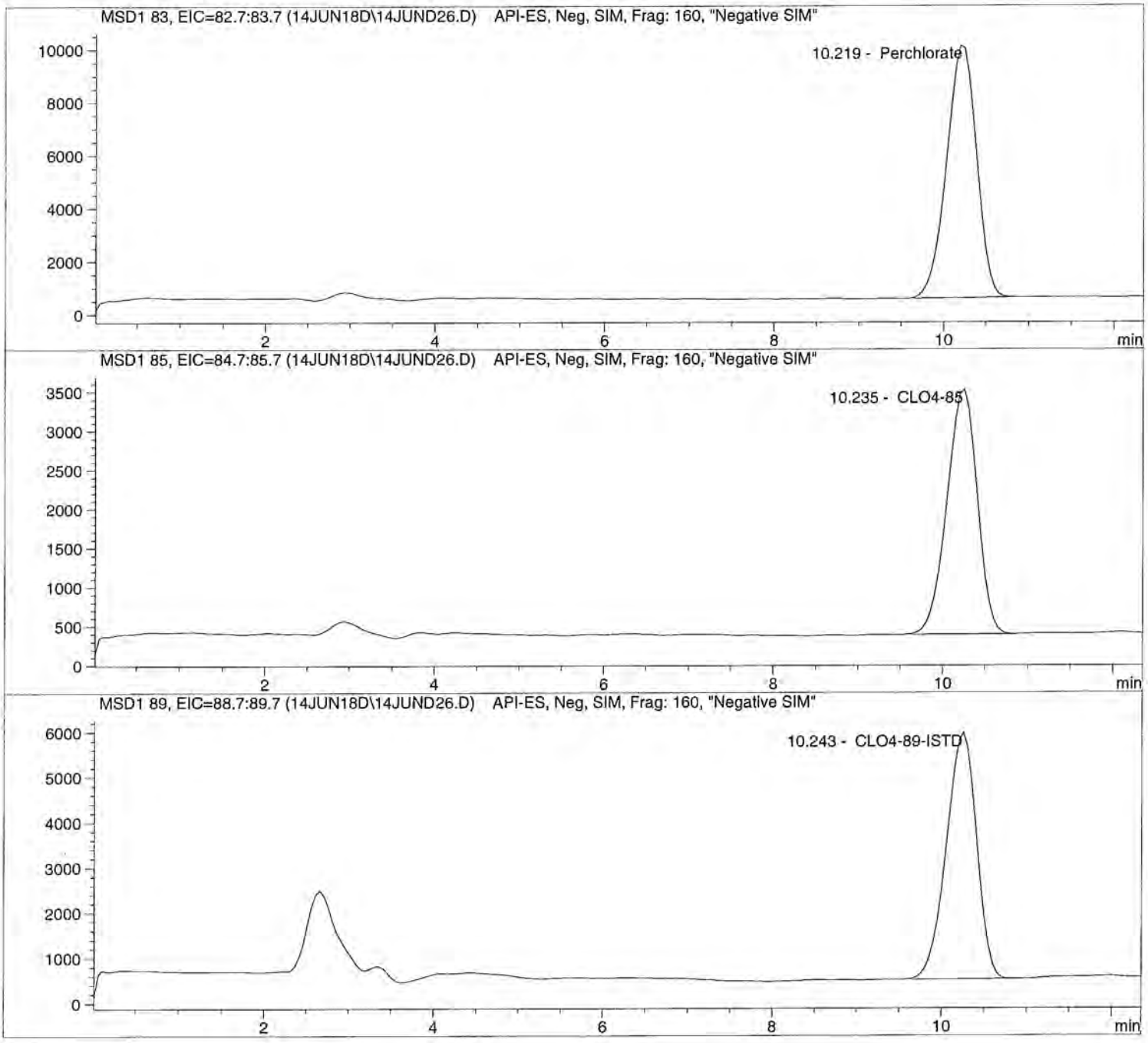
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND26.D Sample Name: 1815988001 1K

Injection Date:	6/14/2018 17:13:26	Seq Line:	26
Sample Name:	1815988001 1K	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND26.D Sample Name: 1815988001 1K

Injection Date:	6/14/2018 17:13:26	Seq Line:	26
Sample Name:	1815988001 1K	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.219	PBA	233270.7	8833.1877	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.235	BBA	78170.6	8476.1423	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.243	BBA	135509.6	5000.0000	CLO4-89-ISTD

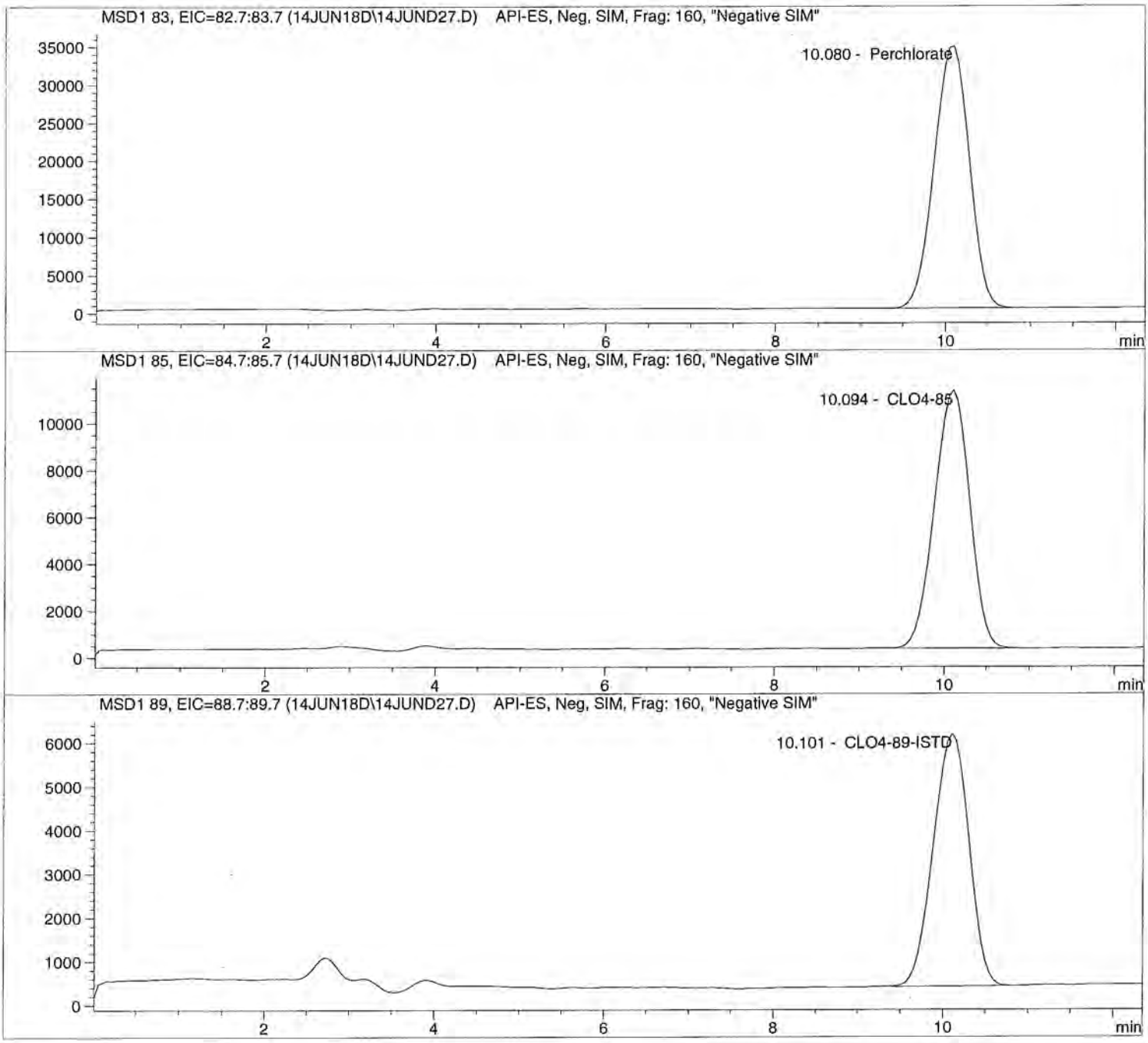
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND27.D Sample Name: 605277 CCV@25

Injection Date:	6/14/2018 17:27:47	Seq Line:	27
Sample Name:	605277 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND27.D Sample Name: 605277 CCV@25

Injection Date:	6/14/2018 17:27:47	Seq Line:	27
Sample Name:	605277 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.080	PBA	992094.1	28.0471	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.094	BBA	319001.0	26.3544	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.101	BBA	169834.9	5.0000	CLO4-89-ISTD

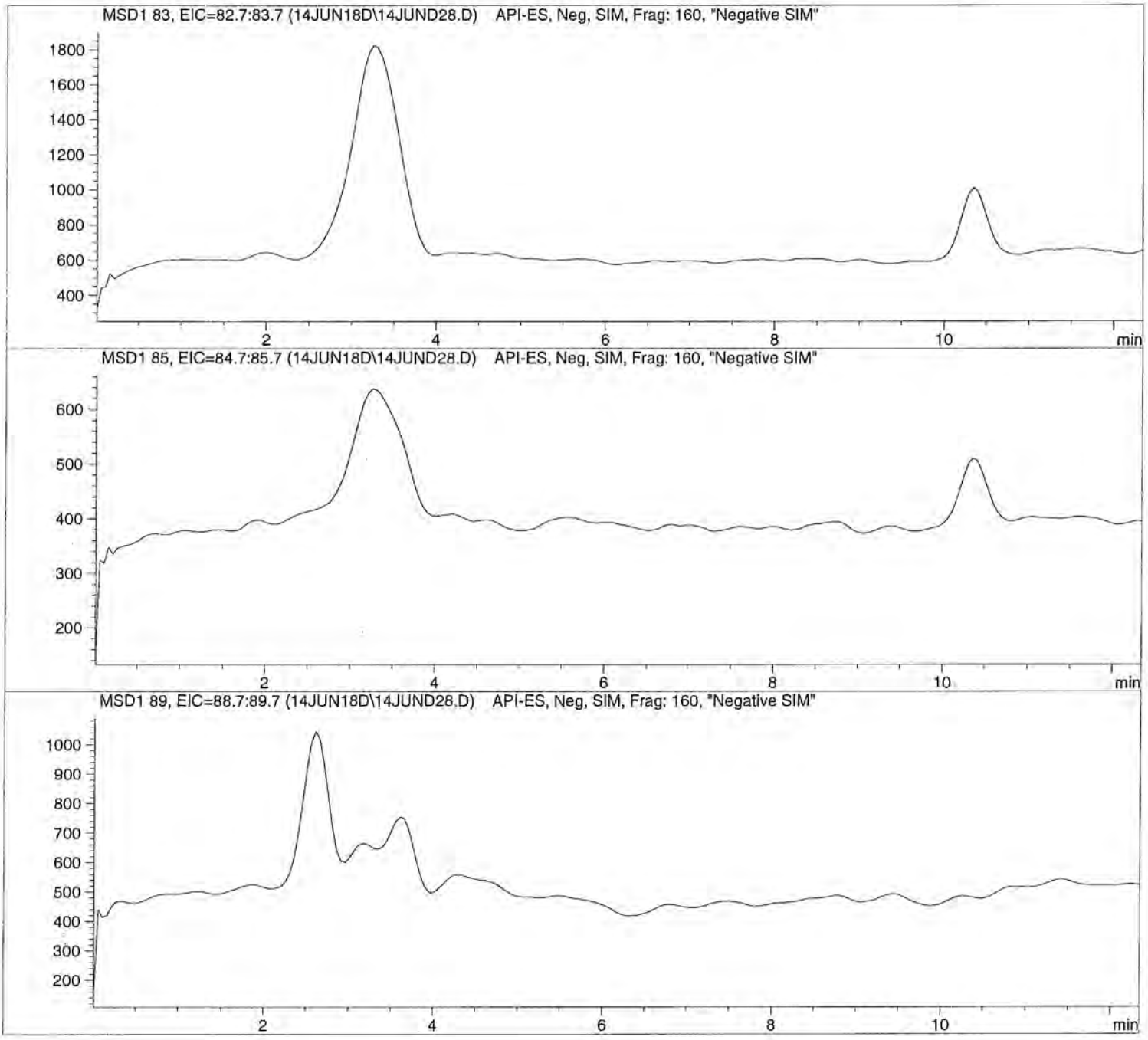
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND28.D Sample Name: Rinse

Injection Date:	6/14/2018 17:42:12	Seq Line:	28
Sample Name:	Rinse	Location:	Vial 61
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	50 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND28.D Sample Name: Rinse

Injection Date:	6/14/2018 17:42:12	Seq Line:	28
Sample Name:	Rinse	Location:	Vial 61
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	50 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-89-ISTD

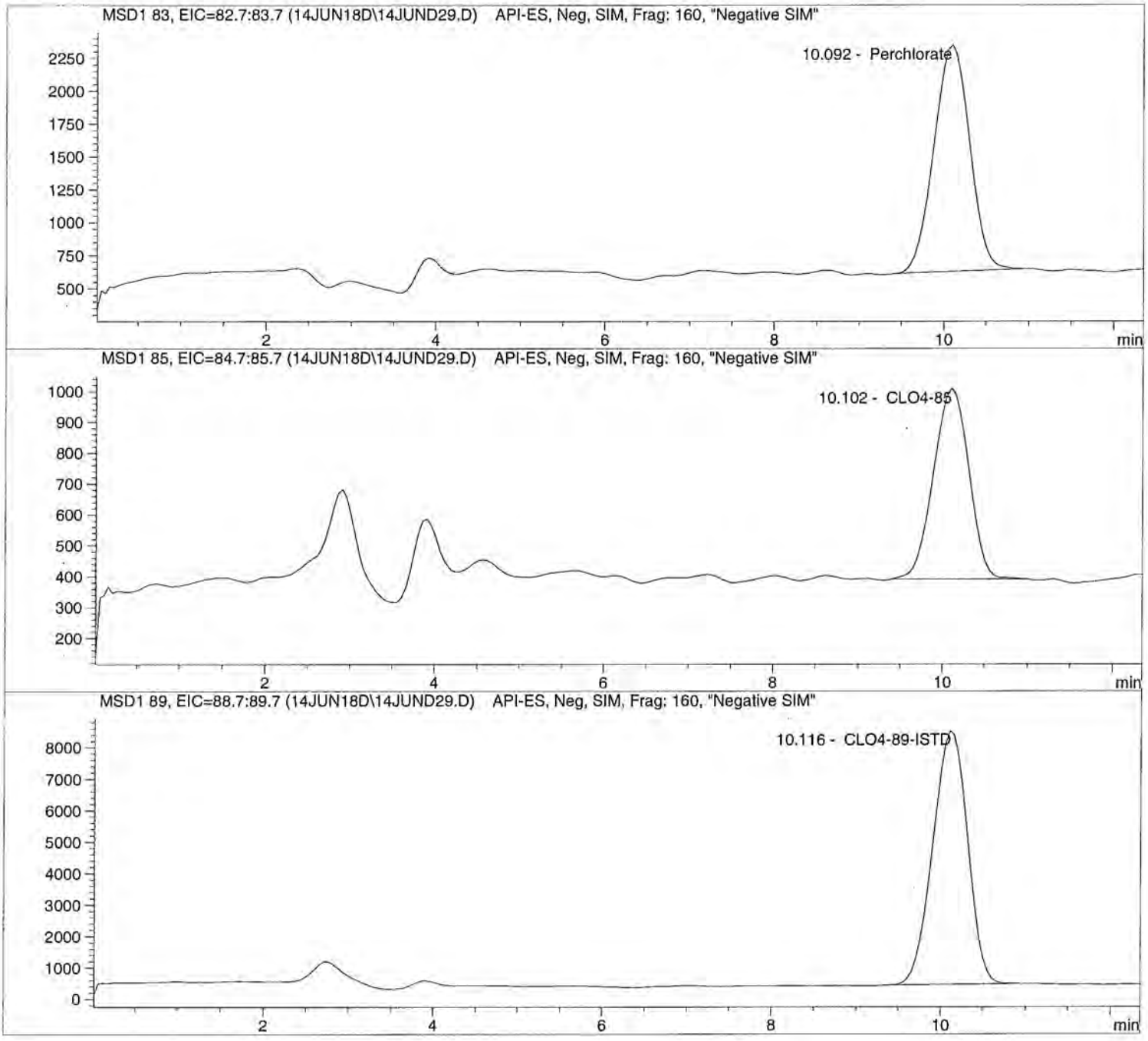
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND29.D Sample Name: 605278 LODV@1.

Injection Date:	6/14/2018 17:56:40	Seq Line:	29
Sample Name:	605278 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND29.D Sample Name: 605278 LODV@1.

Injection Date:	6/14/2018 17:56:40	Seq Line:	29
Sample Name:	605278 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.092	PBA	50405.6	1.1828	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.102	BBA	17956.5	0.9987	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.116	BBA	230883.7	5.0000	CLO4-89-ISTD

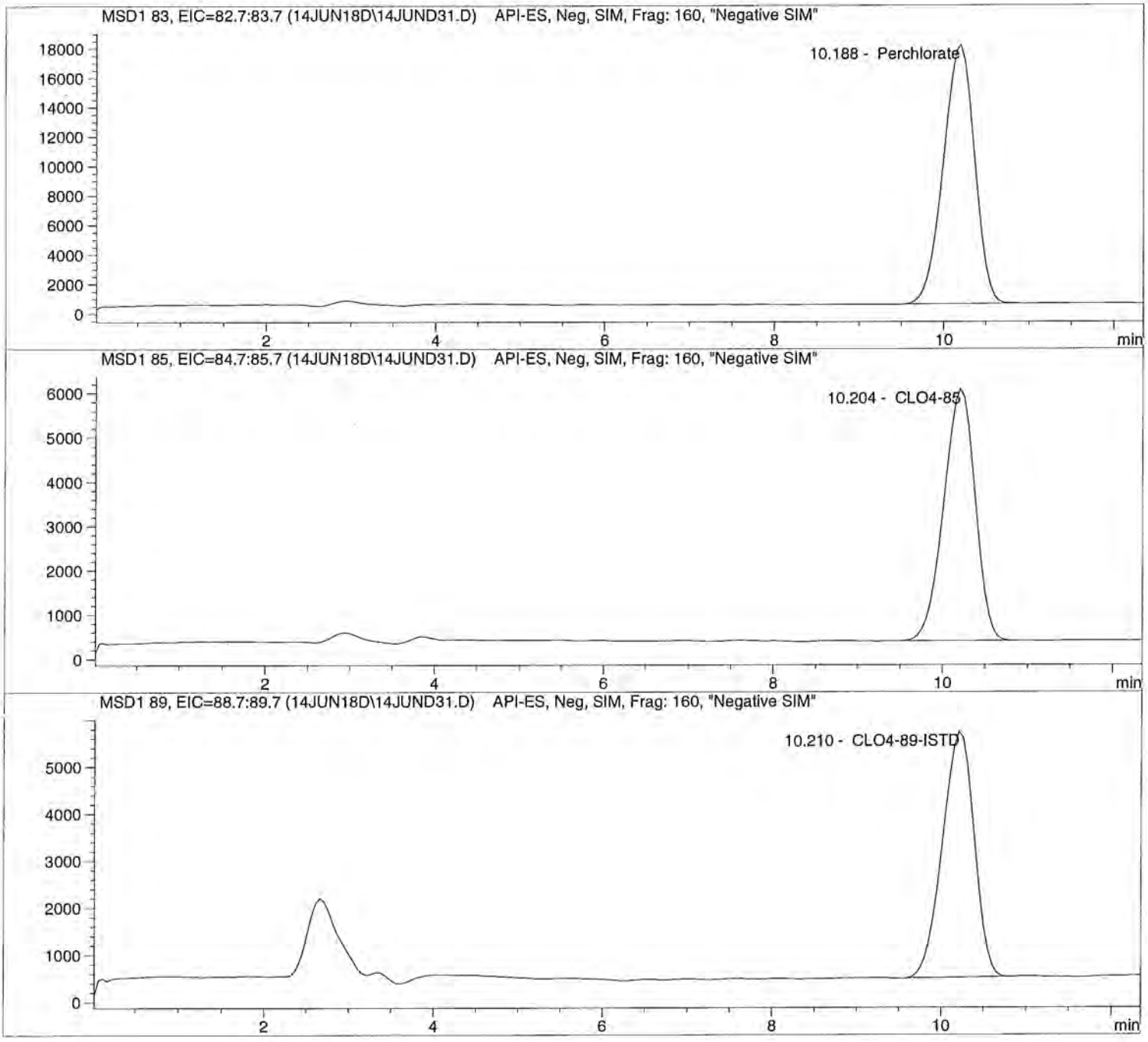
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND31.D Sample Name: 1815988004 MS

Injection Date:	6/14/2018 18:25:18	Seq Line:	31
Sample Name:	1815988004 MS	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND31.D Sample Name: 1815988004 MS

Injection Date:	6/14/2018 18:25:18	Seq Line:	31
Sample Name:	1815988004 MS	Location:	Vial 94
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.188	BBA	448410.1	16427.6491	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.204	BBA	146771.5	15600.1771	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.210	PBA	136255.7	5000.0000	CLO4-89-ISTD

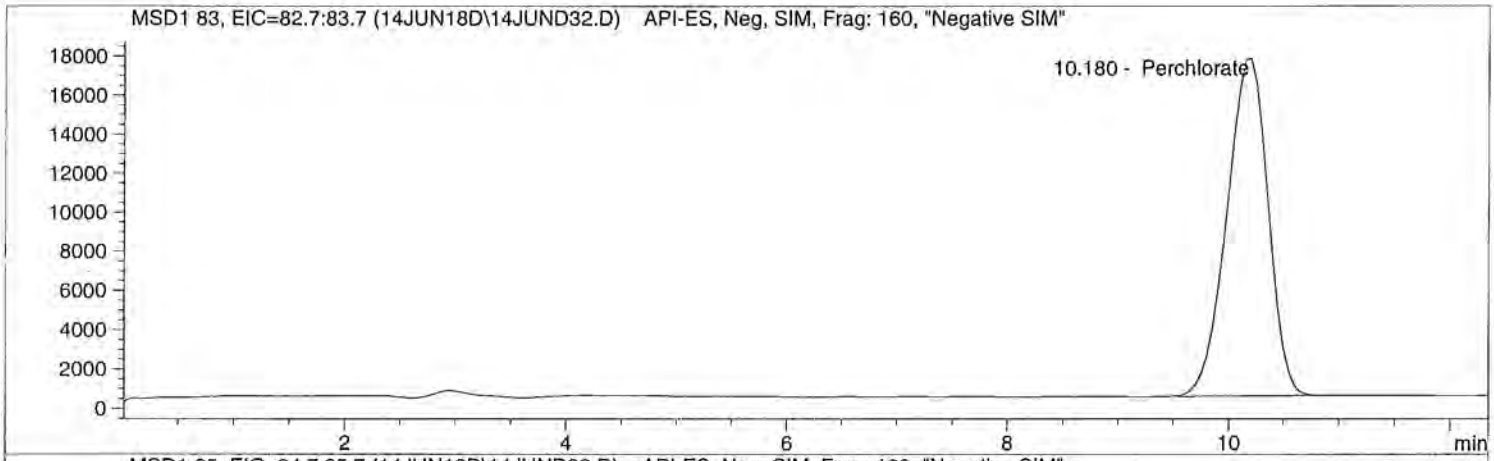
*** End of Report ***

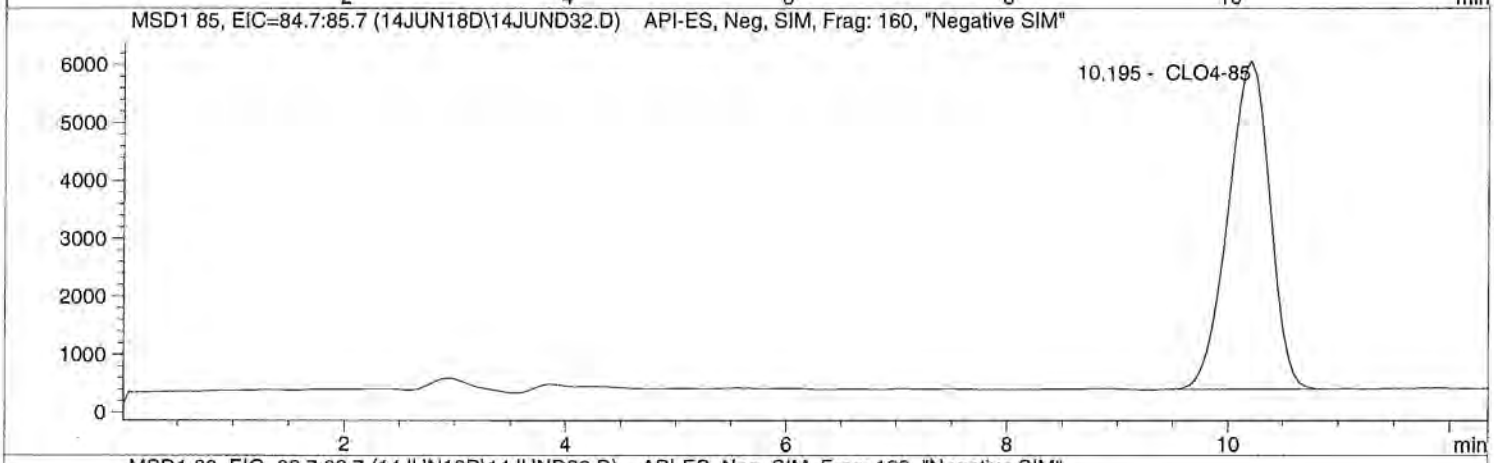
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND32.D Sample Name: 1815988005 MSD

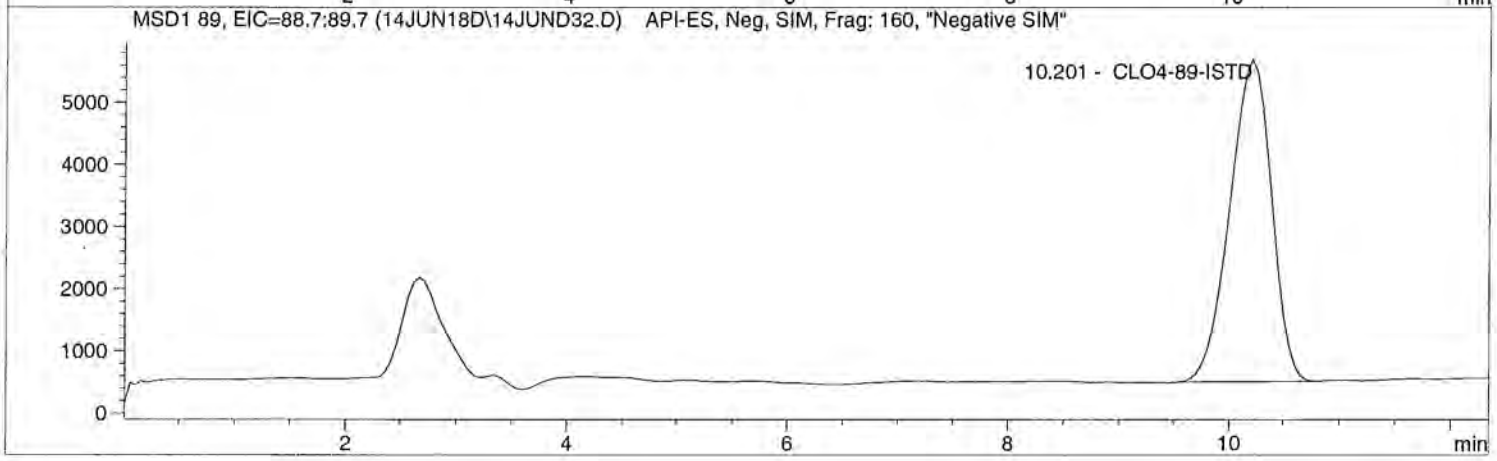
Injection Date:	6/14/2018 18:39:34	Seq Line:	32
Sample Name:	1815988005 MSD	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND32.D Sample Name: 1815988005 MSD

Injection Date:	6/14/2018 18:39:34	Seq Line:	32
Sample Name:	1815988005 MSD	Location:	Vial 95
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.180	BBA	450869.7	16431.0515	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.195	BBA	150109.8	15860.3426	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.201	BBA	136973.1	5000.0000	CLO4-89-ISTD

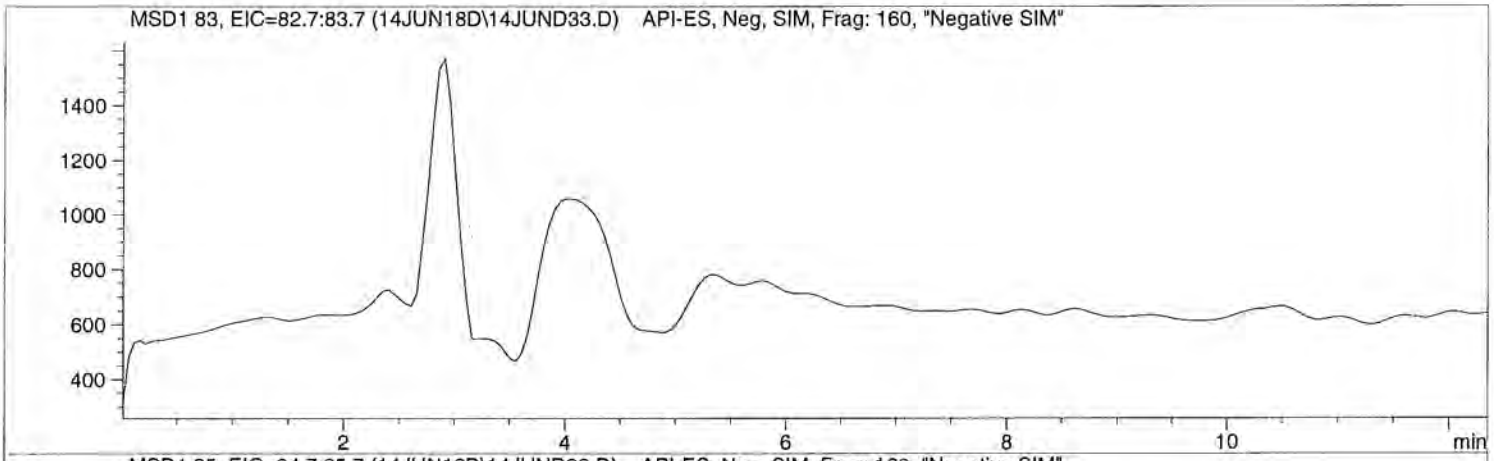
*** End of Report ***

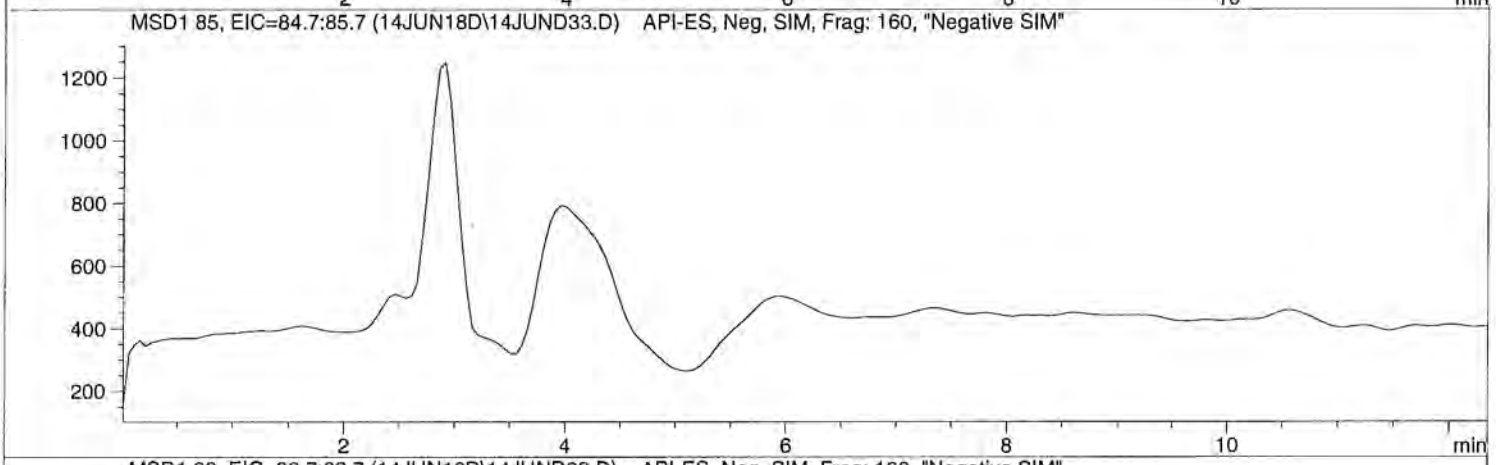
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND33.D Sample Name: 1815991001

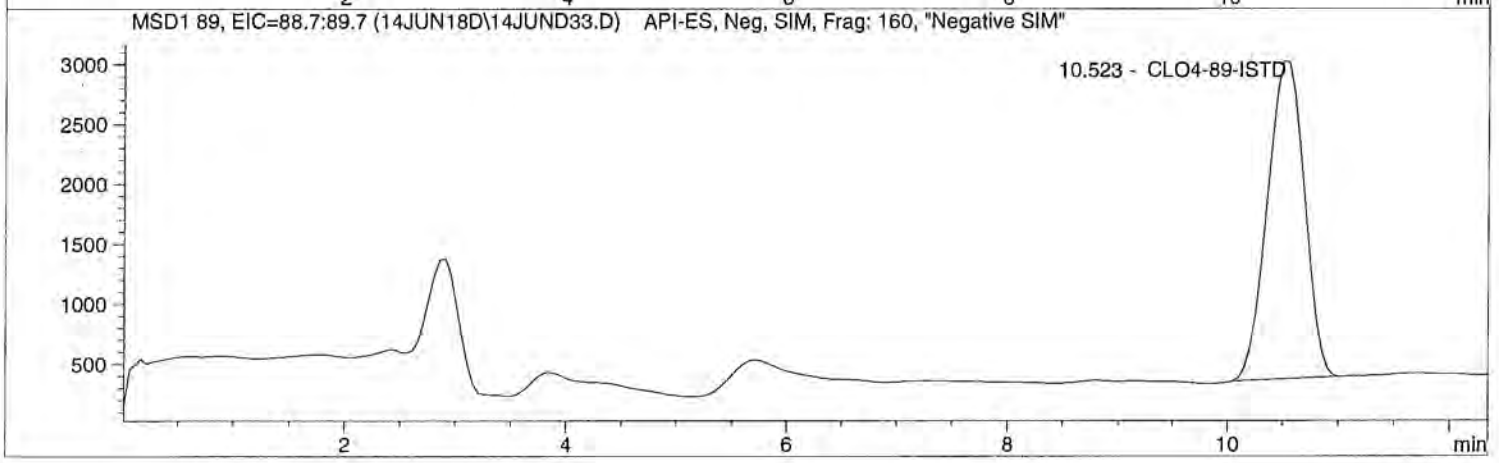
Injection Date:	6/14/2018 18:53:49	Seq Line:	33
Sample Name:	1815991001	Location:	Vial 96
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND33.D Sample Name: 1815991001

Injection Date:	6/14/2018 18:53:49	Seq Line:	33
Sample Name:	1815991001	Location:	Vial 96
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.523	PBA	61048.9	5.0000	CLO4-89-ISTD

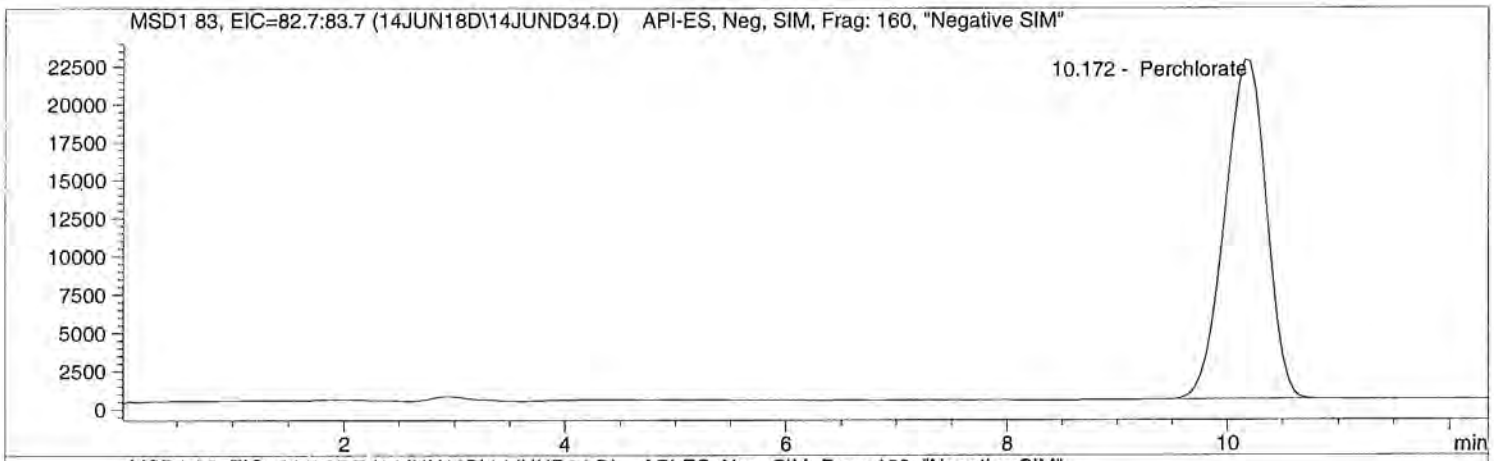
*** End of Report ***

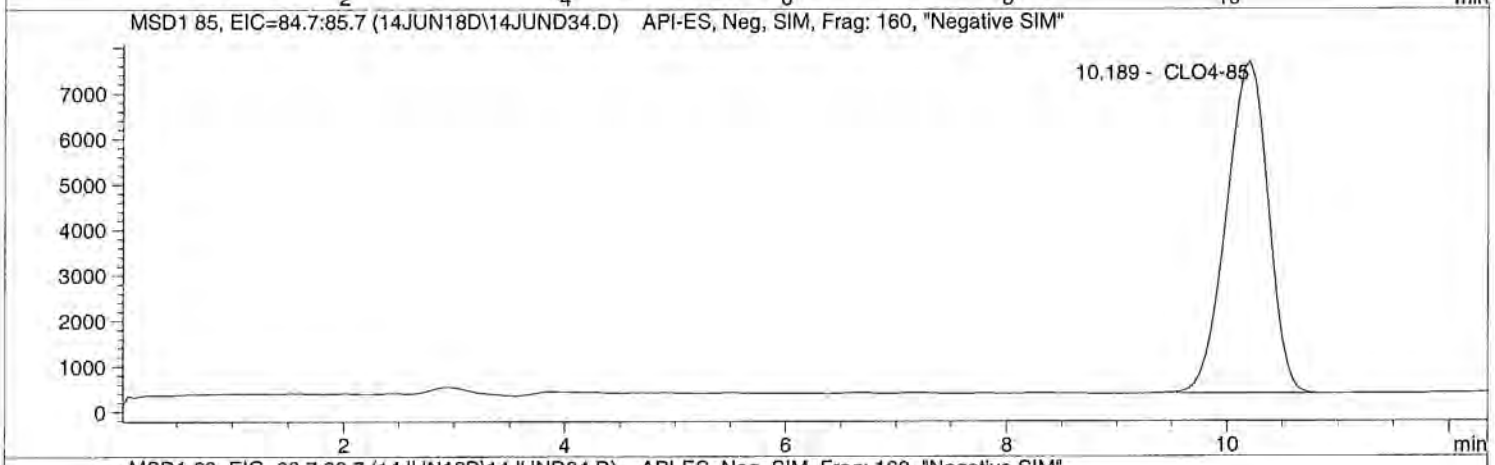
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND34.D Sample Name: 1815992001 1K

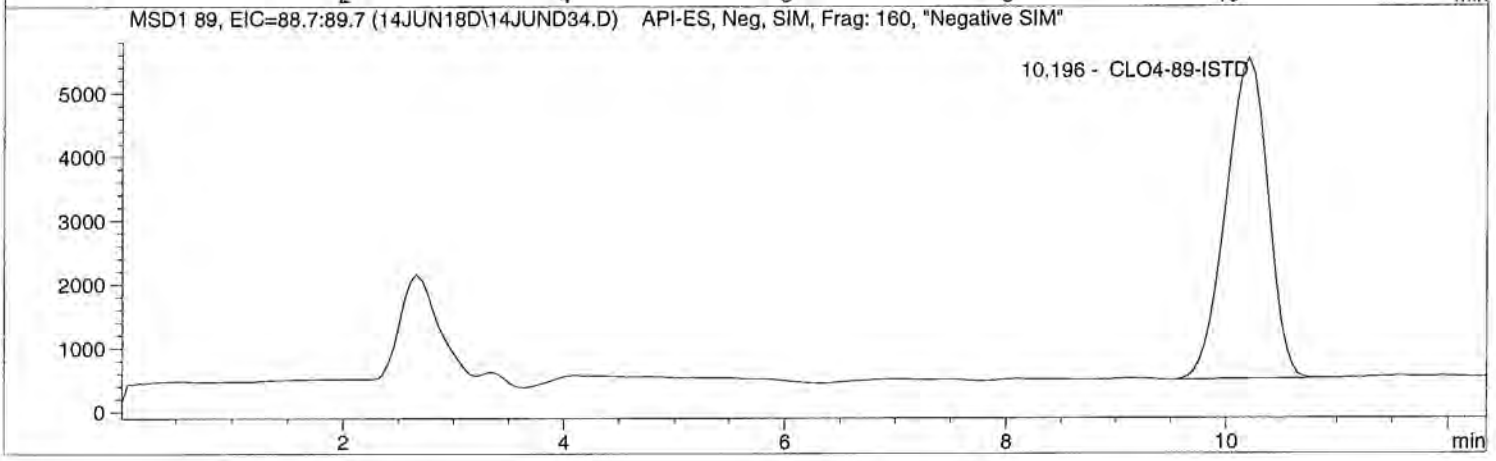
Injection Date:	6/14/2018 19:08:02	Seq Line:	34
Sample Name:	1815992001 1K	Location:	Vial 97
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND34.D Sample Name: 1815992001 1K

Injection Date:	6/14/2018 19:08:02	Seq Line:	34
Sample Name:	1815992001 1K	Location:	Vial 97
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.172	BBA	579000.9	21420.1932	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.189	BBA	191018.4	20562.3407	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.196	PBA	132654.2	5000.0000	CLO4-89-ISTD

