

Chemical Analysis Report

NE-DIST-2018-11-21-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **bmap tribs 2**
Request ID: **RQ-2018-11-12-20**
Customer: **NE-DIST**
Project ID: **SMP**

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8800 Baymeadows Way West
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 12-DEC-2018 16:28

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: TERRAPIN CREEK AT FAYE ROAD

Collection Date/Time: 11/20/2018 09:00

Field ID: 20030653

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043385	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P355040	
	EPA 300.0 Rev. 2.1	Chloride	9.5		mg Cl/L	P355505	
		Sulfate	16		mg SO4/L	P355507	
		Color (true)	44	A	PCU	P355037	
	SM 2320 B-97	Total Alkalinity	22		mg CaCO3/L	P355469	
	SM 2540 C-97	TDS	78		mg/L	P355461	
	SM 2540 D-97	TSS	6	I	mg/L	P355463	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P355474	
2043387	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P355305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P355215	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.039		mg N/L	P355329	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P355084	
	SM 5310 B-00	Organic Carbon	7.1		mg C/L	P355326	
2043389	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P355043	
2043415	EPA 8321B	2,4-D	0.010		ug/L	P355009	
		Sucralose**	0.047		ug/L	P355085	
		Bentazon	8.0E-04	U	ug/L	P355009	
		MCP	0.0020	U	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.0020	U	ug/L	P355009	
		Diuron	0.0023	I	ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.0080	U	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	0.075		ug/L	P355009	
		Carbamazepine**	8.0E-04	U	ug/L	P355009	
		Fluridone**	0.19		ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.10	U	ug/L	P354971	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: TROUT RIVER AT OLD KINGS RD

Collection Date/Time: 11/20/2018 09:40

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043386	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P355040	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P355505	
		Sulfate	7.4		mg SO4/L	P355507	
		Color (true)	260		PCU	P355037	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P355469	
	SM 2540 C-97	TDS	128		mg/L	P355461	
	SM 2540 D-97	TSS	2	I	mg/L	P355463	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P355474	
2043388	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P355305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P355216	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P355329	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P355084	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P355326	
2043390	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P355043	
2043416	EPA 8321B	2,4-D	0.0020	U	ug/L	P355009	
		Sucralose**	0.046		ug/L	P355064	
		Bentazon	8.0E-04	U	ug/L	P355009	
		MCP	0.0020	U	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.0020	U	ug/L	P355009	
		Diuron	0.0020	U	ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.0080	U	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	0.065		ug/L	P355009	
		Carbamazepine**	8.0E-04	U	ug/L	P355009	
		Fluridone**	0.0011	I	ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.10	U	ug/L	P355064	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Sample Location: MONCRIEF CR N OF 33RD ST BRID

Collection Date/Time: 11/20/2018 10:40

Field ID: 20030316

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043391	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P355040	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P355505	
		Sulfate	23		mg SO4/L	P355507	
		Color (true)	17		PCU	P355037	
	SM 2120 B	Total Alkalinity	99		mg CaCO3/L	P355469	
	SM 2540 C-97	TDS	158		mg/L	P355461	
	SM 2540 D-97	TSS	6	I	mg/L	P355463	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P355474	
2043394	EPA 350.1 Rev. 2.0	Ammonia-N	0.085		mg N/L	P355305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P355216	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.078		mg N/L	P355329	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P355084	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P355326	
2043397	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P355043	
2043417	EPA 8321B	2,4-D	0.019		ug/L	P355009	
		Sucralose**	0.069		ug/L	P355064	
		Bentazon	0.0021	I	ug/L	P355009	
		MCP	0.0037	I	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.0079	I	ug/L	P355009	
		Diuron	0.016		ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.029	I	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	1.3		ug/L	P355009	
		Carbamazepine**	8.0E-04	U	ug/L	P355009	
		Fluridone**	0.066		ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.13	I	ug/L	P355064	
2043420	EPA 200.7 Rev. 4.4	Calcium	40.3		mg/L	P355105	
		Iron	660		ug/L	P355105	
		Magnesium	5.49		mg/L	P355105	
		Potassium	2.2		mg/L	P355105	
		Sodium	10.2		mg/L	P355105	
		Zinc	5.0	U	ug/L	P355105	
	EPA 200.8 Rev. 5.4	Arsenic	1.28		ug/L	P355105	
		Cadmium	0.020	U	ug/L	P355105	
		Chromium	0.40	U	ug/L	P355105	
		Copper	0.69	I	ug/L	P355105	

