

Chemical Analysis Report

NE-DIST-2019-12-13-02

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

Event Description: **Bmap 2**
Request ID: **RQ-2019-12-09-18**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 07-JAN-2020 09:14



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Moncrief CR at Moncrief Road

Collection Date/Time: 12/12/2019 10:35

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144141	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P376188	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P376426	
		Sulfate	38		mg SO4/L	P376429	
		Color (true)	14		PCU	P375990	
	SM 2320 B-97	Total Alkalinity	165		mg CaCO3/L	P376260	
	SM 2540 C-97	TDS	252		mg/L	P376421	
	SM 2540 D-97	TSS	2	I	mg/L	P376361	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P376263	
2144142	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P376348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P376051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.076		mg N/L	P376241	
	EPA 365.1 Rev. 2.0	Total-P	0.091		mg P/L	P376071	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P376029	
2144143	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P375860	
2144164	EPA 200.7 Rev. 4.4	Barium	55.1		ug/L	P375985	
		Calcium	63.0		mg/L	P375985	
		Iron	680		ug/L	P375985	
		Magnesium	10.4		mg/L	P375985	
		Potassium	2.9		mg/L	P375985	
		Sodium	17.2		mg/L	P375985	
		Zinc	6.9	I	ug/L	P375985	
	EPA 200.8 Rev. 5.4	Aluminum	14	I	ug/L	P375985	
		Antimony	0.19	I	ug/L	P375985	
		Arsenic	0.90		ug/L	P375985	
		Boron**	63.3		ug/L	P375985	
		Cadmium	0.020	U	ug/L	P375985	
		Chromium	0.40	U	ug/L	P375985	
		Copper	0.87		ug/L	P375985	
		Lead	0.52		ug/L	P375985	
		Nickel	0.75	I	ug/L	P375985	
		Selenium	0.20	U	ug/L	P375985	
		Silver	0.010	U	ug/L	P375985	
		Thallium	0.10	U	ug/L	P375985	

Ref. Method and Comment:

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

Sample Location: Big Fishweir CR SF @ Hamilton St

Collection Date/Time: 12/12/2019 11:10

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144138	EPA 180.1 Rev. 2.0	Turbidity	3.5	A	NTU	P376188	
	EPA 300.0 Rev. 2.1	Chloride	570		mg Cl/L	P376407	
		Sulfate	110		mg SO4/L	P376409	
	SM 2120 B	Color (true)	42		PCU	P375990	
	SM 2320 B-97	Total Alkalinity	194		mg CaCO3/L	P376260	
	SM 2540 C-97	TDS	1.27E+03		mg/L	P376421	
	SM 2540 D-97	TSS	3	I	mg/L	P376361	
	SM 4500 F-C-97	Fluoride	0.21		mg F/L	P376263	
2144139	EPA 350.1 Rev. 2.0	Ammonia-N	0.067		mg N/L	P376347	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P376051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P376241	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P376071	
	SM 5310 B-00	Organic Carbon	8.3		mg C/L	P376029	
2144140	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P375860	
2144162	EPA 8321B	2,4-D	0.0048	I	ug/L	P375999	
		Acesulfame K**	1.0	U	ug/L	P375926	
		AMPA**	0.24	I	ug/L	P375926	
		Sucralose**	0.63		ug/L	P375926	
		Acetaminophen**	0.015	I	ug/L	P375999	RPD
		Endothall**	2.5	U	ug/L	P375926	
		Acetamiprid**	0.0020	U	ug/L	P375999	RPD
		Glufosinate**	0.10	U	ug/L	P375926	
		Glyphosate**	0.10	U	ug/L	P375926	
		Afidopyropen**	0.0020	UJ	ug/L	P375999	RPD
		Bentazon	0.015		ug/L	P375999	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375999	
		Carbamazepine**	0.0033		ug/L	P375999	
		Clothianidin**	0.0020	U	ug/L	P375999	
		Dinotefuran**	0.0020	U	ug/L	P375999	RPD
		Diuron	0.014		ug/L	P375999	
		Fenuron	0.016	U	ug/L	P375999	RPD
		Fluridone**	0.0018	I	ug/L	P375999	
		Imazapyr**	0.88		ug/L	P375999	
		Hydrocodone**	0.0020	U	ug/L	P375999	MS, RPD
		Ibuprofen**	0.020	U	ug/L	P375999	
		Imidacloprid	0.033		ug/L	P375999	MS
		Linuron	0.0040	U	ug/L	P375999	
		Mandestrobin**	0.0020	UJ	ug/L	P375999	
		MCP	0.0054	IJ	ug/L	P375999	LCS, MS
		Naproxen**	0.0080	U	ug/L	P375999	
		Primidone**	0.013	I	ug/L	P375999	
		Pyraclostrobin**	0.0020	U	ug/L	P375999	
		Thiamethoxam**	0.0020	U	ug/L	P375999	MS

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144162	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375999	
		Triclopyr**	0.0040	U	ug/L	P375999	MS, RPD

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: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8321B: MDL for some parameters elevated due to matrix interference.