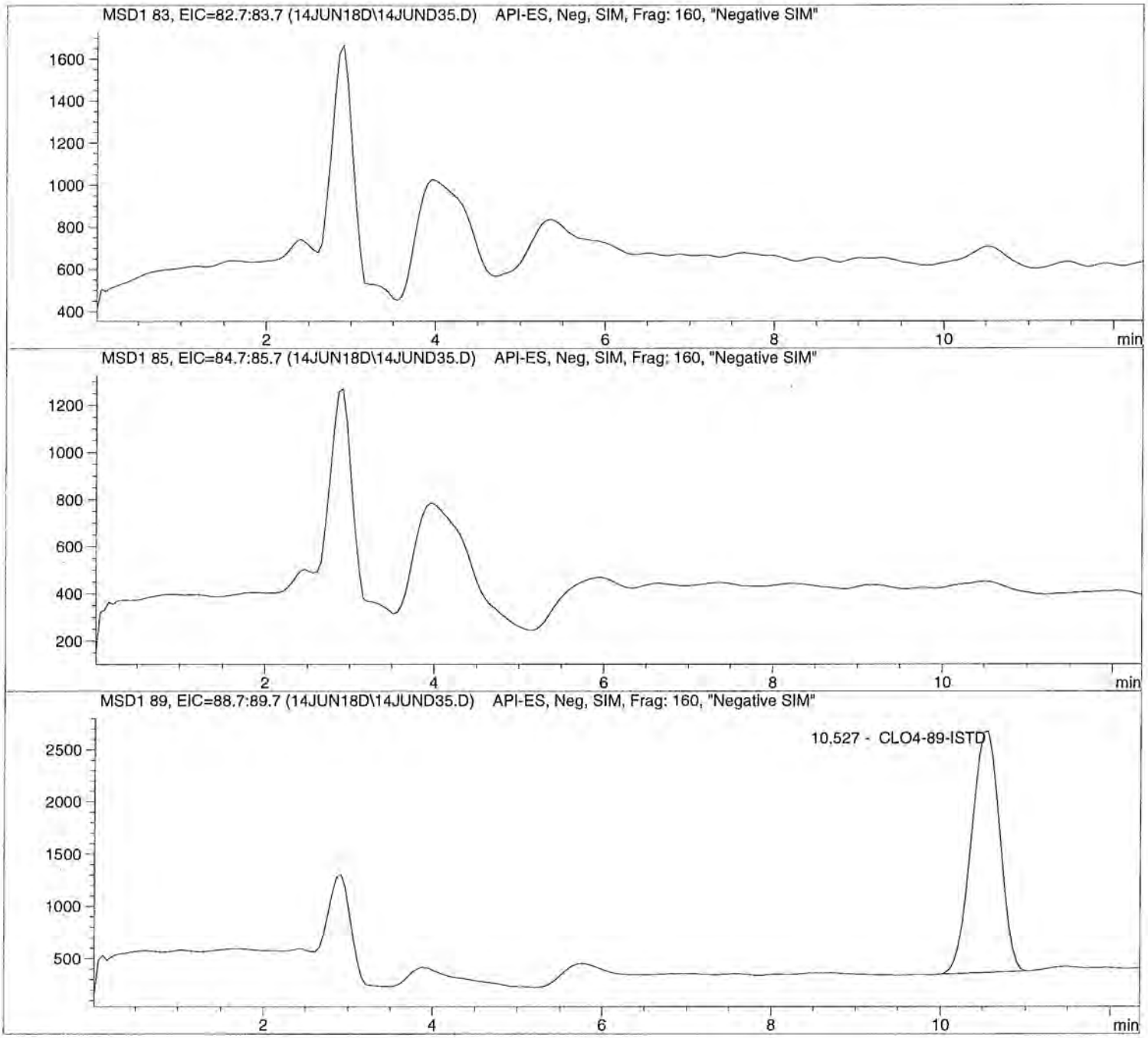
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND35.D Sample Name: 1815993001

Injection Date:	6/14/2018 19:22:16	Seq Line:	35
Sample Name:	1815993001	Location:	Vial 98
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND35.D Sample Name: 1815993001

Injection Date:	6/14/2018 19:22:16	Seq Line:	35
Sample Name:	1815993001	Location:	Vial 98
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.527	PBA	53821.9	5.0000	CLO4-89-ISTD

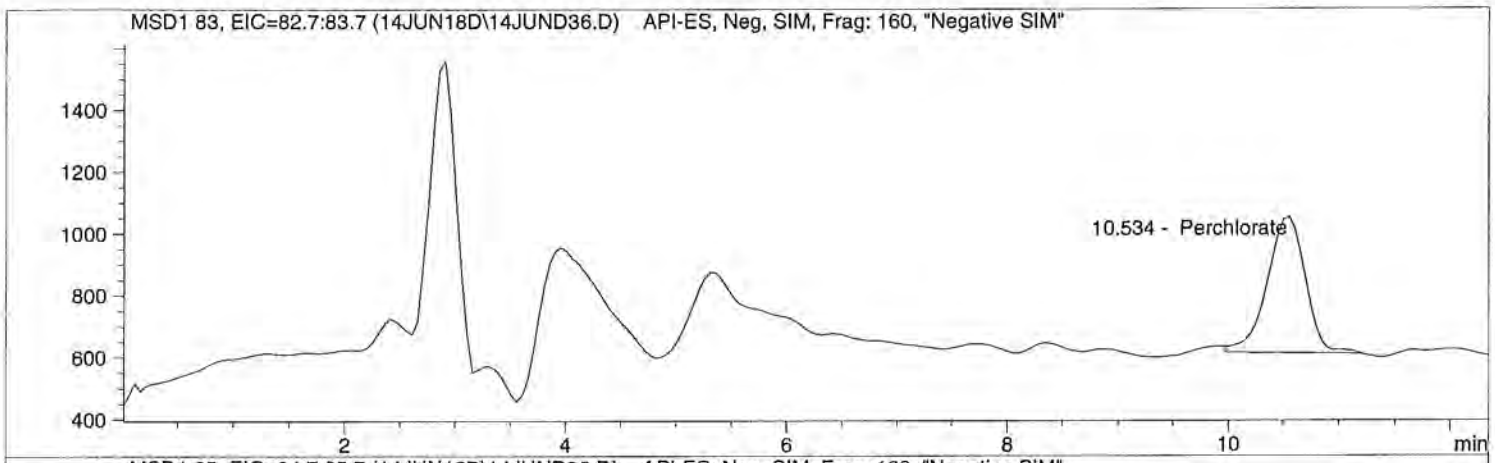
*** End of Report ***

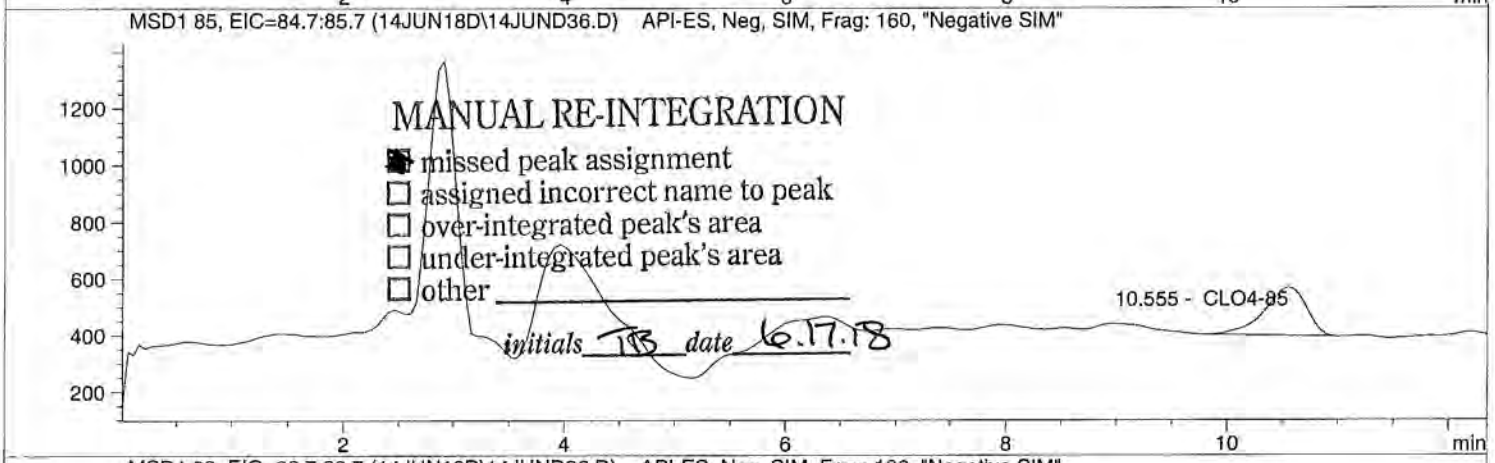
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND36.D Sample Name: 1816534001

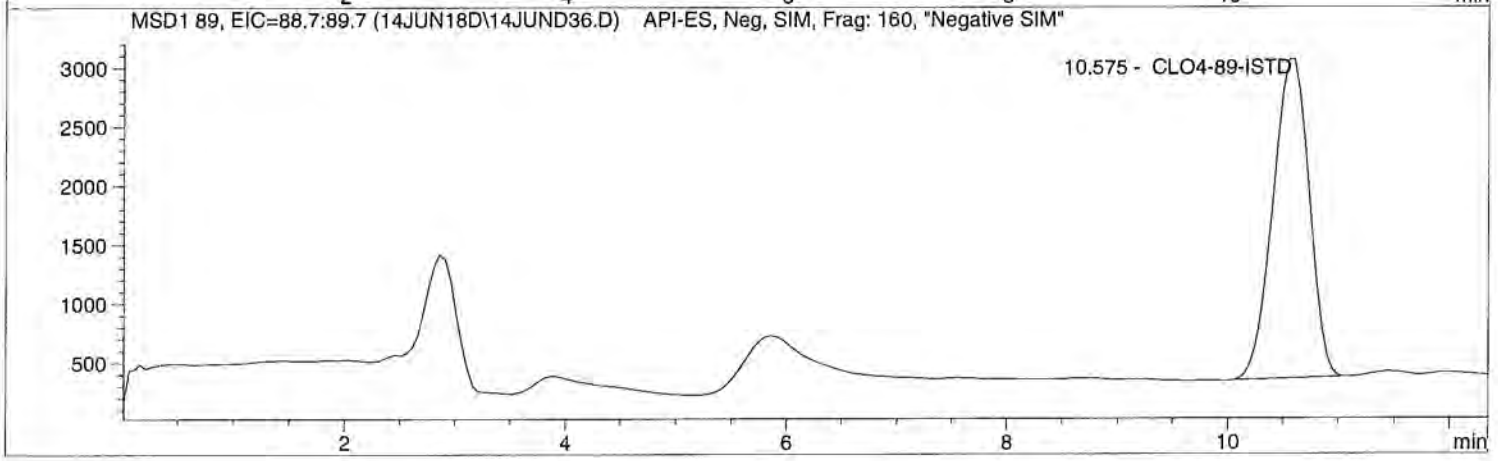
Injection Date:	6/14/2018 19:36:36	Seq Line:	36
Sample Name:	1816534001	Location:	Vial 99
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND36.D Sample Name: 1816534001

Injection Date:	6/14/2018 19:36:36	Seq Line:	36
Sample Name:	1816534001	Location:	Vial 99
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.534	BBA	10511.0	0.9336	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.555	MM	4480.6	0.9214	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.575	PBA	61582.9	5.0000	CLO4-89-ISTD

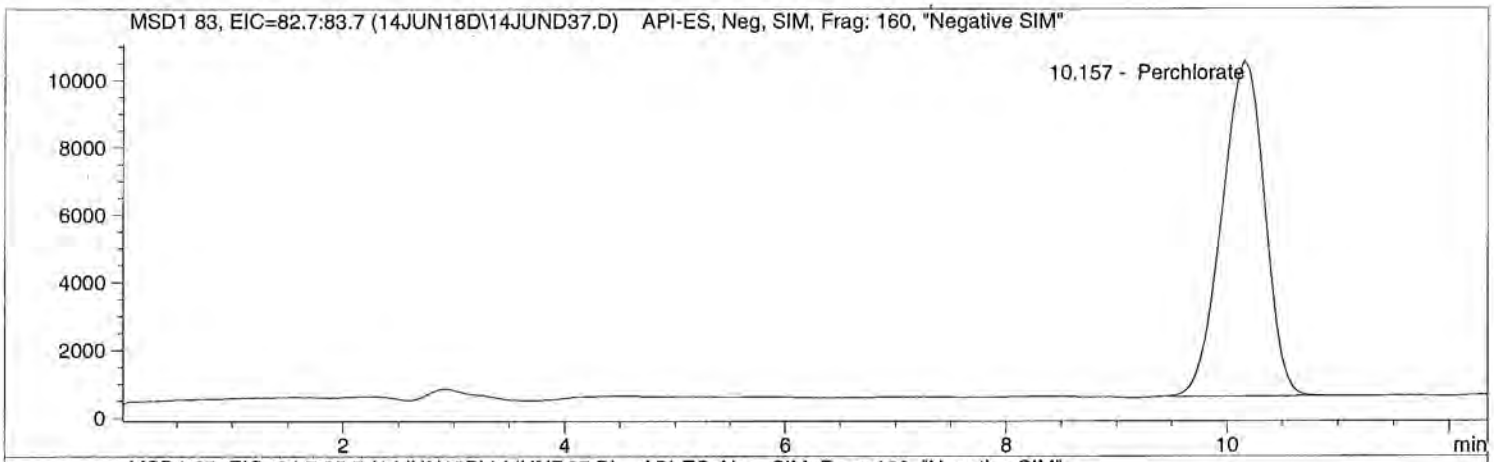
*** End of Report ***

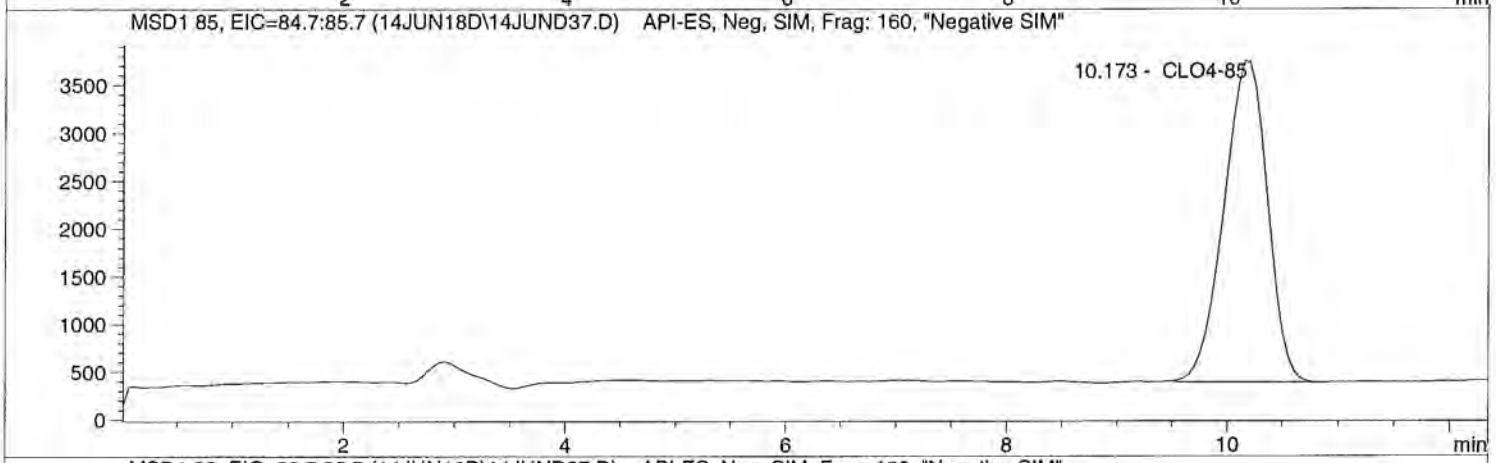
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND37.D Sample Name: 1815740002 100

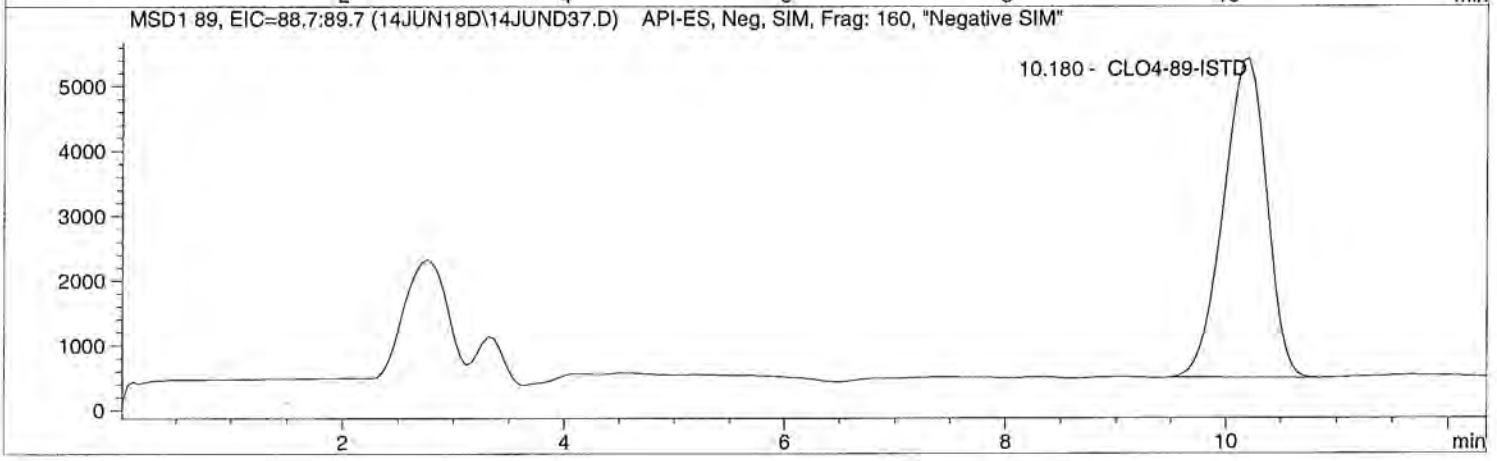
Injection Date:	6/14/2018 19:50:52	Seq Line:	37
Sample Name:	1815740002 100	Location:	Vial 51
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND37.D Sample Name: 1815740002 100

Injection Date:	6/14/2018 19:50:52	Seq Line:	37
Sample Name:	1815740002 100	Location:	Vial 51
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	100.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.157	BBA	267604.5	1017.2050	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.173	BBA	92279.9	1007.5799	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.180	BBA	134303.8	500.0000	CLO4-89-ISTD

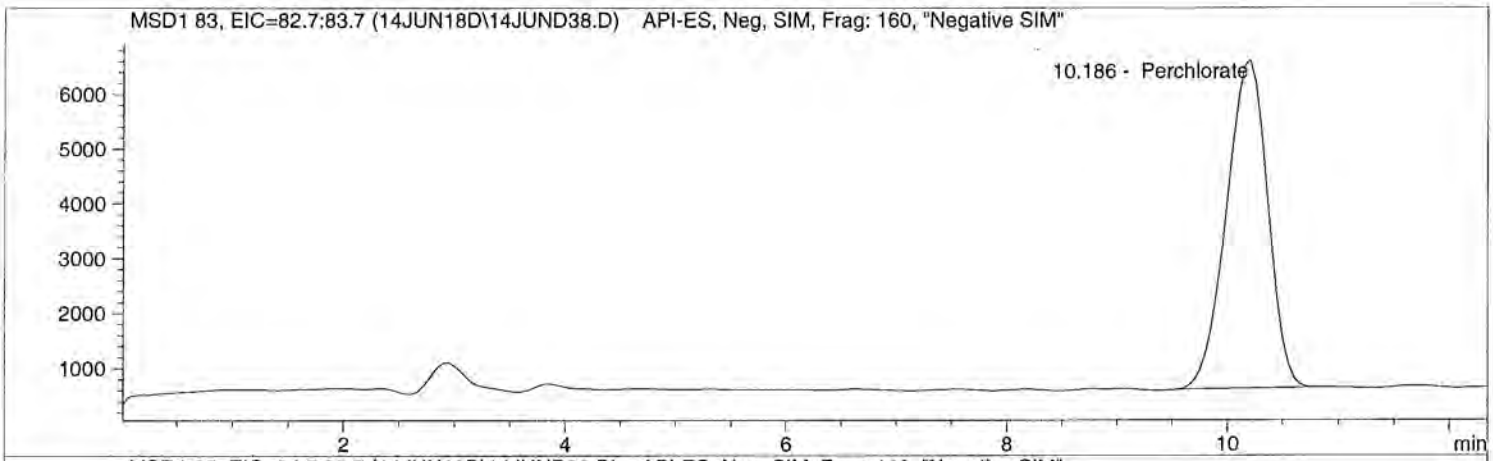
*** End of Report ***

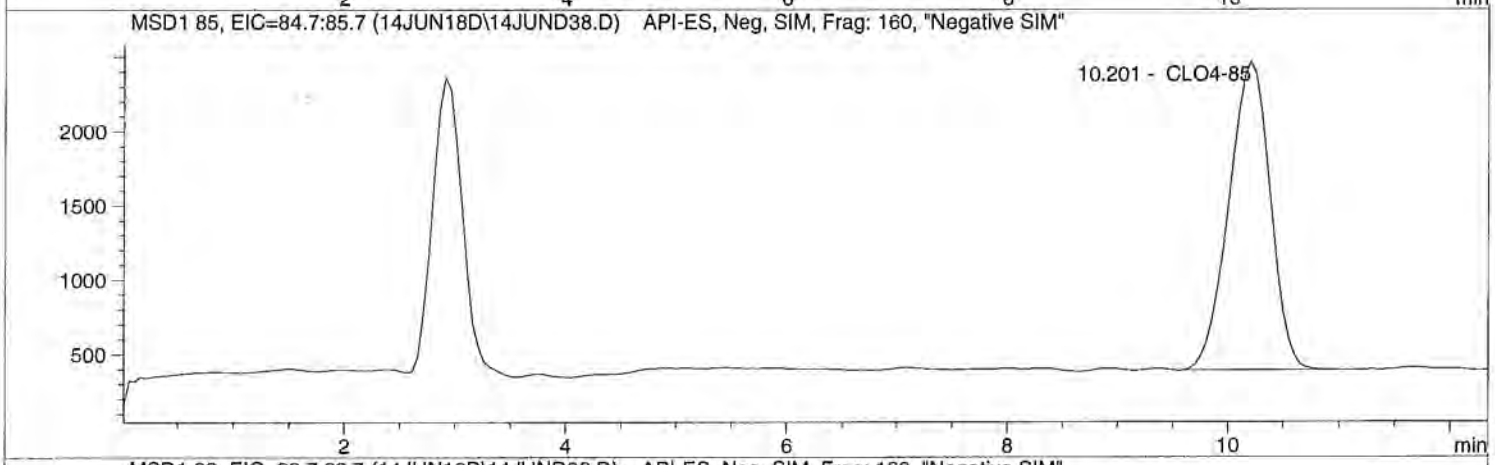
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND38.D Sample Name: 1815740003 10K

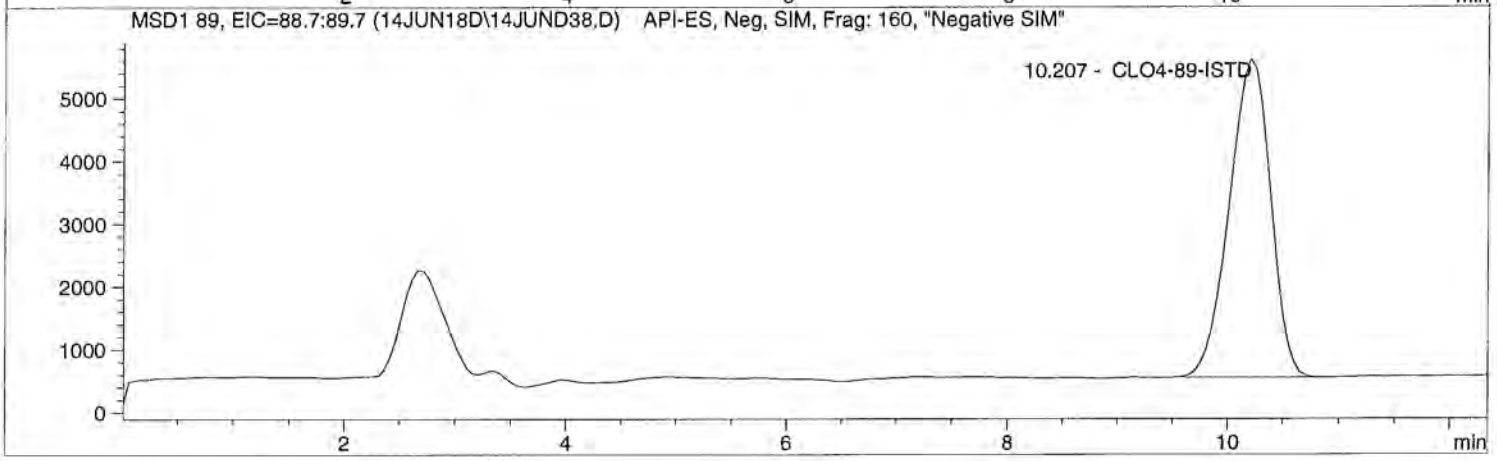
Injection Date:	6/14/2018 20:05:08	Seq Line:	38
Sample Name:	1815740003 10K	Location:	Vial 52
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Injection Date:	6/14/2018 20:05:08	Seq Line:	38
Sample Name:	1815740003 10K	Location:	Vial 52
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	10000.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.186	PBA	154877.4	60914.4333	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.201	PBA	53800.4	59865.4344	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.207	BBA	131950.8	50000.0000	CLO4-89-ISTD

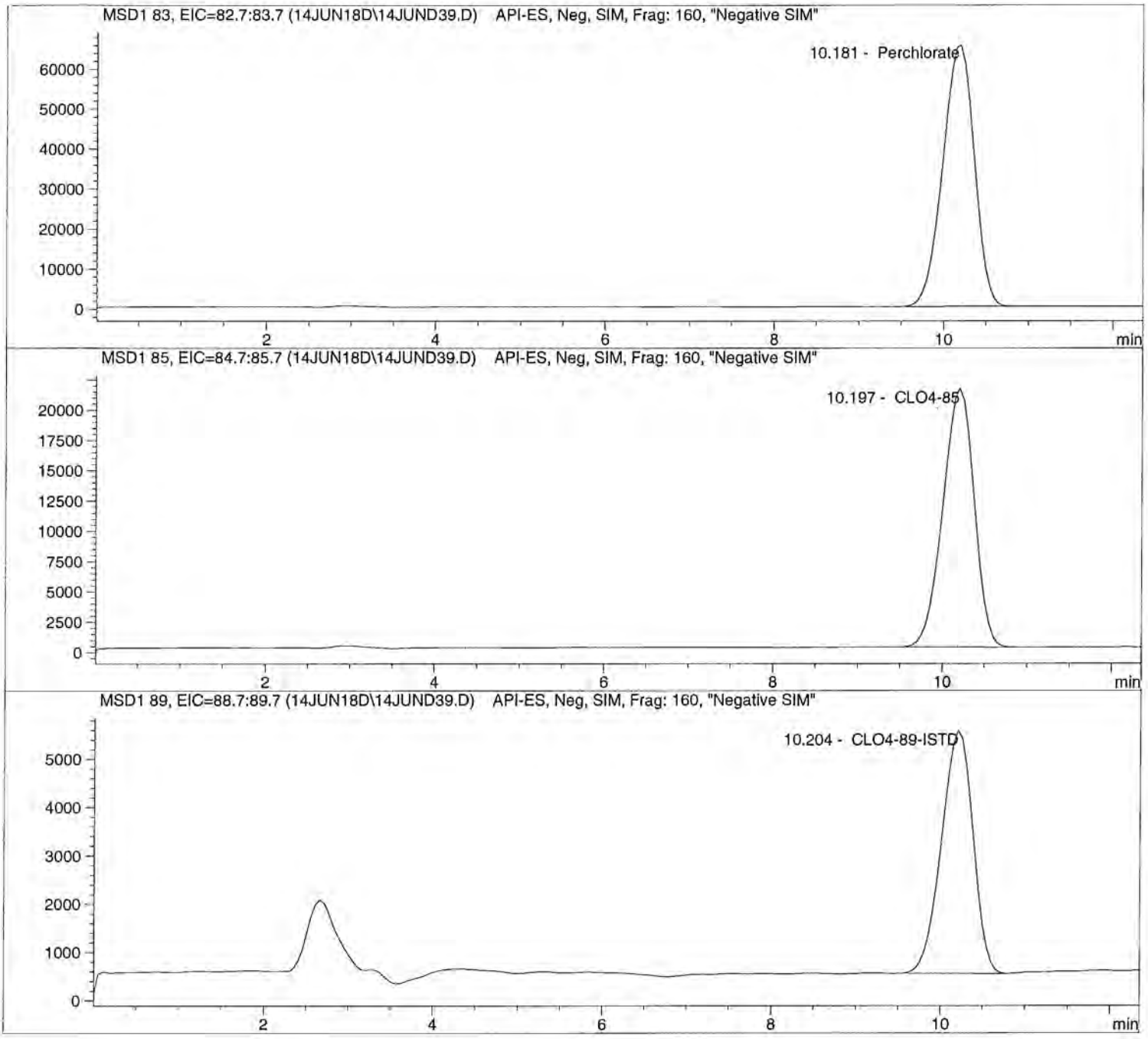
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND39.D Sample Name: 1815740005 100 00903131

Injection Date:	6/14/2018 20:19:28	Seq Line:	39
Sample Name:	1815740005 100	Location:	Vial 53
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND39.D Sample Name: 1815740005 100

Injection Date:	6/14/2018 20:19:28	Seq Line:	39
Sample Name:	1815740005 100	Location:	Vial 53
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	100.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.181	BBA	1698492.9	5684.0471	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.197	BBA	552736.8	5422.1146	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.204	BBA	131262.1	500.0000	CLO4-89-ISTD

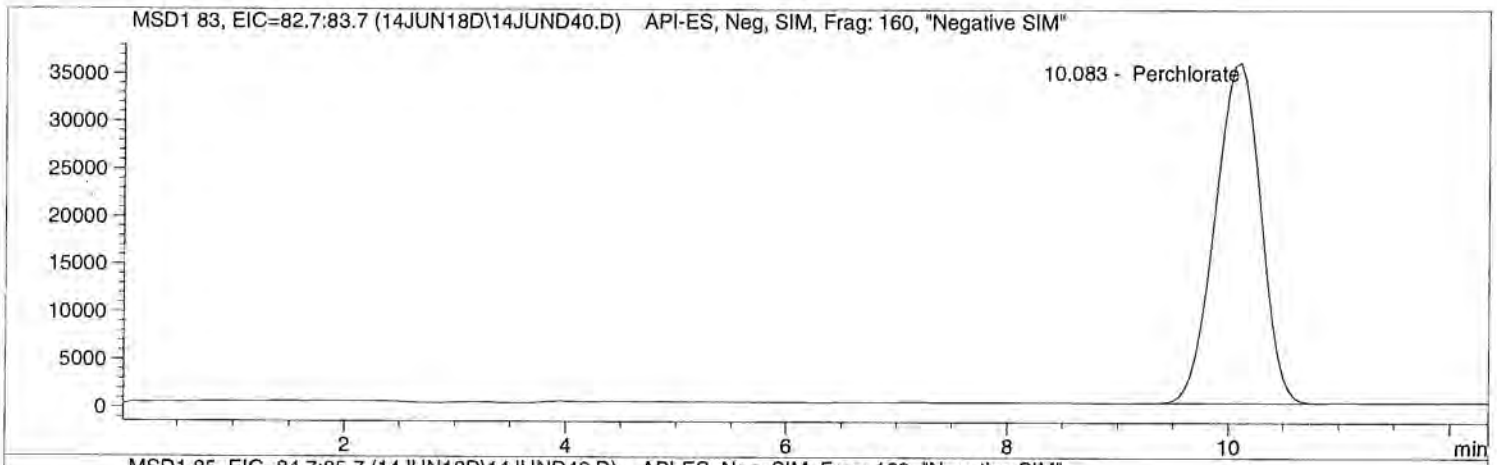
*** End of Report ***

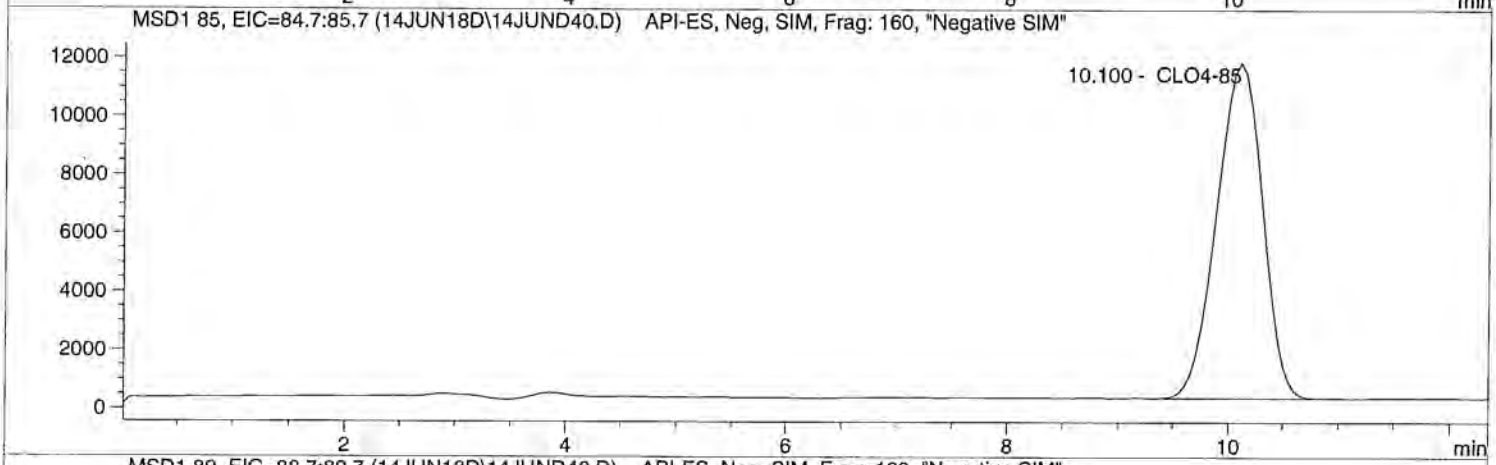
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND40.D Sample Name: 605342 CCV@25

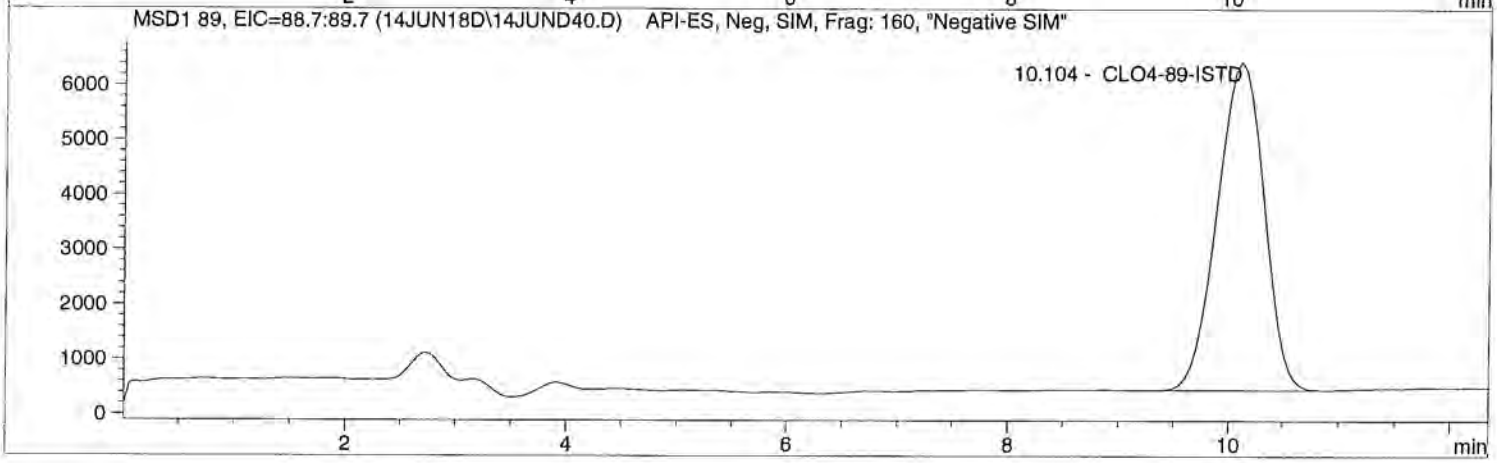
Injection Date:	6/14/2018 20:33:44	Seq Line:	40
Sample Name:	605342 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND40.D Sample Name: 605342 CCV@25

Injection Date:	6/14/2018 20:33:44	Seq Line:	40
Sample Name:	605342 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.083	BBA	1025812.5	27.8946	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.100	PBA	332463.3	26.4023	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.104	BBA	176654.7	5.0000	CLO4-89-ISTD

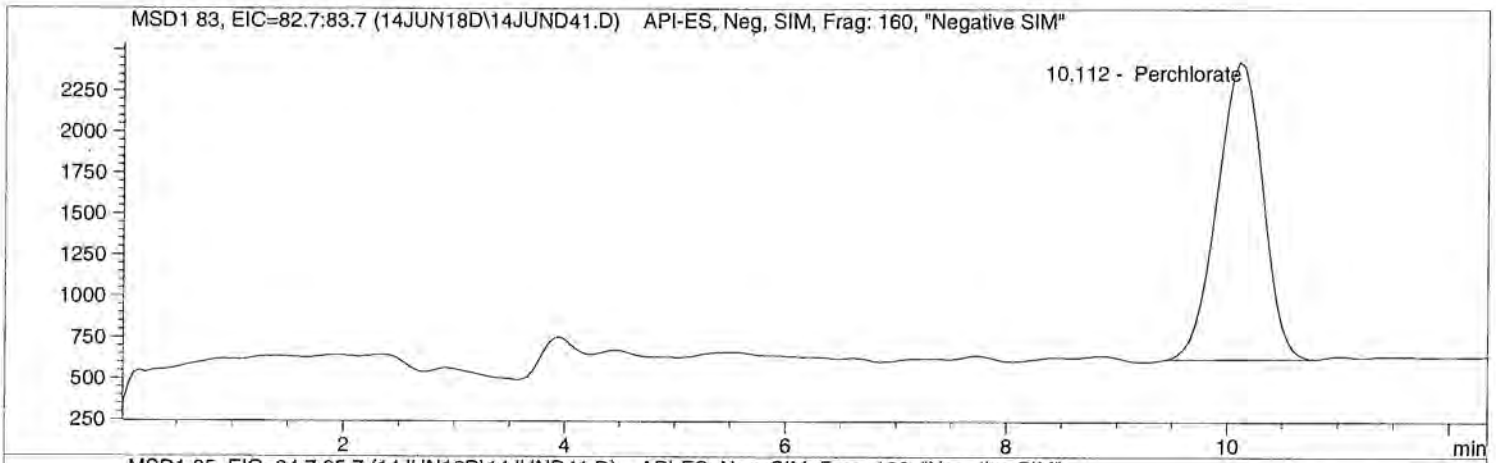
*** End of Report ***

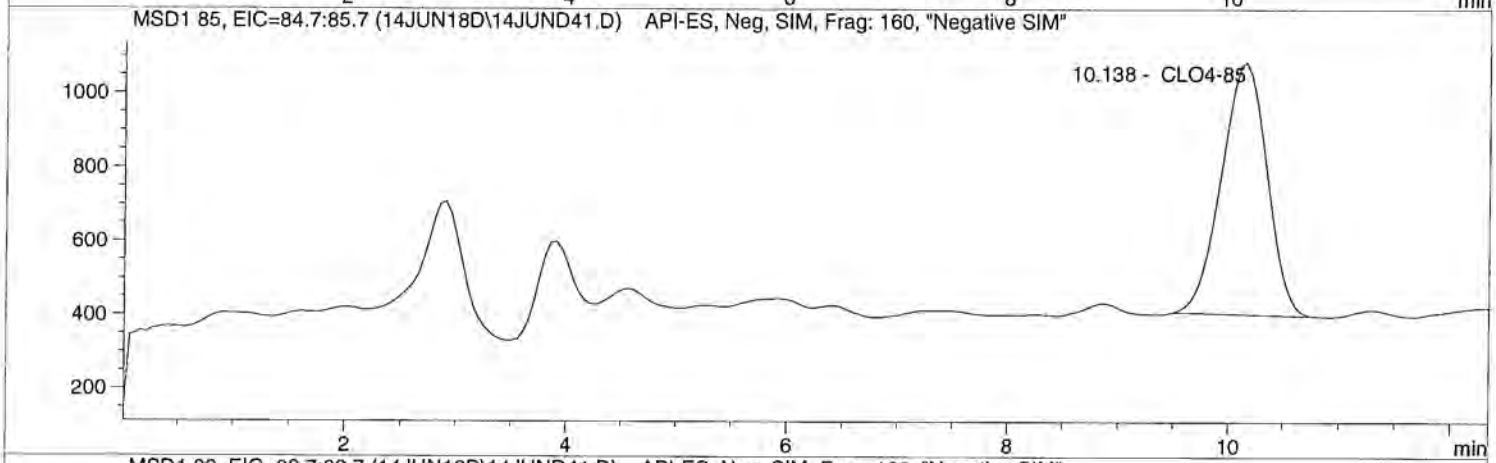
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND41.D Sample Name: 605343 LODV@1.

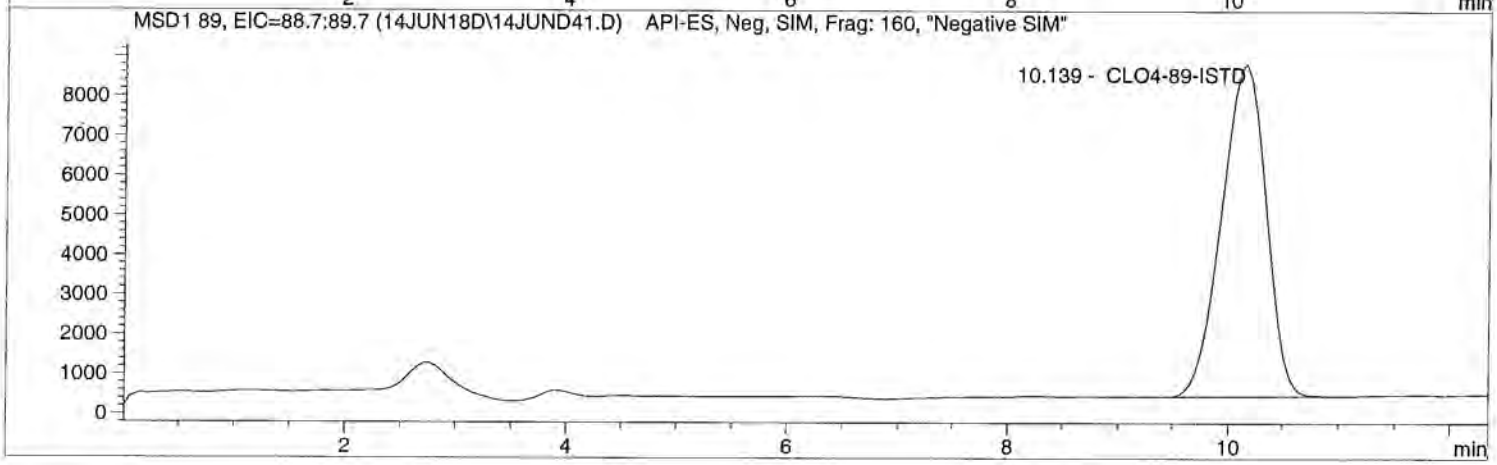
Injection Date:	6/14/2018 20:48:03	Seq Line:	41
Sample Name:	605343 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND41.D Sample Name: 605343 LODV@1.