Field ID: 20030316

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043420	EPA 200.8 Rev. 5.4	Lead	0.45		ug/L	P355105	
		Nickel	0.50	I	ug/L	P355105	
		Silver	0.010	U	ug/L	P355105	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, and sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: MONCRIEF CR @ 21ST ST

Collection Date/Time: 11/20/2018 10:15

Field ID: 20030897

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043392	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P355040	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P355505	
		Sulfate	41		mg SO4/L	P355507	
	SM 2120 B	Color (true)	12		PCU	P355037	
	SM 2320 B-97	Total Alkalinity	167		mg CaCO3/L	P355469	
	SM 2540 C-97	TDS	295		mg/L	P355461	
	SM 2540 D-97	TSS	5	I	mg/L	P355463	
	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P355474	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P355305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P355216	
2043395	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P355329	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P355222	
	SM 5310 B-00	Organic Carbon	4.6		mg C/L	P355326	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.010		mg P/L	P355043	
	dissolved						
2043418	EPA 8321B	2,4-D	0.0020	U	ug/L	P355009	
		Sucralose**	0.094		ug/L	P355064	
		Bentazon	0.0047		ug/L	P355009	
		MCP	0.0040	I	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.014		ug/L	P355009	
		Diuron	0.0068	I	ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.0080	U	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	0.57		ug/L	P355009	
		Carbamazepine**	8.0E-04	U	ug/L	P355009	
		Fluridone**	0.0032		ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.14	I	ug/L	P355064	
2043421	EPA 200.7 Rev. 4.4	Calcium	67.0		mg/L	P355105	
		Iron	1.37E+03		ug/L	P355105	
		Magnesium	9.00		mg/L	P355105	
		Potassium	2.7		mg/L	P355105	
		Sodium	19.4		mg/L	P355105	
		Zinc	5.0	U	ug/L	P355105	
	EPA 200.8 Rev. 5.4	Arsenic	1.28		ug/L	P355105	
		Cadmium	0.020	U	ug/L	P355105	
		Chromium	0.40	U	ug/L	P355105	
		Copper	0.28	I	ug/L	P355105	

Field ID: 20030897

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043421	EPA 200.8 Rev. 5.4	Lead	0.20	I	ug/L	P355105	
		Nickel	0.77	I	ug/L	P355105	
		Silver	0.010	U	ug/L	P355105	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, and sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: Goodbys CR Above West Branch at San Clerc Collection Date/Time: 11/20/2018 11:30

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043393	EPA 180.1 Rev. 2.0	Turbidity	5.7	A	NTU	P355041	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P355505	
		Sulfate	21		mg SO4/L	P355507	
	SM 2120 B	Color (true)	42		PCU	P355037	
	SM 2320 B-97	Total Alkalinity	139		mg CaCO3/L	P355469	
	SM 2540 C-97	TDS	230		mg/L	P355461	
	SM 2540 D-97	TSS	4	I	mg/L	P355463	
	SM 4500 F-C-97	Fluoride	0.16		mg F/L	P355474	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P355305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P355216	
2043396	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P355329	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P355222	
	SM 5310 B-00	Organic Carbon	7.7		mg C/L	P355326	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.030		mg P/L	P355043	
	dissolved						
2043419	EPA 8321B	2,4-D	0.0055	I	ug/L	P355009	
		Sucralose**	0.071		ug/L	P355064	
		Bentazon	0.011		ug/L	P355009	
		MCPP	0.0025	I	ug/L	P355009	
		Triclopyr**	0.0040	U	ug/L	P355009	
		Imidacloprid	0.015		ug/L	P355009	
		Diuron	0.064		ug/L	P355009	
		Pyraclostrobin**	0.0020	UJ	ug/L	P355009	CCV
		Primidone**	0.0040	U	ug/L	P355009	RPD
		Linuron	0.0040	U	ug/L	P355009	
		Acetaminophen**	0.0080	U	ug/L	P355009	
		Fenuron	0.016	U	ug/L	P355009	
		Imazapyr**	0.51		ug/L	P355009	
		Carbamazepine**	8.0E-04	U	ug/L	P355009	
		Fluridone**	0.012		ug/L	P355009	
		Hydrocodone**	8.0E-04	U	ug/L	P355009	
		Naproxen**	0.0080	U	ug/L	P355009	RPD
		Ibuprofen**	0.020	U	ug/L	P355009	
		Acesulfame K**	0.16	I	ug/L	P355064	
2043422	EPA 200.7 Rev. 4.4	Calcium	54.7		mg/L	P355105	
		Iron	1.19E+03		ug/L	P355105	
		Magnesium	7.19		mg/L	P355105	
		Potassium	2.6		mg/L	P355105	
		Sodium	17.6		mg/L	P355105	
		Zinc	5.0	U	ug/L	P355105	
	EPA 200.8 Rev. 5.4	Arsenic	2.87		ug/L	P355105	
		Cadmium	0.020	U	ug/L	P355105	
		Chromium	0.40	U	ug/L	P355105	
		Copper	0.32	I	ug/L	P355105	