Sample Location: Little Fishweir at Oak St.

Collection Date/Time: 12/12/2019 11:40

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144163	EPA 8321B	2,4-D	0.012		ug/L	P375999	
		Acesulfame K**	0.10	U	ug/L	P375926	
		AMPA**	0.12	I	ug/L	P375926	
		Sucralose**	0.15		ug/L	P375926	
		Acetaminophen**	0.0081	I	ug/L	P375999	RPD
		Endothall**	0.25	U	ug/L	P375926	
		Acetamiprid**	0.0020	U	ug/L	P375999	RPD
		Glufosinate**	0.10	U	ug/L	P375926	
		Glyphosate**	0.14	I	ug/L	P375926	
		Afidopyropen**	0.0020	UJ	ug/L	P375999	RPD
		Bentazon	0.039		ug/L	P375999	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375999	
		Carbamazepine**	8.0E-04	U	ug/L	P375999	
		Clothianidin**	0.0020	U	ug/L	P375999	
		Dinotefuran**	0.0020	U	ug/L	P375999	RPD
		Diuron	0.0020	U	ug/L	P375999	
		Fenuron	0.016	U	ug/L	P375999	RPD
		Fluridone**	8.0E-04	U	ug/L	P375999	
		Imazapyr**	0.092		ug/L	P375999	
		Hydrocodone**	0.0020	U	ug/L	P375999	MS, RPD
		Ibuprofen**	0.020	U	ug/L	P375999	
		Imidacloprid	0.017		ug/L	P375999	MS
		Linuron	0.0040	U	ug/L	P375999	
		Mandestrobin**	0.0020	UJ	ug/L	P375999	
		MCPP	0.0020	UJ	ug/L	P375999	LCS, MS
		Naproxen**	0.0080	U	ug/L	P375999	
		Primidone**	0.0040	U	ug/L	P375999	
		Pyraclostrobin**	0.0020	U	ug/L	P375999	
		Thiamethoxam**	0.0020	U	ug/L	P375999	MS
		Tolfenpyrad**	0.0020	U	ug/L	P375999	
		Triclopyr**	0.0040	U	ug/L	P375999	MS, RPD

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Trout River at Old Kings Rd

Collection Date/Time: 12/12/2019 09:30

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144147	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P376188	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P376426	
		Sulfate	8.2		mg SO4/L	P376429	
	SM 2120 B	Color (true)	290		PCU	P375990	
	SM 2320 B-97	Total Alkalinity	34		mg CaCO3/L	P376260	
	SM 2540 C-97	TDS	150		mg/L	P376421	
	SM 2540 D-97	TSS	2	I	mg/L	P376361	
	SM 4500 F-C-97	Fluoride	0.063	I	mg F/L	P376263	
2144148	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P376348	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P376051	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P376241	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P376071	
	SM 5310 B-00	Organic Carbon	31		mg C/L	P376029	
2144149	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.073		mg P/L	P375860	

Ref. Method and Comment:

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

Sample Location: Trout R @ Dinsmore Boat Ramp Dock NR US 1 Collection Date/Time: 12/12/2019 09:15

Field ID: 20030123

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144144	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P376185	
	EPA 300.0	Bromide	6.7		mg Br/L	P376393	
	SM 2320 B-97	Total Alkalinity	77		mg CaCO3/L	P376260	
	SM 2540 D-97	TSS	5	I	mg/L	P376362	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P376263	
2144145	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P376349	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P376044	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P376152	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P376010	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P376029	
2144146	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P375858	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376185

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376188

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375985

Component	Result	Code	Units
Barium	1.0	U	ug/L
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: P375985

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0
Batch ID: P376393

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376407

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376409

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376426

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376429

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376347

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376348

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376044

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376051

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376152

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376241

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376010

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376071

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375858

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375860

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

Reference Method: EPA 8321B
Batch ID: P375926

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P375999

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P375999

Component	Result	Code	Units
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B
Batch ID: P375990