Injection Date:	6/14/2018 20:48:03	Seq Line:	41
Sample Name:	605343 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By: Signal
Calib. Data Modified: Thu, 14. Jun. 2018,01:02:34 pm
Multiplier: 1.000000
Dilution: 1.000000
Sample Amount: 1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.112	PBA	52151.5	1.1970	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.138	PBA	19729.0	1.0886	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.139	PBA	235935.5	5.0000	CLO4-89-ISTD

*** End of Report ***

Sequence Table:

Method and Injection Info Part:

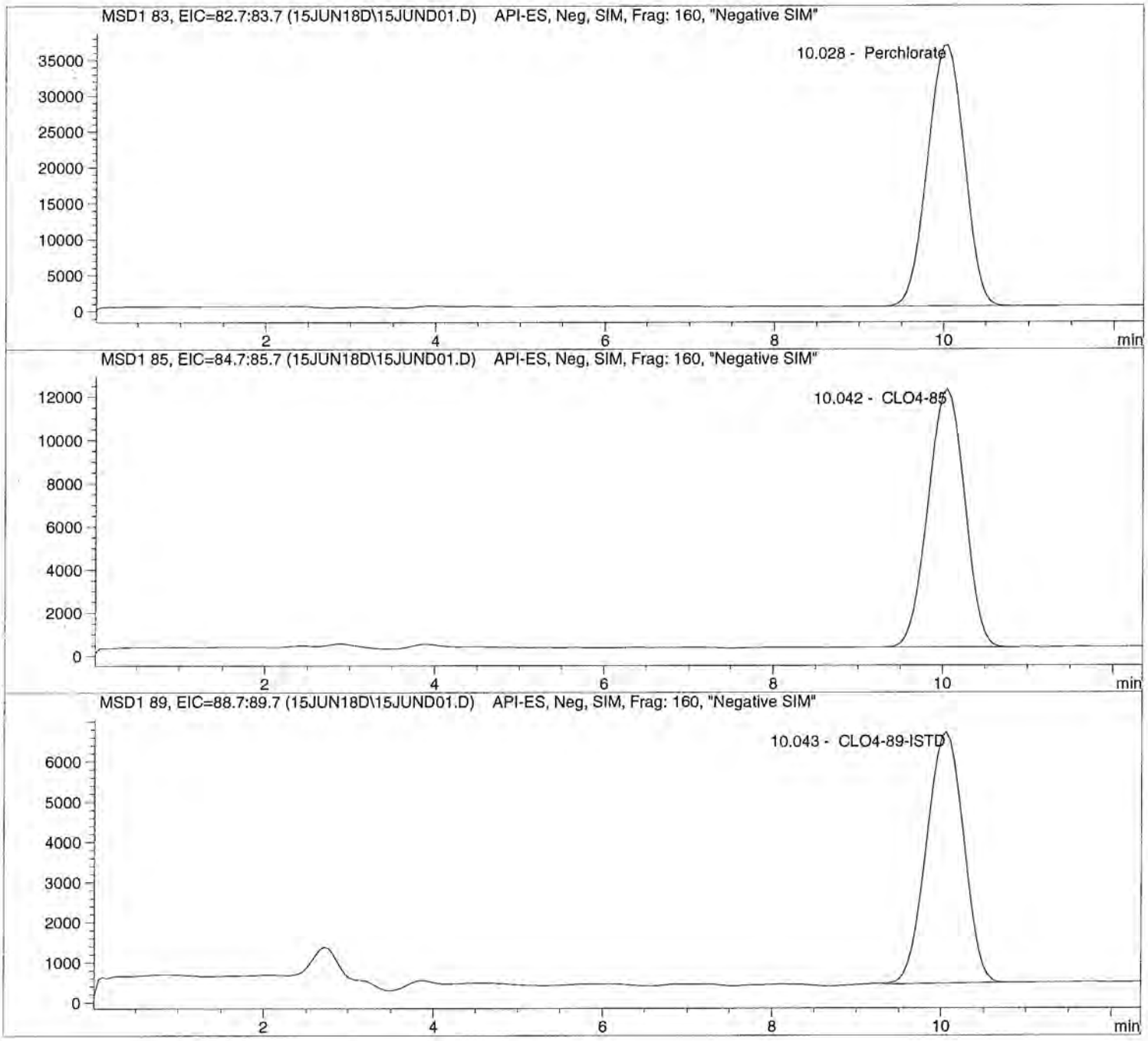
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 41	605457 CCV@25	CLO4-DOD	1	Ctrl Samp		
2	Vial 42	605458 LODV@1.	CLO4-DOD	1	Ctrl Samp		
3	Vial 43	1815991001 5X	CLO4-DOD	1	Sample		
4	Vial 44	1815993001 5X	CLO4-DOD	1	Sample		
5	Vial 45	1816534001 5X	CLO4-DOD	1	Sample		
6	Vial 41	605459 CCV@25	CLO4-DOD	1	Ctrl Samp		
7	Vial 42	605460 LODV@1.	CLO4-DOD	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND01.D Sample Name: 605457 CCV@25

Injection Date:	6/15/2018 10:37:21	Seq Line:	1
Sample Name:	605457 CCV@25	Location:	Vial 41
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND01.D Sample Name: 605457 CCV@25

Injection Date:	6/15/2018 10:37:21	Seq Line:	1
Sample Name:	605457 CCV@25	Location:	Vial 41
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.028	BBA	1092364.1	27.5642	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.042	BBA	357588.0	26.3292	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.043	BBA	190575.5	5.0000	CLO4-89-ISTD

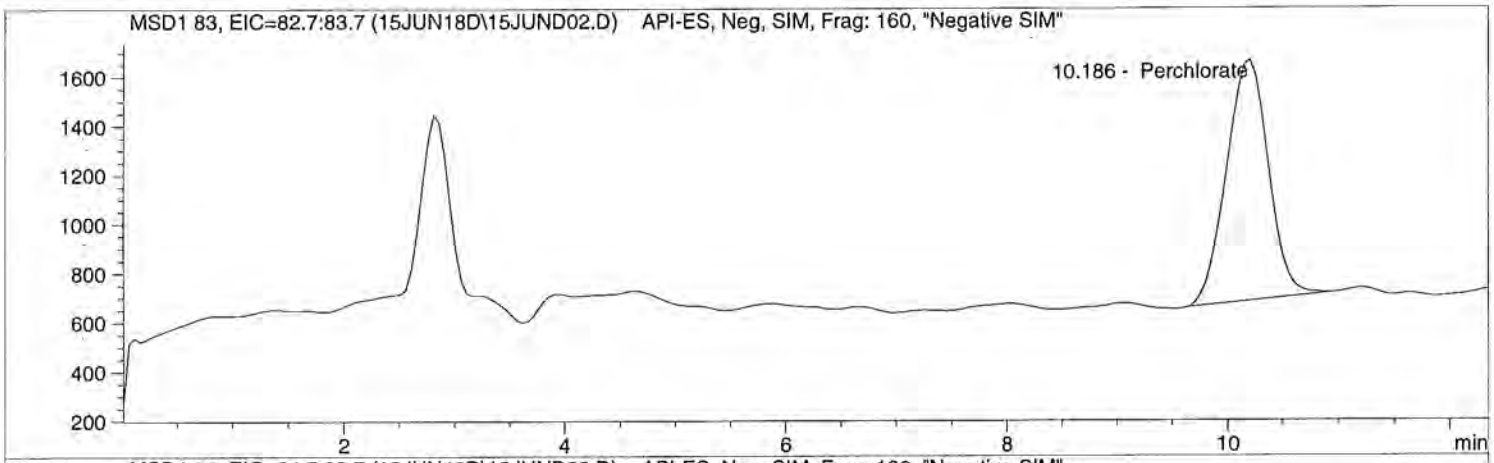
*** End of Report ***

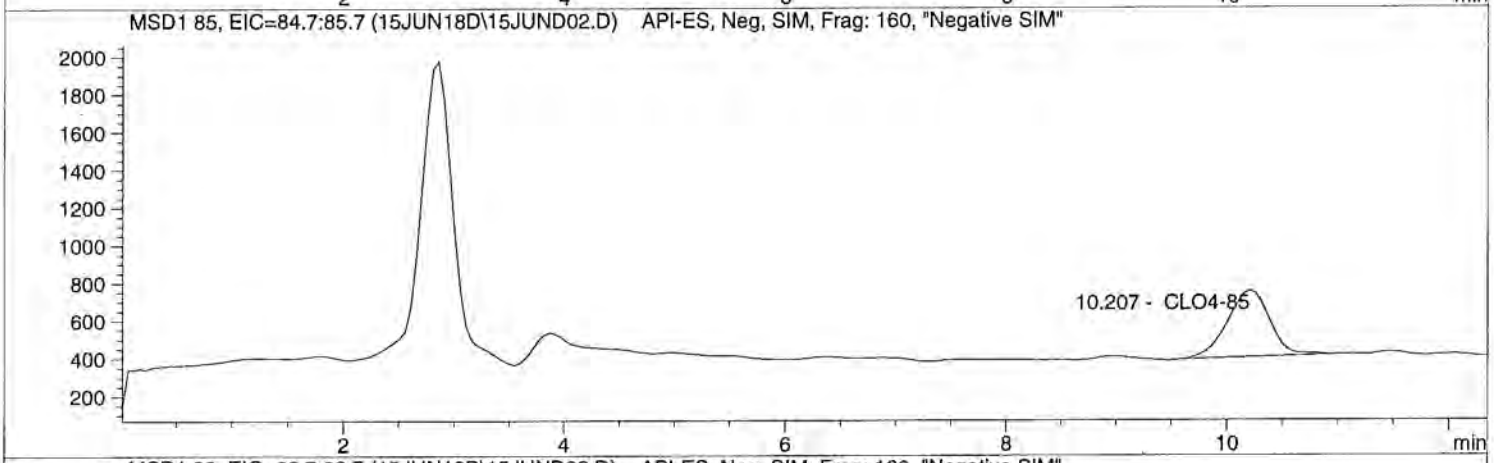
Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND02.D Sample Name: 605458 LODV@1.

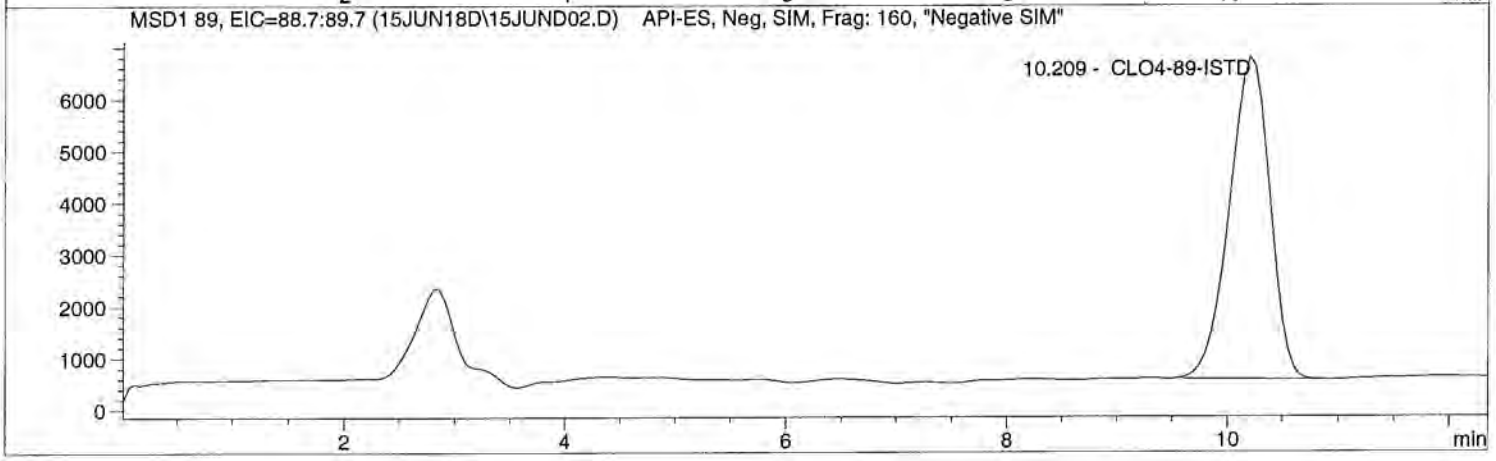
Injection Date:	6/15/2018 10:51:37	Seq Line:	2
Sample Name:	605458 LODV@1.	Location:	Vial 42
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND02.D Sample Name: 605458 LODV@1.

Injection Date:	6/15/2018 10:51:37	Seq Line:	2
Sample Name:	605458 LODV@1.	Location:	Vial 42
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.186	PBA	25754.6	0.8947	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.207	PBA	9290.9	0.7077	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.209	BBA	157760.7	5.0000	CLO4-89-ISTD

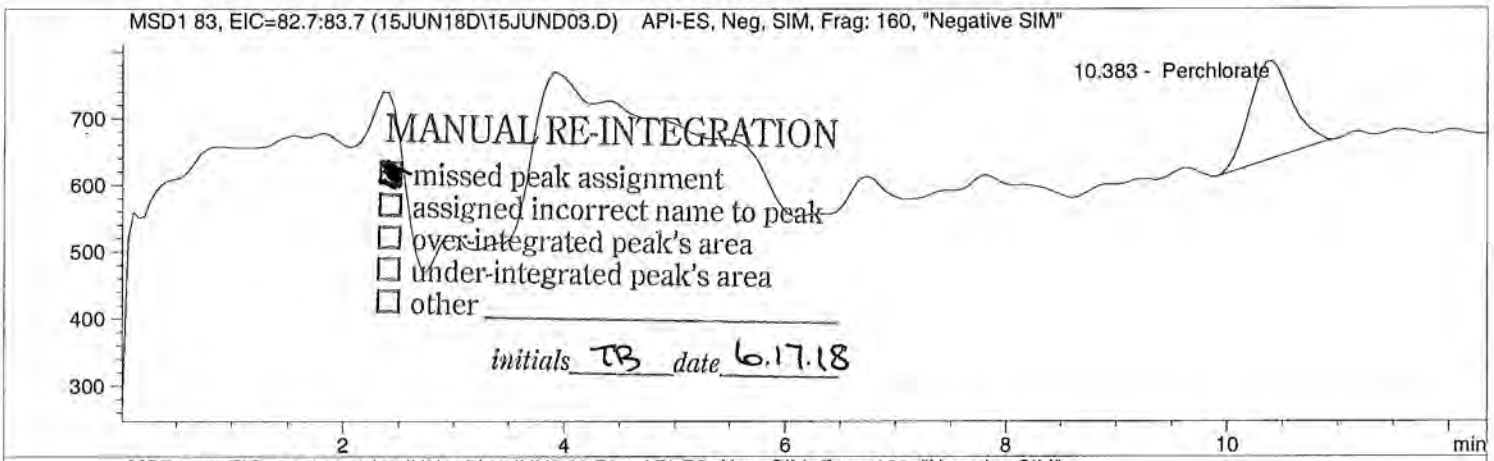
*** End of Report ***

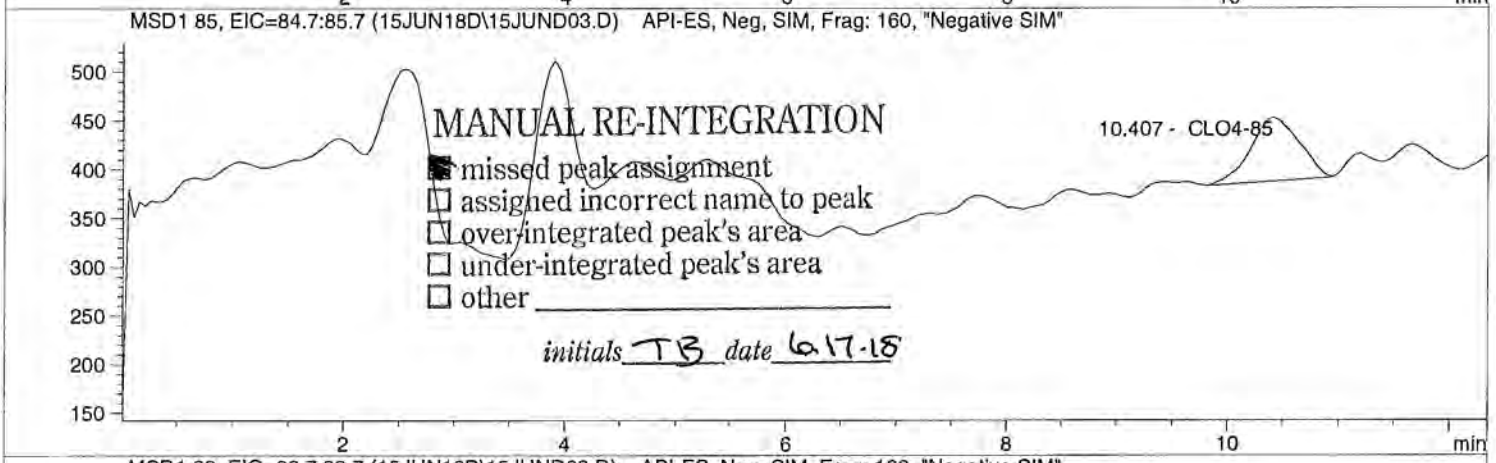
Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND03.D Sample Name: 1815991001 5X

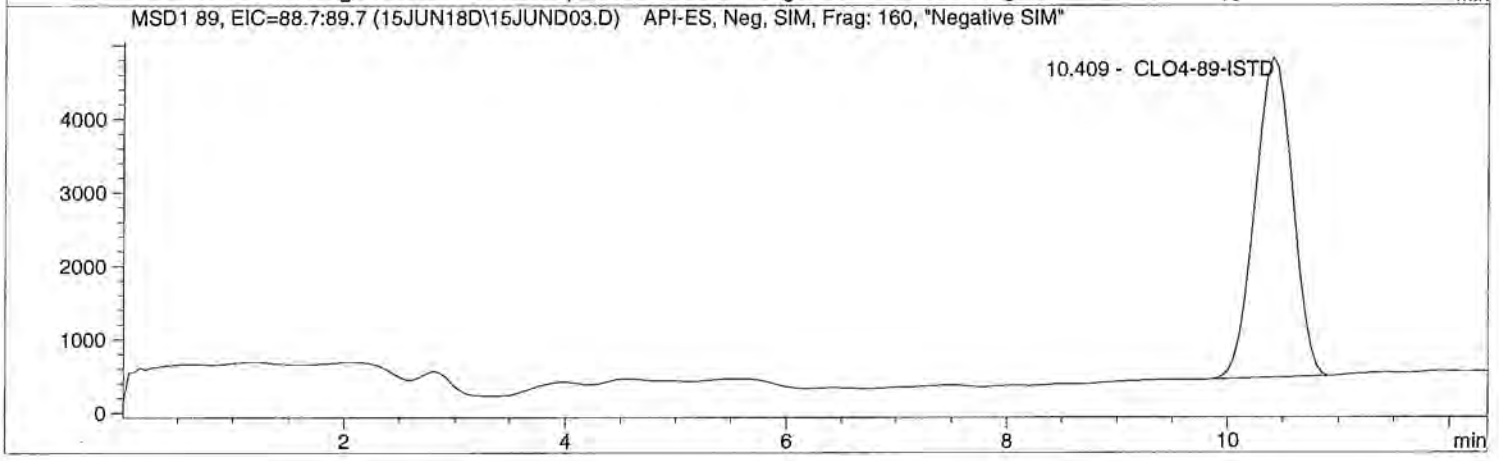
Injection Date:	6/15/2018 11:05:53	Seq Line:	3
Sample Name:	1815991001 5X	Location:	Vial 43
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND03.D Sample Name: 1815991001 5X

Injection Date:	6/15/2018 11:05:53	Seq Line:	3
Sample Name:	1815991001 5X	Location:	Vial 43
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	5.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.383	MM	3890.4	1.1826	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.407	MM	1978.1	0.4730	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.409	PBA	102814.8	25.0000	CLO4-89-ISTD

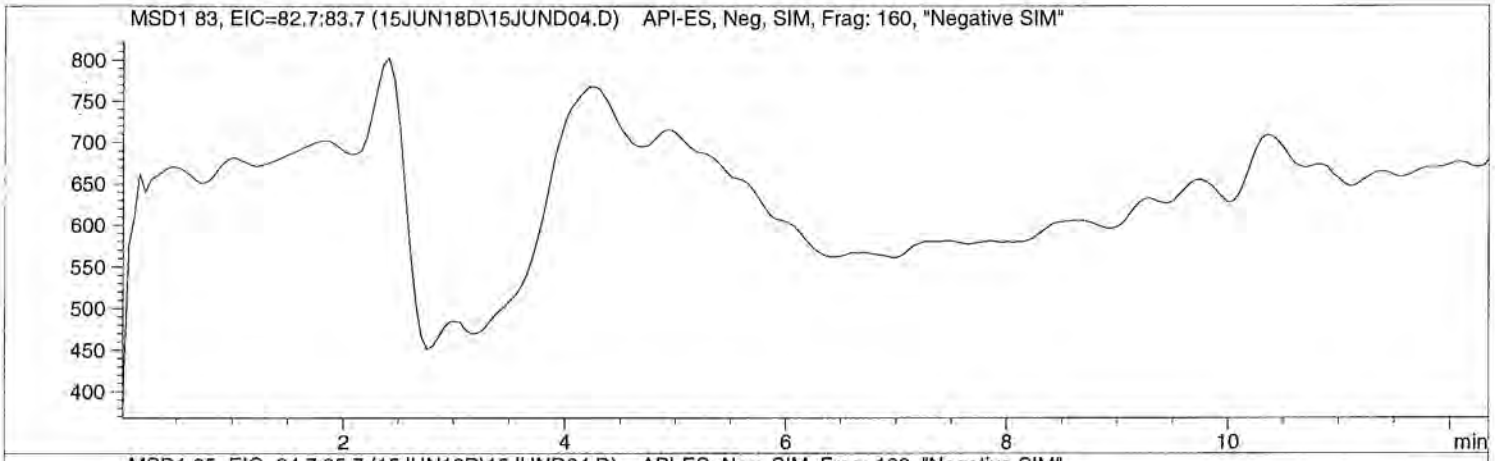
*** End of Report ***

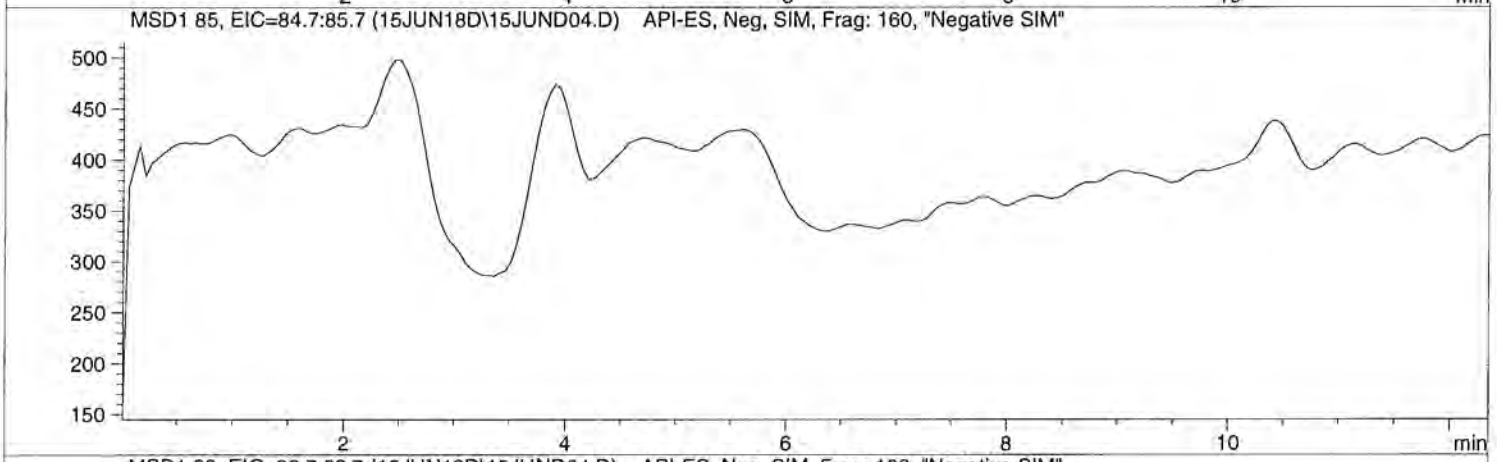
Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND04.D Sample Name: 1815993001 5X

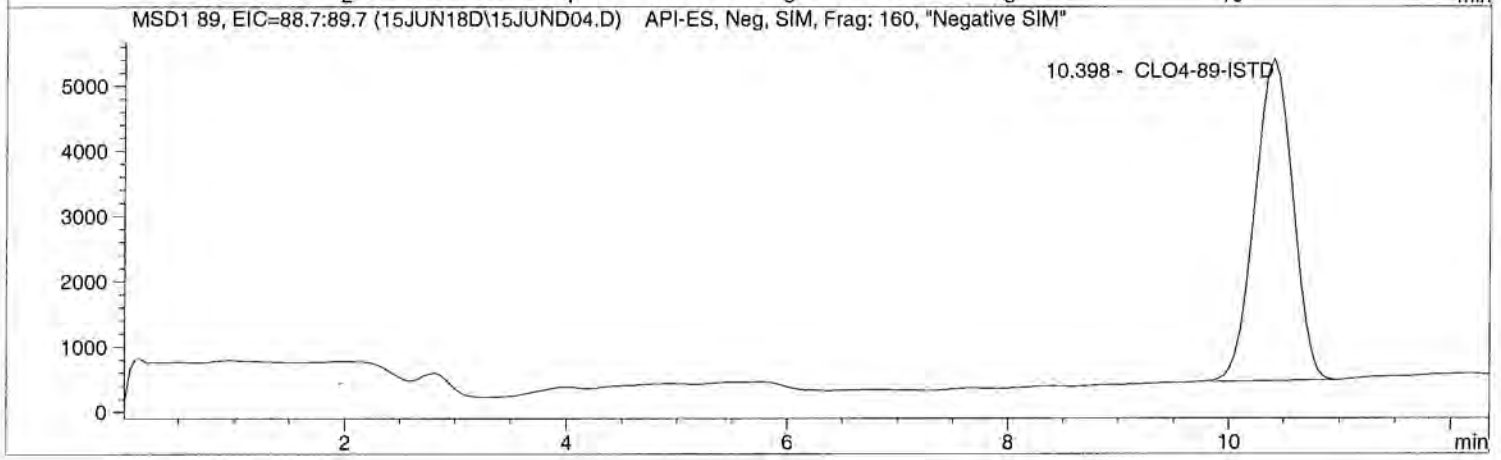
Injection Date:	6/15/2018 11:32:13	Seq Line:	4
Sample Name:	1815993001 5X	Location:	Vial 44
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND04.D Sample Name: 1815993001 5X

Injection Date:	6/15/2018 11:32:13	Seq Line:	4
Sample Name:	1815993001 5X	Location:	Vial 44
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	5.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.398	BBA	118350.6	25.0000	CLO4-89-ISTD

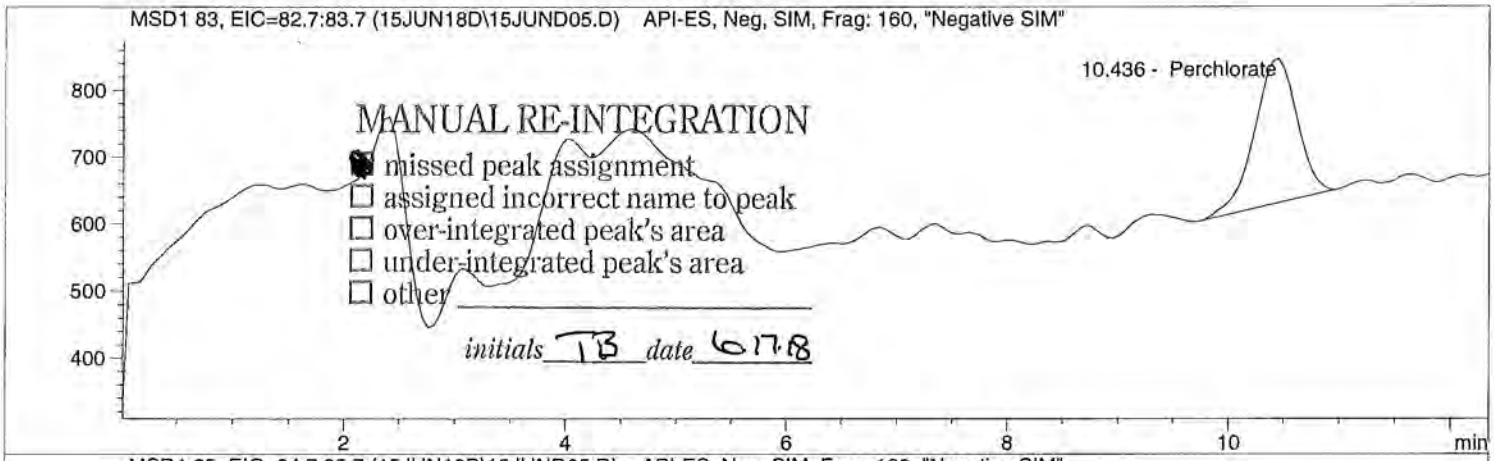
*** End of Report ***

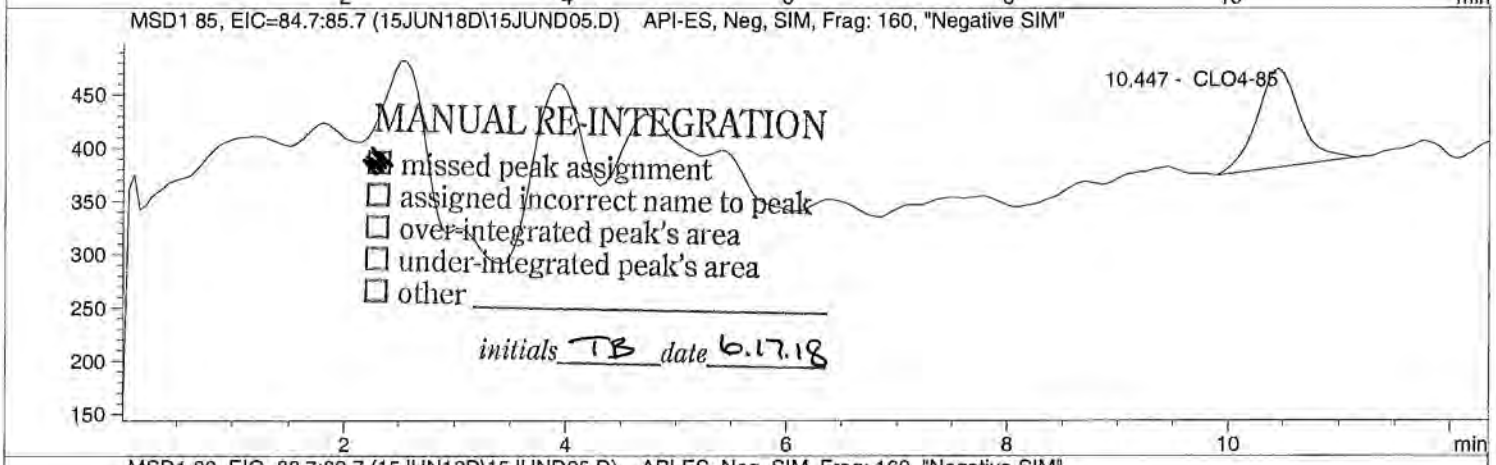
Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND05.D Sample Name: 1816534001 5X

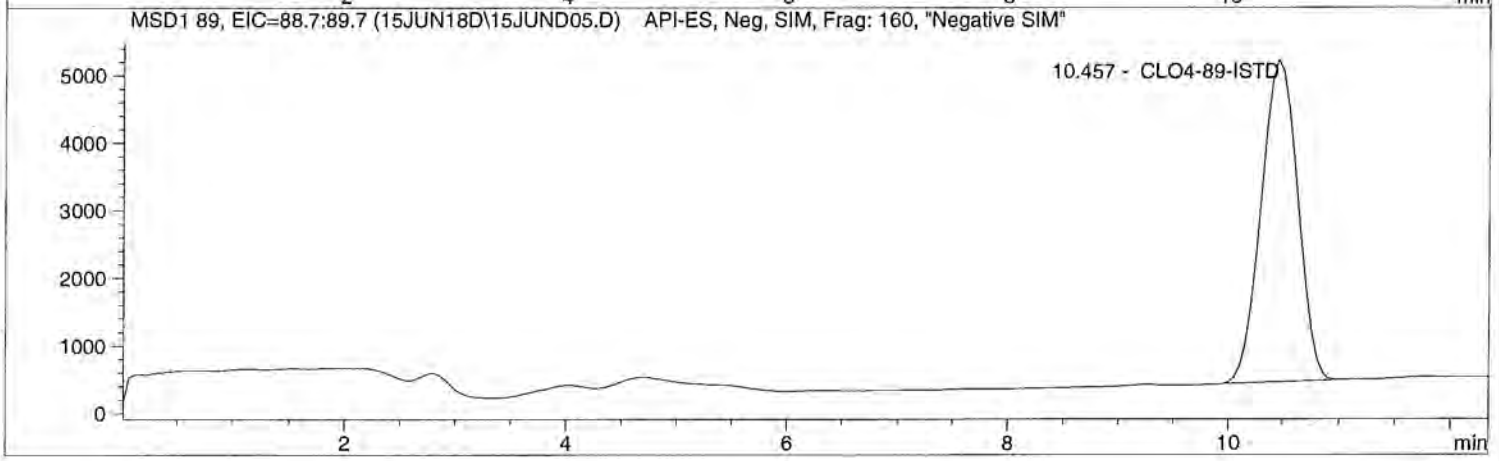
Injection Date:	6/15/2018 11:46:31	Seq Line:	5
Sample Name:	1816534001 5X	Location:	Vial 45
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND05.D Sample Name: 1816534001 5X

Injection Date:	6/15/2018 11:46:31	Seq Line:	5
Sample Name:	1816534001 5X	Location:	Vial 45
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	5.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.436	MM	5786.6	1.5782	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.447	MM	2493.5	0.7479	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.457	PBA	109428.6	25.0000	CLO4-89-ISTD

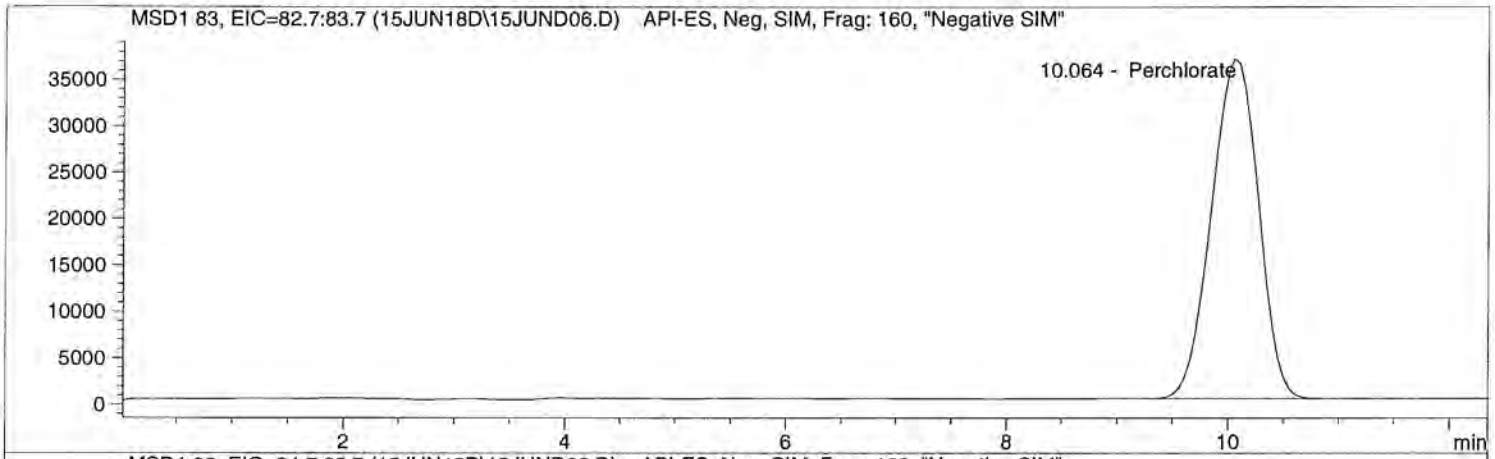
*** End of Report ***

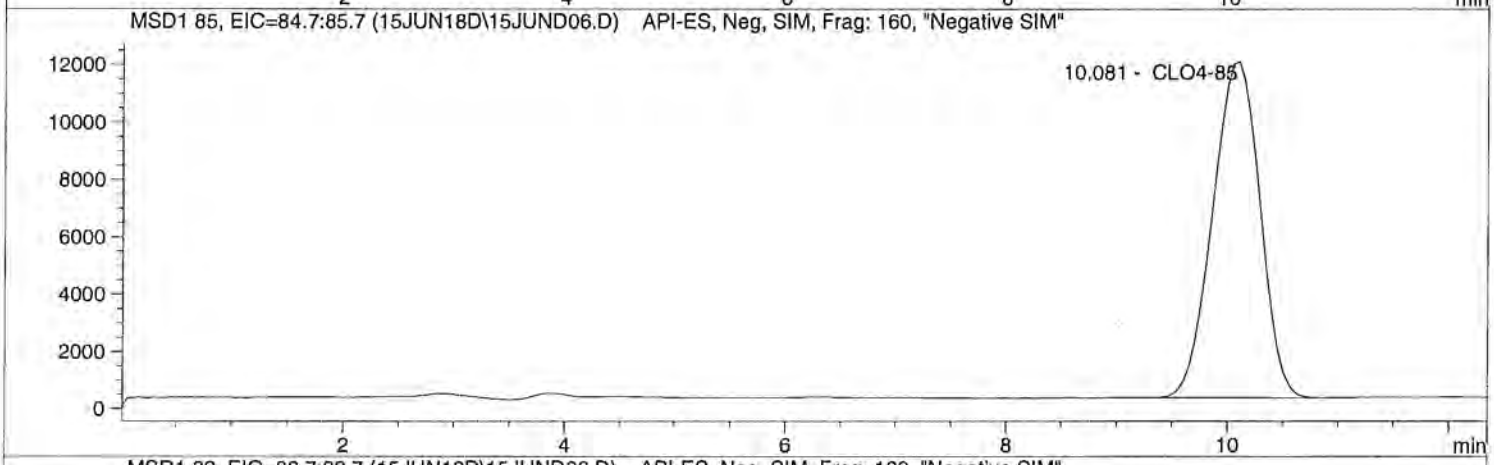
Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND06.D Sample Name: 605459 CCV@25

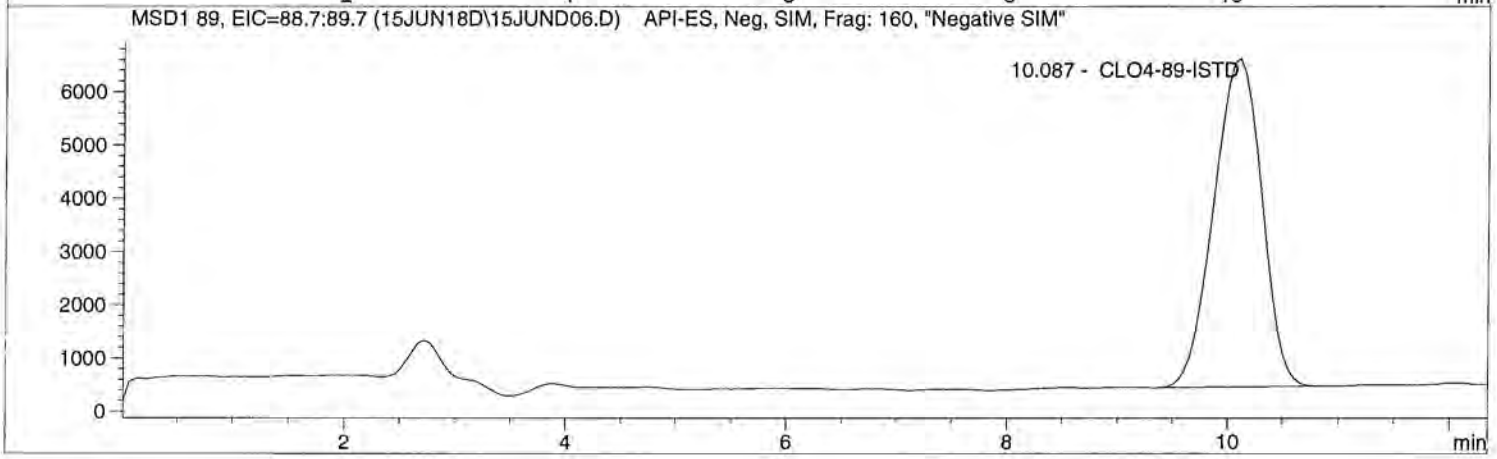
Injection Date:	6/15/2018 12:03:05	Seq Line:	6
Sample Name:	605459 CCV@25	Location:	Vial 41
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND06.D Sample Name: 605459 CCV@25

Injection Date:	6/15/2018 12:03:05	Seq Line:	6
Sample Name:	605459 CCV@25	Location:	Vial 41
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.064	BBA	1079758.9	27.9158	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.081	BBA	349017.1	26.3576	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.087	PBA	185790.9	5.0000	CLO4-89-ISTD

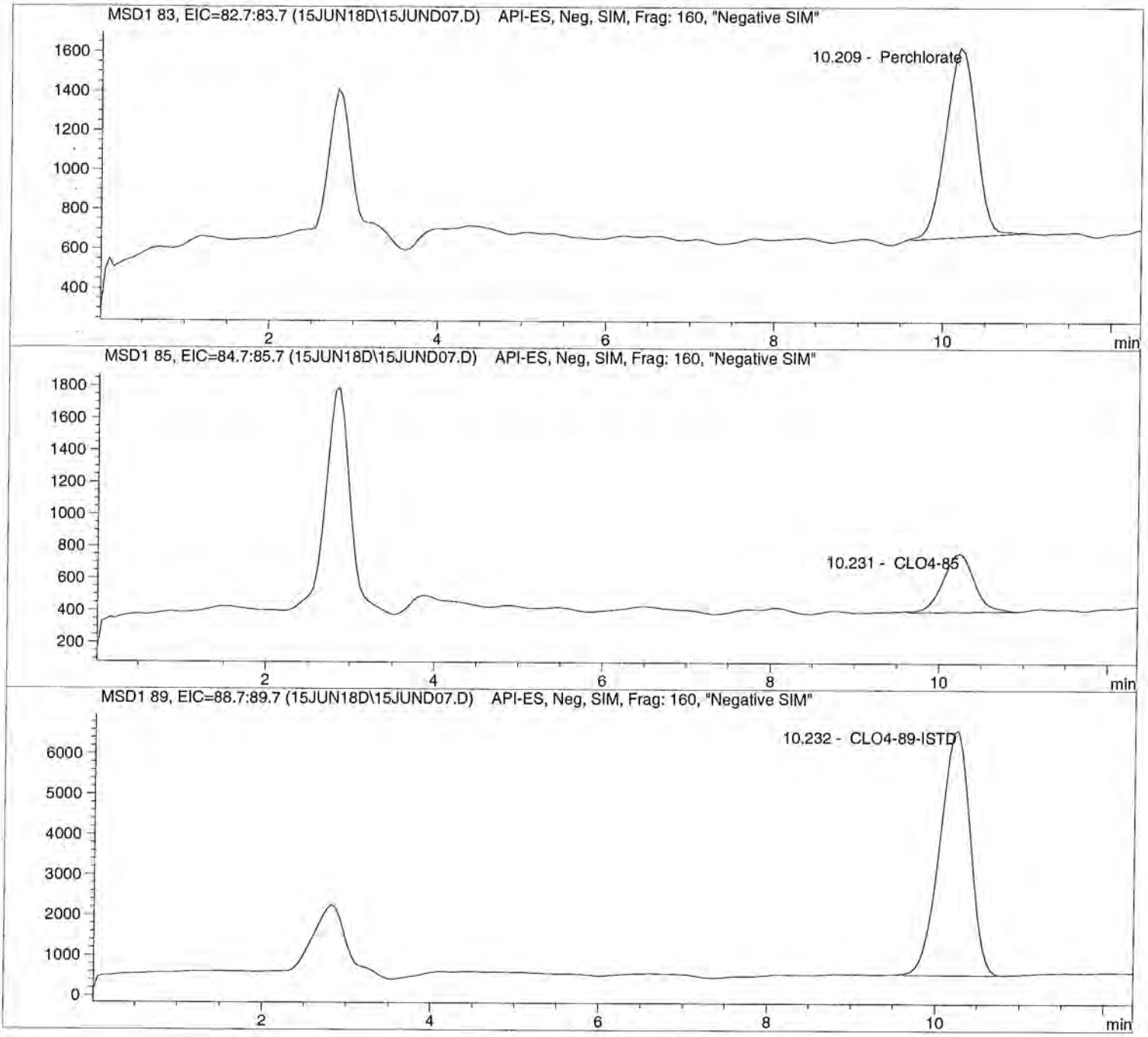
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND07.D Sample Name: 605460 LODV@1.