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2043422	EPA 200.8 Rev. 5.4	Lead	0.10	I	ug/L	P355105	
		Nickel	0.27	I	ug/L	P355105	
		Silver	0.010	U	ug/L	P355105	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, and sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355040

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355041

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355105

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355505

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355507

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355305

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355216

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355222

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P354971

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355009

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P355009

Component	Result	Code	Units
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355064

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P355085

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P355037

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P355469

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P355461

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P355463

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P355474

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P355326

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	104		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	102		P	85 - 115
Sodium	96.9		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	109		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	104		P	85 - 115
Copper	105		P	85 - 115
Lead	104		P	85 - 115
Nickel	105		P	85 - 115
Silver	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355505

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	101		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.5		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355216

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	102		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	101		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P354971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	94.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	85.1		P	40 - 150
Acetaminophen	114		P	30 - 150
Bentazon	72.6		P	30 - 150
Carbamazepine	80.4		P	40 - 150
Diuron	69.6		P	40 - 150
Fenuron	101		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	98.6		P	40 - 150
Ibuprofen	78.4		P	40 - 150
Imazapyr	77.8		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	76.9		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	91.5		P	40 - 150
Primidone	80.0		P	40 - 150
Pyraclostrobin	71.7		P	40 - 150
Triclopyr	72.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P355064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	99.9		P	40 - 150
Sucralose	82.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.8		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P355037

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P355469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P355474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043083	Iron	97.4	98.1	P/P	80 - 120
2043083	Zinc	96.2	96.3	P/P	80 - 120
2043420	Calcium	97.0		P	80 - 120
2043420	Iron	100		P	80 - 120
2043420	Magnesium	98.1		P	80 - 120
2043420	Potassium	95.8		P	80 - 120
2043420	Sodium	97.3		P	80 - 120
2043420	Zinc	94.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043083	Arsenic	115	115	P/P	80 - 120
2043083	Cadmium	103	102	P/P	80 - 120
2043083	Chromium	84.4	82.9	P/P	80 - 120
2043083	Copper	97.0	96.5	P/P	80 - 120
2043083	Lead	107	105	P/P	80 - 120
2043083	Nickel	92.4	91.8	P/P	80 - 120
2043083	Silver	96.8	93.6	P/P	80 - 120
2043420	Arsenic	107		P	80 - 120
2043420	Cadmium	108		P	80 - 120
2043420	Chromium	102		P	80 - 120
2043420	Copper	100		P	80 - 120
2043420	Lead	102		P	80 - 120
2043420	Nickel	99.4		P	80 - 120
2043420	Silver	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355505

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043287	Chloride	98.1		P	90 - 110
2043510	Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043287	Sulfate	99.1		P	90 - 110
2043510	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043387	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043511	Kjeldahl Nitrogen	102	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043284	NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043394	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043544	Total-P	97.8	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043389	O-Phosphate-P	96.8	98.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P354971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042005	Acesulfame K	137	131	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043262	2,4-D	107	120	P/P	40 - 150
2043262	Acetaminophen	130	130	P/P	30 - 150
2043262	Bentazon	53.3	62.0	P/P	30 - 150
2043262	Carbamazepine	79.7	81.3	P/P	40 - 150
2043262	Diuron	61.7	64.9	P/P	40 - 150
2043262	Fenuron	81.5	84.7	P/P	40 - 150
2043262	Fluridone	105	102	P/P	40 - 150
2043262	Hydrocodone	84.1	85.3	P/P	40 - 150
2043262	Ibuprofen	72.3	66.9	P/P	40 - 150
2043262	Imidacloprid	125	128	P/P	40 - 160
2043262	Linuron	67.2	68.2	P/P	40 - 150
2043262	MCPP	134	129	P/P	40 - 150
2043262	Naproxen	86.6	59.7	P/P	40 - 150
2043262	Primidone	79.8	131	P/P	40 - 150
2043262	Pyraclostrobin	54.7	53.1	P/P	40 - 150
2043262	Triclopyr	79.2	78.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P355064