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P376260

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P376421

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P376361

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P376362

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P376263

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: P376029

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: P375985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	100		P	85 - 115
Calcium	104		P	85 - 115
Iron	104		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	103		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.7		P	85 - 115
Antimony	105		P	85 - 115
Arsenic	98.9		P	85 - 115
Boron	109		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	99.5		P	85 - 115
Copper	96.9		P	85 - 115
Lead	107		P	85 - 115
Nickel	97.5		P	85 - 115
Selenium	98.7		P	85 - 115
Silver	101		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P376393

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376407

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376409

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.8		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376429

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376347

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376348

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

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: P376044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376152

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376241

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376010

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376071

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P375926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	146		P	40 - 150
AMPA	95.8		P	40 - 150
Endothall	82.5		P	40 - 150
Glufosinate	95.3		P	40 - 150
Glyphosate	104		P	40 - 140
Sucralose	92.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P375999

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	140		P	40 - 160
Acetaminophen	83.2		P	30 - 160
Acetamiprid	83.5		P	40 - 160
Afidopyropen	86.1		P	40 - 160
Bentazon	82.6		P	30 - 160
Benzovindiflupyr	96.2		P	40 - 160
Carbamazepine	98.8		P	40 - 160
Clothianidin	83.3		P	40 - 160
Dinotefuran	84.2		P	40 - 160
Diuron	95.1		P	40 - 160
Fenuron	97.7		P	40 - 160
Fluridone	102		P	40 - 160
Hydrocodone	97.4		P	40 - 160
Ibuprofen	78.6		P	30 - 160
Imazapyr	109		P	40 - 160
Imidacloprid	104		P	40 - 160
Linuron	82.9		P	40 - 160
Mandestrobin	106		P	40 - 160
MCPP	172		F	40 - 160
Naproxen	85.3		P	40 - 160
Primidone	98.5		P	40 - 160
Pyraclostrobin	105		P	30 - 160
Thiamethoxam	109		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P375999

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Tolfenpyrad	68.6		P	40 - 160
Triclopyr	89.3		P	30 - 160

Reference Method: SM 2120 B
Batch ID: P375990

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P376260

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P376263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P376029

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143707	Barium	97.2	98.8	P/P	80 - 120
2143707	Calcium	109		P	80 - 120
2143707	Iron	104	104	P/P	80 - 120
2143707	Magnesium	103		P	80 - 120
2143707	Potassium	101	102	P/P	80 - 120
2143707	Sodium	102	103	P/P	80 - 120
2143707	Zinc	97.1	98.9	P/P	80 - 120
2144164	Barium	98.7		P	80 - 120
2144164	Calcium	103		P	80 - 120
2144164	Iron	102		P	80 - 120
2144164	Magnesium	101		P	80 - 120
2144164	Potassium	99.4		P	80 - 120
2144164	Sodium	101		P	80 - 120
2144164	Zinc	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143707	Aluminum	94.3	91.9	P/P	80 - 120
2143707	Antimony	106	108	P/P	80 - 120
2143707	Arsenic	99.4	98.9	P/P	80 - 120
2143707	Boron	104	104	P/P	80 - 120
2143707	Cadmium	103	102	P/P	80 - 120
2143707	Chromium	103	102	P/P	80 - 120
2143707	Copper	91.4	90.3	P/P	80 - 120
2143707	Lead	109	109	P/P	80 - 120
2143707	Nickel	94.4	93.0	P/P	80 - 120
2143707	Selenium	93.3	92.4	P/P	80 - 120
2143707	Silver	101	102	P/P	80 - 120
2143707	Thallium	104	106	P/P	80 - 120
2144164	Aluminum	93.1		P	80 - 120
2144164	Antimony	107		P	80 - 120
2144164	Arsenic	99.9		P	80 - 120
2144164	Boron	109		P	80 - 120
2144164	Cadmium	103		P	80 - 120
2144164	Chromium	103		P	80 - 120
2144164	Copper	91.7		P	80 - 120
2144164	Lead	109		P	80 - 120
2144164	Nickel	93.5		P	80 - 120
2144164	Selenium	95.8		P	80 - 120
2144164	Silver	101		P	80 - 120
2144164	Thallium	105		P	80 - 120

Reference Method: EPA 300.0
Batch ID: P376393

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143832	Bromide	99.9	102	P/P	90 - 110
2143833	Bromide	99.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144399	Chloride	99.9	99.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144399	Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143448	Chloride	100		P	90 - 110
2143991	Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143448	Sulfate	99.9		P	90 - 110
2143991	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144048	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144324	Ammonia-N	98.1	96.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144413	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144415	Kjeldahl Nitrogen	104	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144325	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P376152

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143904	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P376241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144114	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P376010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143906	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P376071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144049	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P375858