Injection Date:	6/15/2018 12:17:20	Seq Line:	7
Sample Name:	605460 LODV@1.	Location:	Vial 42
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND07.D Sample Name: 605460 LODV@1.

Injection Date:	6/15/2018 12:17:20	Seq Line:	7
Sample Name:	605460 LODV@1.	Location:	Vial 42
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.209	BBA	24091.2	0.8675	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.231	BBA	9372.8	0.7478	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.232	BBA	152424.6	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

Initial Calibration

Calibration Table

Perchlorate

Calib. Data Modified : Thursday, June 14, 2018 1:02:33 PM

Calculate : Internal Standard
Based on : Peak Area

Rel. Reference Window : 20.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 20.000 %
Abs. Non-ref. Window : 0.000 min
Use Multiplier & Dilution Factor with ISTDs
Uncalibrated Peaks : not reported
Partial Calibration : No recalibration if peaks missing

Curve Type : Quadratic (some peaks differ, see below)
Origin : Ignored (some peaks differ, see below)
Weight : Linear (Amnt) (some peaks differ, see below)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount	Name
1	5.00000	CLO4-89-ISTD

Signal 1: MSD1 83, EIC=82.7:83.7
Signal 2: MSD1 85, EIC=84.7:85.7
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
10.151	1	1	1.00000	3.93380e4	2.54207e-5		1	Perchlorate
		2	2.00000	7.00576e4	2.85479e-5			
		3	5.00000	1.44153e5	3.46853e-5			
		4	10.00000	3.31118e5	3.02007e-5			
		5	25.00000	8.76318e5	2.85284e-5			
		6	50.00000	1.69767e6	2.94521e-5			
		7	75.00000	2.68817e6	2.79000e-5			
10.161	2	1	1.00000	1.61954e4	6.17458e-5		1	CLO4-85
		2	2.00000	2.74079e4	7.29716e-5			
		3	5.00000	5.16950e4	9.67211e-5			
		4	10.00000	1.15839e5	8.63264e-5			
		5	25.00000	3.00355e5	8.32349e-5			
		6	50.00000	5.83140e5	8.57427e-5			
		7	75.00000	9.25902e5	8.10021e-5			
10.170	3	1	5.00000	2.16479e5	2.30970e-5	+I1		CLO4-89-ISTD
		2	5.00000	1.81269e5	2.75832e-5			
		3	5.00000	1.53680e5	3.25352e-5			
		4	5.00000	1.70890e5	2.92586e-5			
		5	5.00000	1.67256e5	2.98944e-5			
		6	5.00000	1.53418e5	3.25908e-5			

RetTime [min]	Sig	Lvl	Amount	Area	Amt/Area	Ref	Grp	Name
		7	5.00000	1.49175e5	3.35177e-5			

More compound-specific settings:

Compound: Perchlorate
- Time Window : From 8.061 min To 12.061 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 1 : 1
  - Level 2 : 0.5
  - Level 3 : 0.2
  - Level 4 : 0.1
  - Level 5 : 0.04
  - Level 6 : 0.02
  - Level 7 : 0.013333

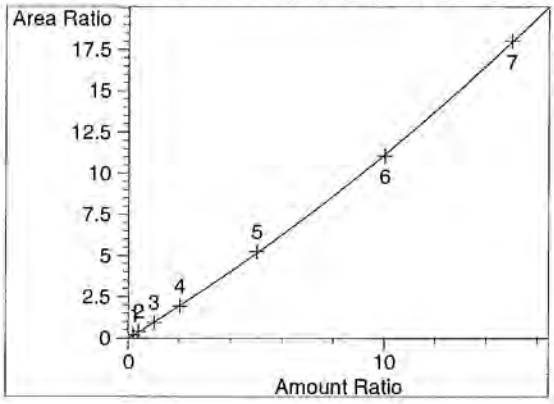
Compound: CLO4-85
- Time Window : From 8.055 min To 12.055 min
- Curve Type : Quadratic
- Origin : Ignored
- Calibration Level Weights:/
  - Level 1 : 1
  - Level 2 : 0.5
  - Level 3 : 0.2
  - Level 4 : 0.1
  - Level 5 : 0.04
  - Level 6 : 0.02
  - Level 7 : 0.013333

Compound: CLO4-89-ISTD
- Time Window : From 8.063 min To 12.049 min
- Curve Type : Linear
- Origin : Included
- Calibration Level Weights:/
  - Level 1 : 1
  - Level 2 : 1
  - Level 3 : 1
  - Level 4 : 1
  - Level 5 : 1
  - Level 6 : 1
  - Level 7 : 1

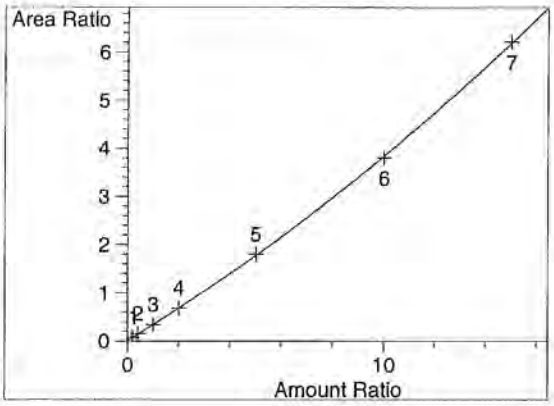
Peak Sum Table

No Entries in table

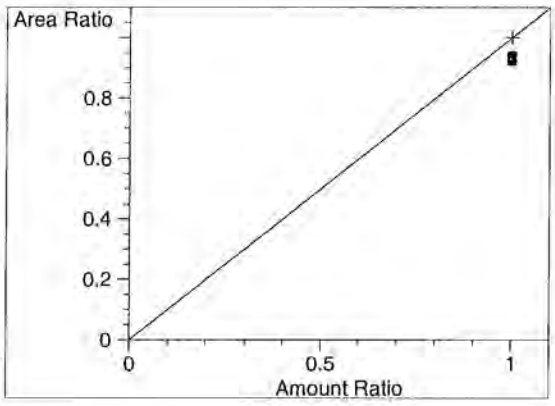
Calibration Curves



Perchlorate at exp. RT: 10.151
MSD1 83, EIC=82.7:83.7
Correlation: 0.99996
Residual Std. Dev.: 0.05799
Formula: $y = ax^2 + bx + c$
a: 1.67107e-2
b: 9.48902e-1
c: -7.08771e-3
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.5
Level 3 : 0.2
Level 4 : 0.1
Level 5 : 0.04
Level 6 : 0.02
Level 7 : 0.013333



CLO4-85 at exp. RT: 10.161
MSD1 85, EIC=84.7:85.7
Correlation: 0.99995
Residual Std. Dev.: 0.01944
Formula: $y = ax^2 + bx + c$
a: 5.96376e-3
b: 3.22428e-1
c: 1.31363e-2
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.5
Level 3 : 0.2
Level 4 : 0.1
Level 5 : 0.04
Level 6 : 0.02
Level 7 : 0.013333



CLO4-89-ISTD at exp. RT: 10.170
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 1
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1
Level 7 : 1

Sequence Table:

Method and Injection Info Part:

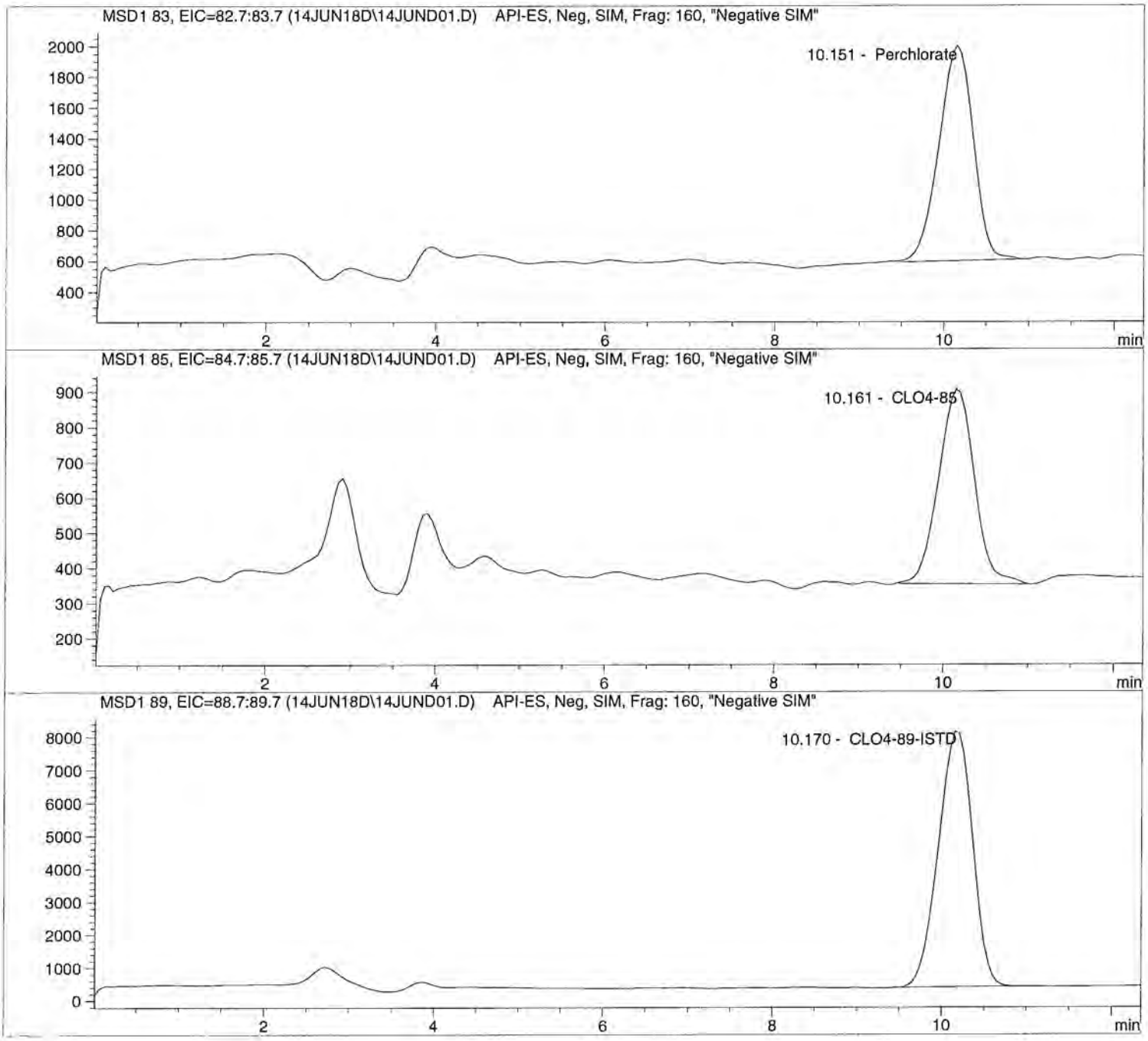
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	ICAL1@ 1.0ug/L	CLO4-DOD	1	Ctrl Samp		
2	Vial 72	ICAL2@ 2.0ug/L	CLO4-DOD	1	Ctrl Samp		
3	Vial 73	ICAL3@ 5.0ug/L	CLO4-DOD	1	Ctrl Samp		
4	Vial 74	ICAL4@ 10.ug/L	CLO4-DOD	1	Ctrl Samp		
5	Vial 75	ICAL5@ 25.ug/L	CLO4-DOD	1	Ctrl Samp		
6	Vial 76	ICAL6@ 50.ug/L	CLO4-DOD	1	Ctrl Samp		
7	Vial 77	ICAL7@ 75.ug/L	CLO4-DOD	1	Ctrl Samp		
8	Vial 78	ICAL Verf@10ug/L	CLO4-DOD	1	Ctrl Samp		
9	Vial 75	605272 CCV@25	CLO4-DOD	1	Ctrl Samp		
10	Vial 71	605273 LODV@1.	CLO4-DOD	1	Ctrl Samp		
11	Vial 81	605274 ICS@1.0	CLO4-DOD	1	Ctrl Samp		
12	Vial 82	605275 LMB	CLO4-DOD	1	Ctrl Samp		
13	Vial 83	605276 QC@5.0	CLO4-DOD	1	Ctrl Samp		
14	Vial 84	1815740001 1K	CLO4-DOD	1	Sample		
15	Vial 81	605274 ICS@1.0	CLO4-DOD	1	Ctrl Samp		
16	Vial 85	1815740002 1K	CLO4-DOD	1	Sample		
17	Vial 86	1815740003 10	CLO4-DOD	1	Sample		
18	Vial 87	1815740004	CLO4-DOD	1	Sample		
19	Vial 88	1815740005	CLO4-DOD	1	Sample		
20	Vial 61	Rinse	CLO4-DOD	1	Sample	50	
21	Vial 89	1815740006	CLO4-DOD	1	Sample		
22	Vial 90	1815740007	CLO4-DOD	1	Sample		
23	Vial 91	1815988001	CLO4-DOD	1	Sample		
24	Vial 92	1815988002 1K	CLO4-DOD	1	Sample		
25	Vial 93	1815988003 1K	CLO4-DOD	1	Sample		
26	Vial 91	1815988001 1K	CLO4-DOD	1	Sample		
27	Vial 75	605277 CCV@25	CLO4-DOD	1	Ctrl Samp		
28	Vial 61	Rinse	CLO4-DOD	1	Sample	50	
29	Vial 71	605278 LODV@1.	CLO4-DOD	1	Ctrl Samp		
30	Vial 62	605278 LODV@1.	CLO4-DOD	1	Ctrl Samp		
31	Vial 94	1815988004 MS	CLO4-DOD	1	Sample		
32	Vial 95	1815988005 MSD	CLO4-DOD	1	Sample		
33	Vial 96	1815991001	CLO4-DOD	1	Sample		
34	Vial 97	1815992001 1K	CLO4-DOD	1	Sample		
35	Vial 98	1815993001	CLO4-DOD	1	Sample		
36	Vial 99	1816534001	CLO4-DOD	1	Sample		
37	Vial 51	1815740002 100	CLO4-DOD	1	Sample		
38	Vial 52	1815740003 10K	CLO4-DOD	1	Sample		
39	Vial 53	1815740005 100	CLO4-DOD	1	Sample		
40	Vial 75	605342 CCV@25	CLO4-DOD	1	Ctrl Samp		
41	Vial 71	605343 LODV@1.	CLO4-DOD	1	Ctrl Samp		
42	Vial 62	605343 LODV@1.	CLO4-DOD	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND01.D Sample Name: ICAL1@ 1.0ug/L

Injection Date:	6/14/2018 09:51:06	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND01.D Sample Name: ICAL1@ 1.0ug/L

Injection Date:	6/14/2018 09:51:06	Seq Line:	1
Sample Name:	ICAL1@ 1.0ug/L	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.151	BBA	39338.0	0.9914	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.161	BBA	16195.4	0.9531	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.170	PBA	216478.8	5.0000	CLO4-89-ISTD

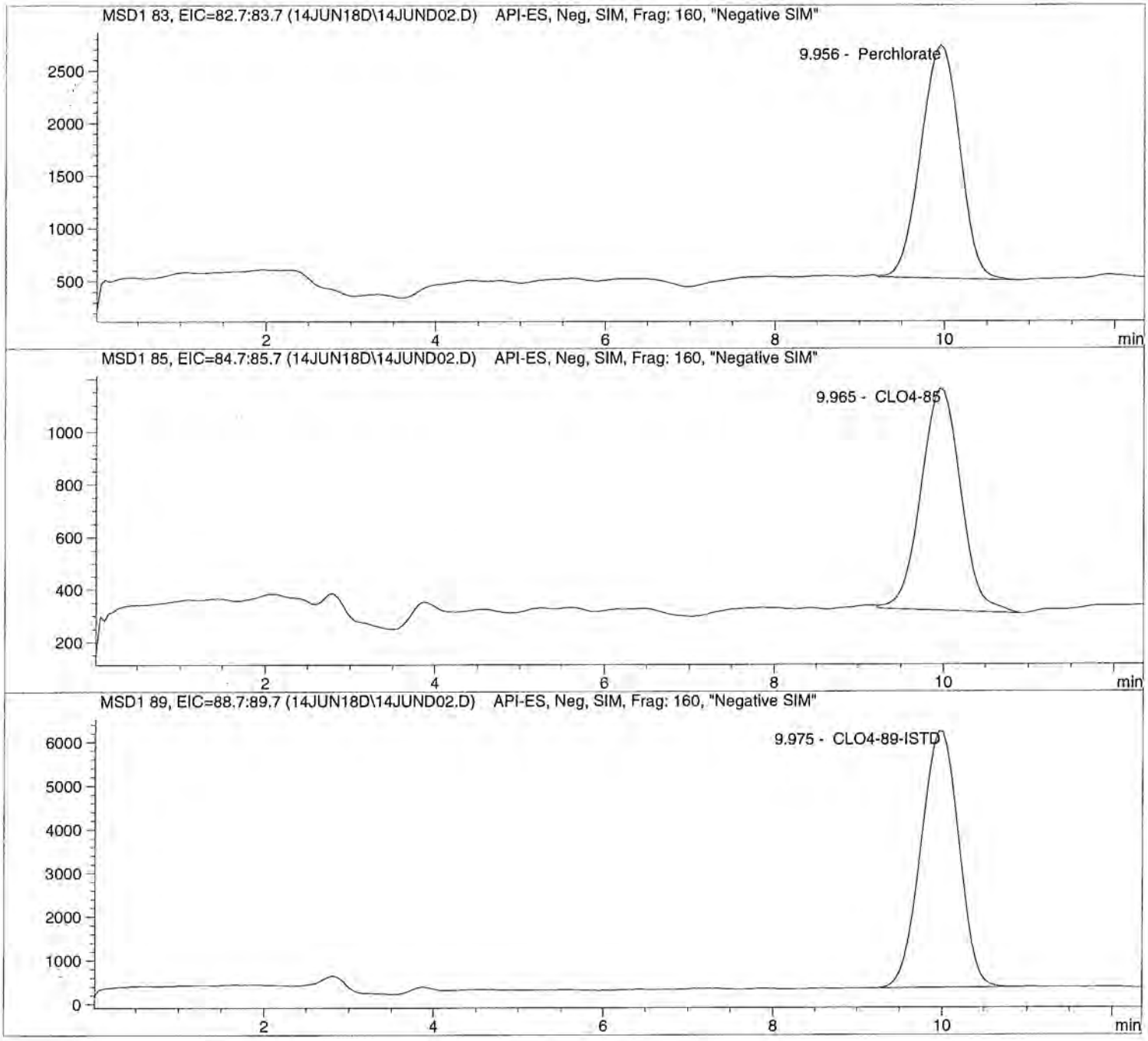
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	6/14/2018 10:05:22	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND02.D Sample Name: ICAL2@ 2.0ug/L

Injection Date:	6/14/2018 10:05:22	Seq Line:	2
Sample Name:	ICAL2@ 2.0ug/L	Location:	Vial 72
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	2.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.956	BBA	70057.6	2.0589	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.965	BBA	27407.9	2.1243	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.975	PBA	181269.5	5.0000	CLO4-89-ISTD

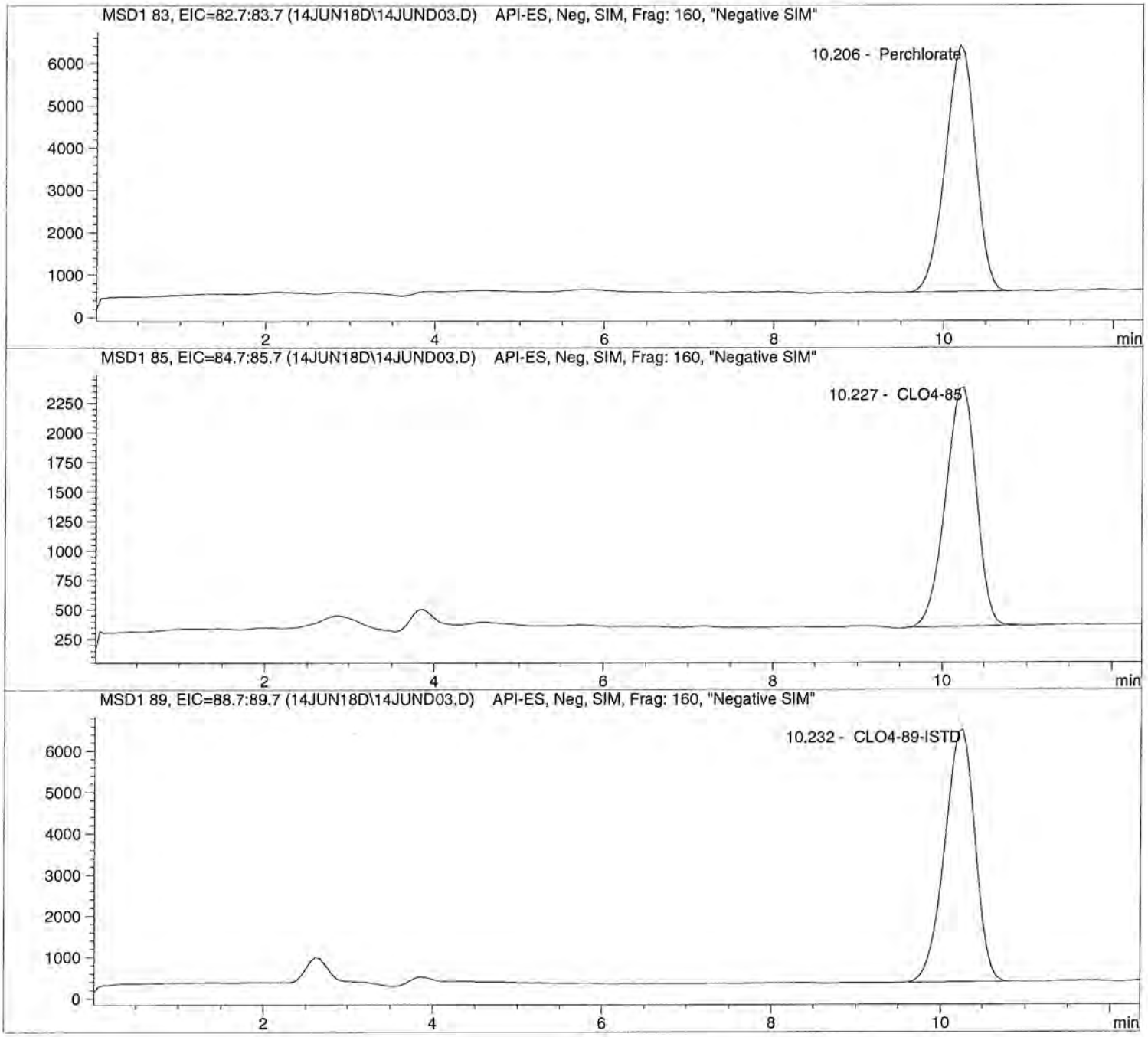
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND03.D Sample Name: ICAL3@ 5.0ug/L

Injection Date:	6/14/2018 10:19:38	Seq Line:	3
Sample Name:	ICAL3@ 5.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND03.D Sample Name: ICAL3@ 5.0ug/L

Injection Date:	6/14/2018 10:19:38	Seq Line:	3
Sample Name:	ICAL3@ 5.0ug/L	Location:	Vial 73
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	5.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.206	PBA	144153.2	4.8955	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.227	PBA	51695.0	4.9230	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.232	BBA	153679.7	5.0000	CLO4-89-ISTD

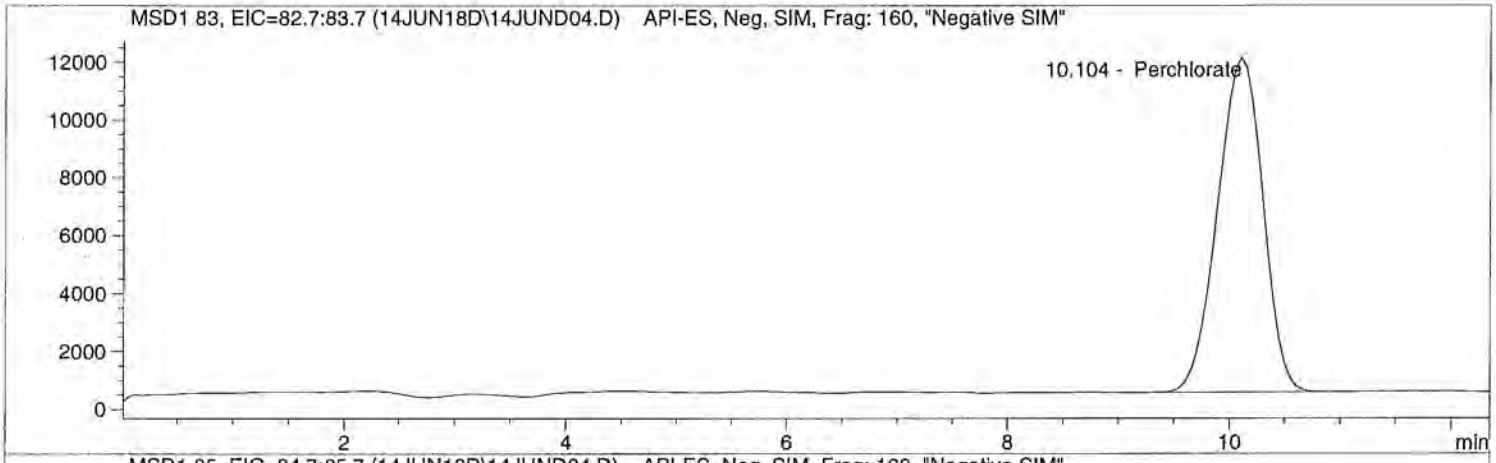
*** End of Report ***

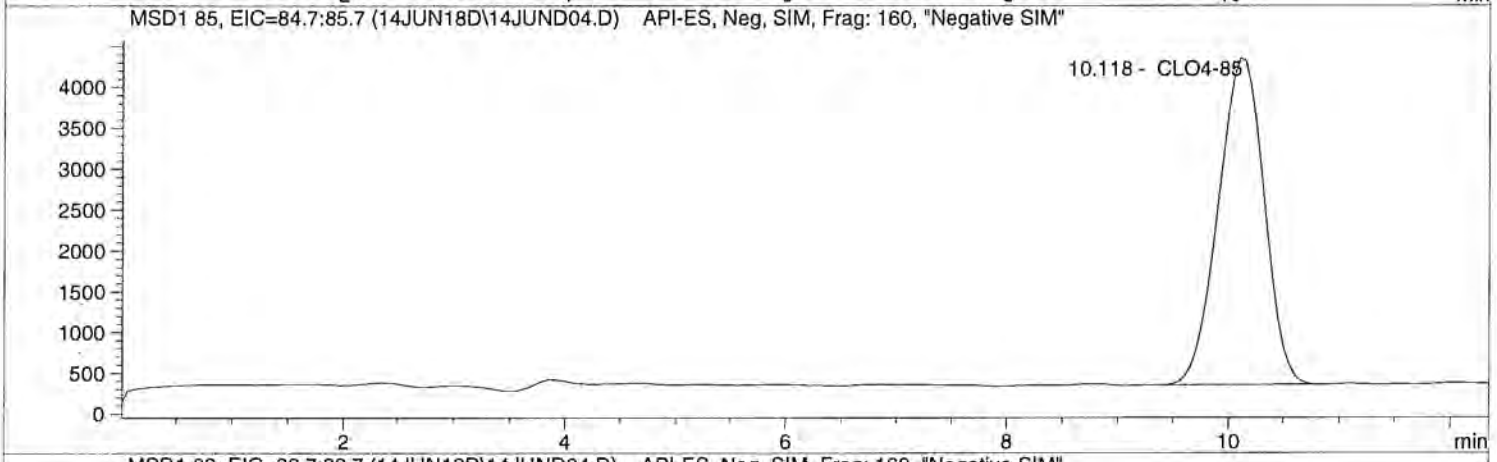
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND04.D Sample Name: ICAL4@ 10.ug/L

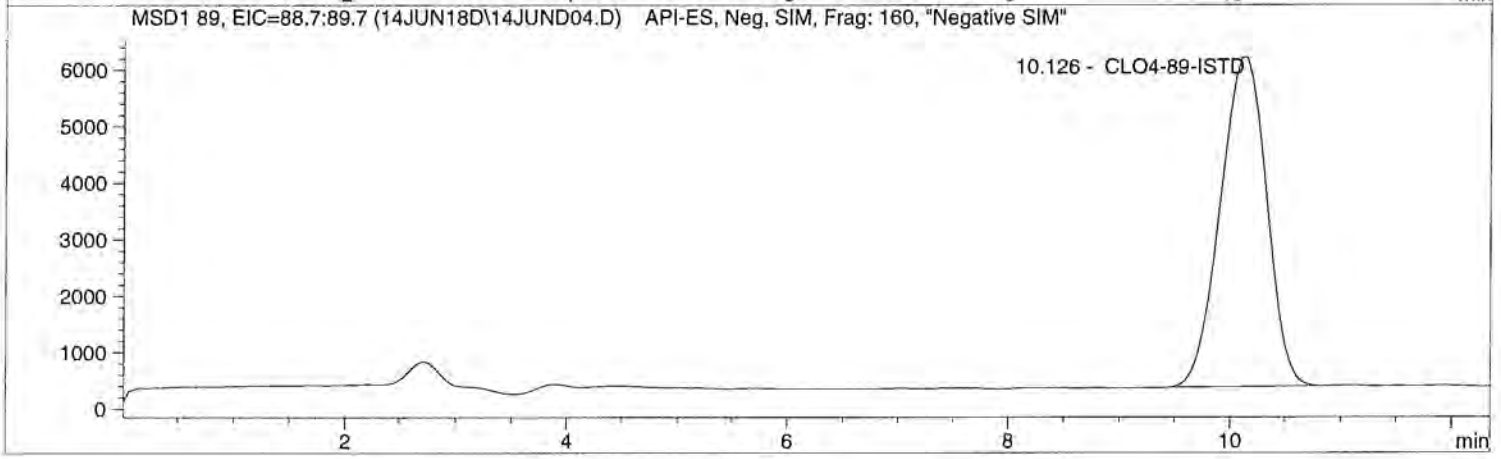
Injection Date:	6/14/2018 10:33:59	Seq Line:	4
Sample Name:	ICAL4@ 10.ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND04.D Sample Name: ICAL4@ 10.ug/L

Injection Date:	6/14/2018 10:33:59	Seq Line:	4
Sample Name:	ICAL4@ 10.ug/L	Location:	Vial 74
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.104	BBA	331117.7	9.9018	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.118	PBA	115839.4	9.9424	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.126	PBA	170890.1	5.0000	CLO4-89-ISTD

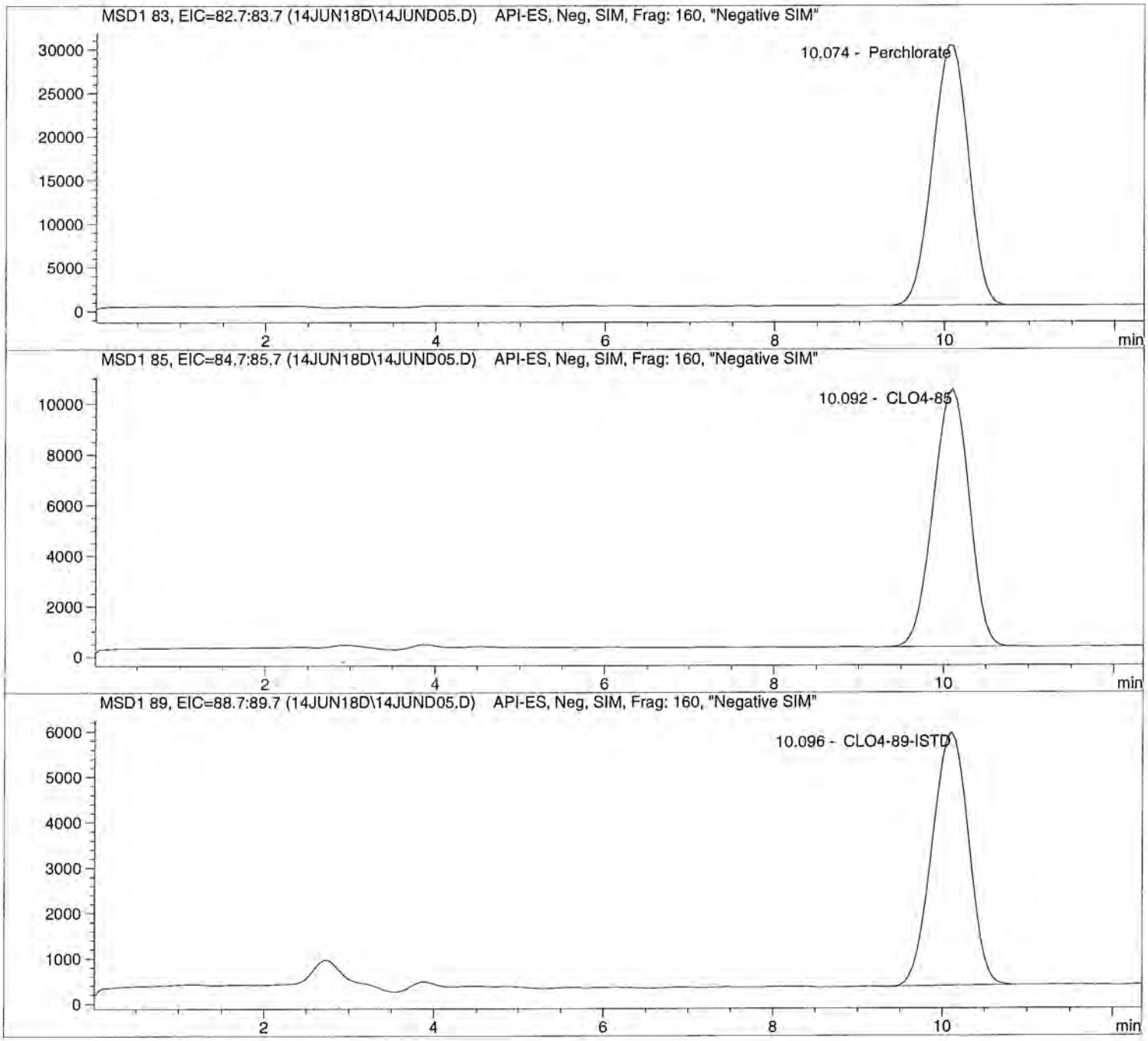
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND05.D Sample Name: ICAL5@ 25.ug/L

Injection Date:	6/14/2018 10:48:17	Seq Line:	5
Sample Name:	ICAL5@ 25.ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND05.D Sample Name: ICAL5@ 25.ug/L

Injection Date:	6/14/2018 10:48:17	Seq Line:	5
Sample Name:	ICAL5@ 25.ug/L	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.074	PBA	876318.4	25.3768	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.092	PBA	300354.8	25.2800	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.096	PBA	167255.6	5.0000	CLO4-89-ISTD

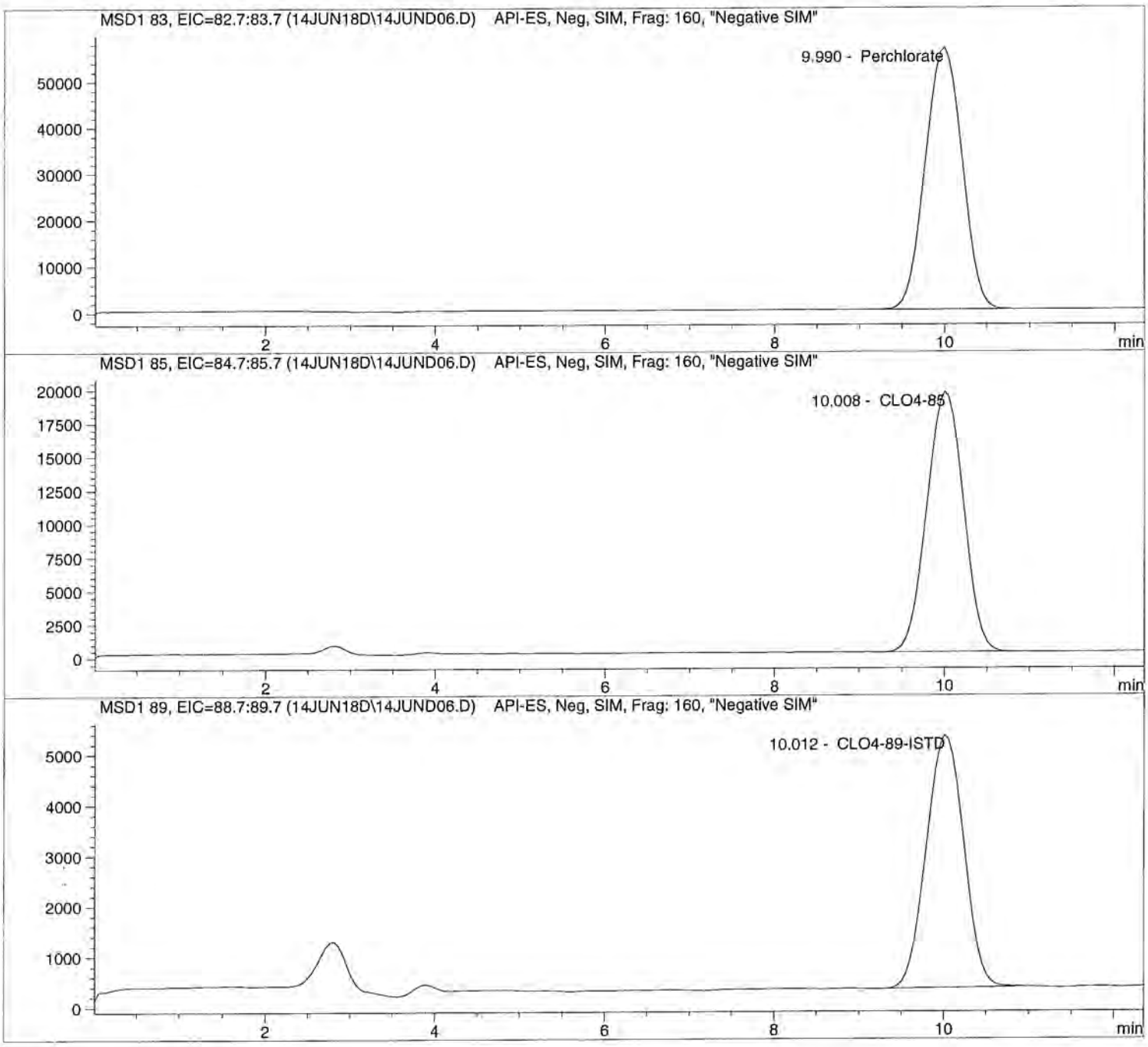
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND06.D Sample Name: ICAL6@ 50.ug/L

Injection Date:	6/14/2018 11:02:36	Seq Line:	6
Sample Name:	ICAL6@ 50.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND06.D Sample Name: ICAL6@ 50.ug/L

Injection Date:	6/14/2018 11:02:36	Seq Line:	6
Sample Name:	ICAL6@ 50.ug/L	Location:	Vial 76
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	50.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.990	BBA	1697669.4	49.6594	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.008	PBA	583139.8	49.6284	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.012	PBA	153417.6	5.0000	CLO4-89-ISTD

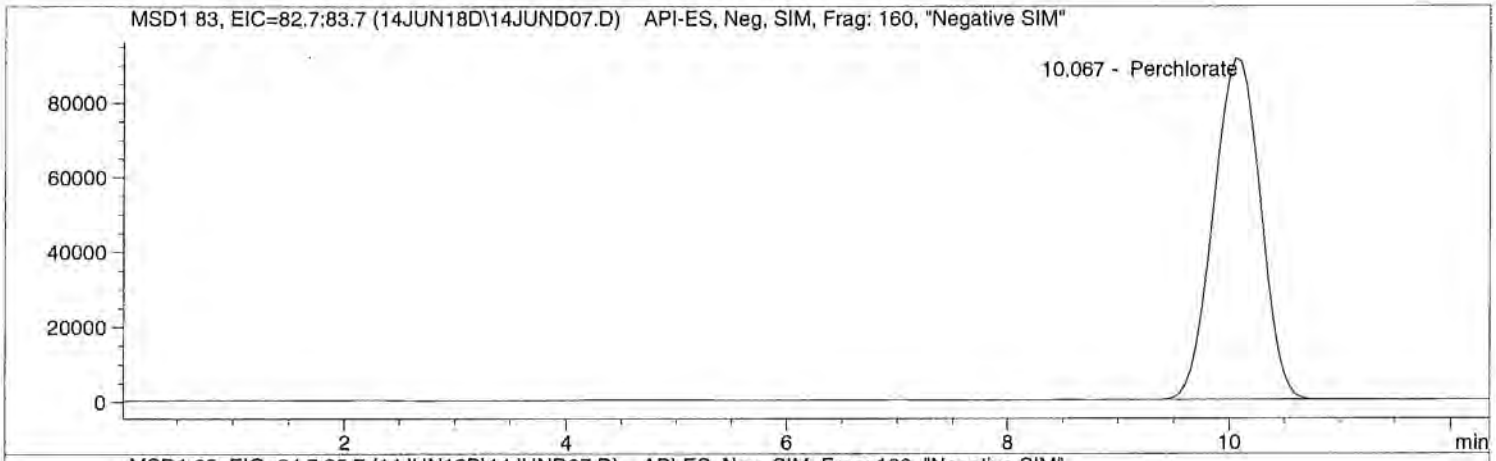
*** End of Report ***

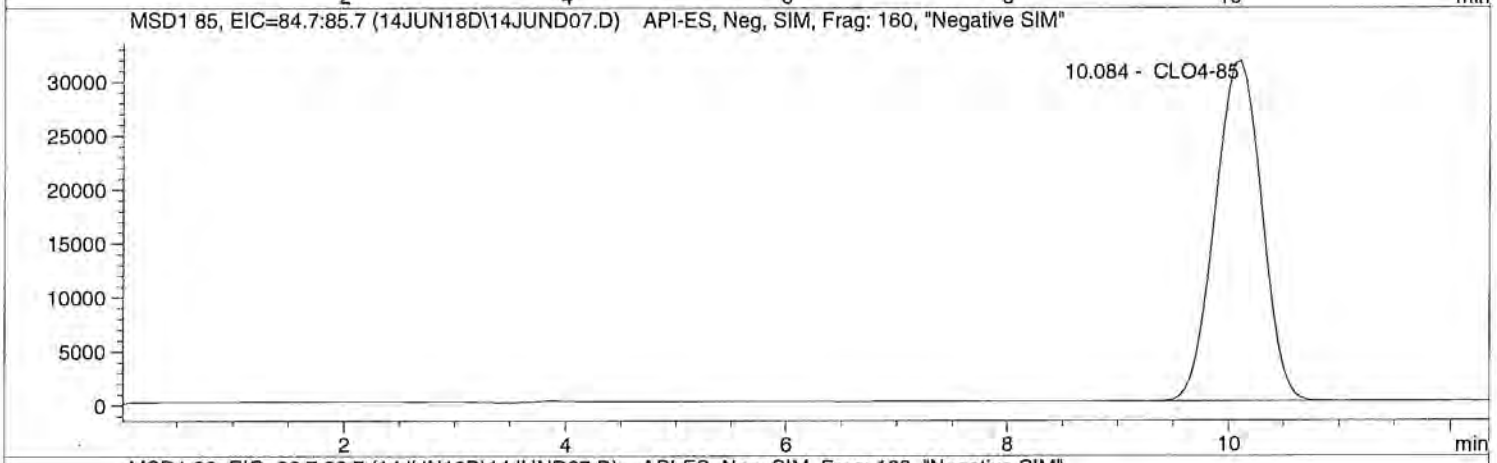
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND07.D Sample Name: ICAL7@ 75.ug/L