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043416	Acesulfame K	120	123	P/P	40 - 150
2043416	Sucralose	93.1	98.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P355085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2042005	Sucralose	85.2	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P355474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043543	Fluoride	98.8	99.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P355326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2043289	Organic Carbon	97.4	94.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043306	Turbidity	0.812	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P355041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043393	Turbidity	3.52	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P355105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043083	Calcium	0.00614	Spike	P	0 - 20
2043083	Iron	0.634	Spike	P	0 - 20
2043083	Magnesium	0.426	Spike	P	0 - 20
2043083	Potassium	0.671	Spike	P	0 - 20
2043083	Sodium	1.62	Spike	P	0 - 20
2043083	Zinc	0.0857	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P355105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043083	Arsenic	0.360	Spike	P	0 - 20
2043083	Cadmium	1.66	Spike	P	0 - 20
2043083	Chromium	1.84	Spike	P	0 - 20
2043083	Copper	0.537	Spike	P	0 - 20
2043083	Lead	1.71	Spike	P	0 - 20
2043083	Nickel	0.611	Spike	P	0 - 20
2043083	Silver	3.41	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355505

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043287	Chloride	0.513	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P355507

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043287	Sulfate	0.739	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P355305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043387	Ammonia-N	1.99	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043284	Kjeldahl Nitrogen	0.989	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P355216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043511	Kjeldahl Nitrogen	2.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P355329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043284	NO2NO3-N	0.274	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043394	Total-P	1.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P355222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043544	Total-P	5.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P355043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043389	O-Phosphate-P	1.00	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P354971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042005	Acesulfame K	4.13	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P355009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043262	2,4-D	11.0	Spike	P	0 - 30
2043262	Acetaminophen	0.135	Spike	P	0 - 30
2043262	Bentazon	15.2	Spike	P	0 - 30
2043262	Carbamazepine	1.96	Spike	P	0 - 30
2043262	Diuron	5.07	Spike	P	0 - 30
2043262	Fenuron	3.92	Spike	P	0 - 30
2043262	Fluridone	2.98	Spike	P	0 - 30
2043262	Hydrocodone	1.37	Spike	P	0 - 30
2043262	Ibuprofen	7.79	Spike	P	0 - 30
2043262	Imazapyr	20.5	Spike	P	0 - 30
2043262	Imidacloprid	2.12	Spike	P	0 - 30
2043262	Linuron	1.51	Spike	P	0 - 30
2043262	MCP	4.01	Spike	P	0 - 30
2043262	Naproxen	36.8	Spike	F	0 - 30
2043262	Primidone	48.9	Spike	F	0 - 30
2043262	Pyraclostrobin	2.97	Spike	P	0 - 30
2043262	Triclopyr	1.20	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043416	Acesulfame K	2.37	Spike	P	0 - 30
2043416	Sucralose	5.24	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P355085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2042005	Sucralose	16.6	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P355037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043385	Color (true)	2.77	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P355469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043543	Total Alkalinity	1.09	Sample	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P355461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043287	TDS	7.53	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P355474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043543	Fluoride	0.979	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P355326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2043289	Organic Carbon	2.29	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2043415
Field Sample ID: 20030653

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.9	P	30 - 160
EPA 8321B	Diuron-d6	104	P	30 - 160
EPA 8321B	Endothall-d6	97.7	P	40 - 160
EPA 8321B	Endothall-d6	97.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	81.3	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	127	P	40 - 160
EPA 8321B	Sucralose-d6	127	P	40 - 160