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143914	O-Phosphate-P	97.9	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P375860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144140	O-Phosphate-P	98.5	97.5	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P375926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143044	Acesulfame K	117	120	P/P	40 - 150
2143044	AMPA	102	101	P/P	40 - 150
2143044	Endothall	88.9	87.5	P/P	40 - 150
2143044	Glufosinate	108	87.3	P/P	40 - 150
2143044	Glyphosate	103	101	P/P	40 - 140
2143044	Sucralose	69.2	68.3	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P375999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143857	Acetaminophen	45.1	97.8	P/P	30 - 160
2143857	Acetamiprid	112	80.8	P/P	40 - 160
2143857	Afidopyropen	110	65.4	P/P	40 - 160
2143857	Benzovindiflupyr	107	93.2	P/P	40 - 160
2143857	Carbamazepine	100	90.4	P/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P375999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2143857	Clothianidin	111	108	P/P	40 - 160
2143857	Dinotefuran	55.7	117	P/P	40 - 160
2143857	Diuron	89.8	81.6	P/P	40 - 160
2143857	Fenuron	99.7	64.4	P/P	40 - 160
2143857	Hydrocodone	33.5	98.2	F/P	40 - 160
2143857	Ibuprofen	84.2	73.9	P/P	30 - 160
2143857	Imidacloprid	192	158	F/P	40 - 160
2143857	Linuron	77.0	77.9	P/P	40 - 160
2143857	Mandestrobin	112	98.0	P/P	40 - 160
2143857	MCPP	211	156	F/P	40 - 160
2143857	Naproxen	123	106	P/P	40 - 160
2143857	Primidone	104	96.1	P/P	40 - 160
2143857	Pyraclostrobin	123	105	P/P	30 - 160
2143857	Thiamethoxam	165	165	F/F	40 - 160
2143857	Tolfenpyrad	78.8	64.3	P/P	40 - 160
2143857	Triclopyr	161	106	F/P	30 - 160

Reference Method: SM 4500 F-C-97
Batch ID: P376263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144357	Fluoride	99.1	99.7	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P376029

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2144047	Organic Carbon	96.1	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143832	Turbidity	4.79	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P376188

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144138	Turbidity	4.88	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143707	Barium	1.61	Spike	P	0 - 20
2143707	Calcium	0.840	Spike	P	0 - 20
2143707	Iron	0.179	Spike	P	0 - 20
2143707	Magnesium	0.310	Spike	P	0 - 20
2143707	Potassium	0.634	Spike	P	0 - 20
2143707	Sodium	0.642	Spike	P	0 - 20
2143707	Zinc	1.31	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375985

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143707	Aluminum	2.57	Spike	P	0 - 20
2143707	Antimony	1.53	Spike	P	0 - 20
2143707	Arsenic	0.505	Spike	P	0 - 20
2143707	Boron	0.0271	Spike	P	0 - 20
2143707	Cadmium	0.592	Spike	P	0 - 20
2143707	Chromium	1.44	Spike	P	0 - 20
2143707	Copper	1.16	Spike	P	0 - 20
2143707	Lead	0.103	Spike	P	0 - 20
2143707	Nickel	1.43	Spike	P	0 - 20
2143707	Selenium	0.861	Spike	P	0 - 20
2143707	Silver	1.20	Spike	P	0 - 20
2143707	Thallium	1.80	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P376393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143832	Bromide	1.04	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144399	Chloride	0.0379	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144399	Sulfate	0.0274	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143448	Chloride	1.34	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P376429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143448	Sulfate	0.585	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144048	Ammonia-N	1.86	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144324	Ammonia-N	1.37	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P376349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144413	Ammonia-N	1.51	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144415	Kjeldahl Nitrogen	3.75	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P376051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144325	Kjeldahl Nitrogen	1.20	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143904	NO2NO3-N	0.705	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P376241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144114	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143906	Total-P	0.229	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P376071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144049	Total-P	0.290	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143914	O-Phosphate-P	0.594	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144140	O-Phosphate-P	0.544	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P375926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143044	Acesulfame K	2.54	Spike	P	0 - 30
2143044	AMPA	0.966	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P375926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143044	Endothall	1.64	Spike	P	0 - 30
2143044	Glufosinate	21.5	Spike	P	0 - 30
2143044	Glyphosate	1.52	Spike	P	0 - 30
2143044	Sucralose	1.29	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P375999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2143857	2,4-D	29.6	Spike	P	0 - 30
2143857	Acetaminophen	73.8	Spike	F	0 - 30
2143857	Acetamiprid	32.0	Spike	F	0 - 30
2143857	Afidopyropen	51.2	Spike	F	0 - 30
2143857	Bentazon	18.5	Spike	P	0 - 30
2143857	Benzovindiflupyr	13.9	Spike	P	0 - 30
2143857	Carbamazepine	10.1	Spike	P	0 - 30
2143857	Clothianidin	2.80	Spike	P	0 - 30
2143857	Dinotefuran	71.0	Spike	F	0 - 30
2143857	Diuron	8.55	Spike	P	0 - 30
2143857	Fenuron	43.0	Spike	F	0 - 30
2143857	Fluridone	12.0	Spike	P	0 - 30
2143857	Hydrocodone	98.2	Spike	F	0 - 30
2143857	Ibuprofen	12.9	Spike	P	0 - 30
2143857	Imazapyr	5.84	Spike	P	0 - 30
2143857	Imidacloprid	15.4	Spike	P	0 - 30
2143857	Linuron	1.12	Spike	P	0 - 30
2143857	Mandestrobin	13.4	Spike	P	0 - 30
2143857	MCP	28.7	Spike	P	0 - 30
2143857	Naproxen	15.0	Spike	P	0 - 30
2143857	Primidone	7.47	Spike	P	0 - 30
2143857	Pyraclostrobin	15.5	Spike	P	0 - 30
2143857	Thiamethoxam	0.0652	Spike	P	0 - 30
2143857	Tolfenpyrad	20.2	Spike	P	0 - 30
2143857	Triclopyr	40.9	Spike	F	0 - 30