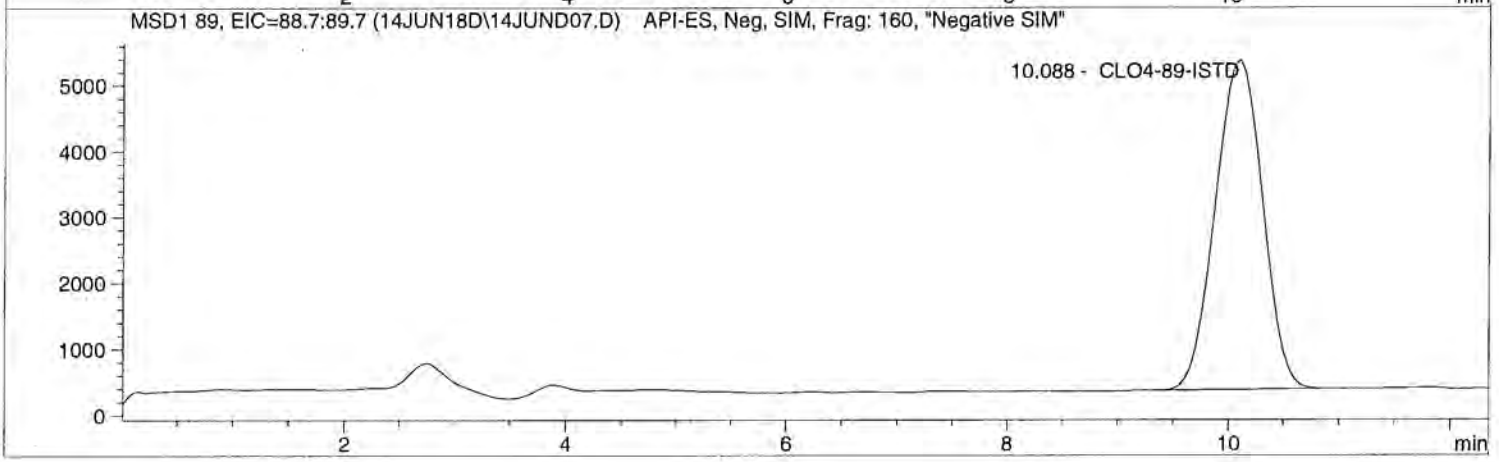
Injection Date:	6/14/2018 11:16:57	Seq Line:	7
Sample Name:	ICAL7@ 75.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND07.D Sample Name: ICAL7@ 75.ug/L

Injection Date:	6/14/2018 11:16:57	Seq Line:	7
Sample Name:	ICAL7@ 75.ug/L	Location:	Vial 77
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	75.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.067	BBA	2688168.5	75.1168	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.084	PBA	925902.0	75.1538	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.088	BBA	149174.9	5.0000	CLO4-89-ISTD

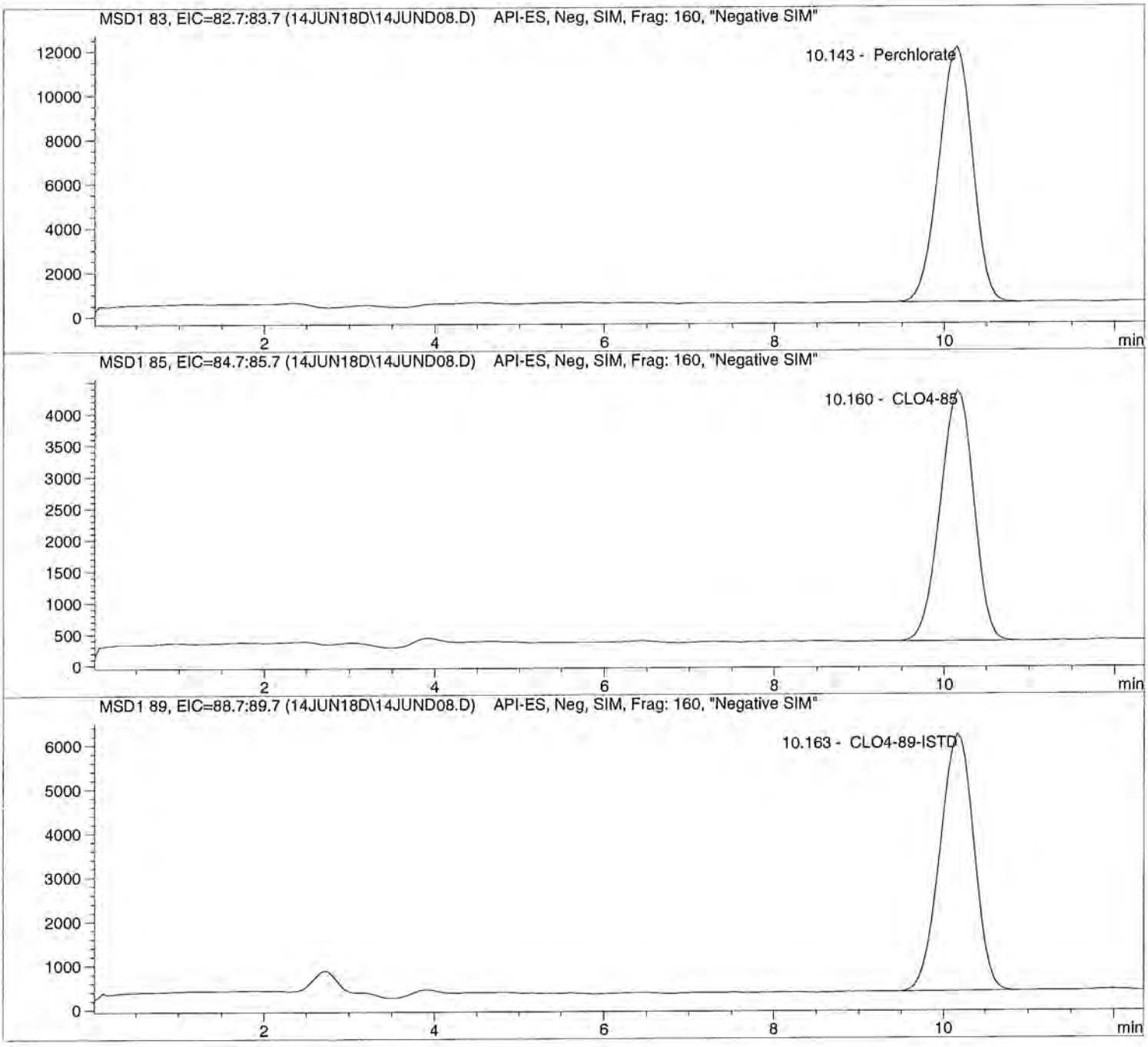
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND08.D Sample Name: ICAL Verf@10ug/L

Injection Date:	6/14/2018 11:31:15	Seq Line:	8
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND08.D Sample Name: ICAL Verf@10ug/L

Injection Date:	6/14/2018 11:31:15	Seq Line:	8
Sample Name:	ICAL Verf@10ug/L	Location:	Vial 78
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	10.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.143	BBA	319377.5	9.9871	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.160	BBA	110126.9	9.8881	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.163	PBA	163369.0	5.0000	CLO4-89-ISTD

*** End of Report ***

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

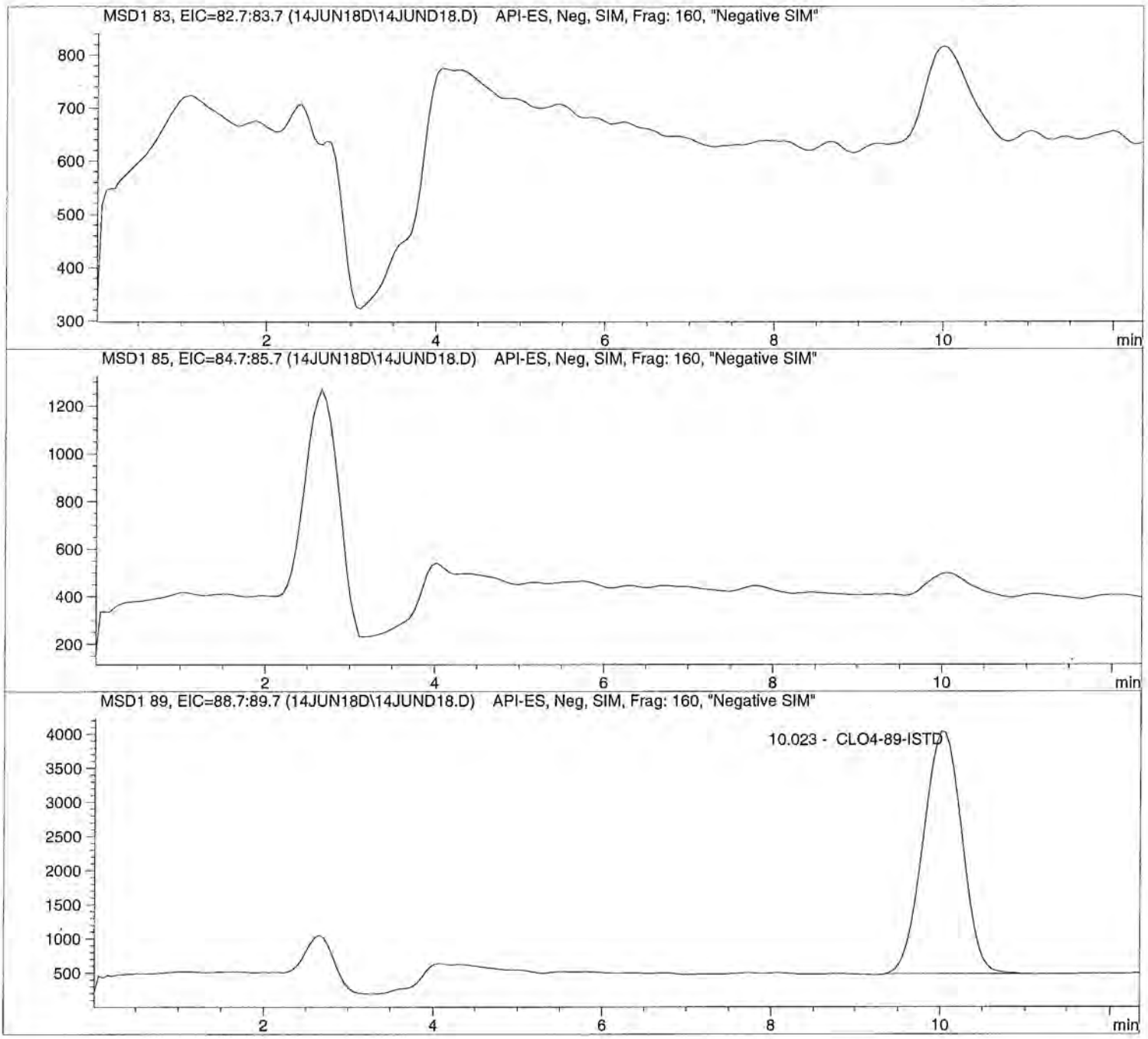
Unmodified

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND18.D Sample Name: 1815740004

Injection Date:	6/14/2018 13:56:06	Seq Line:	18
Sample Name:	1815740004	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND18.D Sample Name: 1815740004

Injection Date:	6/14/2018 13:56:06	Seq Line:	18
Sample Name:	1815740004	Location:	Vial 87
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method:	CLO4-DOD.M
Analysis Method:	C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed:	6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.023	BBA	112834.3	5.0000	CLO4-89-ISTD

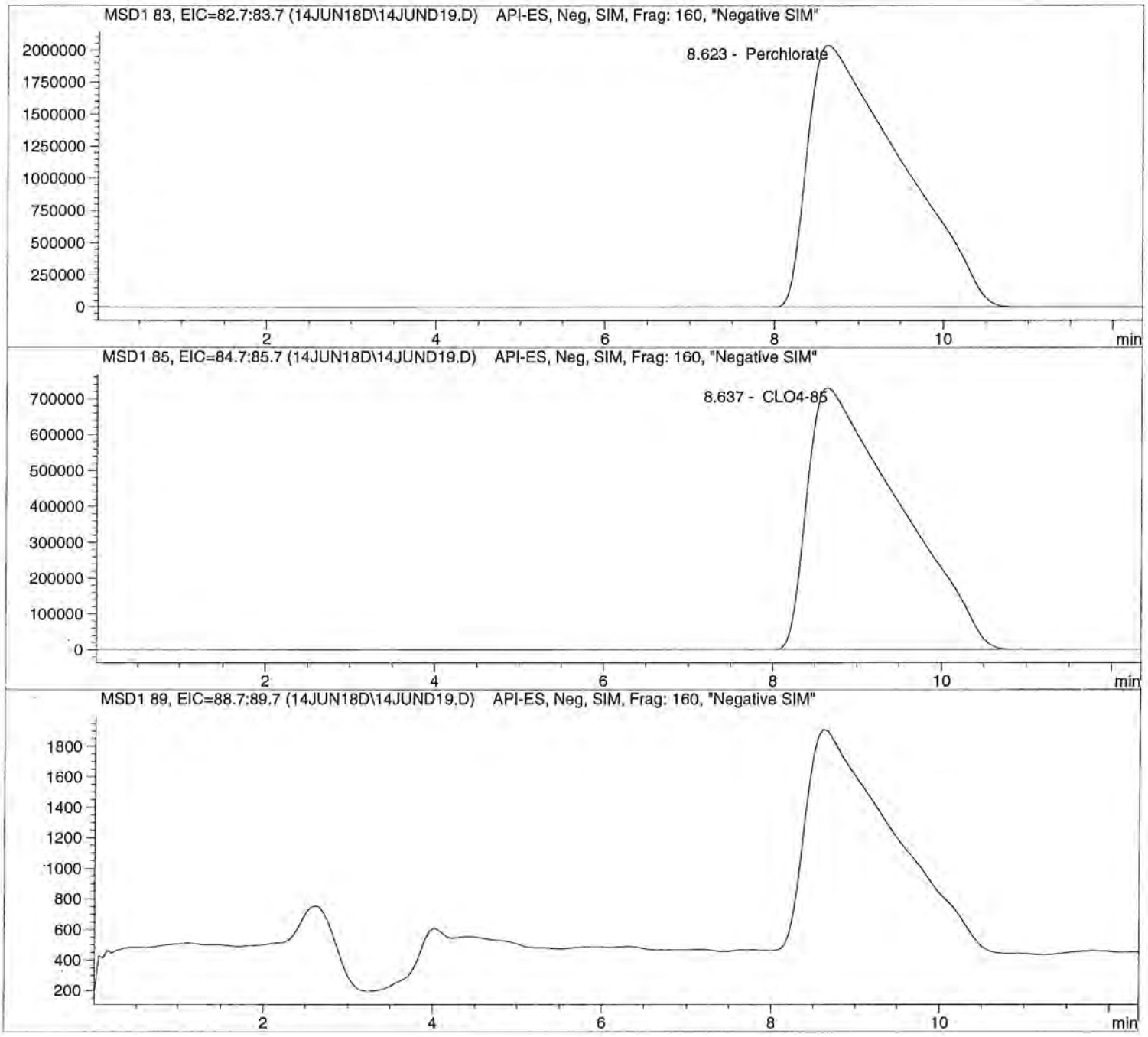
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND19.D Sample Name: 1815740005

Injection Date:	6/14/2018 14:10:21	Seq Line:	19
Sample Name:	1815740005	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND19.D Sample Name: 1815740005

Injection Date:	6/14/2018 14:10:21	Seq Line:	19
Sample Name:	1815740005	Location:	Vial 88
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.623	PBA	156101936.0	0.0373	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.637	PBA	55016480.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-89-ISTD

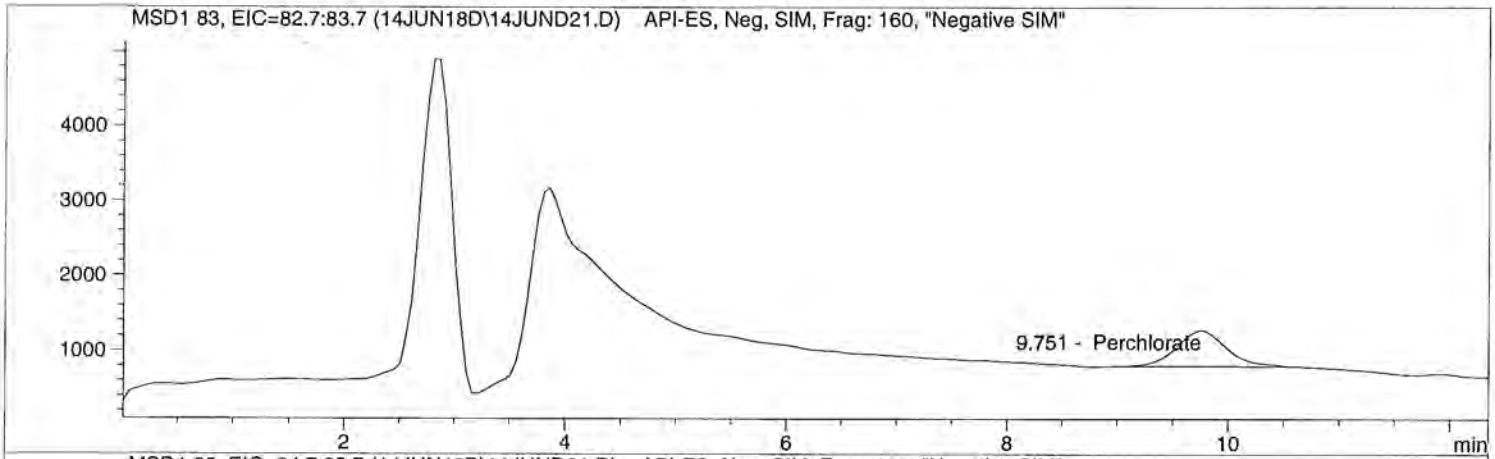
*** End of Report ***

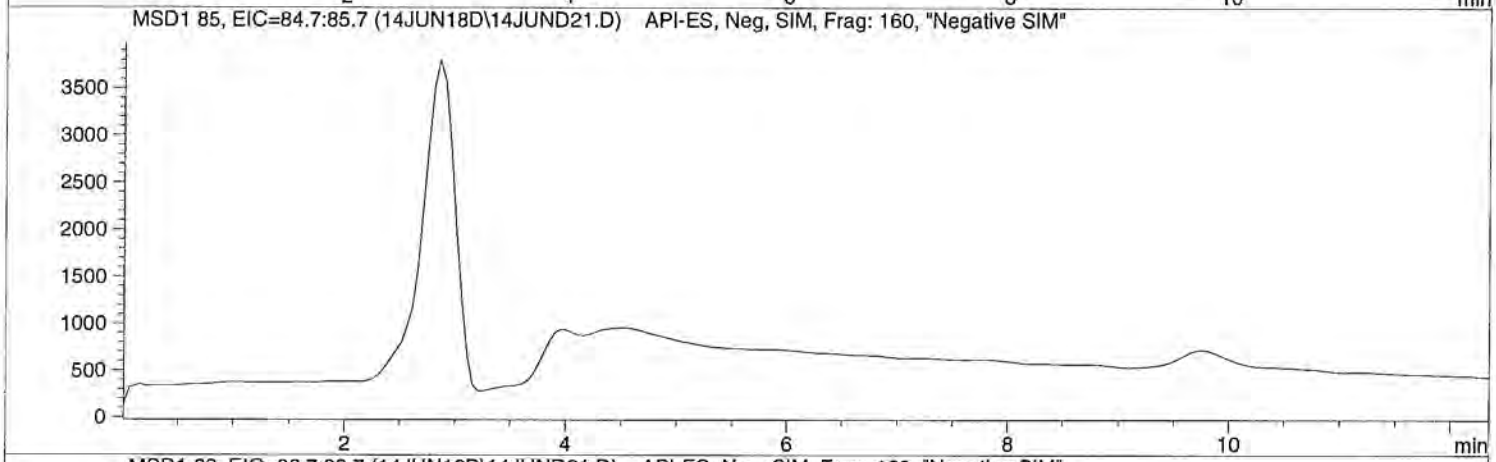
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND21.D Sample Name: 1815740006

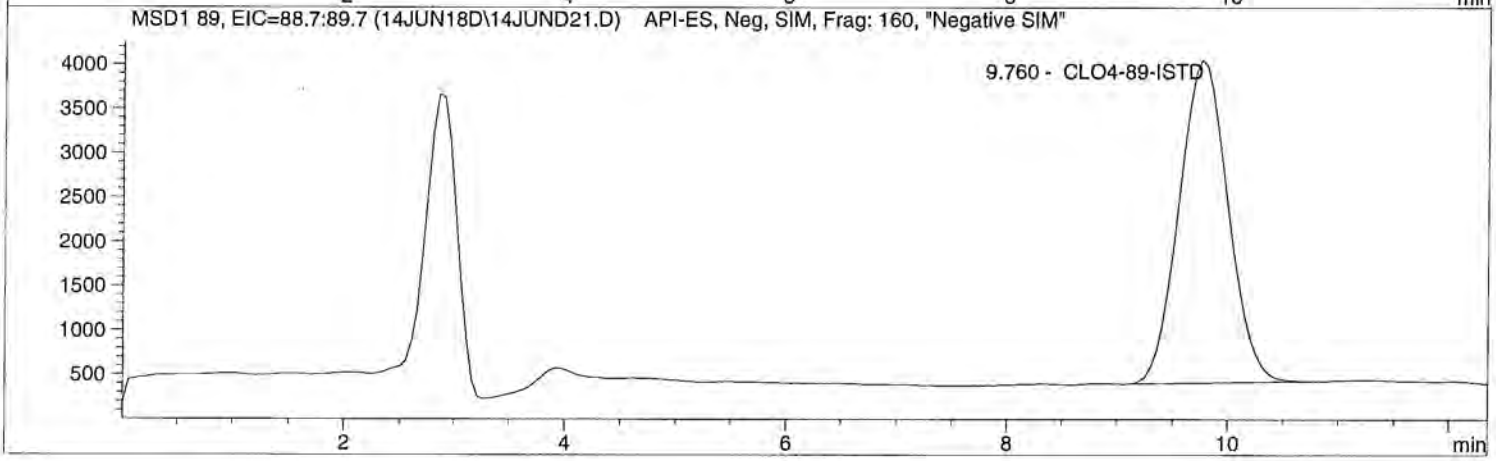
Injection Date:	6/14/2018 14:39:24	Seq Line:	21
Sample Name:	1815740006	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND21.D Sample Name: 1815740006

Injection Date:	6/14/2018 14:39:24	Seq Line:	21
Sample Name:	1815740006	Location:	Vial 89
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.751	PBA	14951.0	0.7364	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.760	PBA	112386.4	5.0000	CLO4-89-ISTD

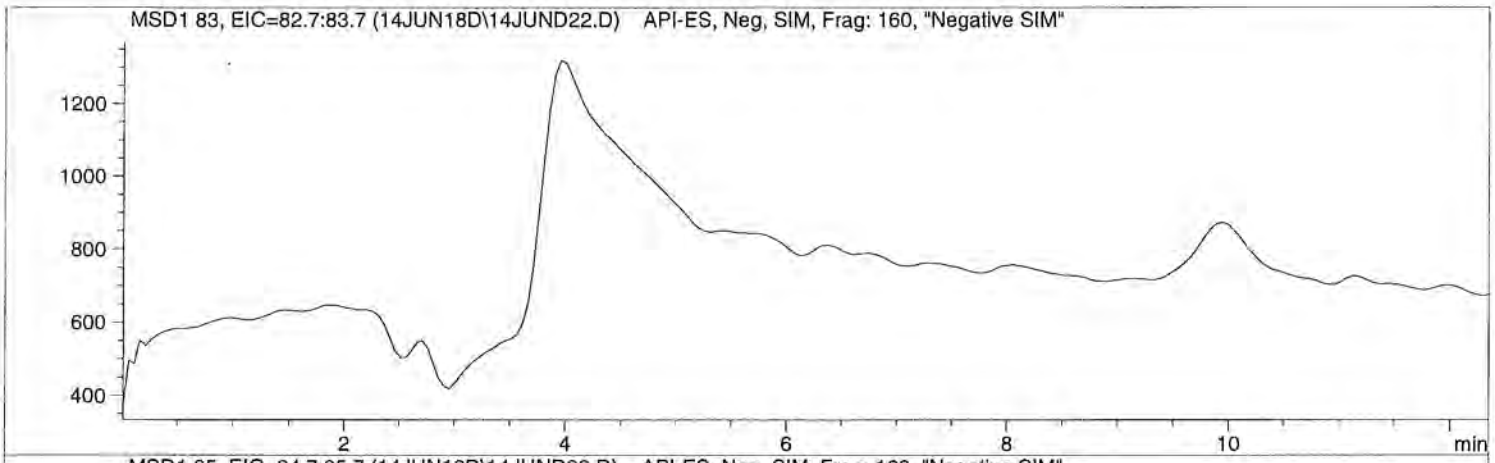
*** End of Report ***

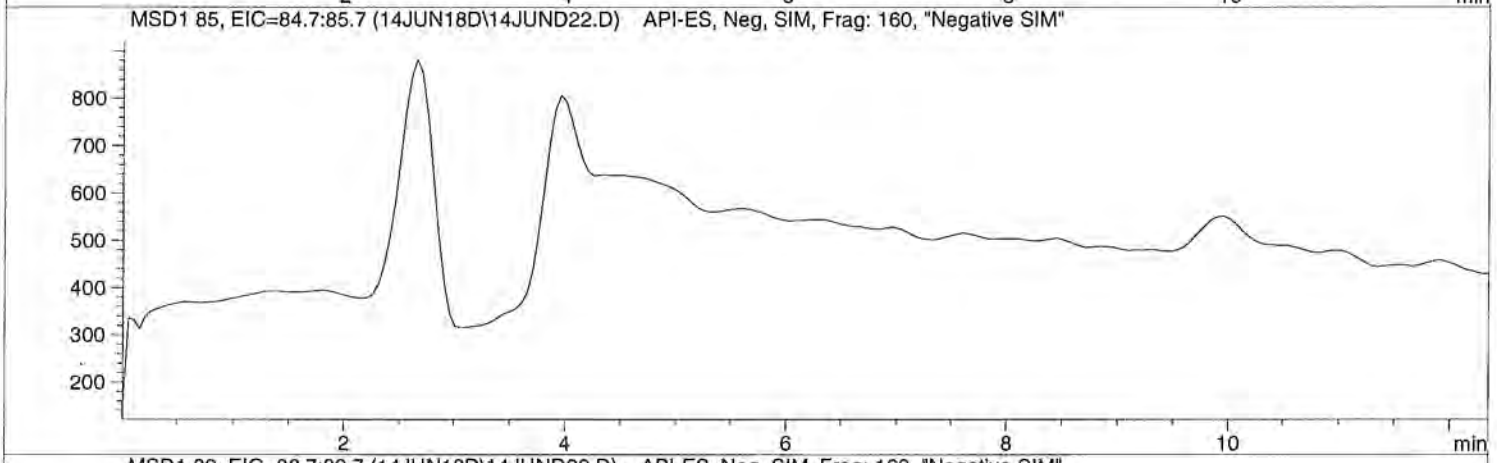
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND22.D Sample Name: 1815740007

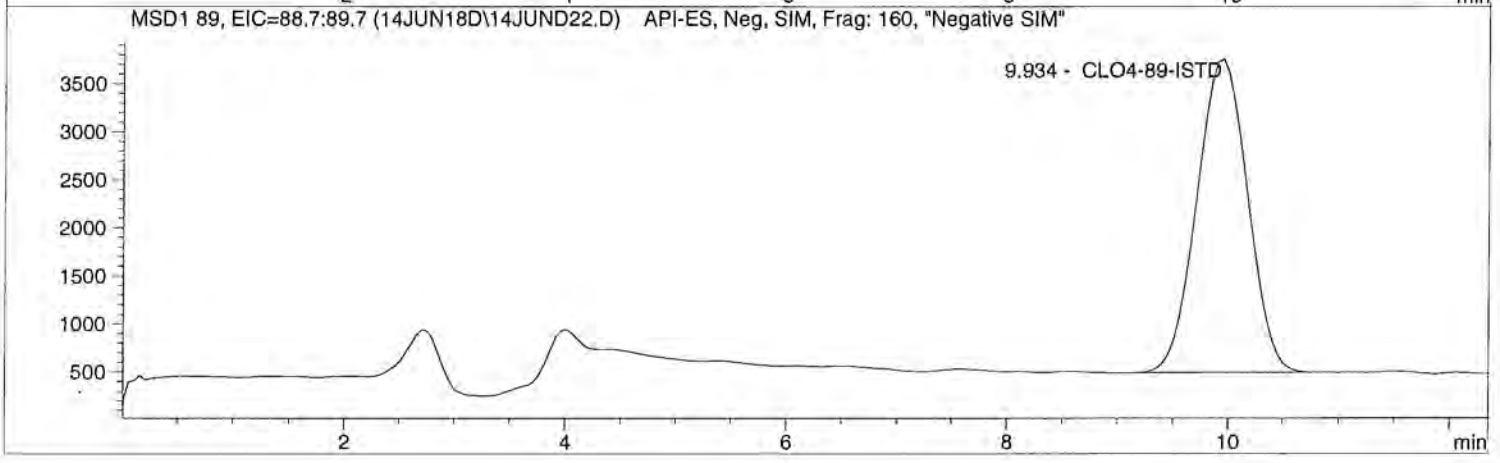
Injection Date:	6/14/2018 14:53:42	Seq Line:	22
Sample Name:	1815740007	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND22.D Sample Name: 1815740007

Injection Date:	6/14/2018 14:53:42	Seq Line:	22
Sample Name:	1815740007	Location:	Vial 90
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
9.934	PBA	103960.3	5.0000	CLO4-89-ISTD

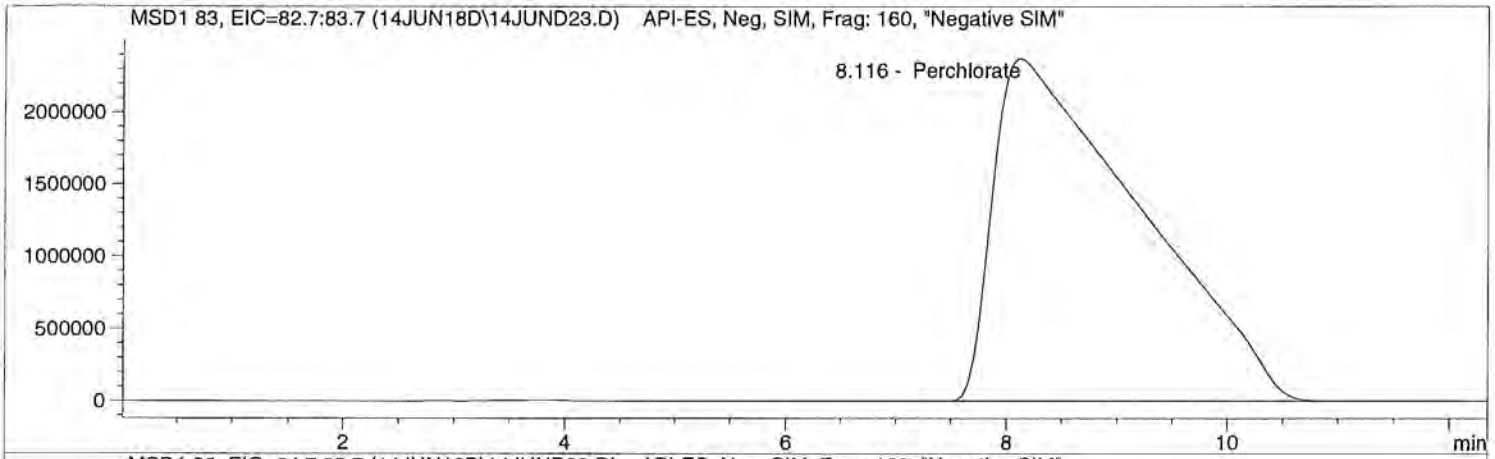
*** End of Report ***

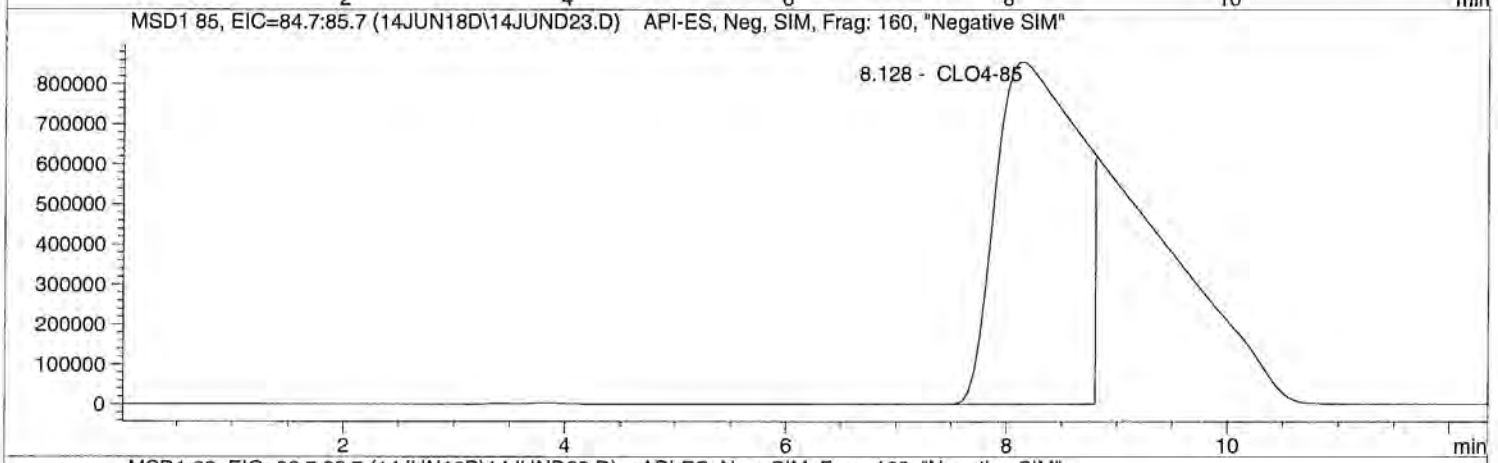
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND23.D Sample Name: 1815988001

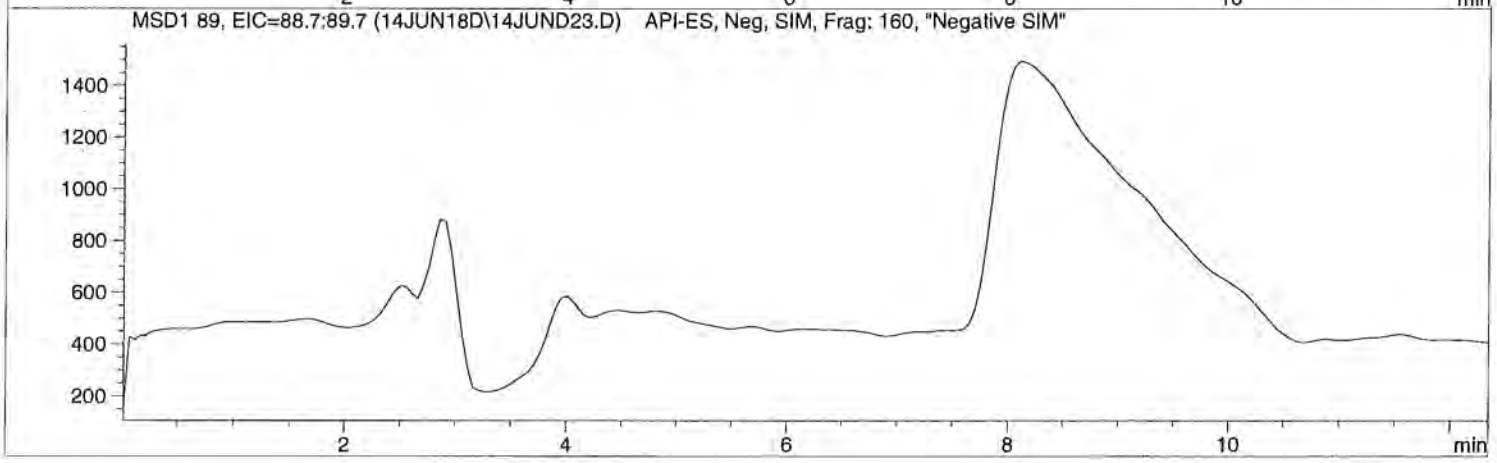
Injection Date:	6/14/2018 15:07:59	Seq Line:	23
Sample Name:	1815988001	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND23.D Sample Name: 1815988001

Injection Date:	6/14/2018 15:07:59	Seq Line:	23
Sample Name:	1815988001	Location:	Vial 91
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.116	PBA	218628112.0	0.0373	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
8.128	PBA	44399768.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-89-ISTD

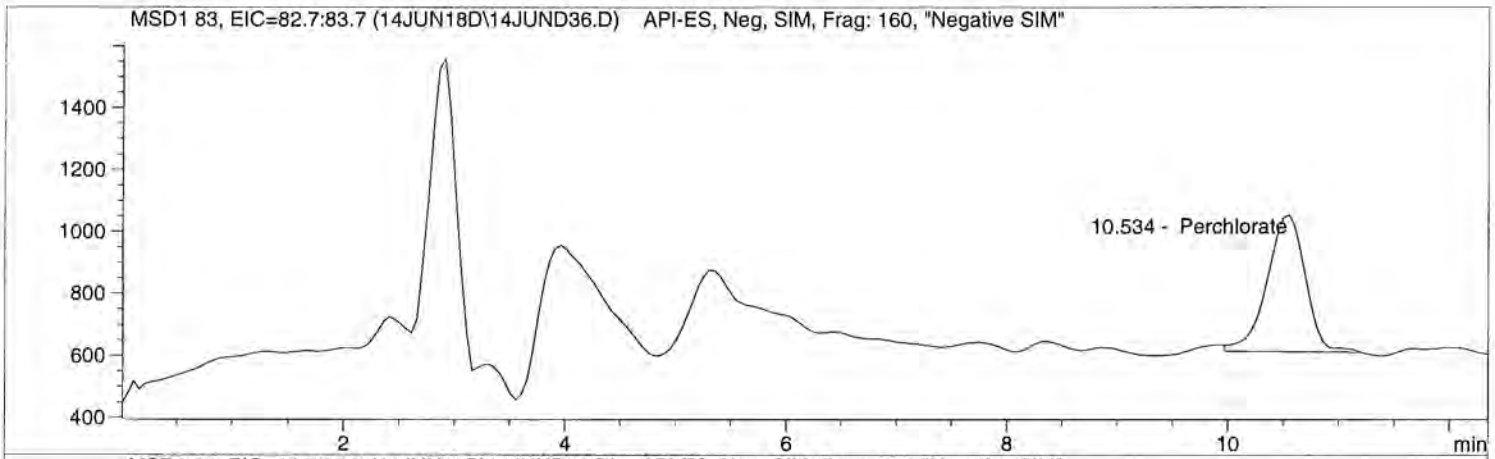
*** End of Report ***

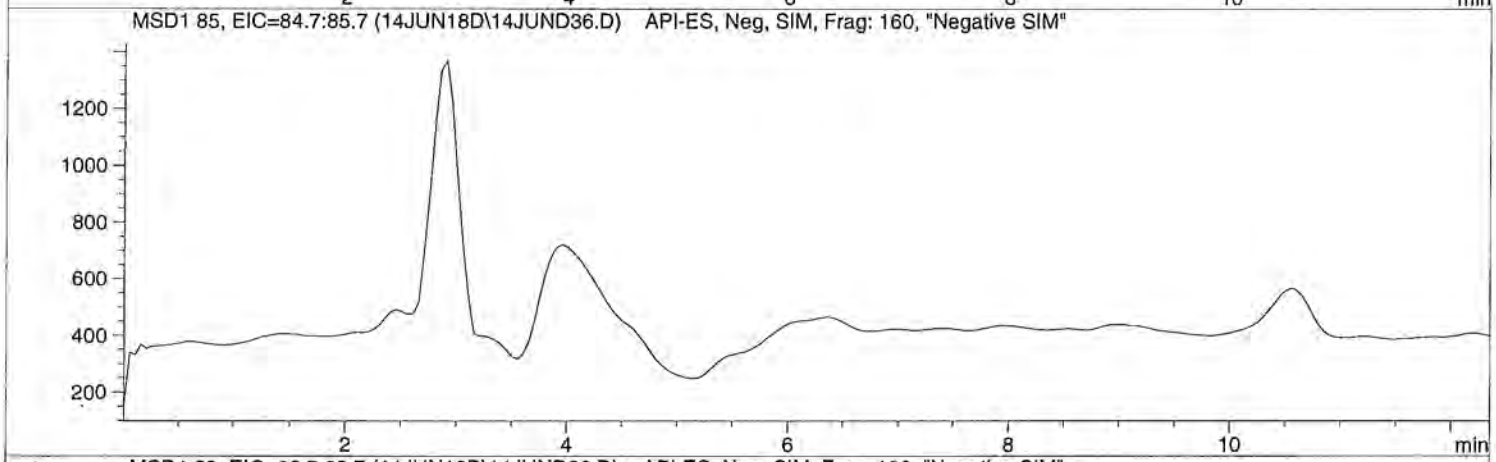
Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND36.D Sample Name: 1816534001