Lab Sample ID: 2043416
Field Sample ID: 20030753

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	76.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.2	P	30 - 160
EPA 8321B	Diuron-d6	89.7	P	30 - 160
EPA 8321B	Endothall-d6	104	P	40 - 160
EPA 8321B	Endothall-d6	104	P	40 - 160
EPA 8321B	Ibuprofen-d3	79.3	P	30 - 160
EPA 8321B	Primidone-d5	30.7	P	30 - 160
EPA 8321B	Sucralose-d6	123	P	40 - 160
EPA 8321B	Sucralose-d6	123	P	40 - 160

Lab Sample ID: 2043417
Field Sample ID: 20030316

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.2	P	30 - 160
EPA 8321B	Diuron-d6	83.0	P	30 - 160
EPA 8321B	Endothall-d6	78.2	P	40 - 160
EPA 8321B	Endothall-d6	78.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	74.0	P	30 - 160
EPA 8321B	Primidone-d5	63.0	P	30 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160
EPA 8321B	Sucralose-d6	105	P	40 - 160

Lab Sample ID: 2043418
Field Sample ID: 20030897

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	103	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.4	P	30 - 160
EPA 8321B	Diuron-d6	91.7	P	30 - 160
EPA 8321B	Endothall-d6	88.6	P	40 - 160
EPA 8321B	Endothall-d6	88.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	72.0	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2043418
Field Sample ID: 20030897

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160

Lab Sample ID: 2043419
Field Sample ID: 20030891

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	78.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.2	P	30 - 160
EPA 8321B	Diuron-d6	76.6	P	30 - 160
EPA 8321B	Endothall-d6	82.0	P	40 - 160
EPA 8321B	Endothall-d6	82.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	61.7	P	30 - 160
EPA 8321B	Primidone-d5	62.1	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	40 - 160
EPA 8321B	Sucralose-d6	104	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A87929

Included Lab Sample IDs: 2043385, 2043386, 2043391, 2043392, 2043393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.5	P/P	85 - 115
Color (true)	98.6	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A87930

Included Lab Sample IDs: 2043385, 2043386, 2043391, 2043392, 2043393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A87931

Included Lab Sample IDs: 2043389, 2043390, 2043397, 2043398, 2043399

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	99.9	99.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A87945

Included Lab Sample IDs: 2043415

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.4	84.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A87962

Included Lab Sample IDs: 2043416, 2043417, 2043418, 2043419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	120	102	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87969

Included Lab Sample IDs: 2043387, 2043388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A87981

Included Lab Sample IDs: 2043394

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A88012

Included Lab Sample IDs: 2043415, 2043416, 2043417, 2043418, 2043419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	114	P/P	50 - 150
2,4-D	115	109	P/P	50 - 150
Acetaminophen	115	126	P/P	60 - 160
Acetaminophen	136	115	P/P	60 - 160
Bentazon	116	69.7	P/P	50 - 160
Bentazon	69.7	129	P/P	50 - 160
Carbamazepine	116	99.7	P/P	60 - 160
Carbamazepine	99.7	121	P/P	60 - 160
Diuron	83.9	90.4	P/P	60 - 150
Diuron	93.2	83.9	P/P	60 - 150
Fenuron	107	124	P/P	60 - 150
Fenuron	119	107	P/P	60 - 150
Fluridone	119	128	P/P	60 - 160
Fluridone	128	137	P/P	60 - 160
Hydrocodone	103	107	P/P	60 - 150
Hydrocodone	107	148	P/P	60 - 150
Ibuprofen	85.0	88.9	P/P	50 - 160
Ibuprofen	94.5	85.0	P/P	50 - 160
Imazapyr	86.3	110	P/P	50 - 150
Imazapyr	92.4	86.3	P/P	50 - 150
Imidacloprid	121	94.8	P/P	60 - 160
Imidacloprid	94.8	111	P/P	60 - 160
Linuron	101	101	P/P	60 - 150
Linuron	102	101	P/P	60 - 150
MCPP	95.0	89.2	P/P	50 - 150
MCPP	95.9	95.0	P/P	50 - 150
Naproxen	76.0	84.4	P/P	50 - 160
Naproxen	84.4	75.1	P/P	50 - 160
Primidone	118	87.2	P/P	60 - 160
Primidone	87.2	154	P/P	60 - 160
Pyraclostrobin	108	163*	P/F	60 - 150
Pyraclostrobin	163*	161*	F/F	60 - 150
Triclopyr	102	73.7	P/P	50 - 160
Triclopyr	97.3	102	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A88023