Reference Method: SM 2120 B
Batch ID: P375990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144112	Color (true)	5.49	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P376260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144357	Total Alkalinity	0.381	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P376421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144117	TDS	4.16	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P376263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144357	Fluoride	0.482	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P376029

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2144047	Organic Carbon	0.332	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2144162
Field Sample ID: 20030801

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	131	P	30 - 160
EPA 8321B	Acetaminophen-d4	142	P	30 - 160
EPA 8321B	Carbamazepine-d10	114	P	30 - 160
EPA 8321B	Diuron-d6	102	P	30 - 160
EPA 8321B	Endothall-d6	34.9	P	30 - 160
EPA 8321B	Endothall-d6	34.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	55.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	55.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	54.2	P	30 - 160
EPA 8321B	Primidone-d5	143	P	30 - 160
EPA 8321B	Sucralose-d6	94.6	P	30 - 160
EPA 8321B	Sucralose-d6	94.6	P	30 - 160

Lab Sample ID: 2144163
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	148	P	30 - 160
EPA 8321B	Acetaminophen-d4	159	P	30 - 160
EPA 8321B	Carbamazepine-d10	115	P	30 - 160
EPA 8321B	Diuron-d6	99.7	P	30 - 160
EPA 8321B	Endothall-d6	77.7	P	30 - 160
EPA 8321B	Endothall-d6	77.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.7	P	30 - 160
EPA 8321B	Primidone-d5	154	P	30 - 160
EPA 8321B	Sucralose-d6	97.0	P	30 - 160
EPA 8321B	Sucralose-d6	97.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96350

Included Lab Sample IDs: 2144140, 2144143, 2144146, 2144149

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	103	96.5	P/P	90 - 110
O-Phosphate-P	97.3	98.0	P/P	90 - 110
O-Phosphate-P	97.8	99.1	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A96397

Included Lab Sample IDs: 2144138, 2144141, 2144147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: SM 5310 B-00

Run ID: A96415

Included Lab Sample IDs: 2144139, 2144142, 2144145, 2144148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.4	92.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96427

Included Lab Sample IDs: 2144162, 2144163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	79.8	81.1	P/P	60 - 160
Glufosinate	79.7	80.5	P/P	60 - 160
Glyphosate	114	103	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96439

Included Lab Sample IDs: 2144164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96449

Included Lab Sample IDs: 2144145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96461

Included Lab Sample IDs: 2144139, 2144142, 2144148

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96466

Included Lab Sample IDs: 2144145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96468

Included Lab Sample IDs: 2144162, 2144163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	117	145	P/P	60 - 160
Acesulfame K	145	146	P/P	60 - 160
Endothall	89.7	84.8	P/P	60 - 160
Endothall	97.0	89.7	P/P	60 - 160

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96479

Included Lab Sample IDs: 2144138, 2144141, 2144144, 2144147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	101	P/P	95 - 105
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96498

Included Lab Sample IDs: 2144145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96499

Included Lab Sample IDs: 2144139, 2144142, 2144148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	103	P/P	90 - 110
Kjeldahl Nitrogen	107	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96503