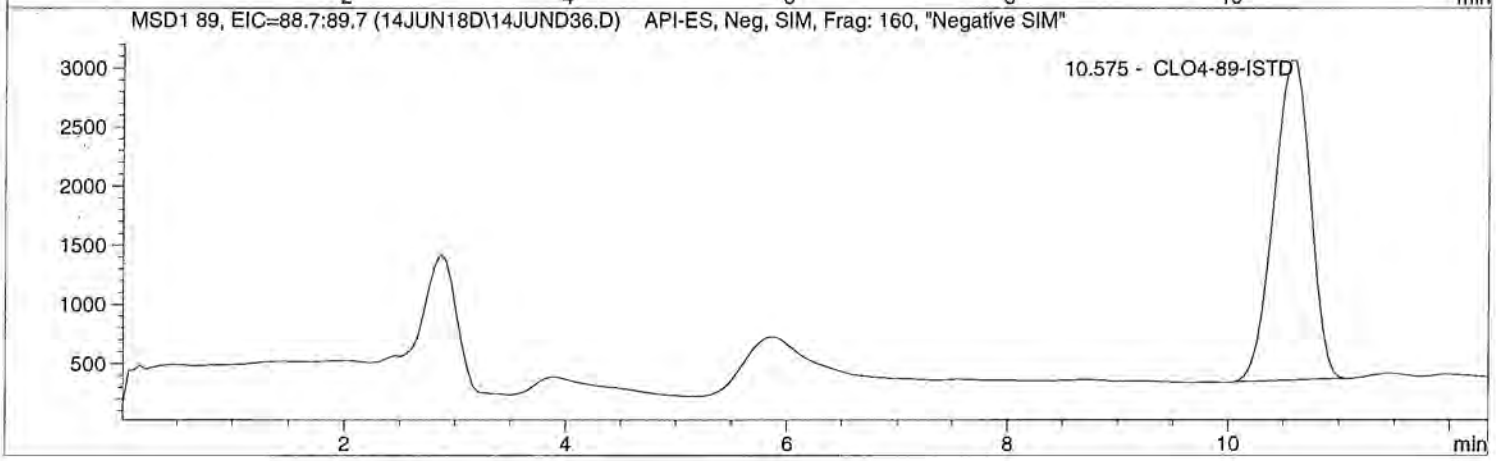
Injection Date:	6/14/2018 19:36:36	Seq Line:	36
Sample Name:	1816534001	Location:	Vial 99
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND36.D Sample Name: 1816534001

Injection Date:	6/14/2018 19:36:36	Seq Line:	36
Sample Name:	1816534001	Location:	Vial 99
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.534	BBA	10511.0	0.9336	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.575	PBA	61582.9	5.0000	CLO4-89-ISTD

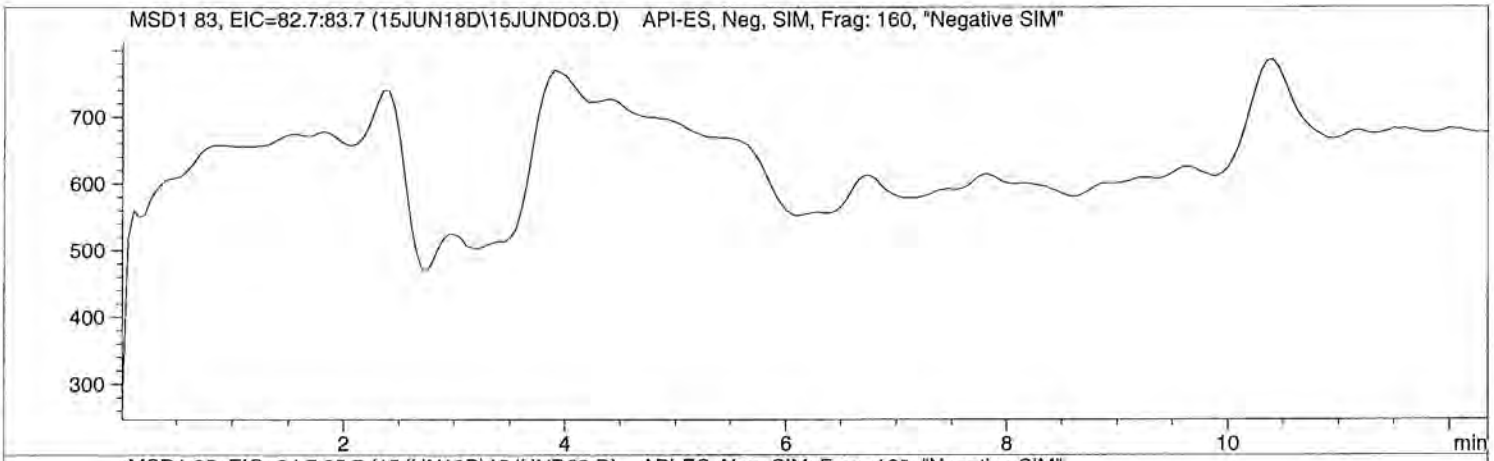
*** End of Report ***

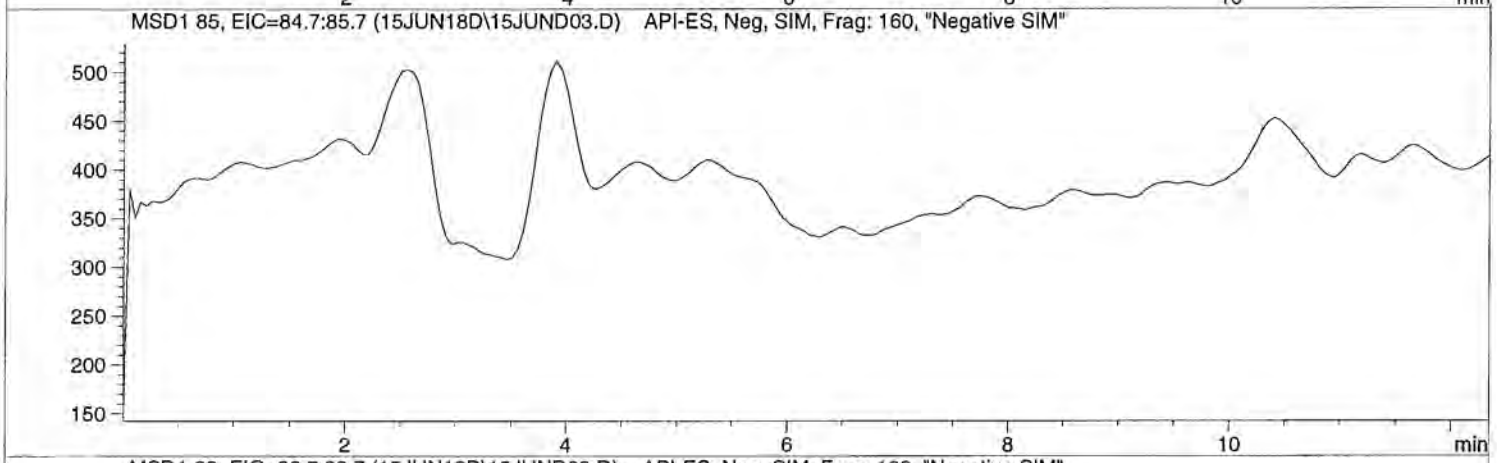
Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND03.D Sample Name: 1815991001 5X

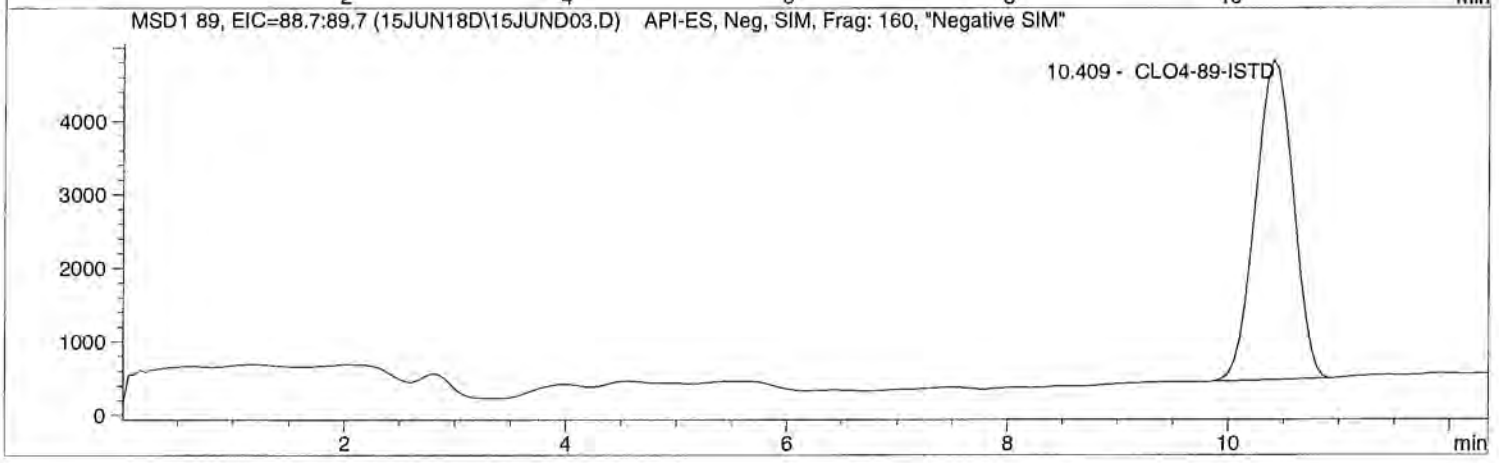
Injection Date:	6/15/2018 11:05:53	Seq Line:	3
Sample Name:	1815991001 5X	Location:	Vial 43
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis







Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND03.D Sample Name: 1815991001 5X

Injection Date:	6/15/2018 11:05:53	Seq Line:	3
Sample Name:	1815991001 5X	Location:	Vial 43
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	5.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.409	PBA	102814.8	25.0000	CLO4-89-ISTD

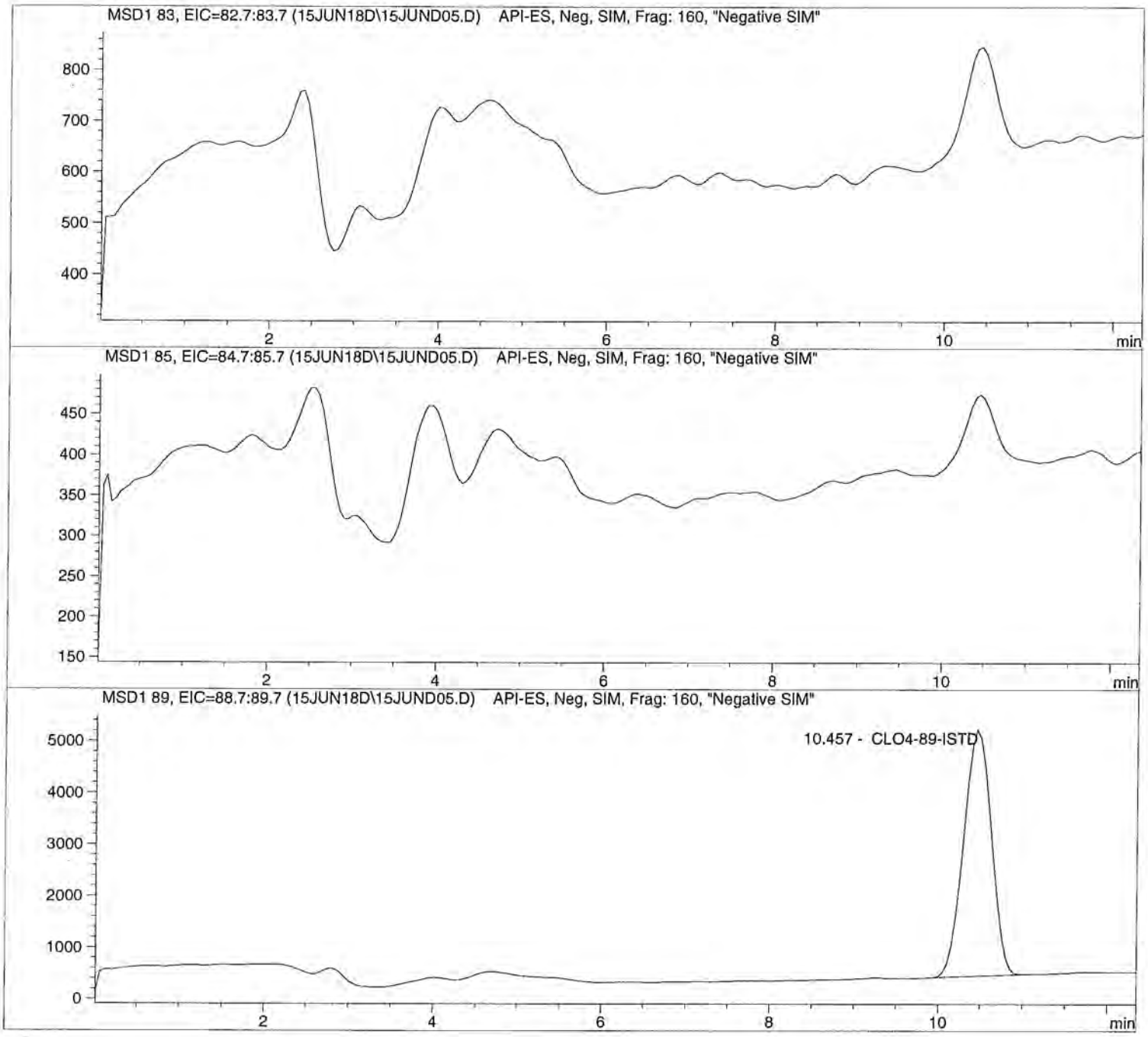
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND05.D Sample Name: 1816534001 5X

Injection Date:	6/15/2018 11:46:31	Seq Line:	5
Sample Name:	1816534001 5X	Location:	Vial 45
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\15JUN18D\15JUND05.D Sample Name: 1816534001 5X

Injection Date:	6/15/2018 11:46:31	Seq Line:	5
Sample Name:	1816534001 5X	Location:	Vial 45
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	5.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.457	PBA	109428.6	25.0000	CLO4-89-ISTD

*** End of Report ***

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

WorkOrder: HS18060310

Longhorn GW Treatment Plant

Bhate Environmental Associates, Inc.

Marcia Olive
445 Union Blvd Ste 129
Lakewood CO 80228

29-Jun-2018

10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

June 19, 2018

Marcia Olive
Bhate Environmental Associates, Inc.
445 Union Blvd Ste 129
Lakewood, CO 80228

Work Order: **HS18060310**

Laboratory Results for: **Longhorn GW Treatment Plant**

Dear Marcia,

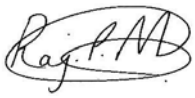
ALS Environmental received 1 sample(s) on Jun 07, 2018 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,



Generated By: JUMOKE.LAWAL
RJ Modashia
Project Manager

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Work Order: HS18060310

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS18060310-01	LH18/24-SP650_060618	Water		06-Jun-2018 14:00	07-Jun-2018 08:37	☐

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc. **CASE NARRATIVE**
Project: Longhorn GW Treatment Plant
Work Order:

Work Order Comments

- The analysis for Perchlorate was subcontracted to ALS Salt Lake City, UT. Final report attached.

WetChemistry by Method E365.3

Batch ID: R318072

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E415.1

Batch ID: R317743

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E350.3

Batch ID: R317612

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Sample ID: LH18/24-SP650_060618
Collection Date: 06-Jun-2018 14:00

ANALYTICAL REPORT
WorkOrder:HS18060310
Lab ID:HS18060310-01
Matrix:Water

ANALYSES	RESULT	QUAL	DL	LOD	LOQ	UNITS	DILUTION FACTOR	DATE ANALYZED
AMMONIA AS N BY E350.3(ISE)		**Method:E350.3**						Analyst: MZD
Nitrogen, Ammonia (As N)	**20**		**0.20**	**0.20**	**0.20**	**mg/L**	1	08-Jun-2018 11:20
ORTHO PHOSPHATE (PO4) AS P BY E365.3		**Method:E365.3**						Analyst: MZD
Phosphorus, Total Orthophosphate (As P)	**2.59**		**0.100**	**0.100**	**0.250**	**mg/L**	10	08-Jun-2018 12:07
TOTAL ORGANIC CARBON BY E415.1		**Method:E415.1**						Analyst: AJH
Organic Carbon, Total	**161**		**2.50**	**3.00**	**5.00**	**mg/L**	5	10-Jun-2018 11:38
SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)		**Method:NA**						Analyst: SUB
Subcontract Analysis	See Attached		0	0		NA	1	19-Jun-2018 10:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060310

DATES REPORT

Sample ID	Client Samp ID	Collection Date	TCLP Date	Prep Date	Analysis Date	DF
Batch ID R317612	**Test Name :** AMMONIA AS N BY E350.3(ISE)			**Matrix:** Water		
HS18060310-01	LH18/24-SP650_060618	06 Jun 2018 14:00			08 Jun 2018 11:20	1
Batch ID R317743	**Test Name :** TOTAL ORGANIC CARBON BY E415.1			**Matrix:** Water		
HS18060310-01	LH18/24-SP650_060618	06 Jun 2018 14:00			10 Jun 2018 11:38	5
Batch ID R318072	**Test Name :** ORTHO PHOSPHATE (PO4) AS P BY E365.3			**Matrix:** Water		
HS18060310-01	LH18/24-SP650_060618	06 Jun 2018 14:00			08 Jun 2018 12:07	10
Batch ID R318211	**Test Name :** SUBCONTRACT ANALYSIS - PERCHLORATE (EPA 6850)			**Matrix:** Water		
HS18060310-01	LH18/24-SP650_060618	06 Jun 2018 14:00			19 Jun 2018 10:45	1

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060310

QC BATCH REPORT

Batch ID: R317612 **Instrument: WetChem_HS** **Method: E350.3**

MBLK Sample ID: **MBLK-317612** Units: **mg/L** Analysis Date: **08-Jun-2018 11:20**
Client ID: Run ID: **WetChem_HS_317612** SeqNo: **4592220** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	0.20	0.20								U

LCS Sample ID: **LCS-317612** Units: **mg/L** Analysis Date: **08-Jun-2018 11:20**
Client ID: Run ID: **WetChem_HS_317612** SeqNo: **4592221** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	9.968	0.20	10	0	99.7	80 - 120				

MS Sample ID: **HS18060043-01MS** Units: **mg/L** Analysis Date: **08-Jun-2018 11:20**
Client ID: Run ID: **WetChem_HS_317612** SeqNo: **4592224** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.78	0.20	10	0.047	107	80 - 120				

MSD Sample ID: **HS18060043-01MSD** Units: **mg/L** Analysis Date: **08-Jun-2018 11:20**
Client ID: Run ID: **WetChem_HS_317612** SeqNo: **4592225** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Nitrogen, Ammonia (As N)	10.8	0.20	10	0.047	108	80 - 120	10.78	0.185	20	

The following samples were analyzed in this batch: HS18060310-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060310

QC BATCH REPORT

Batch ID: R317743 **Instrument: TOC_02** **Method: E415.1**

MBLK Sample ID: **WBLKW3-180609** Units: **mg/L** Analysis Date: **10-Jun-2018 07:42**
Client ID: Run ID: **TOC_02_317743** SeqNo: **4595636** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	0.600	1.00								U

LCS Sample ID: **WLCSW3-180609** Units: **mg/L** Analysis Date: **10-Jun-2018 07:57**
Client ID: Run ID: **TOC_02_317743** SeqNo: **4595637** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	10.08	1.00	10	0	101	80 - 120				

LCSD Sample ID: **WLCSDW3-180609** Units: **mg/L** Analysis Date: **10-Jun-2018 08:10**
Client ID: Run ID: **TOC_02_317743** SeqNo: **4595638** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	9.751	1.00	10	0	97.5	80 - 120	10.08	3.32	20	

MS Sample ID: **HS18060351-21MS** Units: **mg/L** Analysis Date: **10-Jun-2018 08:37**
Client ID: Run ID: **TOC_02_317743** SeqNo: **4595640** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Organic Carbon, Total	12.93	1.00	10	3.405	95.2	80 - 120				

The following samples were analyzed in this batch: HS18060310-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: HS18060310

QC BATCH REPORT

Batch ID: R318072 **Instrument: UV-2450** **Method: E365.3**

MBLK Sample ID: **MBLK-318072** Units: **mg/L** Analysis Date: **08-Jun-2018 12:07**
Client ID: Run ID: **UV-2450_318072** SeqNo: **4611574** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.0100	0.0250								U

LCS Sample ID: **LCS-318072** Units: **mg/L** Analysis Date: **08-Jun-2018 12:07**
Client ID: Run ID: **UV-2450_318072** SeqNo: **4611575** PrepDate: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	0.243	0.0250	0.25	0	97.2	85 - 115				

MS Sample ID: **HS18060310-01MS** Units: **mg/L** Analysis Date: **08-Jun-2018 12:07**
Client ID: **LH18/24-SP650_060618** Run ID: **UV-2450_318072** SeqNo: **4611577** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	4.72	0.250	2.5	2.59	85.2	80 - 120				

MSD Sample ID: **HS18060310-01MSD** Units: **mg/L** Analysis Date: **08-Jun-2018 12:07**
Client ID: **LH18/24-SP650_060618** Run ID: **UV-2450_318072** SeqNo: **4611578** PrepDate: DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phosphorus, Total Orthophosphate (As P)	4.78	0.250	2.5	2.59	87.6	80 - 120	4.72	1.26	20	

The following samples were analyzed in this batch: HS18060310-01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
WorkOrder: **HS18060310**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
California	2919 2016-2018	31-Jul-2018
Oklahoma	2017-088	31-Aug-2018
North Carolina	624-2018	31-Dec-2018
Louisiana	03087 2017-2018	30-Jun-2018
Arkansas	88-0356	27-Mar-2019
Kansas	E-10352 2017-218	31-Jul-2018
Texas	T10470231-18-21	30-Apr-2019
North Dakota	R193	30-Apr-2019

ALS Group Houston, Corp Date: 19-Jun-18

Client: Bhate Environmental Associates, Inc.
Project: Longhorn GW Treatment Plant
Work Order: HS18060310

SAMPLE TRACKING

Lab Samp ID	Client Sample ID	Action	Date	Person	New Location
HS18060310-01	LH18/24-SP650_060618	Login	6/7/2018 10:35:06 AM	PMG	Sub
HS18060310-01	LH18/24-SP650_060618	Login	6/7/2018 10:35:06 AM	PMG	WET082
HS18060310-01	LH18/24-SP650_060618	Login	6/7/2018 10:35:06 AM	PMG	MET050

Date: 19-Jun-18

Sample Receipt Checklist

Client Name:	Bhate Environmental	Date/Time Received:	**07-Jun-2018 08:37**
Work Order:	HS18060310	Received by:	**NDR**

Checklist completed by: *Paresh M. Giga* eSignature — 7-Jun-2018 Date

Reviewed by: *RJ Modashia* eSignature — 7-Jun-2018 Date

Matrices: **Water**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
TX1005 solids received in hermetically sealed vials?	Yes ☐	No ☐	N/A ☑
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c/1.6c U/c	IR11	
Cooler(s)/Kit(s):	43085		
Date/Time sample(s) sent to storage:	6/7/18 10:50		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes: Perchlorate not checked off on COC
Received a 120p for Perchlorate.
Logged in with analysis per RJ

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

CHAIN OF CUSTODY

Name Of Lab Shipping To: ALS 10450 Stancliff Rd. Suite 210 Houston, TX. 77099 (281) 530-5656 ATTN: SONIA WEST

Page 1 of 1

Project: BHATE
LONGHORN ARMY AMMN. PLANT (LHAAP)
GROUNDWATER TREATMENT PLANT (GWTP)
KARNACK, TEXAS

Project No.
NWO1312.0150.0
16.0001

Job:
GROUNDWATER TREATMENT PLANT WEEKLY SAMPLES

Prepared By:
Scott Beesinger

P.O. Number

HS18060310
Bhate Environmental Associates, Inc.
Longhorn GW Treatment Plant

Field Sample I.D.	Sample Matrix	Date / Time	MS / MSD	No. OF CONTAINERS	AMMONIA-N	TOTAL ORGANIC CARBON	ORTHO-PHOSPHATE	PERCHLORATE	Remarks (Preservatives, etc.)	Lab I.D.#
LH18/24-SP650_060618	Water	06/06/18 / 14:00		2	X	X			H2SO4	
LH18/24-SP650_060618	Water	06/06/18 / 14:00		1			X		NONE	

Additional Remarks: **Standard TAT on all parameters**

Relinquished By:	Date	Time	Received By:	Date	Time	Relinquished By:	Date	Time	Received By:	Date	Time
Scott Beesinger (signature)	06/06/18	14:30	NK (signature)	6/7/18	8:37						

For Lab Use Only

Received At Lab By:	Date	Time	Airbill No.	Opened By:	Date	Time	Temp of Container	Seal No.	Condition

Remarks:

43085
UK.
2.1°
#11
<1F -0.5°

(Word) S:\1-ces\Forms\Chain of Custody - BiWeekly

ALS
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887
43085

CUSTODY SEAL

Date: 6/6/18 Time: 1520
Name: Scott Bessinger
Company: BWXT

Seal Broken By: [illegible]
Date: 06/07/18

43085 JUN 0 7 2018

TO CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON TX 77099
(281) 530-5656
REF: LHAAP-58-RJ
RMA:

43085

FedEx Express

E

RETURNS MON-SAT
PRIORITY OVERNIGHT

TRK# 0221 7376 9752 9259

THU - 07 JUN 10:30A
PRIORITY OVERNIGHT
99

FedEx
TRK# 0221 7376 9752 9259

77099
TX-US
IAH

AB SGRA

Wet Chemistry Raw Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT
PLANT ALS WO# HS18060310

HS1806 0310
NIT- AMN- W-ISE (350.3)

Logbook **30622**

ALS Laboratory Group

Ion Selective Electrode Logbook

Analyst: MD			Date: 06/08/2018
Method: SM4500NH3-D/EPA 350.3 or SM4500 NH3 B-F			
Probe Calibration Date: 06/08/2018	Cal Std ID: 30606(03-07)		Probe ID: SR15190
Std Level	mV	Conc., mg/L:	Sodium Thiosulfate ID:
STD 1 (mg/L): 0.2	115.1	0.2010	Std Level / mV / Conc., mg/L:
STD 2 (mg/L): 1	73.4	1.000	STD 4 (mg/L): 10 / 17.4 / 10.00
STD 3 (mg/L): 5	33.4	5.000	STD 5 (mg/L): 50 / -20.9 / 50.17
LSC / MS Spike ID: 2970206404			ICAL Date & Slope: 98.6% / -58.2 mV
ICV Cal STD ID: 30606970404			
DPD Reagent ID: 2970204302			

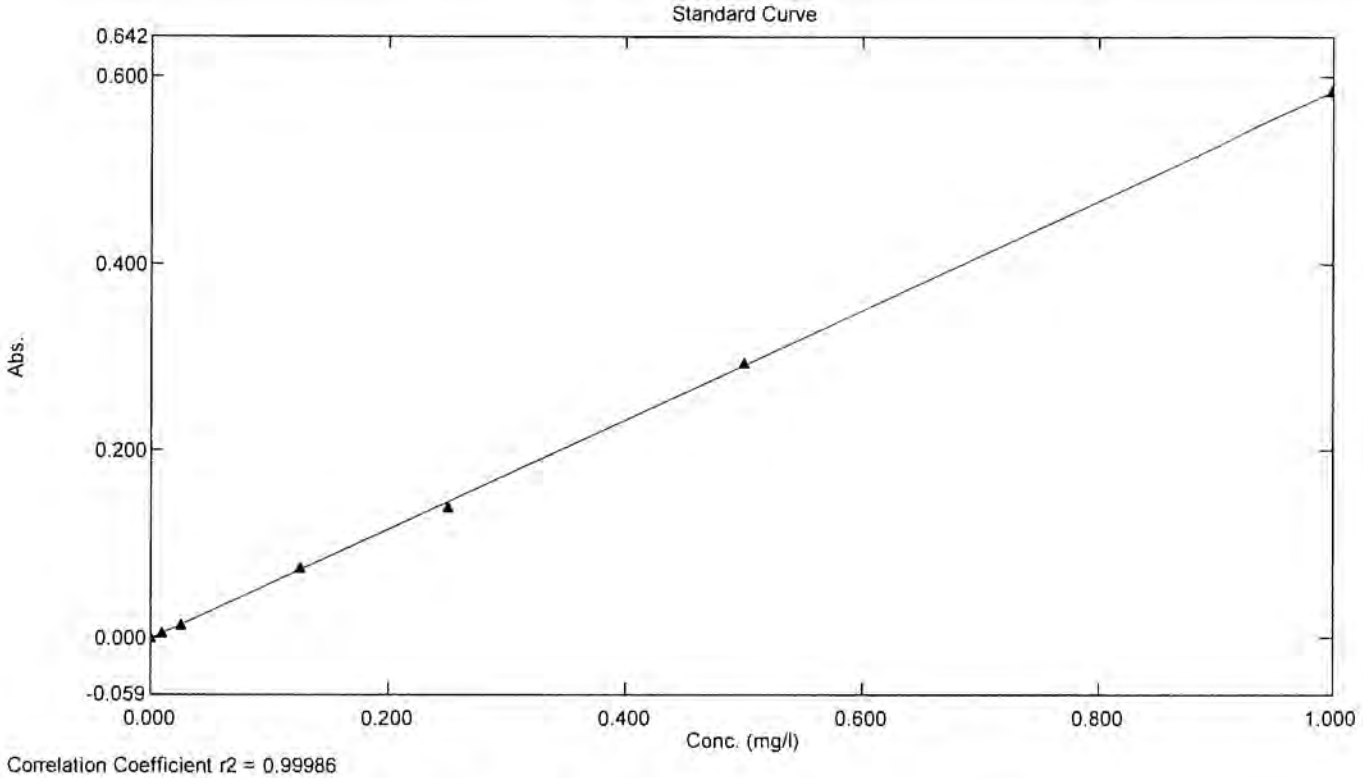
WO # / SX #	Bottle #	Initial g or ml	Final Vol. ml	Dilution Factor	Initial Conc. mg/L	Final Conc. mg/L	Chlorine Check (+/-)	Comments
ICV		50ml	50ml		10.39			
CCB		↓	↓		0.02748			
MBLK					0.02750			
LCS					9.968			
HS1805/1489-01					17.97		-Ve	
HS1806 0043-01					0.07400		-Ve	
HS1806 0153-01					0.07259		-Ve	
HS1806 0164-01					0.03258		-Ve	
HS1806 0310-01					19.80		-ve	
HS1806 0043-01MS					10.78			
⊥ RSD		↓	↓		10.80			
CCV		50ml	50ml		10.01			
CCB		↓	↓		0.02501			

Batch ID:	Reported By	Reviewed By:
317617 / 317614	MD	MD

Standard Table Report

06/27/2018 09:05:25 AM

File Name: C:\Program Files (x86)\Shimadzu\UVProbe\Data\O_PO4_UNKNOWN\ORTHO_2018\180608_P_ORTH



Correlation Coefficient r2 = 0.99986

Standard Table

	Sample ID	Type	Ex	Conc	WL880.0	Wgt.Facto	Comments
1	STD1	Standard		0.000	-0.000	1.000	
2	STD2	Standard		0.010	0.006	1.000	
3	STD3	Standard		0.025	0.014	1.000	
4	STD4	Standard		0.125	0.075	1.000	
5	STD5	Standard		0.250	0.140	1.000	
6	STD6	Standard		0.500	0.294	1.000	
7	STD7	Standard		1.000	0.584	1.000	
8							

Sample Table Report

06/27/2018 09:05:28 AM

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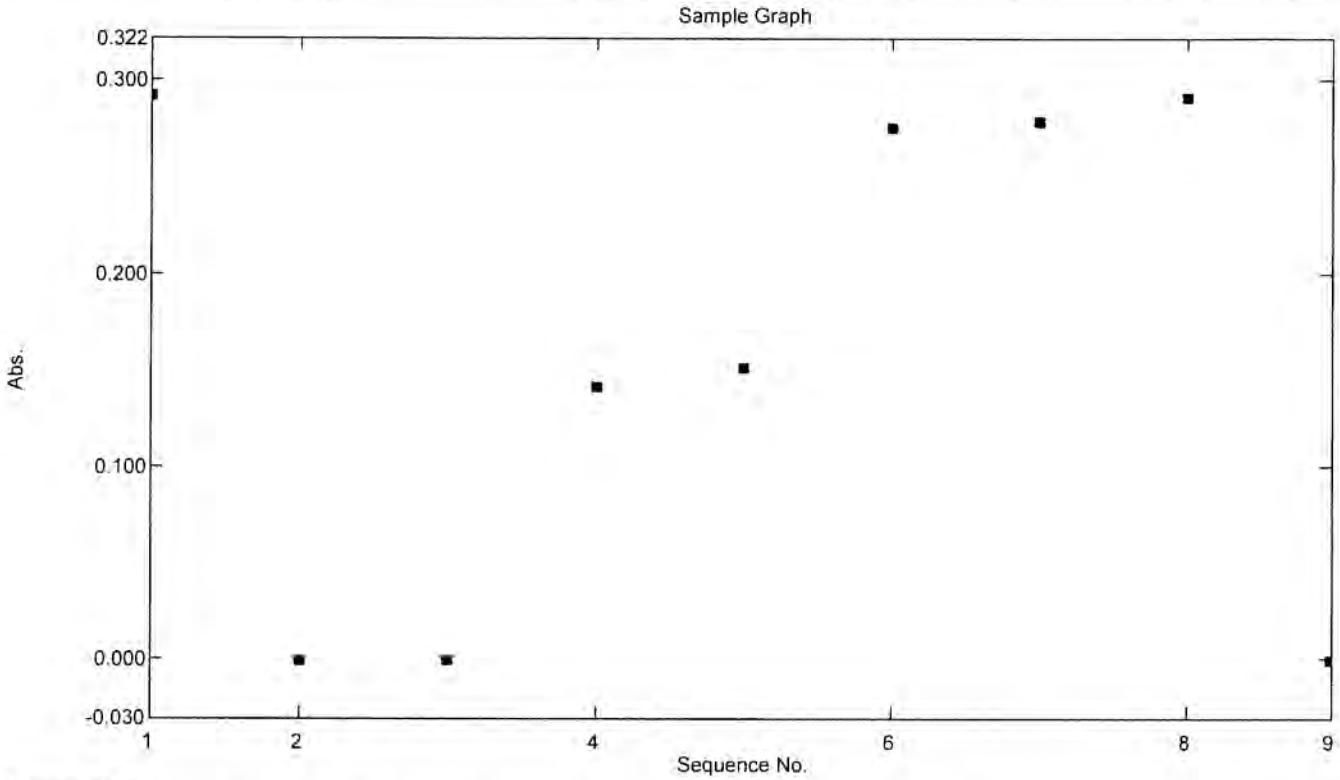


Sample Table

	Sample ID	Type	Ex	Conc	WL880.0	Comments
1	CCV	Unknown		0.502	0.292	
2	CCB	Unknown		-0.000	-0.001	
3	MBLK	Unknown		-0.000	-0.001	
4	LCS	Unknown		0.243	0.141	
5	18060310.01	Unknown		0.259	0.151	12.07PM,FILTER,10X
6	18060310.01MS	Unknown		0.472	0.275	10X
7	18060301.01MSD	Unknown		0.478	0.279	10X
8	CCV2	Unknown		0.500	0.292	
9	CCB2	Unknown		0.000	-0.000	
10						

HS18060310

	T	Analys	Sample Name	Sample ID	Origin	Result	Status	Date / Time	Vial
1	U	NPOC	CCV	306.060.106	05-08-2018_	NPOC:24.82mg/L	Completed	6/9/2018 8:48:52 PM	1
2	U	NPOC	CCB	Untitled	05-08-2018_	NPOC:0.09614mg/	Completed	6/9/2018 9:04:10 PM	2
3	U	NPOC	WBLKW1-180609	TOC_W 5310	05-08-2018_	NPOC:0.08580mg/	Completed	6/9/2018 9:17:18 PM	3
4	U	NPOC	WLCSW1-180609	297.020.5605	05-08-2018_	NPOC:9.804mg/L	Completed	6/9/2018 9:30:31 PM	4
5	U	NPOC	WLCSW1-180609	Untitled	05-08-2018_	NPOC:9.841mg/L	Completed	6/9/2018 9:43:44 PM	5
6	U	NPOC	HS18060351-01	1/2	05-08-2018_	NPOC:2.040mg/L	Completed	6/9/2018 9:56:57 PM	6
7	U	NPOC	HS18060351-01MS	1/2	05-08-2018_	NPOC:11.59mg/L	Completed	6/9/2018 10:10:10 PM	7
8	U	NPOC	HS18060351-02	1/2	05-08-2018_	NPOC:2.068mg/L	Completed	6/9/2018 10:25:28 PM	8
9	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.2102mg/L	Completed	6/9/2018 10:40:41 PM	9
10	U	NPOC	HS18060351-03	1/2	05-08-2018_	NPOC:2.047mg/L	Completed	6/9/2018 10:55:54 PM	10
11	U	NPOC	HS18060351-04	1/2	05-08-2018_	NPOC:2.222mg/L	Completed	6/9/2018 11:11:07 PM	11
12	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1565mg/L	Completed	6/9/2018 11:26:20 PM	12
13	U	NPOC	CCV	Untitled	05-08-2018_	NPOC:24.82mg/L	Completed	6/9/2018 11:39:39 PM	13
14	U	NPOC	CCB	Untitled	05-08-2018_	NPOC:0.1087mg/L	Completed	6/9/2018 11:54:57 PM	14
15	U	NPOC	HS18060351-05	1/2	05-08-2018_	NPOC:2.073mg/L	Completed	6/10/2018 12:08:05 AM	15
16	U	NPOC	HS18060351-06	1/2	05-08-2018_	NPOC:2.135mg/L	Completed	6/10/2018 12:23:23 AM	16
17	U	NPOC	HS18060351-07	1/2	05-08-2018_	NPOC:5.153mg/L	Completed	6/10/2018 12:36:31 AM	17
18	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1077mg/L	Completed	6/10/2018 12:51:49 AM	18
19	U	NPOC	HS18060351-08	1/2	05-08-2018_	NPOC:3.031mg/L	Completed	6/10/2018 1:04:57 AM	19
20	U	NPOC	HS18060351-09	1/2	05-08-2018_	NPOC:3.093mg/L	Completed	6/10/2018 1:20:15 AM	20
21	U	NPOC	HS18060351-10	1/2	05-08-2018_	NPOC:4.177mg/L	Completed	6/10/2018 1:35:28 AM	21
22	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1228mg/L	Completed	6/10/2018 1:50:41 AM	22
23	U	NPOC	CCV	Untitled	05-08-2018_	NPOC:24.62mg/L	Completed	6/10/2018 2:03:58 AM	23
24	U	NPOC	CCB	Untitled	05-08-2018_	NPOC:0.06894mg/	Completed	6/10/2018 2:19:16 AM	24
25	U	NPOC	WBLKW2-180609	TOC_W 5310	05-08-2018_	NPOC:0.08066mg/	Completed	6/10/2018 2:32:24 AM	25
26	U	NPOC	WLCSW2-180609	Untitled	05-08-2018_	NPOC:9.953mg/L	Completed	6/10/2018 2:45:37 AM	26
27	U	NPOC	WLCSW2-180609	Untitled	05-08-2018_	NPOC:9.958mg/L	Completed	6/10/2018 2:58:51 AM	27
28	U	NPOC	HS18060351-11	1/2	05-08-2018_	NPOC:3.957mg/L	Completed	6/10/2018 3:12:05 AM	28
29	U	NPOC	HS18060351-11MS	1/2	05-08-2018_	NPOC:13.34mg/L	Completed	6/10/2018 3:25:19 AM	29
30	U	NPOC	HS18060351-12	1/2	05-08-2018_	NPOC:4.054mg/L	Completed	6/10/2018 3:38:33 AM	30
31	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1046mg/L	Completed	6/10/2018 3:53:52 AM	31
32	U	NPOC	HS18060351-13	1/2	05-08-2018_	NPOC:3.359mg/L	Completed	6/10/2018 4:07:01 AM	32
33	U	NPOC	HS18060351-14	1/2	05-08-2018_	NPOC:3.571mg/L	Completed	6/10/2018 4:22:20 AM	33
34	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.2949mg/L	Completed	6/10/2018 4:37:34 AM	34
35	U	NPOC	CCV	Untitled	05-08-2018_	NPOC:24.73mg/L	Completed	6/10/2018 4:50:56 AM	35
36	U	NPOC	CCB	Untitled	05-08-2018_	NPOC:0.08774mg/	Completed	6/10/2018 5:06:15 AM	36
37	U	NPOC	HS18060351-15	1/2	05-08-2018_	NPOC:3.290mg/L	Completed	6/10/2018 5:19:34 AM	37
38	U	NPOC	HS18060351-16	1/2	05-08-2018_	NPOC:6.122mg/L	Completed	6/10/2018 5:34:53 AM	38
39	U	NPOC	HS18060351-17	1/2	05-08-2018_	NPOC:6.003mg/L	Completed	6/10/2018 5:50:07 AM	39
40	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1433mg/L	Completed	6/10/2018 6:05:21 AM	40
41	U	NPOC	HS18060351-18	1/2	05-08-2018_	NPOC:5.946mg/L	Completed	6/10/2018 6:18:30 AM	41
42	U	NPOC	HS18060351-19	1/2	05-08-2018_	NPOC:2.743mg/L	Completed	6/10/2018 6:33:49 AM	42
43	U	NPOC	HS18060351-20	1/2	05-08-2018_	NPOC:3.540mg/L	Completed	6/10/2018 6:49:03 AM	43
44	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1396mg/L	Completed	6/10/2018 7:04:17 AM	44
45	U	NPOC	CCV	Untitled	05-08-2018_	NPOC:24.52mg/L	Completed	6/10/2018 7:17:49 AM	45
46	U	NPOC	CCB	Untitled	05-08-2018_	NPOC:0.04506mg/	Completed	6/10/2018 7:33:08 AM	46
47	U	NPOC	WBLKW3-180609	TOC_W 5310	05-08-2018_	NPOC:0.08498mg/	Completed	6/10/2018 7:48:23 AM	47
48	U	NPOC	WLCSW3-180609	Untitled	05-08-2018_	NPOC:10.08mg/L	Completed	6/10/2018 8:01:33 AM	48
49	U	NPOC	WLCSW3-180609	Untitled	05-08-2018_	NPOC:9.751mg/L	Completed	6/10/2018 8:14:48 AM	49
50	U	NPOC	HS18060351-21	1/2	05-08-2018_	NPOC:3.405mg/L	Completed	6/10/2018 8:28:03 AM	50
51	U	NPOC	HS18060351-21MS	1/2	05-08-2018_	NPOC:12.93mg/L	Completed	6/10/2018 8:41:29 AM	51