Included Lab Sample IDs: 2043415, 2043416, 2043417, 2043418, 2043419

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.1	92.6	P/P	60 - 160
Sucralose	92.6	86.0	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88031

Included Lab Sample IDs: 2043395, 2043396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88036

Included Lab Sample IDs: 2043387, 2043388, 2043394, 2043395, 2043396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110
Kjeldahl Nitrogen	103	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88037

Included Lab Sample IDs: 2043387, 2043388, 2043394, 2043395, 2043396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	104	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A88042

Included Lab Sample IDs: 2043387, 2043388, 2043394, 2043395, 2043396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	96.2	P/P	90 - 110
Organic Carbon	95.6	95.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88043

Included Lab Sample IDs: 2043387, 2043388, 2043394, 2043395, 2043396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A88044

Included Lab Sample IDs: 2043420, 2043421, 2043422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.9	98.9	P/P	90 - 110
Calcium	98.0	97.9	P/P	90 - 110
Iron	97.0	97.0	P/P	90 - 110
Iron	97.0	97.9	P/P	90 - 110
Magnesium	97.2	98.0	P/P	90 - 110
Magnesium	97.5	97.2	P/P	90 - 110
Potassium	97.9	98.2	P/P	90 - 110
Potassium	98.3	97.9	P/P	90 - 110
Sodium	95.9	96.3	P/P	90 - 110
Sodium	97.2	95.9	P/P	90 - 110
Zinc	99.2	98.1	P/P	90 - 110
Zinc	99.6	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88046

Included Lab Sample IDs: 2043420, 2043421, 2043422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	101	P/P	90 - 110
Cadmium	99.9	101	P/P	90 - 110
Chromium	98.8	99.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A88046

Included Lab Sample IDs: 2043420, 2043421, 2043422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	100	99.2	P/P	90 - 110
Lead	100	100	P/P	90 - 110
Nickel	99.0	98.7	P/P	90 - 110
Silver	99.8	99.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A88078

Included Lab Sample IDs: 2043417

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	119	107	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A88097

Included Lab Sample IDs: 2043385, 2043386, 2043391, 2043392, 2043393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A88097

Included Lab Sample IDs: 2043385, 2043386, 2043391, 2043392, 2043393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A88113

Included Lab Sample IDs: 2043385, 2043386, 2043391, 2043392, 2043393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						0.812	
	Turbidity						3.52	
EPA 200.7 Rev. 4.4	Calcium	100	97.0					0.0061
	Iron	104	97.4	98.1	100			0.634
	Magnesium	100	98.1					0.426
	Potassium	102	95.8					0.671
	Sodium	96.9	97.3					1.62
	Zinc	99.8	96.2	96.3	94.7			0.0857
EPA 200.8 Rev. 5.4	Arsenic	109	115	115	107			0.360
	Cadmium	105	103	102	108			1.66
	Chromium	104	84.4	82.9	102			1.84
	Copper	105	97.0	96.5	100			0.537
	Lead	104	107	105	102			1.71
	Nickel	105	92.4	91.8	99.4			0.611
	Silver	104	96.8	93.6	102			3.41
EPA 300.0 Rev. 2.1	Chloride	101	98.1	98.7			0.513	
	Sulfate	100	99.1	99.1			0.739	
EPA 350.1 Rev. 2.0	Ammonia-N	101	100	103				1.99
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5						0.989
	Kjeldahl Nitrogen	102	102	98.5				2.34
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	101				0.274
EPA 365.1 Rev. 2.0	Total-P	104	106	104				1.65
	Total-P	103	97.8	104				5.43
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.8	98.1				1.00
EPA 8321B	2,4-D	85.1	107	120				11.0
	Acesulfame K	94.5	137	131				4.13
	Acesulfame K	99.9	120	123				2.37
	Acetaminophen	114	130	130				0.135
	Bentazon	72.6	53.3	62.0				15.2
	Carbamazepine	80.4	79.7	81.3				1.96
	Diuron	69.6	61.7	64.9				5.07
	Fenuron	101	81.5	84.7				3.92
	Fluridone	107	105	102				2.98
	Hydrocodone	98.6	84.1	85.3				1.37
	Ibuprofen	78.4	72.3	66.9				7.79
	Imazapyr	77.8						20.5
	Imidacloprid	108	125	128				2.12
	Linuron	76.9	67.2	68.2				1.51
	MCPP	113	134	129				4.01
	Naproxen	91.5	86.6	59.7				36.8
	Primidone	80.0	79.8	131				48.9
	Pyraclostrobin	71.7	54.7	53.1				2.97
	Sucralose	82.4	93.1	98.2				5.24
	Sucralose	97.8	85.2	101				16.6
	Triclopyr	72.1	79.2	78.2				1.20
SM 2120 B	Color (true)	99.3					2.77	
SM 2320 B-97	Total Alkalinity	100					1.09	
SM 2540 C-97	TDS						7.53	
SM 4500 F-C-97	Fluoride	98.9	98.8	99.9				0.979
SM 5310 B-00	Organic Carbon	94.5	97.4	94.1				2.29