Included Lab Sample IDs: 2144139, 2144142, 2144148

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A96510

Included Lab Sample IDs: 2144138, 2144141, 2144144, 2144147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A96510

Included Lab Sample IDs: 2144138, 2144141, 2144144, 2144147

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

Reference Method: EPA 8321B

Run ID: A96534

Included Lab Sample IDs: 2144162, 2144163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.8	99.2	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96549

Included Lab Sample IDs: 2144139, 2144142, 2144145, 2144148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96565

Included Lab Sample IDs: 2144164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	93.6	95.9	P/P	90 - 110
Antimony	103	104	P/P	90 - 110
Arsenic	99.6	101	P/P	90 - 110
Cadmium	103	105	P/P	90 - 110
Chromium	107	109	P/P	90 - 110
Copper	96.5	97.7	P/P	90 - 110
Lead	105	106	P/P	90 - 110
Nickel	96.5	97.6	P/P	90 - 110
Selenium	102	105	P/P	90 - 110
Thallium	91.0	92.6	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A96567

Included Lab Sample IDs: 2144144

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	105	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96570

Included Lab Sample IDs: 2144138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.6	97.6	P/P	90 - 110
Sulfate	97.5	98.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96574

Included Lab Sample IDs: 2144141, 2144147

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	100	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96588

Included Lab Sample IDs: 2144162, 2144163

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.2	106	P/P	50 - 150
Acetaminophen	151	147	P/P	60 - 160
Acetamiprid	138	139	P/P	50 - 150
Afidopyropen	131	81.9	P/P	50 - 150
Bentazon	81.6	82.7	P/P	50 - 160
Benzovindiflupyr	122	118	P/P	50 - 150
Carbamazepine	127	128	P/P	60 - 150
Clothianidin	117	112	P/P	60 - 150
Dinotefuran	138	129	P/P	50 - 150
Diuron	142	136	P/P	60 - 150
Fenuron	139	113	P/P	60 - 150
Fluridone	125	118	P/P	60 - 160
Hydrocodone	143	124	P/P	60 - 150
Ibuprofen	111	113	P/P	50 - 160
Imazapyr	118	109	P/P	50 - 150
Imazapyr	93.8	100	P/P	50 - 150
Imidacloprid	122	129	P/P	60 - 150
Linuron	122	87.6	P/P	60 - 150
Mandestrobin	125	120	P/P	50 - 150
MCPP	91.6	94.7	P/P	50 - 150
Naproxen	65.5	78.3	P/P	50 - 160
Primidone	139	118	P/P	60 - 150
Pyraclostrobin	125	120	P/P	60 - 150
Thiamethoxam	130	135	P/P	50 - 150
Tolfenpyrad	121	114	P/P	60 - 150
Triclopyr	76.5	98.1	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96610

Included Lab Sample IDs: 2144164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96637

Included Lab Sample IDs: 2144164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	105	105	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			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					4.79	
	Turbidity					4.88	
EPA 200.7 Rev. 4.4	Barium	100	97.2	98.8	98.7		1.61
	Calcium	104	109	103			0.840
	Iron	104	104	104	102		0.179
	Magnesium	103	103	101			0.310
	Potassium	101	101	102	99.4		0.634
	Sodium	103	102	103	101		0.642
	Zinc	103	97.1	98.9	100		1.31
EPA 200.8 Rev. 5.4	Aluminum	97.7	94.3	91.9	93.1		2.57
	Antimony	105	106	108	107		1.53
	Arsenic	98.9	99.4	98.9	99.9		0.505
	Boron	109	104	104	109		0.0271
	Cadmium	103	103	102	103		0.592
	Chromium	99.5	103	102	103		1.44
	Copper	96.9	91.4	90.3	91.7		1.16
	Lead	107	109	109	109		0.103
	Nickel	97.5	94.4	93.0	93.5		1.43
	Selenium	98.7	93.3	92.4	95.8		0.861
	Silver	101	101	102	101		1.20
	Thallium	103	104	106	105		1.80
EPA 300.0	Bromide	103	99.9	102	99.4		1.04
EPA 300.0 Rev. 2.1	Chloride	99.6	99.9	99.9			0.0379
	Chloride	99.8	100	97.4		1.34	
	Sulfate	101	101	101			0.0274
	Sulfate	100	99.9	98.8		0.585	
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	104			1.86
	Ammonia-N	100	98.1	96.5			1.37
	Ammonia-N	101	104	105			1.51
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	94.0	104	108			3.75
	Kjeldahl Nitrogen	109	105	106			1.20
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	102			0.705
	NO2NO3-N	99.5	99.5	99.5			0.0
EPA 365.1 Rev. 2.0	Total-P	108	107	108			0.229
	Total-P	104	104	103			0.290
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	97.9	98.9			0.594
	O-Phosphate-P	99.8	98.5	97.5			0.544
EPA 8321B	2,4-D	140					29.6
	Acesulfame K	146	117	120			2.54
	Acetaminophen	83.2	45.1	97.8			73.8
	Acetamiprid	83.5	112	80.8			32.0
	Afidopyropen	86.1	110	65.4			51.2
	AMPA	95.8	102	101			0.966
	Bentazon	82.6					18.5
	Benzovindiflupyr	96.2	107	93.2			13.9
	Carbamazepine	98.8	100	90.4			10.1
	Clothianidin	83.3	111	108			2.80
	Dinotefuran	84.2	55.7	117			71.0
	Diuron	95.1	89.8	81.6			8.55
	Endothall	82.5	88.9	87.5			1.64
	Fenuron	97.7	99.7	64.4			43.0
	Fluridone	102					12.0
	Glufosinate	95.3	108	87.3			21.5
	Glyphosate	104	103	101			1.52