	T	Analys	Sample Name	Sample ID	Origin	Result	Status	Date / Time	Vial
52	U	NPOC	HS18060351-22	1/2	05-08-2018_	NPOC:4.243mg/L	Completed	6/10/2018 8:54:44 AM	52
53	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1128mg/L	Completed	6/10/2018 9:10:04 AM	53
54	U	NPOC	HS18060351-23	1/2	05-08-2018_	NPOC:2.934mg/L	Completed	6/10/2018 9:23:14 AM	54
55	U	NPOC	HS18060351-24	1/2	05-08-2018_	NPOC:3.081mg/L	Completed	6/10/2018 9:38:34 AM	55
56	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.1092mg/L	Completed	6/10/2018 9:53:49 AM	56
57	U	NPOC	CCV	Untitled	05-08-2018_	NPOC:24.70mg/L	Completed	6/10/2018 10:07:56 AM	57
58	U	NPOC	CCB	Untitled	05-08-2018_	NPOC:0.1231mg/L	Completed	6/10/2018 10:23:16 AM	58
59	U	NPOC	HS18060435-01	1/3	05-08-2018_	NPOC:0.2464mg/L	Completed	6/10/2018 10:36:26 AM	59
60	U	NPOC	HS18060396-01	1/2	05-08-2018_	NPOC:34.67mg/L	Completed	6/10/2018 10:49:41 AM	60
61	U	NPOC	HS18060408-01	1/2	05-08-2018_	NPOC:16.05mg/L	Completed	6/10/2018 11:03:00 AM	61
62	U	NPOC	HS18060228-01	1/2	05-08-2018_	NPOC:10.05mg/L	Completed	6/10/2018 11:16:16 AM	62
63	U	NPOC	HS18060310-01	1/2	05-08-2018_	NPOC:165.6mg/L	Completed	6/10/2018 11:29:49 AM	63
64	U	NPOC	HS18060310-01DF5	1/2	05-08-2018_	NPOC:32.21mg/L	Completed	6/10/2018 11:43:05 AM	64
65	U	NPOC	HS18060399-01	1/2	05-08-2018_	NPOC:4.908mg/L	Completed	6/10/2018 11:56:22 AM	65
66	U	NPOC	CCV	Untitled	05-08-2018_	NPOC:24.52mg/L	Completed	6/10/2018 12:10:02 PM	66
67	U	NPOC	CCB	Untitled	05-08-2018_	NPOC:0.06906mg/	Completed	6/10/2018 12:25:23 PM	67
68	U	NPOC	FLUSH	Untitled	05-08-2018_	NPOC:0.05699mg/	Completed	6/10/2018 12:40:39 PM	68

Instr.Information

System	TOC csh with asi
Instrument Options	TOC/ASI/IC Unit/
Catalyst	Regular Sensitivity

Cal. Curve

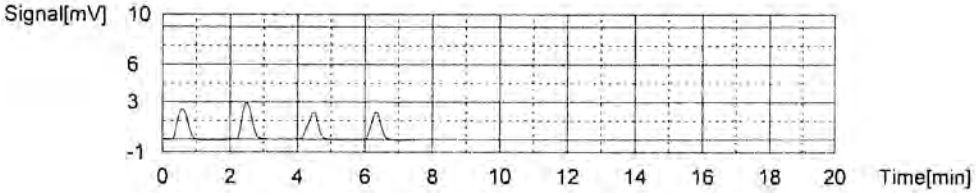
Sample Name:	CAL
Sample ID:	306.067:504-509
Cal. Curve:	05-08-2018_W.2018_05_08_16_59_08.cal
Status	Completed

Type	Anal.
Standard	NPOC

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.281	50uL	1	*******		5/8/2018 5:07:52 PM
2	5.767	50uL	1	*******	E	5/8/2018 5:09:57 PM
3	4.377	50uL	1	*******		5/8/2018 5:12:02 PM
4	4.321	50uL	1	*******		5/8/2018 5:14:07 PM

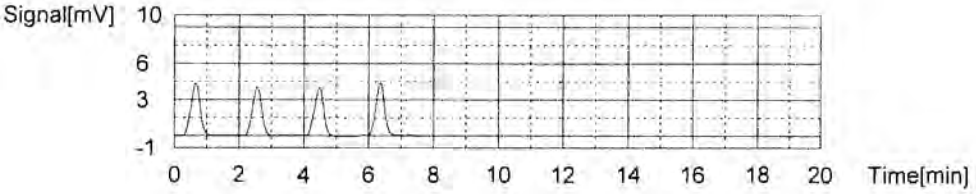
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 4.660



Conc: 2.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	8.552	50uL	1	*******	E	5/8/2018 5:23:05 PM
2	7.956	50uL	1	*******		5/8/2018 5:25:10 PM
3	7.917	50uL	1	*******		5/8/2018 5:27:15 PM
4	7.981	50uL	1	*******		5/8/2018 5:29:20 PM

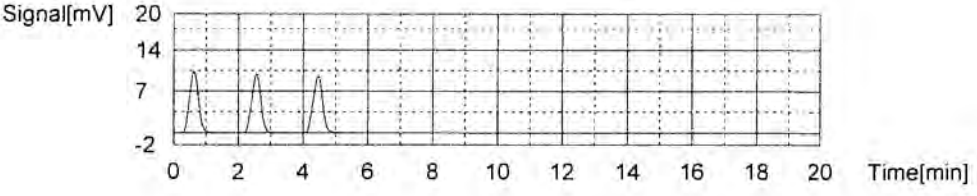
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 7.951



Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	19.68	50uL	1	*******		5/8/2018 5:38:18 PM
2	19.11	50uL	1	*******		5/8/2018 5:40:23 PM
3	19.32	50uL	1	*******		5/8/2018 5:42:28 PM

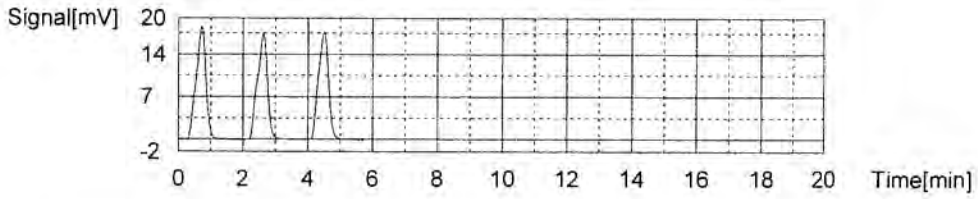
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 19.37



Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	38.73	50uL	1	*******		5/8/2018 5:51:31 PM
2	37.61	50uL	1	*******		5/8/2018 5:53:36 PM
3	38.22	50uL	1	*******		5/8/2018 5:55:41 PM

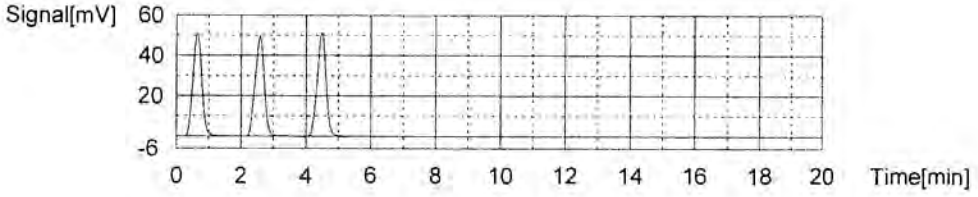
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 38.19



Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	97.00	50uL	1	*******		5/8/2018 6:04:44 PM
2	96.71	50uL	1	*******		5/8/2018 6:06:49 PM
3	96.75	50uL	1	*******		5/8/2018 6:08:54 PM

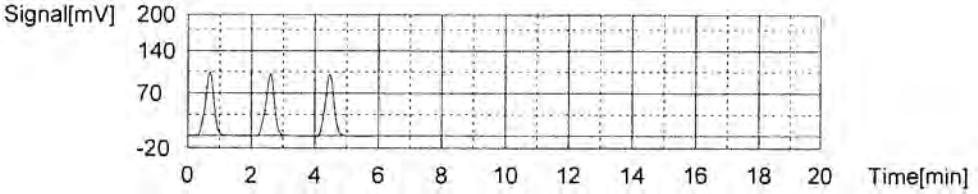
Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 96.82



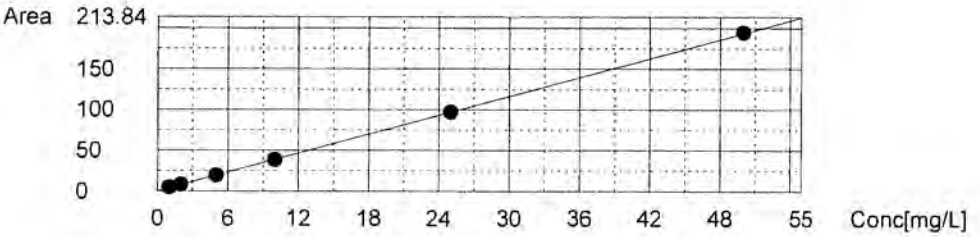
Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	195.4	50uL	1	*******		5/8/2018 6:17:57 PM
2	193.7	50uL	1	*******		5/8/2018 6:20:02 PM
3	194.1	50uL	1	*******		5/8/2018 6:22:07 PM

Acid Add. 0.000%
Sp. Time 180.0sec
Mean Area 194.4



Slope: 3.881
Intercept 0.07512
r^2 1.0000
r 1.0000
Zero Shift No



Sample

Sample Name: ICV
Sample ID: 306.067.601
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

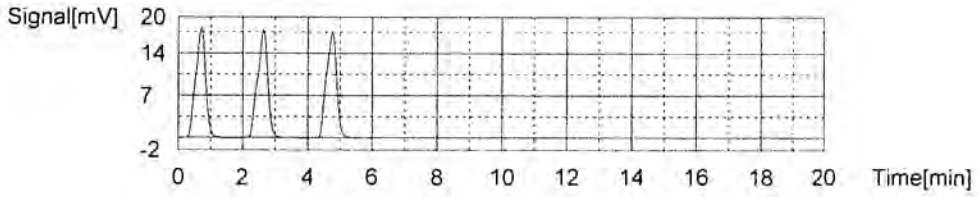
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.923mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	38.63	9.934mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:31:10 PM
2	38.67	9.944mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:33:30 PM
3	38.46	9.890mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:35:35 PM

Mean Area 38.59
Mean Conc. 9.923mg/L



Sample

Sample Name: ICB
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

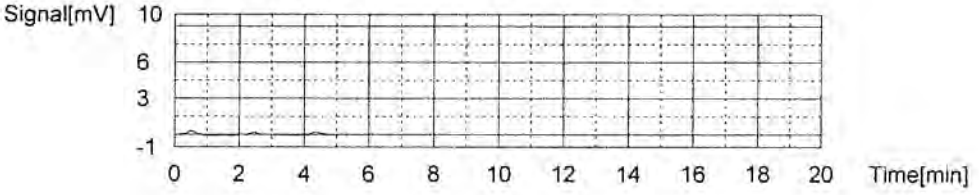
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.09481mg/L

1. Det

Anal.: NPOC

No.	Area	Conc	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.4983	0.1090mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:44:38 PM
2	0.3330	0.06645mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:46:43 PM
3	0.4980	0.1090mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	5/8/2018 6:48:48 PM

Mean Area 0.4431
Mean Conc. 0.09481mg/L



Instr.Information

System	TOC csh with asi
Instrument Options	TOC/ASI/IC Unit/
Catalyst	Regular Sensitivity

Sample

Sample Name:	CCV
Sample ID:	Untitled
Origin:	05-08-2018_W.cal
Status	Completed
Chk. Result	

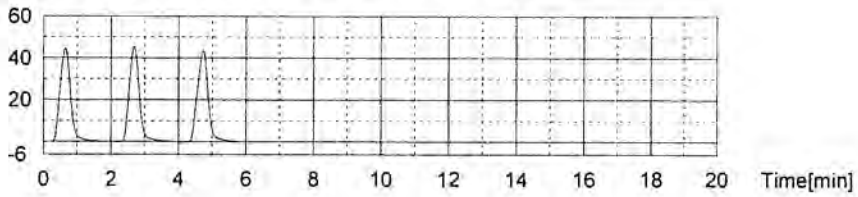
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.52mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	95.91	24.69mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:13:25 AM
2	93.68	24.12mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:15:36 AM
3	96.13	24.75mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:17:49 AM

Mean Area 95.24
Mean Conc. 24.52mg/L



Sample

Sample Name:	CCB
Sample ID:	Untitled
Origin:	05-08-2018_W.cal
Status	Completed
Chk. Result	

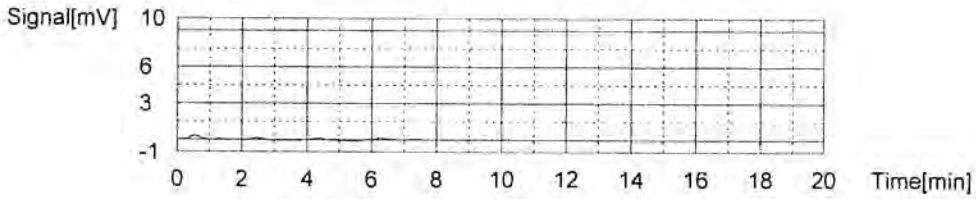
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.04506mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.5570	0.1242mg/L	50uL	1	E	05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:26:53 AM
2	0.2776	0.05217mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:28:58 AM
3	0.2552	0.04640mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:31:03 AM
4	0.2172	0.03661mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:33:08 AM

Mean Area 0.2500
Mean Conc. 0.04506mg/L



Sample

Sample Name: WBLKW3-180609
Sample ID: TOC_W 5310B
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

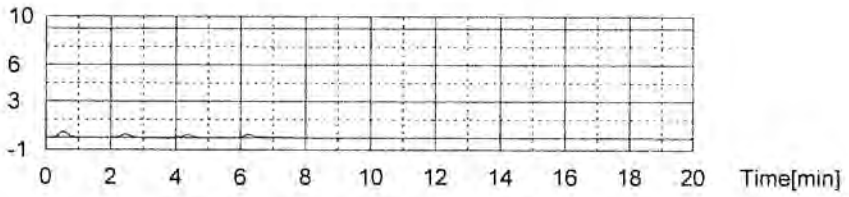
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.08498mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	0.8294	0.1943mg/L	50uL	1	E	05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:42:08 AM
2	0.3795	0.07843mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:44:13 AM
3	0.3980	0.08319mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:46:18 AM
4	0.4373	0.09332mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:48:23 AM

Mean Area 0.4049
Mean Conc. 0.08498mg/L



Sample

Sample Name: WLCSW3-180609
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

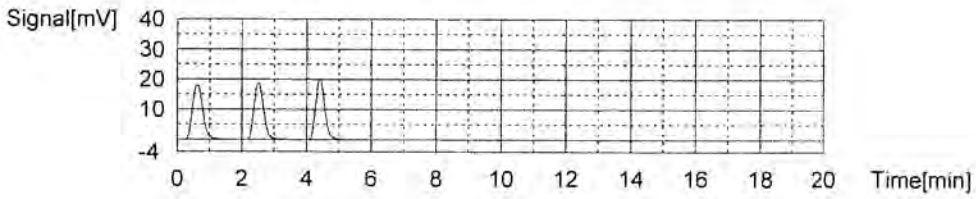
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:10.08mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.33	10.11mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:57:23 AM
2	38.74	9.962mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 7:59:28 AM
3	39.52	10.16mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:01:33 AM

Mean Area 39.20
Mean Conc. 10.08mg/L



Sample

Sample Name: WLCSW3-180609
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

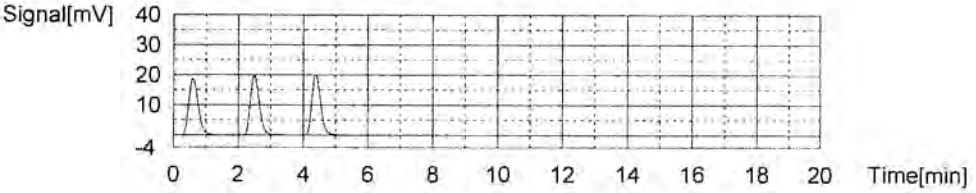
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:9.751mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	37.56	9.658mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:10:38 AM
2	38.13	9.805mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:12:43 AM
3	38.07	9.790mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:14:48 AM

Mean Area 37.92
Mean Conc. 9.751mg/L



Sample

Sample Name: HS18060351-21
Sample ID: 1/2
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

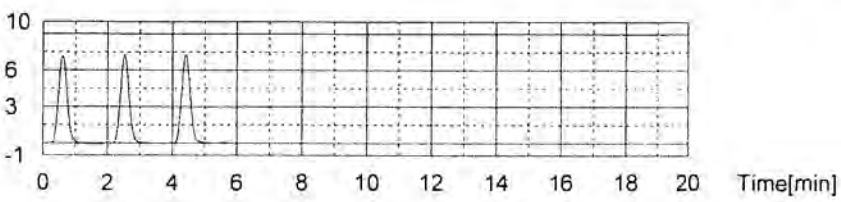
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:3.405mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.18	3.377mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:23:53 AM
2	13.32	3.413mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:25:58 AM
3	13.37	3.426mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:28:03 AM

Mean Area 13.29
Mean Conc. 3.405mg/L



Sample

Sample Name: HS18060351-21MS
Sample ID: 1/2
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

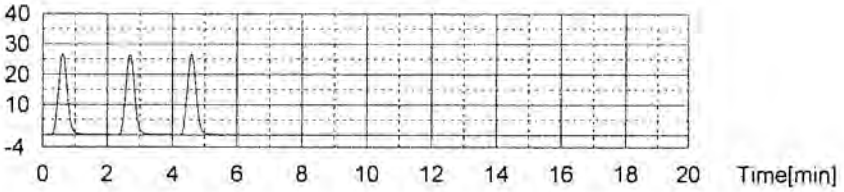
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:12.93mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.30	12.94mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:37:19 AM
2	50.19	12.91mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:39:24 AM
3	50.26	12.93mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 8:41:29 AM

Mean Area 50.25
Mean Conc. 12.93mg/L



Sample

Sample Name: CCV
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

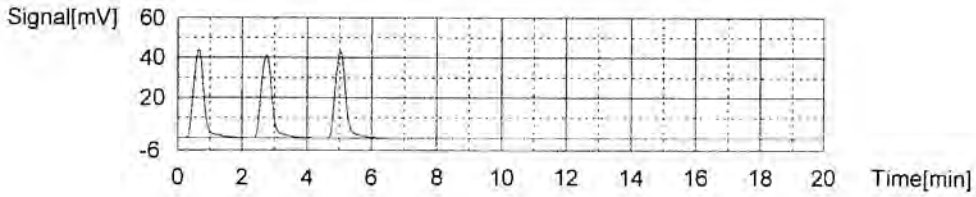
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.70mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	95.70	24.64mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 10:03:01 AM
2	95.69	24.64mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 10:05:29 AM
3	96.44	24.83mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 10:07:56 AM

Mean Area 95.94
Mean Conc. 24.70mg/L



Sample

Sample Name: CCB
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

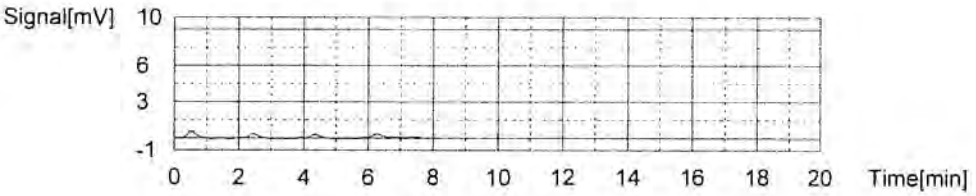
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.1231mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.014	0.2419mg/L	50uL	1	E	05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 10:17:01 AM
2	0.5837	0.1310mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 10:19:06 AM
3	0.5698	0.1275mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 10:21:11 AM
4	0.5053	0.1108mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 10:23:16 AM

Mean Area 0.5529
Mean Conc. 0.1231mg/L



Sample

Sample Name: HS18060310-01
Sample ID: 1/2
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

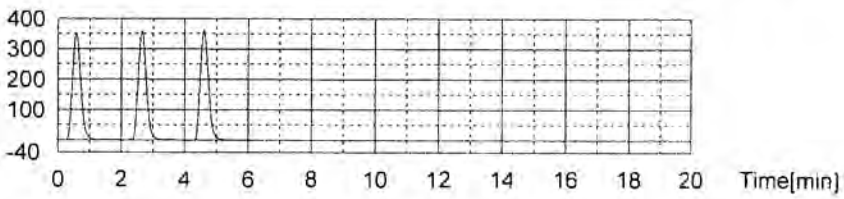
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:165.6mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	643.3	165.7mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 11:25:32 AM
2	640.5	165.0mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 11:27:41 AM
3	644.1	165.9mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 11:29:49 AM

Mean Area 642.6
Mean Conc. 165.6mg/L



Sample

Sample Name: HS18060310-01DF5
Sample ID: 1/2
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

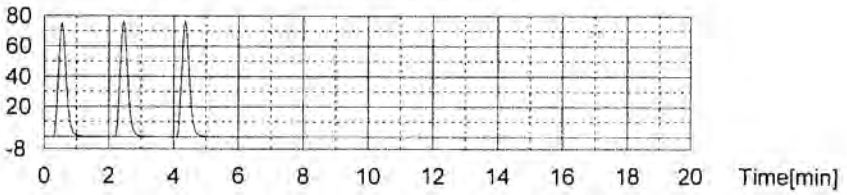
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:32.21mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	125.3	32.27mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 11:38:55 AM
2	124.9	32.16mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 11:41:00 AM
3	125.1	32.21mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 11:43:05 AM

Mean Area 125.1
Mean Conc. 32.21mg/L



Sample

Sample Name: CCV
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

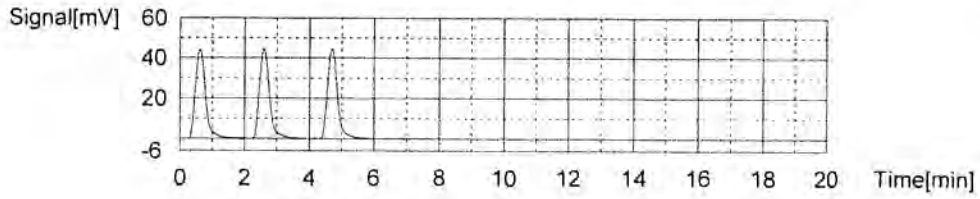
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:24.52mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	95.11	24.49mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 12:05:33 PM
2	95.25	24.52mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 12:07:49 PM
3	95.30	24.54mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 12:10:02 PM

Mean Area 95.22
Mean Conc. 24.52mg/L



Sample

Sample Name: CCB
Sample ID: Untitled
Origin: 05-08-2018_W.cal
Status Completed
Chk. Result

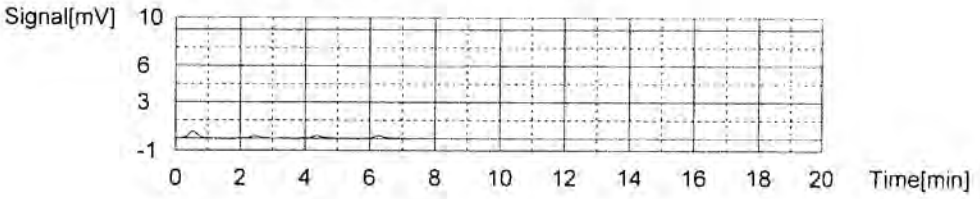
Type	Anal.	Manual Dilution	Result
Unknown	NPOC	1.000	NPOC:0.06906mg/L

1. Det

Anal.: NPOC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1.016	0.2424mg/L	50uL	1	E	05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 12:19:08 PM
2	0.3090	0.06026mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 12:21:13 PM
3	0.3383	0.06781mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 12:23:18 PM
4	0.3822	0.07912mg/L	50uL	1		05-08-2018_W.2018_05_08_16_59_08.cal	6/10/2018 12:25:23 PM

Mean Area 0.3432
Mean Conc. 0.06906mg/L



Sub Contract Data

Bhate Environmental Associates, Inc.
Project: LONGHORN GW TREATMENT
PLANT ALS WO# HS18060310

Case Narrative

Method: 6850
Analysis: Perchlorate
Analysis SOP: LC-MS-CLO4
ALS WO ID(s): 1815740; 1815988; 1815991; 1815992; 1815993; 1816534

Client: ALS Laboratories (Houston, TX)
Matrix: Water
ELMS Batch (HBN): 2101 (216711)

General Set Information: There were fourteen field samples in these Work Orders. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard (ISTD) of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 10.0mL aliquot of each sample was transferred into a 15-mL centrifuge tube. 50µL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Phenex PES membrane 0.45µm Syringe filters.

Holding Times: Holding times were met for all analyses.

Dilutions: The following samples were analyzed and reported at various dilutions. 1815740001/1815988001-05/1815992001 - 1:1,000. 1815740002/05 – 1:100. 1815740003 – 10,000. Samples 1815991001/1815993001/1816534001 failed the 50-150% method requirement for ISTD recoveries. These samples were re-analyzed and reported from 1:5 dilutions. The reporting limits have been adjusted accordingly.

Method QC data: The method blank (LMB 605275) was less than 1/2 the CRDL. The recovery for the LCS (605276) was within acceptable parameters.

MS/MSD Analysis: The matrix spike and matrix spike duplicate (MS/MSD) was performed on samples 1815988004/05 (Client ID: MW8-060518). The parent sample and the MS/MSD were analyzed at 1:1,000 dilutions. The effective spike target was 5,000.µg/L. The Matrix Spike and duplicate (MS/MSD) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected. The MS/MSD relative percent difference (RPD) was within the performance limits.

Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): NA

Sample Calculation: Samples were reported in µg/L. Results were calculated in µg/L by the equation (A)x(B),

where: A = Analyte concentration from the standard curve (µg/L)
B = Dilution performed at time of analysis

Miscellaneous Comments: These samples were analyzed in accordance with the requirements found in the DOD QSM Version 5.1. Manual Integrations was performed for datafiles 14JUND18/19/21-23/33/35/36 and 15JUND03/05.

Thomas Bosch June 18, 2018
Analyst Date

ANALYTICAL REPORT

Report Date: June 18, 2018

RJ Masahisa
ALS Environmental (Houston)
10450 Stancliff Road
Suite 210
Houston, TX 77099

Phone: 281 530-5656

E-mail: RJ.Modashia@ALSGlobal.com

Workorder: **34-1815993**
Project ID: HS18060310 060618
Purchase Order: HS18060310
Project Manager Kevin W. Griffiths

Client Sample ID	Lab ID	Collect Date	Receive Date	Sampling Site
LH18/24-SP650_060618	1815993001	06/06/18	06/08/18	

ANALYTICAL REPORT

Workorder: 34-1815993
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

Analytical Results

Sample ID: **LH18/24-SP650_060618**	Sampling Site: NA	Collected: 06/06/2018
Lab ID: 1815993001	Media: 125 mL Nalgene	Received: 06/08/2018
Matrix: Water	Sampling Parameter: NA	

Analysis Method - EPA 6850, DoD QSM

Preparation: Not Applicable	**Analysis:** EPA 6850, DoD QSM Water	**Instrument ID:** LCMS04
	Batch: ELMS/2101 (HBN: 216711)	**Percent Solid:** NA
	Analyzed: 06/15/2018 11:32	**Report Basis:** Wet

Analyte	Result (ug/L)	DL (ug/L)	LOD (ug/L)	LOQ (ug/L)	Dilution	Qual
Perchlorate	ND	5.0	10	20	5	U

Comments

Workorder: 1815993

Sample 1815993001 failed the 50-150% method requirement for ISTD recovery. The sample was re-analyzed and reported from a 1:5 dilution. The reporting limit has been adjusted accordingly.

Quality Control: EPA 6850, DoD QSM - (HBN: 216711)

The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.

Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Method	Analyst	Peer Review
EPA 6850, DoD QSM	/S/ Thomas Bosch 06/17/2018 13:08	/S/ Stephen Brose 06/18/2018 15:12

Laboratory Contact Information

ALS Environmental
960 W Levoy Drive
Salt Lake City, Utah 84123

Phone: (801) 266-7700
Email: alslt.lab@ALSGlobal.com
Web: www.alsslc.com

ANALYTICAL REPORT

Workorder: 34-1815993
Client: ALS Environmental (Houston)
Project Manager: Kevin W. Griffiths

General Lab Comments

The results provided in this report relate only to the items tested.
Samples were received in acceptable condition unless otherwise noted.
Samples have not been blank corrected unless otherwise noted.
This test report shall not be reproduced, except in full, without written approval of ALS.

ALS provides professional analytical services for all samples submitted. ALS is not in a position to interpret the data and assumes no responsibility for the quality of the samples submitted.

All quality control samples processed with the samples in this report yielded acceptable results unless otherwise noted.

ALS is accredited for specific fields of testing (scopes) in the following testing sectors. The quality system implemented at ALS conforms to accreditation requirements and is applied to all analytical testing performed by ALS. The following table lists testing sector, accreditation body, accreditation number and website. Please contact these accrediting bodies or your ALS project manager for the current scope of accreditation that applies to your analytical testing.

Testing Sector	Accreditation Body	Certificate Number	Website
Environmental	PJLA (DoD ELAP)		
	Utah (TNI)		
	Nevada		
	Oklahoma		
	Iowa		

Result Symbol Definitions

MDL = Method Detection Limit, a statistical estimate of method/media/instrument sensitivity.
RL = Reporting Limit, a verified value of method/media/instrument sensitivity.
CRDL = Contract Required Detection Limit
Reg. Limit = Regulatory Limit.
ND = Not Detected, testing result not detected above the MDL or RL.
< This testing result is less than the numerical value.
** No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

U = Qualifier indicates that the analyte was not detected above the MDL.
J = Qualifier Indicates that the analyte value is between the MDL and the RL. It is also used to indicate an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.
B = Qualifier indicates that the analyte was detected in the blank.
E = Qualifier indicates that the analyte result exceeds calibration range.
P = Qualifier indicates that the RPD between the two columns is greater than 40%.

Quality Control Sample Batch Report

Analysis Information

Workorder: 1815993

Limits:	Client SOW/Contract Specified	**Preparation:**	NA	**Analysis:**	EPA 6850
Basis:	DoD QSM	**Batch:**	NA	**Batch:**	ELMS/2101 (HBN: 216711)
		Prepared By:	NA	**Analyzed By:**	Thomas Bosch

Blank

LMB: 605275
Analyzed: 06/14/2018 12:28
Units: ug/L

Analyte	Result	MDL	RL
Perchlorate	ND	1	2.00

Laboratory Control Sample

LCS: 605276
Analyzed: 06/14/2018 12:42
Dilution: 1
Units: ug/L

Analyte	Result	Target	% Rec	QC Limits	
Perchlorate	5.26	5.00	105	78.8	123.8

Matrix Spike - Matrix Spike Duplicate

	Sample	MS	MSD
	1815988001	1815988004	1815988005
Analyzed:	06/14/2018 17:13	06/14/2018 18:25	06/14/2018 18:39
Dilution:	1000	1000	1000
Units:	ug/L	ug/L	ug/L

Analyte	Result	Result	Target	% Rec	QC Limits		Result	% Rec	RPD	QC Limits	
Perchlorate	8800	16400	5000	# 152	78.8	123.8	16400	# 152	0.018	0.0	20.0

Continuing Calibration Verification

	CCV: 605272	CCV: 605277	CCV: 605342
Analyzed:	06/14/2018 11:45	06/14/2018 17:27	06/14/2018 20:33
Units:	ug/L	ug/L	ug/L
Criteria:	± 15%	± 15%	± 15%

Analyte	Result	Target	% Rec.	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	25.7	25.0	103	28.0	25.0	112	27.9	25.0	112

	CCV: 605457	CCV: 605459
Analyzed:	06/15/2018 10:37	06/15/2018 12:03
Units:	ug/L	ug/L
Criteria:	± 15%	± 15%

Analyte	Result	Target	% Rec.	Result	Target	% Rec.
Perchlorate	27.6	25.0	110	27.9	25.0	112

Interference Check Sample

ICSA: 605274
Analyzed: 06/14/2018 13:13
Units: ug/L
Criteria: ± 30%

Analyte	Result	Target	% Rec.
Perchlorate	1.09	1.00	109

Quality Control Sample Batch Report

Analysis Information

Workorder: 1815993

Limits:	Client SOW/Contract Specified	**Preparation:**	NA
Basis:	DoD QSM	**Batch:**	NA
		Prepared By:	NA
Analysis:	EPA 6850		
Batch:	ELMS/2101 (HBN: 216711)		
Analyzed By:	Thomas Bosch		

Limit of Detection Verification

LODV: 605273 Analyzed: 06/14/2018 11:59 Units: ug/L Criteria: ± 50%				LODV: 605278 Analyzed: 06/14/2018 17:56 Units: ug/L Criteria: ± 50%			LODV: 605343 Analyzed: 06/14/2018 20:48 Units: ug/L Criteria: ± 50%		
Analyte	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**
Perchlorate	1.03	1.00	103	1.18	1.00	118	1.20	1.00	120

LODV: 605458 Analyzed: 06/15/2018 10:51 Units: ug/L Criteria: ± 50%				LODV: 605460 Analyzed: 06/15/2018 12:17 Units: ug/L Criteria: ± 50%		
Analyte	**Result**	**Target**	**% Rec.**	**Result**	**Target**	**% Rec.**
Perchlorate	0.895	1.00	89.5	0.868	1.00	86.8

Comments

The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.

QC Report Authorization (/S/ is an electronic signature that complies with 21 CFR Part 11)

Analyst	Peer Review
/S/ Thomas Bosch	/S/ Stephen Brose
06/17/2018 13:08	06/18/2018 15:12

Symbols and Definitions

* - Analyte above reporting limit or outside of control limits
▲ - Sample result is greater than 4 times the spike added
◆ - Sample and Matrix Duplicate less than 5 times the reporting limit
● - Result is above the calibration range
- The Matrix Spike, Matrix Spike duplicate or Matrix Duplicate is reported for your information only. The sample matrix may be inappropriate for the method selected.

RPD - Relative % Difference (Spike / Spike Duplicate)
ND - Not Detected (U - Qualifier also flags analyte as not detected)
NA - Not Applicable
QC results are not adjusted for moisture correction, where applicable

18698/#2

W 1815993

10450 Stancliff Rd, Ste 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887
www.alsglobal.com

Subcontract Chain of Custody

COC ID: 9242

1815993

SUBCONTRACT TO:

ALS Laboratory Group
960 LeVoy Dr
Salt Lake City, UT 84123

Phone: +1 801 266 7700

CUSTOMER INFORMATION:

Company:	ALS Houston
Contact:	RJ Modashia
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Email:	RJ.Modashia@alsglobal.com
Alternate Contact:	
Email:	

INVOICE INFORMATION:

Company:	ALS Houston
Contact:	Accounts Payable
Address:	10450 Stancliff Rd, Ste 210
Phone:	+1 281 530 5656
Reference:	HS18060310
TSR:	Danielle Winnings

	LAB SAMPLE ID	CLIENT SAMPLE ID	MATRIX	COLLECT DATE
	ANALYSIS REQUESTED			DUE DATE
1.	**HS18060310-01**	**LH18/24-SP650_060618**	**Water**	**06 Jun 2018 14:00**
	SUB_Perch-6850			15 Jun 2018

Comments: Please analyze for the analysis listed above.
Send report to the emails shown above.

QC Level: DOD IV (DoD Data Package)

Relinquished By: _____ Date/Time: 6/7/18 1800

Received By: Jamal Jossee Date/Time: 06-08-18 9:40

Cooler ID(s): _____ Temperature(s): _____

ALS-Salt Lake City-Related Information Report (CRIR)

Cooler or Container Information Checklist (Fill In or Circle)

Client Name: ALS Houston — Project/Task/Site: 1815993

Date/Time of Receipt: 06-08-18 9:40 — Number of Coolers Received: 1

Condition of Coolers:	Acceptable/Unacceptable	Temperature Control:	Present/Not Included
Cooler Custody Seals:	Present/Absent/NA Intact/Broken/NA	Location Temp Taken:	Control/Between Samples
Container Custody Seals:	Present/Absent/NA Intact/Broken/NA	Are all temperatures within project specific guidelines?	Yes/No/NA
Ice Present:	Yes/No/NA Frozen/Melted/NA	VOA Headspace Present?	Yes/No/NA

pH Check Performed:							
	Metals	Yes/No/NA	Total Phenolics	Yes/No/NA	NO3/NO2	Yes/No/NA
	Cyanide	Yes/No/NA	TPH – 418.1	Yes/No/NA	Oil & Grease	Yes/No/NA
	Sulfide	Yes/No/NA	COD	Yes/No/NA	Total Phosphorous	Yes/No/NA
	Ammonia	Yes/No/NA	TKN	Yes/No/NA	Gross A.B, Gamma Spec	Yes/No/NA

Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.	Cooler Received	DCL Cooler No.	Temp.
1	C18 8993	3 °C	4	C18	°C	7	C18	°C
2	C18	°C	5	C18	°C	8	C18	°C
3	C18	°C	6	C18	°C	9	C18	°C

Taken By: Tanni vanTassell (Signature) — Tanni VanTassell (Printed Name) — 06-08-18 (Date)

Client-Related Information

☐ Missing Cooler	☐ Missing Samples/Bottles	☐ Incorrect Preservation	☐ Insufficient Sample Volume
☐ Cooler Conditions	☐ Broken/Leaking Samples	☐ pH Criteria Not Met	☐ Chain of Custody Problems
☐ Missing Paperwork	☐ Incorrect Bottle Type	☐ Residual Chlorine Present	☐ Other:
☐ Missing/Incorrect Bottle Labels	☐ Cooler Temperatures Out of Range	☐ Head Space in Bottles	

Briefly Describe the Problem and the Action Taken:

N.D Paperwork
TA 06-08-18

Client Notified? YES ☐ NO ☐

Response Required Within 24 Hours

Project Management

Project Manager Comments:

ALS Project Manager: _____ (Printed Name) Returned to Sample Receipt by: _____ (Signature) Date: _____

Must Deliver Next Business Day
Time and Tempature Sensitive!

Part # 156148-434

ALS

ORIGIN ID:SGRA (281) 530-5656
CLIENT SERVICES
ALS LABORATORY GROUP
10450 STANCLIFF ROAD
SUITE 210
HOUSTON, TX 77099
UNITED STATES US

SHIP DATE: 07JUN18
ACTWGT: 17.30 LB
CAD: 300130/CAFE3111
DIMS: 14x11x10 IN.

BILL SENDER

TO SAMPLE RECEIVING
ALS ENVIRONMENTAL
960 W. LEVOY DRIVE

SALT LAKE CITY UT 84123
(801) 266-7700
REF: HS18060281/306/08/10/52-RJ

54684/4BE5/53C1

FedEx Express

E

J171018120301ux

FRI - 08 JUN 3:00P
STANDARD OVERNIGHT

TRK# 0201 4380 9529 8878

AX BTFA

84123
UT-US SLC

ALS Environmental

CHAIN-OF-CUSTODY

Project / Job / Task: HS18060310	*Split:*	**Workorder ID:** 1815993	**Level:** ENV_LVL4
Client: ALS Environmental (Houston)		**Account:** 8101	**Type:** 125Poly
Comments:			**Preservatives**

Item	Collect Date/Time	Sample ID	Lab ID	QC	Matrix	Containers ID(s)	Containers Count	Requested Analysis: EPA 6850, DoD QSM
1	06/06/2018 14:00	LH18/24-SP650_060618	1815993001		Water	A	1	A
2								
3								
4								
5								
6								
7								
8								
9								
10								

COOL

43 of 481

ORIGINAL FIELD SAMPLE CHAIN-OF-CUSTODY

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location
Warath, Julie	06/08/2018 09:40	ALS Sample Receiving	Sample Login
Julie Warath 6/8/18 1400		15C	Storage
R.33.1	6.14.18/12:50	T. Bosch	6850

SAMPLE PREPARATION / ANALYSIS CHAIN-OF-CUSTODY

Sample Prep / Analysis for: _____ Lab Notebook No.: _____

Prepared / Analyzed by: _____ Date / Time: _____

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Reason for Transfer / Storage Location

Batch Worklist

Batch: ELMS/ 2101
Rule: EPA 6850, DoD QSM Water
Created: 6/14/2018 08:55
Analyst: T. Bosch
Instrument: LCMS04
Status: WP
HBN: 216711

Workorder: 1815740 [ENV_LVL4]
Workorder: 1815988 [ENV_LVL4]
Workorder: 1815991 [ENV_LVL4]
Workorder: 1815992 [ENV_LVL4]
Workorder: 1815993 [ENV_LVL4]
Workorder: 1816534 [ENV_LVL4]

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
1	605272	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
2	605273	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
3	605275	LMB for HBN 216711 [ELMS/2101]				LMB	3		E6850Q413Q	5311		6/19/2018	6/14/2018
4	605276	LCS for HBN 216711 [ELMS/2101]				LCS	3		E6850Q413Q	5311		6/19/2018	6/14/2018
5	1815740001	MW5_060418				SAMPLE	3	1815740001-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
6	605274	ICS for HBN 216711 [ELMS/2101]				ICS	3		E6850..D3Q	5311		6/19/2018	6/14/2018
7	1815740004	18CPTMW23SW-060418				SAMPLE	3	1815740004-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
8	1815740006	18WW24_060418				SAMPLE	3	1815740006-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
9	1815740007	18WW25_060418				SAMPLE	3	1815740007-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
10	1815988002	MW21_060518				SAMPLE	3	1815988002-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
11	1815988003	MW21_060518-a				SAMPLE	3	1815988003-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
12	1815988001	MW8_060518				SAMPLE	3	1815988001-A	E6850Q41.3	5480	7/3/2018	6/21/2018	6/14/2018
13	605277	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
14	605278	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
15	1815988004	MW8_060518MS				MS	3	1815988004-A	E6850Q413Q	5480		6/19/2018	6/14/2018
16	1815988005	MW8_060518MSD				MSD	3	1815988005-A	E6850Q413Q	5480		6/19/2018	6/14/2018
17	1815992001	LH18/24-SP140_060618				SAMPLE	3	1815992001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/14/2018
18	1815740002	18CPTMW08DW-060418				SAMPLE	3	1815740002-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
19	1815740003	18CPTMW08SW-060418				SAMPLE	3	1815740003-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
20	1815740005	18CPTMW23-060418				SAMPLE	3	1815740005-A	E6850Q41.3	5480	7/2/2018	6/19/2018	6/14/2018
21	605342	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/14/2018
22	605343	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/14/2018
23	605457	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/15/2018
24	605458	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/15/2018

Batch Worklist

Pos	Lab ID	Sample ID	Prep Initial	Prep Final	Dust Weight	Type	Mx	Container	Procedure	Mgr	Expire Date	Due Date	Run Date
25	1815991001	LH18/24-SP650_060618				SAMPLE	3	1815991001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/15/2018
26	1815993001	LH18/24-SP650_060618				SAMPLE	3	1815993001-A	E6850Q41.3	5480	7/4/2018	6/21/2018	6/15/2018
27	1816534001	LH18/24-SP650_061218				SAMPLE	3	1816534001-A	E6850Q41.3	5480	7/10/2018	6/15/2018	6/15/2018
28	605459	CCV for HBN 216711 [ELMS/2101]				CCV	3		E685041C3Q	5311		6/19/2018	6/15/2018
29	605460	LODV for HBN 216711 [ELMS/2101				LODV	3		E6850..D3Q	5311		6/19/2018	6/15/2018

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Analytical Documentation

ALS Work Order #'s & Sample #( )'s: 1815740 (001-07); 1815988 (001-05); 1815991 (001); 1815992 (001); 1815993 (001); 1816534 (001) ELMS Batch/HBN ID: 2101 (216711)
Prep Date: 06/14/2018 Analysis Date: 06/14,15/2018 Analyst: T. Bosch
Analyte: **Perchlorate** Matrix: **Water** Method: **6850**
Sequence: \\HPCHEM\1\SEQUENCE\CLO4\2018\JUN\14JUN18D.s & 15JUN18D.s
Reported DL: **1.0µg/L** Reported LOD: **2.0µg/L** Reported LOQ: **4.0µg/L**

SAMPLE PREPARATION/ANALYSIS:

Water: Samples were prepared by TNB. 10.0mL of each sample was pipetted into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added as an internal standard. The samples were capped, vortexed, and filtered with Phenex PES membrane 0.45µm Syringe filters prior to analysis.