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2043385, 2043386, 2043391, 2043392, 2043393
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2043420, 2043421, 2043422
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2043420, 2043421, 2043422
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2043385, 2043386, 2043391, 2043392, 2043393
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2043385, 2043386, 2043391, 2043392, 2043393
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2043387, 2043388, 2043394, 2043395, 2043396
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2043387, 2043388, 2043394, 2043395, 2043396
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2043387, 2043388, 2043394, 2043395, 2043396
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2043387, 2043388, 2043394, 2043395, 2043396
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2043389, 2043390, 2043397, 2043398, 2043399
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2043415, 2043416, 2043417, 2043418, 2043419
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2043415, 2043416, 2043417, 2043418, 2043419
SM 2120 B / E31780	True Color measured at 450 nm	2043385, 2043386, 2043391, 2043392, 2043393
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2043385, 2043386, 2043391, 2043392, 2043393
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2043385, 2043386, 2043391, 2043392, 2043393
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2043385, 2043386, 2043391, 2043392, 2043393
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2043385, 2043386, 2043391, 2043392, 2043393
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2043387, 2043388, 2043394, 2043395, 2043396

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/21/2018			11/21/2018 15:37	Megan Treadwell	2043385, 2043386, 2043391, 2043392, 2043393
EPA 200.7 Rev. 4.4	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/28/2018 15:54	Betina Topolski	2043420
	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/28/2018 16:22	Betina Topolski	2043421
	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/28/2018 16:26	Betina Topolski	2043422
EPA 200.8 Rev. 5.4	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/29/2018 18:05	Robert K Palmer	2043420
	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/29/2018 18:23	Robert K Palmer	2043421
	11/21/2018	11/26/2018 17:30	Elliott D. Healy	11/29/2018 18:32	Robert K Palmer	2043422
EPA 300.0 Rev. 2.1	11/21/2018			12/03/2018 18:41	Lipi Saha	2043385
	11/21/2018			12/03/2018 18:53	Lipi Saha	2043386
	11/21/2018			12/03/2018 19:06	Lipi Saha	2043391
	11/21/2018			12/03/2018 19:18	Lipi Saha	2043392
	11/21/2018			12/03/2018 19:56	Lipi Saha	2043393
EPA 350.1 Rev. 2.0	11/21/2018			11/29/2018 10:51	Ping Hua	2043387
	11/21/2018			11/29/2018 10:55	Ping Hua	2043388
	11/21/2018			11/29/2018 10:57	Ping Hua	2043394
	11/21/2018			11/29/2018 10:58	Ping Hua	2043395
	11/21/2018			11/29/2018 11:00	Ping Hua	2043396
EPA 351.2 Rev. 2.0	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:40	Joseph Suarez	2043387
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:45	Joseph Suarez	2043388
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:46	Joseph Suarez	2043394
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:51	Joseph Suarez	2043395
	11/21/2018	11/28/2018 11:50	Adrian Shelby	11/29/2018 09:53	Joseph Suarez	2043396
EPA 353.2 Rev. 2.0	11/21/2018			11/29/2018 12:03	Lauren Bottorf	2043387
	11/21/2018			11/29/2018 12:04	Lauren Bottorf	2043388
	11/21/2018			11/29/2018 12:05	Lauren Bottorf	2043394
	11/21/2018			11/29/2018 12:06	Lauren Bottorf	2043395
	11/21/2018			11/29/2018 12:07	Lauren Bottorf	2043396
EPA 365.1 Rev. 2.0	11/21/2018	11/26/2018 12:15	Sima Feizi	11/27/2018 11:34	Beverly Y. Sanders	2043387
	11/21/2018	11/26/2018 12:15	Sima Feizi	11/27/2018 11:35	Beverly Y. Sanders	2043388
	11/21/2018	11/26/2018 12:15	Sima Feizi	11/27/2018 14:05	Beverly Y. Sanders	2043394
	11/21/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 08:47	Beverly Y. Sanders	2043395
	11/21/2018	11/28/2018 12:35	Sima Feizi	11/29/2018 08:48	Beverly Y. Sanders	2043396
EPA 365.1 Rev. 2.0 dissolved	11/21/2018			11/21/2018 15:16	Jhamieka S. Greenwood	2043389
	11/21/2018			11/21/2018 15:42	Jhamieka S. Greenwood	2043390
	11/21/2018			11/21/2018 15:43	Jhamieka S. Greenwood	2043398
	11/21/2018			11/21/2018 15:44	Jhamieka S. Greenwood	2043397
	11/21/2018			11/21/2018 15:49	Jhamieka S. Greenwood	2043399
EPA 8321B	11/21/2018	11/21/2018 13:45	Rebecca Ware	11/21/2018 16:43	Rebecca Ware	2043415
	11/21/2018	11/21/2018 13:45	Rebecca Ware	11/28/2018 14:17	Rebecca Ware	2043415