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Hydrocodone	97.4	33.5	98.2		98.2
	Ibuprofen	78.6	84.2	73.9		12.9
	Imazapyr	109				5.84
	Imidacloprid	104	192	158		15.4
	Linuron	82.9	77.0	77.9		1.12
	Mandestrobin	106	112	98.0		13.4
	MCPP	172	211	156		28.7
	Naproxen	85.3	123	106		15.0
	Primidone	98.5	104	96.1		7.47
	Pyraclostrobin	105	123	105		15.5
	Sucralose	92.4	69.2	68.3		1.29
	Thiamethoxam	109	165	165		0.0652
	Tolfenpyrad	68.6	78.8	64.3		20.2
	Triclopyr	89.3	161	106		40.9
SM 2120 B	Color (true)	101				5.49
SM 2320 B-97	Total Alkalinity	104				0.381
SM 2540 C-97	TDS					4.16
SM 4500 F-C-97	Fluoride	99.8	99.1	99.7		0.482
SM 5310 B-00	Organic Carbon	96.3	96.1	95.6		0.332

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2144138, 2144141, 2144144, 2144147
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2144164
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2144164
EPA 300.0 / E31780	Bromide in aqueous matrices	2144144
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2144138, 2144141, 2144147
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2144138, 2144141, 2144147
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2144139, 2144142, 2144145, 2144148
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2144139, 2144142, 2144145, 2144148
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2144139, 2144142, 2144145, 2144148
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2144139, 2144142, 2144145, 2144148
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2144140, 2144143, 2144146, 2144149
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2144162, 2144163
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2144162, 2144163
SM 2120 B / E31780	True Color measured at 450 nm	2144138, 2144141, 2144147
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2144138, 2144141, 2144144, 2144147
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2144138, 2144141, 2144147
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2144138, 2144141, 2144144, 2144147
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2144138, 2144141, 2144144, 2144147
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2144139, 2144142, 2144145, 2144148