REAGENTS: Eluent A1: 95% ASTM Type II water (ALS)/ 5% ACN (B&J Lot DI735)/0.1% glacial acetic acid (JT-Baker Lot 04802).
Eluent B1: 95% ACN (B&J Lot DI735)/ 5% ASTM Type II water (ALS)/0.1% glacial acetic acid (JT-Baker Lot 04802).

STANDARDS: Internal Standard Spiking Solution Horizon# 41827. Dilutions of Working Standard Solution ID 41829 used for CCV's, LODV's, RLVS and IPC.

CALIBRATION CURVE: Used curve from 06/14/2018, sequence 14JU18D.s Offline Quantitation Method: CLO4-DPR.M

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89.
Instrument ID: LCMS04 Online Acquisition Method: CLO4-DOD.M Fragmentor: 160 Output Gain: 3 Injection Volume: 25µL
Column: KP-RPPX C8 separator, 250mm Mobile Phase: 70% Eluent A1; 30% Eluent B1

FLOW GRADIENT:

Time (min.)	Flow (mL/min)
0	0.80
4.0	0.80
5.0	0.25
10.0	0.25
10.5	0.80
13.0	0.80

QC DATA: 5.0µL of QC Solution Horizon ID 41830 was used for LCS 605276; Target = 5.0µg/L. ASTM type II water was used for LMB 605275.

MS/MSD: MS/MSD was performed on samples 1815988004/05 (Client ID: MW8_060518). 5.0µl of Working Standard Solution Horizon ID 41828 was added to 10.0mL of sample preparation. Spike target = 5.0µg/L. The parent sample and the MS/MSD were analyzed at 1:1,000 dilutions. The effective spike target was 5,000.µg/L.

COMMENTS:

1) Results reported in µg/L. The following samples were analyzed and reported at various dilutions. 1815740001/1815988001-05/1815992001 - 1:1,000. 1815740002/05 – 1:100. 1815740003 – 10,000. Samples 1815991001/1815993001/1816534001 failed the 50-150% method requirement for ISTD recoveries. These samples were re-analyzed and reported from 1:5 dilutions. The reporting limits have been adjusted accordingly.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters, except for the following. The Matrix Spike and duplicate (MS/MSD – 1815988004/05) failed QC acceptance criteria for percent recoveries, biased high. The Matrix Spike and Matrix Spike duplicate is reported for the clients' information only. The sample matrix may be inappropriate for the method selected.
3) Sample data can be viewed at two directories within the ALS system: \\ALSLTWS013\LCMS\LCMS04\2018\JUN\HBN# or through NuGenesis\Tree\PrintData\LCMS\DefaultView.
4) Due to limitations of the Chemstation Software, some of the chromatographic peaks require manual integration. Manual Integrations was performed for datafiles 14JUND18/19/21-23/33/35/36 and 15JUND03/05.
5) Notebook: \\alsltws013\ORGANIC\BOSCH\LCMS\Perchlorates\Waters\2018\216711-DOD-ALS-HSTN-LCMS4 or through \\ALSLTWS013\DATAREVIEW\HBN#

STANDARD REPORT

Working Standard - CLO4 WRK

CLO4 WRK — **Description - 6850 WKG Std 100.ug/L**

Standard: 41829
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 WRK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	0.1 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
41828	CLO4 INT	6850 Intermdt AccStd 10.ug/mL	CLO4 INT	0.1 mL	10/04/2018

STANDARD REPORT

Constituent

Stock Standard - CLO4 STOCK

CLO4 STOCK	Description - 6850 Stock AccStd 1,000ug/mL

Standard: 36733
MFG: AccuStandard
MFG Lot: 216095148
Part ID: IC-PER-10X-1

Created By: Thomas Bosch
Create Date: 05/10/2017 11:05AM

Amount: 100 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

STANDARD REPORT

Constituent

Working Standard - CLO4 INT

CLO4 INT	Description - 6850 Intermdt AccStd 10.ug/mL

Standard: 41828
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 10/04/2018
Usable: Yes
Lab Lot: CLO4 INT

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36733	CLO4 STOCK	6850 Stock AccStd 1,000ug/mL	CLO4 STOCK	0.1 mL	10/04/2018

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O		Description - ASTM Type II Water
Standard: 109	Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House	Create Date: 10/06/2005 09:10AM	Expires: 11/07/2025
MFG Lot: Not Provided		Usable: Yes
Part ID: Not Provided		Lab Lot: LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Working Standard - CLO4ISTDWRK

CLO4ISTDWRK		Description - Perchlorate ISTD Wrk 1,000ug/L
Standard: 41827	Created By: Thomas Bosch	Amount: 10 mL
MFG: ALS/SLC	Create Date: 05/09/2018 10:05AM	Expires: 05/09/2019
MFG Lot: TNB: 05/09/2018	Verified By: Thomas Bosch	Usable: Yes
Pipette ID: Not Provided	Verify Date:	Lab Lot: CLO4ISTDWRK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	1000 ug/L
2	14797-73-0-89	Perchlorate 89	1000 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
23118	CLO4ISTDSTK	Perchlorate ISTD Stock	CLO4ISTDSTK	0.1 mL	02/27/2024

STANDARD REPORT

Constituent

Stock Standard - CLO4ISTDSTK

CLO4ISTDSTK		Description - Perchlorate ISTD Stock
Standard: 23118	**Created By:** Thomas Bosch	**Amount:** 1 mL
MFG: Cambridge Isotope	**Create Date:** 04/04/2014 03:04PM	**Expires:** 02/27/2024
MFG Lot: SDDG-013	**Verified By:** Thomas Bosch	**Usable:** Yes
Part ID: OLM-7310-S	**Verify Date:** 02/05/2009 12:02AM	**Lab Lot:** CLO4ISTDSTK

Pos.	Analyte	Name	Concentration
1	14797-73-0-8385	Perchlorate 83:85 Ratio	100 ug/mL
2	14797-73-0-89	Perchlorate 89	100 ug/mL

STANDARD REPORT

Working Standard - CLO4 QC WRK

CLO4 QC WRK — **Description - 6850 QC WKG STD 100ug/L**

Standard:	41831	**Created By:**	Thomas Bosch
MFG:	ALS/SLC	**Create Date:**	05/09/2018 10:05AM
MFG Lot:	TNB: 05/09/2018		
Pipette ID:	Not Provided		

Amount:	10 mL		
Expires:	05/09/2019		
Usable:	Yes		
Lab Lot:	CLO4 QC WRK 100.ug/L		

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	100 ug/L

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
41830	CLO4 QC INT	6850 QC Intrmdt Std-QC 10ug/mL	CLO4 QC INT 10.ug/mL	0.1 mL	05/09/2019

STANDARD REPORT

Constituent

Working Standard - CLO4 QC INT

CLO4 QC INT	Description - 6850 QC Intrmdt Std-QC 10ug/mL

Standard: 41830
MFG: ALS/SLC
MFG Lot: TNB: 05/09/2018
Pipette ID: Not Provided

Created By: Thomas Bosch
Create Date: 05/09/2018 10:05AM

Amount: 10 mL
Expires: 05/09/2019
Usable: Yes
Lab Lot: CLO4 QC INT 10.ug/mL

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	10 ug/mL

Composition

Standard	Standard ID	Description	Lab Lot ID	Volume	Expires
109	ASTM H2O	ASTM Type II Water	LAB 109	9.9 mL	11/07/2025
36748	CLO4 QCSTOCK	6850 QC Stock STD 1,000ug/mL	CLO4 QC STOCK	0.1 mL	03/31/2020

STANDARD REPORT

Constituent

Solvent Standard - ASTM H2O

ASTM H2O			Description - ASTM Type II Water
Standard: 109		Created By: ALS Support (Lims)	Amount: 1000 L
MFG: DCL In House		Create Date: 10/06/2005 09:10AM	Expires: 11/07/2025
MFG Lot: Not Provided			Usable: Yes
Part ID: Not Provided			Lab Lot: LAB 109

Pos.	Analyte	Name	Concentration
Solvent - Analyte(s) not applicable			

STANDARD REPORT

Constituent

Stock Standard - CLO4 QCSTOCK

CLO4 QCSTOCK	Description - 6850 QC Stock STD 1,000ug/mL

Standard:	36748	**Created By:** Thomas Bosch	**Amount:** 100 mL
MFG:	Ultra Scientific	**Create Date:** 05/11/2017 01:05PM	**Expires:** 03/31/2020
MFG Lot:	CP-0860		**Usable:** Yes
Part ID:	ICC-013		**Lab Lot:** CLO4 QC STOCK

Pos.	Analyte	Name	Concentration
1	14797-73-0	Perchlorate	1000 ug/mL

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Product Name: Perchlorate IC Standard

Description:
This Reference Material (RM) was gravimetrically prepared in accordance with ISO Guide 34 and under ULTRA Scientific's ISO 9001 registered quality system. The neat materials used for this product have been verified by ULTRA's ISO 17025 laboratory and under ULTRA's ISO Guide 34 accreditation. The analyte concentrations were verified by ULTRA's ISO 17025 accredited laboratory. For each analyte, the true value, with its uncertainty value calculated at the 95% confidence level, is reported below.

Analyte	Starting Material	Lot Number	Purity (%)	Calculated Value	True Value	Traceability & Method
perchlorate	potassium perchlorate	RM07987	100	1001 ± 5 µg/mL	976 ± 6 µg/mL	NIST SRM 3141A; ICP-OES

Solvent: water (low TOC, < 50 ppb)

Storage: Store at Room Temperature (15° to 30°C).

Traceability:
Traceability has been established through an unbroken chain of comparisons, each having stated uncertainties. Comparisons are based on appropriate physical or chemical measurements, including gravimetric or volumetric dilution, where the mass or volume of a solution before and after dilution is measured. The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z-540-1, ISO 9001, ISO 17025, and ISO Guide 34. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 819.

Estimation of Uncertainties:
The true value is reported, with its uncertainty value calculated at the 95% confidence level.

Homogeneity:
This RM was formulated and unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Intended Use:
This RM is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods and continuing calibration verification.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening and should be processed without delay for the true value to be valid within the stated uncertainties. Do not pipet from the bottle. Do not return any material removed for pipetting to the bottle. Tightly cap the bottle after removing any material and store according to the instructions noted above.

Hazards:
Refer to the Safety Data Sheet for information regarding this RM.

Expiration of Certification:
The certification of this RM is valid, within the measurement uncertainty specified, until the expiration date specified above, provided the RM is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the RM is damaged, contaminated, or otherwise modified.

ULTRA SCIENTIFIC
Analytical Solutions

Certificate of Analysis

ISO Guide 34 Reference Material

Product Number: ICC-013
Lot Number: CP-0860

Lot Issue Date: 29-Feb 2016
Expiration Date: 31-Mar 2020

Maintenance of Certification:
The real-time, long term stability of the RM may be monitored over the lifetime of the certification. If substantive changes occur that affect the certification before the expiration of this certificate, ULTRA Scientific will notify the purchaser.

Peter A. King, Ph.D.
VP, Technical Operations

Daniel J. Lamendola
Director of QA/RA

125 Market Street
New Haven, CT 06513
USA

AccuStandard,® Inc.

Tel (203)786-5290
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www.AccuStandard.com

CERTIFICATE OF ANALYSIS

AccuTrace™ Reference Standard

Catalog No: IC-PER-10X-1
Description: Perchlorate Standard
Element: Perchlorate (ClO_4)
SRM: Ind. Std.
Lot: 216095148
Matrix: Water
Hazards: *Refer to SDS for complete safety information*

Date Certified: Oct 4, 2016
Expiration: Oct 4, 2018
Sample Size: 100 mL
Components: 1
Storage Condition: Ambient (>5 °C)
Included on ISO/IEC 17025 Scope of Accreditation: Yes
Included on ISO Guide 34 Scope of Accreditation: Yes

Signal Word: Warning

Component		SRM #	Prepared Concentration (µg/mL)
ClO_4	Perchlorate	Ind. Std.	1000

The gravimetric uncertainty for this product is ±0.2%. See reverse side for details.
The final solution was checked against an independent standard to verify its concentration.
We use the highest purity raw materials available to minimize impurity levels in the final solution. Typically 99.999%+ pure starting materials are used as well as ASTM Type I 18 megohm deionized water.
All solutions are filtered through a 0.2 µm filter prior to being bottled.
All glassware used in preparation is Class A and calibrated regularly.
All weights are traceable through NIST, Test No. 822-275872-11
All bottles are triple rinsed with deionized water prior to use.
Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.
We certify the accuracy of this standard to be ±0.5% of the stated value until its expiration date provided it is kept tightly capped and stored under the conditions stated above.

Certified By: Meigan O'Leary
Meigan O'Leary, Inorganic QC Manager

For use in routine laboratory analysis.

Cambridge Isotope Laboratories, Inc. Certificate of Analysis

Quality Standards:
ISO Guide 34 • ISO/IEC 17025 • ISO 13485 • cGMP

23118

Product Name: (Isotopic Label & Enrichment Specification)	PERCHLORIC ACID, SODIUM SALT (18O4, 90%+) 100 UG/ML IN WATER
Lot Number:	SDDG-013
Catalog Number:	OLM-7310-S

Product Information

Chemical Purity Specification:	≥98%
Labeled CAS Number:	NA
Unlabeled CAS Number:	7601-89-0
MW*:	130.4
Chemical Formula:	NaCl*O4
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number. Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

* *For isotopically labeled compounds, MW listed is for the fully enriched product.*

Approved by: T. J. Eckersley

Timothy J. Eckersley, Ph.D., Quality Assurance

Quality Control Tests and Results

QC Release Date	2/27/2014
Expiration Date	2/27/2024
Concentration Based on Gravimetry	102 µg/mL
Chemical Purity of Neat Material(s)	98%
LC/MS for Concentration	109.4 ± 2.8 µg/mL (k=2)

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ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

Raw Data

00903252

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DPR.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorate RT	Perchlorate Amount
*	605272 CCV@25	Vial 75	1	Control	9	8.55224e5	10.105	25.69705
*	605273 LODV@1.	Vial 71	1	Control	10	4.09897e4	10.131	1.03151
*	605275 LMB	Vial 82	1	Control	12	0.00000	0.000	0.00000
*	605276 QC@5.0	Vial 83	1	Control	13	1.55938e5	10.234	5.25713
*	1815740001 1K	Vial 84	1	Sample	14	1.18171e6	10.224	4.09928e4
*	605274 ICS@1.0	Vial 81	1	Control	15	3.18741e4	10.039	1.08841
*	1815740002 1K	Vial 85	1	Sample	16	2.60255e4	10.232	1043.13319 RE
*	1815740003 10	Vial 86	1	Sample	17	1.10286e8	9.113	1.03926e4 RE
*	1815740004	Vial 87	1	Sample	18	6529.78760	10.005	3.41870e-1
*	1815740005	Vial 88	1	Sample	19	1.56102e8	8.623	1362.60207
*	Rinse	Vial 61	1	Sample	20	0.00000	0.000	0.00000
*	1815740006	Vial 89	1	Sample	21	1.49510e4	9.751	7.36417e-1
*	1815740007	Vial 90	1	Sample	22	5925.78320	9.939	3.37296e-1
*	1815988001	Vial 91	1	Sample	23	2.18628e8	8.116	1751.68923 D1
*	1815988002 1K	Vial 92	1	Sample	24	8.50046e5	10.190	3.47744e4
*	1815988003 1K	Vial 93	1	Sample	25	9.54516e5	10.157	3.56346e4
*	1815988001 1K	Vial 91	1	Sample	26	2.33271e5	10.219	8833.18769
*	605277 CCV@25	Vial 75	1	Control	27	9.92094e5	10.080	28.04713
*	Rinse	Vial 61	1	Sample	28	0.00000	0.000	0.00000
*	605278 LODV@1.	Vial 71	1	Control	29	5.04056e4	10.092	1.18278
*	1815988004 MS	Vial 94	1	Sample	31	4.48410e5	10.188	1.64276e4
*	1815988005 MSD	Vial 95	1	Sample	32	4.50870e5	10.180	1.64311e4
*	ISTD 1815991001	Vial 96	1	Sample	33	0.00000	0.000	0.00000
*	1815992001 1K	Vial 97	1	Sample	34	5.79001e5	10.172	2.14202e4
	ISTD 1815993001	Vial 98	1	Sample	35	0.00000	0.000	0.00000
	ISTD 1816534001	Vial 99	1	Sample	36	1.05110e4	10.534	9.33633e-1
*	1815740002 100	Vial 51	1	Sample	37	2.67605e5	10.157	1017.20503
*	1815740003 10K	Vial 52	1	Sample	38	1.54877e5	10.186	6.09144e4
*	1815740005 100	Vial 53	1	Sample	39	1.69849e6	10.181	5684.04705
*	605342 CCV@25	Vial 75	1	Control	40	1.02581e6	10.083	27.89464
*	605343 LODV@1.	Vial 71	1	Control	41	5.21515e4	10.112	1.19702

#	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	605272 CCV@25	Vial 75	1	Control	9	2.90705e5	10.120	25.40469
*	605273 LODV@1.	Vial 71	1	Control	10	1.53637e4	10.143	8.94117e-1
*	605275 LMB	Vial 82	1	Control	12	0.00000	0.000	0.00000
*	605276 QC@5.0	Vial 83	1	Control	13	5.40567e4	10.252	5.12372
*	1815740001 1K	Vial 84	1	Sample	14	3.87842e5	10.241	3.93454e4
*	605274 ICS@1.0	Vial 81	1	Control	15	1.21188e4	10.051	9.73548e-1
*	1815740002 1K	Vial 85	1	Sample	16	1.07181e4	10.247	1016.14295
*	1815740003 10	Vial 86	1	Sample	17	3.87280e7	9.125	1.03585e4
*	1815740004	Vial 87	1	Sample	18	3253.03320	10.056	2.43152e-1
*	1815740005	Vial 88	1	Sample	19	5.50165e7	8.637	1359.43683
*	Rinse	Vial 61	1	Sample	20	0.00000	0.000	0.00000
*	1815740006	Vial 89	1	Sample	21	5399.54053	9.748	5.40253e-1
*	1815740007	Vial 90	1	Sample	22	1718.94263	9.940	5.26885e-2
*	1815988001	Vial 91	1	Sample	23	7.75233e7	8.128	1751.91213
*	1815988002 1K	Vial 92	1	Sample	24	2.82340e5	10.205	3.37112e4
*	1815988003 1K	Vial 93	1	Sample	25	3.13550e5	10.173	3.42054e4
*	1815988001 1K	Vial 91	1	Sample	26	7.81706e4	10.235	8476.14226
*	605277 CCV@25	Vial 75	1	Control	27	3.19001e5	10.094	26.35441
*	Rinse	Vial 61	1	Sample	28	0.00000	0.000	0.00000
*	605278 LODV@1.	Vial 71	1	Control	29	1.79565e4	10.102	9.98650e-1
*	1815988004 MS	Vial 94	1	Sample	31	1.46772e5	10.204	1.56002e4
*	1815988005 MSD	Vial 95	1	Sample	32	1.50110e5	10.195	1.58603e4
*	1815991001	Vial 96	1	Sample	33	0.00000	0.000	0.00000
*	1815992001 1K	Vial 97	1	Sample	34	1.91018e5	10.189	2.05623e4
*	1815993001	Vial 98	1	Sample	35	0.00000	0.000	0.00000
*	1816534001	Vial 99	1	Sample	36	4480.61572	10.555	9.21425e-1

00903253

#		Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	1815740002	100	Vial 51	1	Sample	37	9.22799e4	10.173	1007.57992
*	1815740003	10K	Vial 52	1	Sample	38	5.38004e4	10.201	5.98654e4
*	1815740005	100	Vial 53	1	Sample	39	5.52737e5	10.197	5422.11462
*	605342	CCV@25	Vial 75	1	Control	40	3.32463e5	10.100	26.40234
*	605343	LODV@1.	Vial 71	1	Control	41	1.97290e4	10.138	1.08864

#		Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-ISTD RT	CLO4-89-ISTD Amount
*	605272	CCV@25	Vial 75	1	Control	9	1.61026e5	10.125	5.00000
*	605273	LODV@1.	Vial 71	1	Control	10	2.16437e5	10.152	5.00000
*	605275	LMB	Vial 82	1	Control	12	1.36891e5	10.195	5.00000
*	605276	QC@5.0	Vial 83	1	Control	13	1.54534e5	10.260	5.00000
*	1815740001	1K	Vial 84	1	Sample	14	1.32839e5	10.247	5000.00000
*	605274	ICS@1.0	Vial 81	1	Control	15	1.59161e5	10.060	5.00000
*	1815740002	1K	Vial 85	1	Sample	16	1.35828e5	10.253	5000.00000
*	1815740003	10	Vial 86	1	Sample	17	1.19985e5	9.117	50.00000
*	1815740004		Vial 87	1	Sample	18	1.12834e5	10.023	5.00000
*	1815740005		Vial 88	1	Sample	19	1.04092e5	8.621	5.00000
*	Rinse		Vial 61	1	Sample	20	0.00000	0.000	0.00000
*	1815740006		Vial 89	1	Sample	21	1.12386e5	9.760	5.00000
*	1815740007		Vial 90	1	Sample	22	1.03960e5	9.934	5.00000
*	1815988001		Vial 91	1	Sample	23	9.17279e4	8.121	5.00000
*	1815988002	1K	Vial 92	1	Sample	24	1.14860e5	10.214	5000.00000
*	1815988003	1K	Vial 93	1	Sample	25	1.25521e5	10.179	5000.00000
*	1815988001	1K	Vial 91	1	Sample	26	1.35510e5	10.243	5000.00000
*	605277	CCV@25	Vial 75	1	Control	27	1.69835e5	10.101	5.00000
*	Rinse		Vial 61	1	Sample	28	0.00000	0.000	0.00000
*	605278	LODV@1.	Vial 71	1	Control	29	2.30884e5	10.116	5.00000
*	1815988004	MS	Vial 94	1	Sample	31	1.36256e5	10.210	5000.00000
*	1815988005	MSD	Vial 95	1	Sample	32	1.36973e5	10.201	5000.00000
*	1815991001		Vial 96	1	Sample	33	6.10489e4 LOW RE	10.523	5.00000
*	1815992001	1K	Vial 97	1	Sample	34	1.32654e5	10.196	5000.00000
*	1815993001		Vial 98	1	Sample	35	5.38219e4 LOW RE	10.527	5.00000
*	1816534001		Vial 99	1	Sample	36	6.15829e4 LOW RE	10.575	5.00000
*	1815740002	100	Vial 51	1	Sample	37	1.34304e5	10.180	500.00000
*	1815740003	10K	Vial 52	1	Sample	38	1.31951e5	10.207	5.00000e4
*	1815740005	100	Vial 53	1	Sample	39	1.31262e5	10.204	500.00000
*	605342	CCV@25	Vial 75	1	Control	40	1.76655e5	10.104	5.00000
*	605343	LODV@1.	Vial 71	1	Control	41	2.35935e5	10.139	5.00000

*** End of Report ***

Batch Report: C:\HPCHEM\1\DATA\15JUN18D\15JUN18D.B

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DPR.M

['#' ==> Run has not been reprocessed with Batch Review Method
'*' ==> Run has been saved with batch file]

#*	Sample	Location	Inj	SampleType	Run	Perchlorate Area	Perchlorate RT	Perchlorate Amount
*	605457	CCV@25	Vial 41	1	Control	1	1.09236e6	10.028	27.56422
*	605458	LODV@1.	Vial 42	1	Control	2	2.57546e4	10.186	8.94736e-1
*	1815991001	5X	Vial 43	1	Sample	3	3890.35474	10.383	1.18265
*	1815993001	5X	Vial 44	1	Sample	4	0.00000	0.000	0.00000
*	1816534001	5X	Vial 45	1	Sample	5	5786.55127	10.436	1.57816
*	605459	CCV@25	Vial 41	1	Control	6	1.07976e6	10.064	27.91581
*	605460	LODV@1.	Vial 42	1	Control	7	2.40912e4	10.209	8.67516e-1

#*	Sample	Location	Inj	SampleType	Run	CLO4-85 Area	CLO4-85 RT	CLO4-85 Amount
*	605457	CCV@25	Vial 41	1	Control	1	3.57588e5	10.042	26.32920
*	605458	LODV@1.	Vial 42	1	Control	2	9290.92578	10.207	7.07705e-1
*	1815991001	5X	Vial 43	1	Sample	3	1978.09058	10.407	4.73045e-1
*	1815993001	5X	Vial 44	1	Sample	4	0.00000	0.000	0.00000
*	1816534001	5X	Vial 45	1	Sample	5	2493.53687	10.447	7.47861e-1
*	605459	CCV@25	Vial 41	1	Control	6	3.49017e5	10.081	26.35761
*	605460	LODV@1.	Vial 42	1	Control	7	9372.82715	10.231	7.47793e-1

#*	Sample	Location	Inj	SampleType	Run	CLO4-89-ISTD Area	CLO4-89-ISTD RT	CLO4-89-ISTD Amount
*	605457	CCV@25	Vial 41	1	Control	1	1.90575e5	10.043	5.00000
*	605458	LODV@1.	Vial 42	1	Control	2	1.57761e5	10.209	5.00000
*	1815991001	5X	Vial 43	1	Sample	3	1.02815e5	10.409	25.00000
*	1815993001	5X	Vial 44	1	Sample	4	1.18351e5	10.398	25.00000
*	1816534001	5X	Vial 45	1	Sample	5	1.09429e5	10.457	25.00000
*	605459	CCV@25	Vial 41	1	Control	6	1.85791e5	10.087	5.00000
*	605460	LODV@1.	Vial 42	1	Control	7	1.52425e5	10.232	5.00000

*** End of Report ***

Sequence Table:

Method and Injection Info Part:

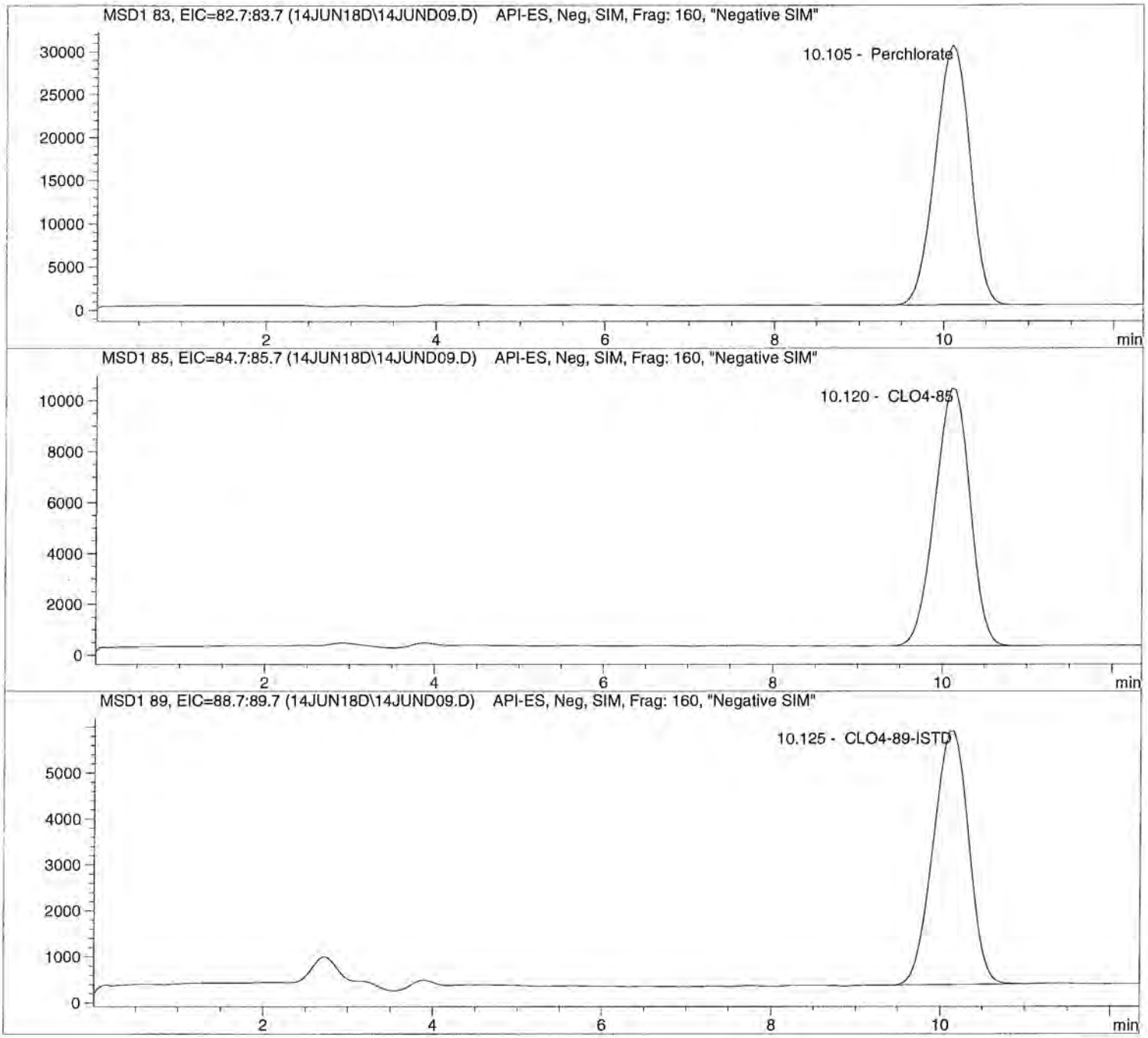
Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 71	ICAL1@ 1.0ug/L	CLO4-DOD	1	Ctrl Samp		
2	Vial 72	ICAL2@ 2.0ug/L	CLO4-DOD	1	Ctrl Samp		
3	Vial 73	ICAL3@ 5.0ug/L	CLO4-DOD	1	Ctrl Samp		
4	Vial 74	ICAL4@ 10.ug/L	CLO4-DOD	1	Ctrl Samp		
5	Vial 75	ICAL5@ 25.ug/L	CLO4-DOD	1	Ctrl Samp		
6	Vial 76	ICAL6@ 50.ug/L	CLO4-DOD	1	Ctrl Samp		
7	Vial 77	ICAL7@ 75.ug/L	CLO4-DOD	1	Ctrl Samp		
8	Vial 78	ICAL Verf@10ug/L	CLO4-DOD	1	Ctrl Samp		
9	Vial 75	605272 CCV@25	CLO4-DOD	1	Ctrl Samp		
10	Vial 71	605273 LODV@1.	CLO4-DOD	1	Ctrl Samp		
11	Vial 81	605274 ICS@1.0	CLO4-DOD	1	Ctrl Samp		
12	Vial 82	605275 LMB	CLO4-DOD	1	Ctrl Samp		
13	Vial 83	605276 QC@5.0	CLO4-DOD	1	Ctrl Samp		
14	Vial 84	1815740001 1K	CLO4-DOD	1	Sample		
15	Vial 81	605274 ICS@1.0	CLO4-DOD	1	Ctrl Samp		
16	Vial 85	1815740002 1K	CLO4-DOD	1	Sample		
17	Vial 86	1815740003 10	CLO4-DOD	1	Sample		
18	Vial 87	1815740004	CLO4-DOD	1	Sample		
19	Vial 88	1815740005	CLO4-DOD	1	Sample		
20	Vial 61	Rinse	CLO4-DOD	1	Sample	50	
21	Vial 89	1815740006	CLO4-DOD	1	Sample		
22	Vial 90	1815740007	CLO4-DOD	1	Sample		
23	Vial 91	1815988001	CLO4-DOD	1	Sample		
24	Vial 92	1815988002 1K	CLO4-DOD	1	Sample		
25	Vial 93	1815988003 1K	CLO4-DOD	1	Sample		
26	Vial 91	1815988001 1K	CLO4-DOD	1	Sample		
27	Vial 75	605277 CCV@25	CLO4-DOD	1	Ctrl Samp		
28	Vial 61	Rinse	CLO4-DOD	1	Sample	50	
29	Vial 71	605278 LODV@1.	CLO4-DOD	1	Ctrl Samp		
30	Vial 62	605278 LODV@1.	CLO4-DOD	1	Ctrl Samp		
31	Vial 94	1815988004 MS	CLO4-DOD	1	Sample		
32	Vial 95	1815988005 MSD	CLO4-DOD	1	Sample		
33	Vial 96	1815991001	CLO4-DOD	1	Sample		
34	Vial 97	1815992001 1K	CLO4-DOD	1	Sample		
35	Vial 98	1815993001	CLO4-DOD	1	Sample		
36	Vial 99	1816534001	CLO4-DOD	1	Sample		
37	Vial 51	1815740002 100	CLO4-DOD	1	Sample		
38	Vial 52	1815740003 10K	CLO4-DOD	1	Sample		
39	Vial 53	1815740005 100	CLO4-DOD	1	Sample		
40	Vial 75	605342 CCV@25	CLO4-DOD	1	Ctrl Samp		
41	Vial 71	605343 LODV@1.	CLO4-DOD	1	Ctrl Samp		
42	Vial 62	605343 LODV@1.	CLO4-DOD	1	Ctrl Samp		

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND09.D Sample Name: 605272 CCV@25

Injection Date:	6/14/2018 11:45:33	Seq Line:	9
Sample Name:	605272 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND09.D Sample Name: 605272 CCV@25

Injection Date:	6/14/2018 11:45:33	Seq Line:	9
Sample Name:	605272 CCV@25	Location:	Vial 75
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	25.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.105	PBA	855223.9	25.6971	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.120	BBA	290705.0	25.4047	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.125	PBA	161025.8	5.0000	CLO4-89-ISTD

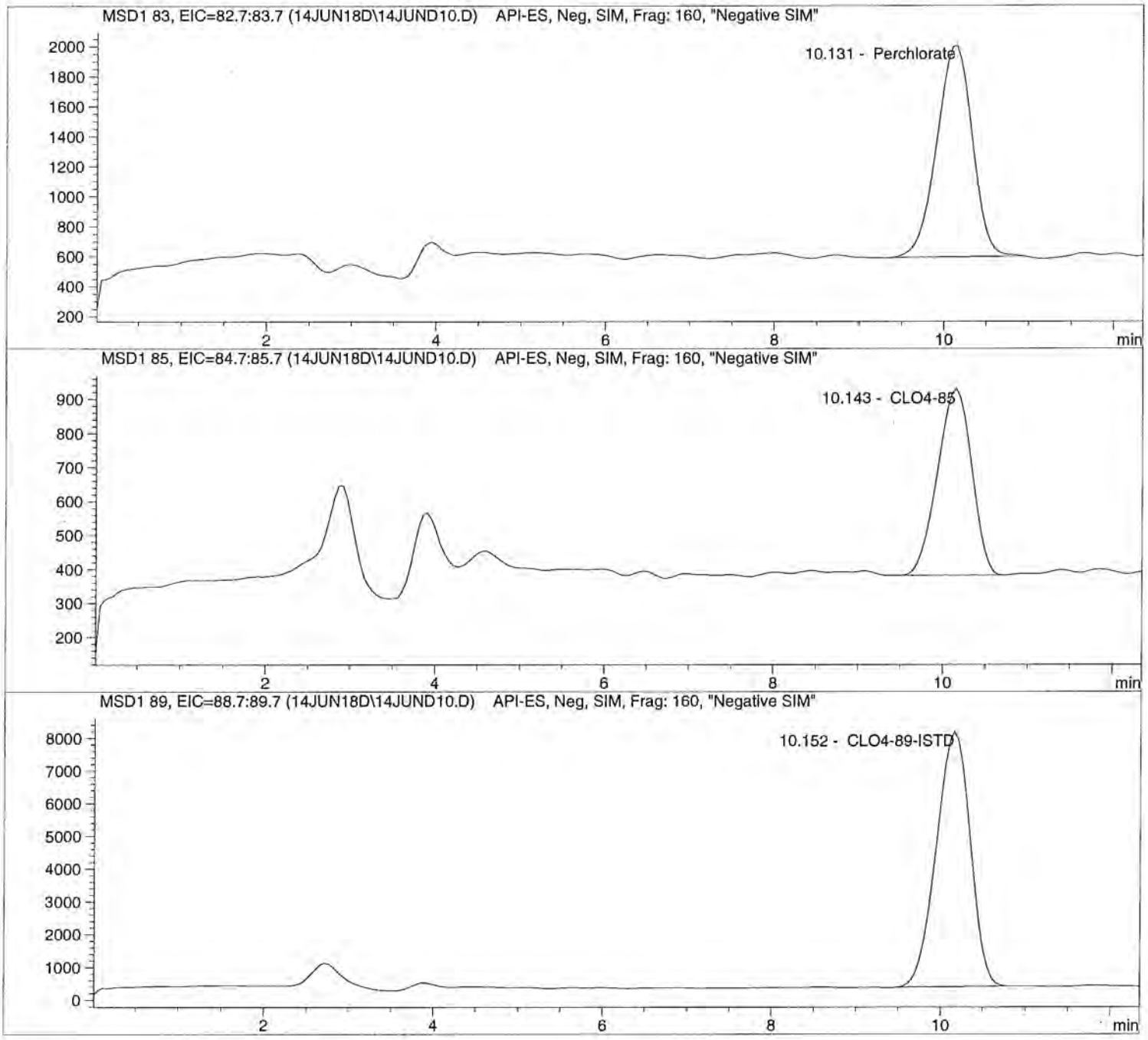
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND10.D Sample Name: 605273 LODV@1. 00903258

Injection Date:	6/14/2018 11:59:51	Seq Line:	10
Sample Name:	605273 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND10.D Sample Name: 605273 LODV@1.

Injection Date:	6/14/2018 11:59:51	Seq Line:	10
Sample Name:	605273 LODV@1.	Location:	Vial 71
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	1.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.131	PBA	40989.7	1.0315	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.143	PBA	15363.7	0.8941	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.152	BBA	216437.1	5.0000	CLO4-89-ISTD

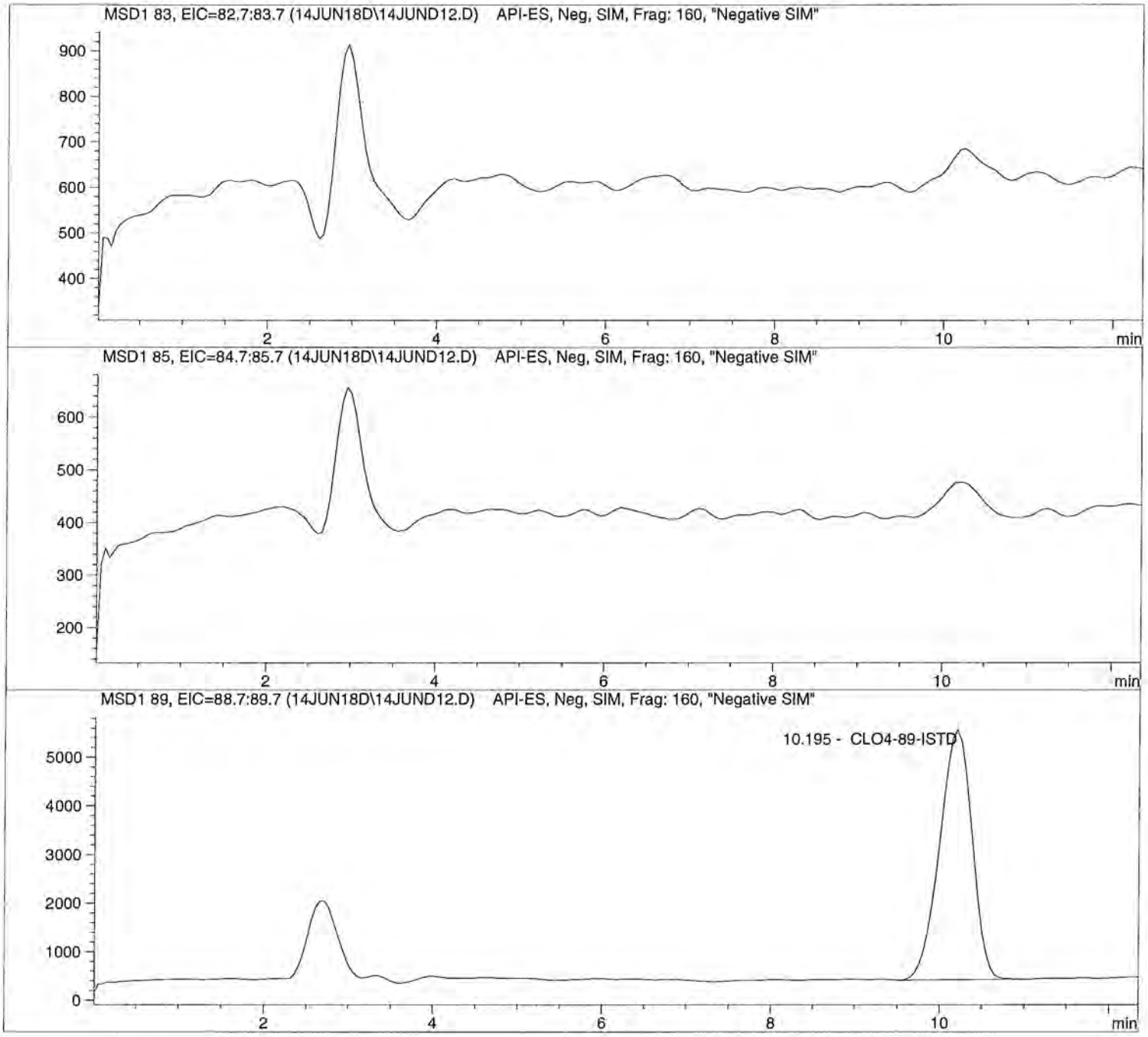
*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND12.D Sample Name: 605275 LMB

Injection Date:	6/14/2018 12:28:22	Seq Line:	12
Sample Name:	605275 LMB	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis



Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND12.D Sample Name: 605275 LMB

Injection Date:	6/14/2018 12:28:22	Seq Line:	12
Sample Name:	605275 LMB	Location:	Vial 82
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis

Sample Information

Sorted By:	Signal
Calib. Data Modified:	Thu, 14. Jun. 2018,01:02:34 pm
Multiplier:	1.000000
Dilution:	1.000000
Sample Amount:	0.000

LCMS Results

Signal1: MSD1 83, EIC=82.7:83.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	Perchlorate

Signal2: MSD1 85, EIC=84.7:85.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
0.000		0.0	0.0000	CLO4-85

Signal3: MSD1 89, EIC=88.7:89.7

RT [min]	Type	Area	Amount [ug/sample]	Compound Name
10.195	PBA	136891.5	5.0000	CLO4-89-ISTD

*** End of Report ***

Data file: C:\HPCHEM\1\DATA\14JUN18D\14JUND13.D Sample Name: 605276 QC@5.0

Injection Date:	6/14/2018 12:42:40	Seq Line:	13
Sample Name:	605276 QC@5.0	Location:	Vial 83
Acq Operator:	TNB	Inj. No.:	1
		Inj. Vol.:	30 µl

Acq. Method: CLO4-DOD.M
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DPR.M
Last Changed: 6/14/2018 13:03:31

Perchlorate analysis