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/26/2018 17:03	Rebecca Ware	2043416
	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/26/2018 17:16	Rebecca Ware	2043417
	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/26/2018 17:30	Rebecca Ware	2043418
	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/26/2018 17:44	Rebecca Ware	2043419
	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/28/2018 15:40	Rebecca Ware	2043416
	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/28/2018 15:54	Rebecca Ware	2043417
	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/28/2018 16:07	Rebecca Ware	2043418
	11/21/2018	11/26/2018 08:15	Mohammad Ghaffari	11/28/2018 16:21	Rebecca Ware	2043419
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 07:03	Juyoung Kim	2043415
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 07:19	Juyoung Kim	2043416
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 07:36	Juyoung Kim	2043417
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 08:09	Juyoung Kim	2043418
	11/21/2018	11/27/2018 08:50	Hoor Shaik	11/29/2018 08:26	Juyoung Kim	2043419
	11/21/2018	11/27/2018 08:50	Hoor Shaik	12/01/2018 07:26	Juyoung Kim	2043417
	11/21/2018			11/21/2018 16:10	Chelsea Hernandez	2043385
SM 2120 B	11/21/2018			11/21/2018 16:11	Chelsea Hernandez	2043391
	11/21/2018			11/21/2018 16:12	Chelsea Hernandez	2043392
	11/21/2018			11/21/2018 16:13	Chelsea Hernandez	2043393
	11/21/2018			11/21/2018 16:21	Chelsea Hernandez	2043386
	11/21/2018			11/30/2018 08:42	Dale L. Simmons	2043385
SM 2320 B-97	11/21/2018			11/30/2018 08:53	Dale L. Simmons	2043386
	11/21/2018			11/30/2018 09:03	Dale L. Simmons	2043391
	11/21/2018			11/30/2018 09:15	Dale L. Simmons	2043392
	11/21/2018			11/30/2018 09:25	Dale L. Simmons	2043393
	11/21/2018			11/26/2018 16:02	Yijie Li	2043385, 2043386, 2043391, 2043392, 2043393
SM 2540 C-97						
SM 2540 D-97	11/21/2018			11/26/2018 16:02	Yijie Li	2043385, 2043386, 2043391, 2043392, 2043393
SM 4500 F-C-97	11/21/2018			11/30/2018 08:42	Dale L. Simmons	2043385
	11/21/2018			11/30/2018 08:53	Dale L. Simmons	2043386
	11/21/2018			11/30/2018 09:03	Dale L. Simmons	2043391
	11/21/2018			11/30/2018 09:15	Dale L. Simmons	2043392
	11/21/2018			11/30/2018 09:25	Dale L. Simmons	2043393
SM 5310 B-00	11/21/2018			11/29/2018 00:49	Megan Treadwell	2043387
	11/21/2018			11/29/2018 01:02	Megan Treadwell	2043388
	11/21/2018			11/29/2018 01:42	Megan Treadwell	2043394
	11/21/2018			11/29/2018 01:55	Megan Treadwell	2043395
	11/21/2018			11/29/2018 02:09	Megan Treadwell	2043396