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	12/13/2019			12/13/2019 17:27	Yen Ta	2144138, 2144141, 2144144, 2144147
EPA 200.7 Rev. 4.4	12/13/2019	12/17/2019 15:50	Elliott D. Healy	12/18/2019 16:03	Betina Topolski	2144164
EPA 200.8 Rev. 5.4	12/13/2019	12/17/2019 15:50	Elliott D. Healy	12/24/2019 02:24	Justin Cutchin	2144164
	12/13/2019	12/17/2019 15:50	Elliott D. Healy	12/27/2019 18:55	Alexander Thompson	2144164
	12/13/2019	12/17/2019 15:50	Elliott D. Healy	12/30/2019 17:20	Alexander Thompson	2144164
EPA 300.0	12/13/2019			12/24/2019 02:52	Jhamieka S. Greenwood	2144144
EPA 300.0 Rev. 2.1	12/13/2019			12/24/2019 10:57	Jhamieka S. Greenwood	2144141
	12/13/2019			12/24/2019 11:09	Jhamieka S. Greenwood	2144147
	12/13/2019			12/25/2019 08:15	Jhamieka S. Greenwood	2144138
EPA 350.1 Rev. 2.0	12/13/2019			12/23/2019 11:47	Ping Hua	2144139
	12/13/2019			12/23/2019 11:53	Ping Hua	2144142
	12/13/2019			12/23/2019 12:03	Ping Hua	2144148
	12/13/2019			12/23/2019 12:30	Ping Hua	2144145
EPA 351.2 Rev. 2.0	12/13/2019	12/18/2019 10:14	Sima Feizi	12/19/2019 15:46	Jhamieka S. Greenwood	2144139
	12/13/2019	12/18/2019 10:14	Sima Feizi	12/19/2019 15:50	Jhamieka S. Greenwood	2144142
	12/13/2019	12/18/2019 10:14	Sima Feizi	12/19/2019 15:52	Jhamieka S. Greenwood	2144148
	12/13/2019	12/18/2019 11:30	Sima Feizi	12/19/2019 12:41	Jhamieka S. Greenwood	2144145
EPA 353.2 Rev. 2.0	12/13/2019			12/19/2019 11:26	Beverly Y. Sanders	2144145
	12/13/2019			12/20/2019 10:52	Beverly Y. Sanders	2144139
	12/13/2019			12/20/2019 10:53	Beverly Y. Sanders	2144142
	12/13/2019			12/20/2019 10:54	Beverly Y. Sanders	2144148
EPA 365.1 Rev. 2.0	12/13/2019	12/17/2019 15:15	Lipi Saha	12/18/2019 13:40	Benjamin T. Nordmann	2144145
	12/13/2019	12/18/2019 14:20	Lipi Saha	12/19/2019 11:05	Benjamin T. Nordmann	2144139
	12/13/2019	12/18/2019 14:20	Lipi Saha	12/19/2019 11:06	Benjamin T. Nordmann	2144142
	12/13/2019	12/18/2019 14:20	Lipi Saha	12/19/2019 11:07	Benjamin T. Nordmann	2144148
EPA 365.1 Rev. 2.0 dissolved	12/13/2019			12/13/2019 18:09	Samantha Davila	2144140
	12/13/2019			12/13/2019 18:40	Samantha Davila	2144146
	12/13/2019			12/13/2019 19:03	Samantha Davila	2144143
	12/13/2019			12/13/2019 19:04	Samantha Davila	2144149
EPA 8321B	12/13/2019	12/17/2019 09:45	Rebecca Ware	12/17/2019 22:22	Rebecca Ware	2144162
	12/13/2019	12/17/2019 09:45	Rebecca Ware	12/17/2019 22:33	Rebecca Ware	2144163
	12/13/2019	12/17/2019 09:45	Rebecca Ware	12/18/2019 13:37	Rebecca Ware	2144163
	12/13/2019	12/17/2019 09:45	Rebecca Ware	12/18/2019 15:30	Rebecca Ware	2144162
	12/13/2019	12/17/2019 09:45	Rebecca Ware	12/23/2019 22:24	Mohammad Ghaffari	2144162
	12/13/2019	12/17/2019 09:45	Rebecca Ware	12/23/2019 22:38	Mohammad Ghaffari	2144163
	12/13/2019	12/18/2019 11:00	Hoor Shaik	12/24/2019 22:40	Juyoung Kim	2144162
	12/13/2019	12/18/2019 11:00	Hoor Shaik	12/24/2019 23:15	Juyoung Kim	2144163
	12/13/2019	12/18/2019 11:00	Hoor Shaik	12/27/2019 02:53	Juyoung Kim	2144162
SM 2120 B	12/13/2019			12/13/2019 19:05	Madeline Funaro	2144138, 2144141
	12/13/2019			12/13/2019 19:24	Madeline Funaro	2144147

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	12/13/2019			12/19/2019 12:39	Dale L. Simmons	2144141
	12/13/2019			12/19/2019 12:51	Dale L. Simmons	2144147
	12/13/2019			12/19/2019 13:44	Dale L. Simmons	2144138
	12/13/2019			12/19/2019 13:56	Dale L. Simmons	2144144
SM 2540 C-97	12/13/2019			12/17/2019 16:36	Yijie Li	2144138, 2144141, 2144147
SM 2540 D-97	12/13/2019			12/17/2019 16:36	Yijie Li	2144138, 2144141, 2144144, 2144147
SM 4500 F-C-97	12/13/2019			12/19/2019 12:39	Dale L. Simmons	2144141
	12/13/2019			12/19/2019 12:51	Dale L. Simmons	2144147
	12/13/2019			12/19/2019 13:44	Dale L. Simmons	2144138
	12/13/2019			12/19/2019 13:56	Dale L. Simmons	2144144
SM 5310 B-00	12/13/2019			12/18/2019 02:39	Madeline Funaro	2144139
	12/13/2019			12/18/2019 02:52	Madeline Funaro	2144142
	12/13/2019			12/18/2019 03:05	Madeline Funaro	2144145
	12/13/2019			12/18/2019 03:20	Madeline Funaro	2144148