

Chemical Analysis Report

SW-DIST-2022-06-21-01

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

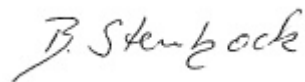
Event Description: **2022 Run 6**
Request ID: **RQ-2022-06-20-03**
Customer: **SW-DIST**
Project ID: **SMP**

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Date Certified: 12-JUL-2022 13:23



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: Wildcat Creek N Branch@Scramble Dr

Collection Date/Time: 06/20/2022 10:00

Field ID: G2SW0112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335816	EPA 8321B	2,4-D	0.0096		ug/L	P415542	
		Acesulfame K	0.10	U	ug/L	P415517	
		AMPA	1.3		ug/L	P415517	
		2,4,5-T	0.0040	U	ug/L	P415542	MS, RPD
		Acetaminophen	0.0080	U	ug/L	P415542	
		Acetamiprid	0.0020	U	ug/L	P415542	
		Endothall	0.25	U	ug/L	P415517	
		Glufosinate	0.10	U	ug/L	P415517	
		Glyphosate	1.2		ug/L	P415517	
		Afidopyropen	0.0020	U	ug/L	P415542	
		Bentazon	0.041		ug/L	P415542	
		Sucralose	1.0		ug/L	P415517	
		Benzovindiflupyr	0.0020	U	ug/L	P415542	
		Carbamazepine	0.0014	I	ug/L	P415542	
		Clothianidin	0.046		ug/L	P415542	
		Dinotefuran	0.010		ug/L	P415542	
		Diuron	0.012		ug/L	P415542	
		Fenuron	0.032	U	ug/L	P415542	
		Fluridone	8.0E-04	U	ug/L	P415542	
		Imazapyr	0.64		ug/L	P415542	
		Hydrocodone	0.0020	U	ug/L	P415542	
		Ibuprofen	0.080	U	ug/L	P415542	
		Imidacloprid	0.11		ug/L	P415542	MS
		Linuron	0.0040	U	ug/L	P415542	
		Mandestrobin	0.0020	U	ug/L	P415542	
		MCPP	0.0040	U	ug/L	P415542	
		Naproxen	0.0080	U	ug/L	P415542	MS, RPD
		Primidone	0.0059	I	ug/L	P415542	
		Pyraclostrobin	0.0020	U	ug/L	P415542	
		Silvex	0.0040	U	ug/L	P415542	
		Thiamethoxam	0.22		ug/L	P415542	MS
		Tolfenpyrad	0.0020	U	ug/L	P415542	
		Triclopyr	0.0040	U	ug/L	P415542	MS

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Wildcat Creek S Branch@Stephens Rd

Collection Date/Time: 06/20/2022 10:40

Field ID: G2SW0102

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335803	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P415502	
	SM 2320 B-2011	Total Alkalinity	55		mg CaCO3/L	P415767	
	SM 2540 D-2011	TSS	3	I	mg/L	P415895	
	SM 4500-F- C-2011	Fluoride	0.25		mg F/L	P415771	
2335804	EPA 350.1 Rev. 2.0	Ammonia-N	0.057		mg N/L	P415991	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P415785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P416201	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P415811	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P415622	
2335827	EPA 8321B	2,4-D	0.0031	I	ug/L	P415542	
		Acesulfame K	0.10	U	ug/L	P415517	
		AMPA	0.10	U	ug/L	P415517	
		2,4,5-T	0.0040	U	ug/L	P415542	MS, RPD
		Acetaminophen	0.0080	U	ug/L	P415542	
		Acetamiprid	0.0020	U	ug/L	P415542	
		Endothall	0.25	U	ug/L	P415517	
		Glufosinate	0.10	U	ug/L	P415517	
		Glyphosate	0.10	U	ug/L	P415517	
		Afidopyropen	0.0020	U	ug/L	P415542	
		Bentazon	8.0E-04	U	ug/L	P415542	
		Sucralose	0.016	I	ug/L	P415517	
		Benzovindiflupyr	0.0020	U	ug/L	P415542	
		Carbamazepine	8.0E-04	U	ug/L	P415542	
		Clothianidin	0.0092		ug/L	P415542	
		Dinotefuran	0.0020	U	ug/L	P415542	
		Diuron	0.015		ug/L	P415542	
		Fenuron	0.032	U	ug/L	P415542	
		Fluridone	8.0E-04	U	ug/L	P415542	
		Imazapyr	0.011	I	ug/L	P415542	
		Hydrocodone	0.0020	U	ug/L	P415542	
		Ibuprofen	0.080	U	ug/L	P415542	
		Imidacloprid	0.021		ug/L	P415542	MS
		Linuron	0.0040	U	ug/L	P415542	
		Mandestrobin	0.0020	U	ug/L	P415542	
		MCPP	0.0040	U	ug/L	P415542	
		Naproxen	0.0080	U	ug/L	P415542	MS, RPD
		Primidone	0.0040	U	ug/L	P415542	
		Pyraclostrobin	0.0020	U	ug/L	P415542	
		Silvex	0.0040	U	ug/L	P415542	
		Thiamethoxam	0.23		ug/L	P415542	MS
		Tolfenpyrad	0.0020	U	ug/L	P415542	
		Triclopyr	0.0040	U	ug/L	P415542	MS

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: McMullen Creek @ Marina

Collection Date/Time: 06/20/2022 11:10

Field ID: G1SW0120

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335800	DEP SOP: NU-094-1	Color (true)**	28		PCU	P415506	
	EPA 180.1 Rev. 2.0	Turbidity	3.1		NTU	P415502	
	EPA 300.0 Rev. 2.1	Chloride	1.5E+04		mg Cl/L	P415942	
		Sulfate	2.1E+03		mg SO4/L	P415947	
	SM 2320 B-2011	Total Alkalinity	134		mg CaCO3/L	P415769	
	SM 2540 C-2011	TDS	2.61E+04		mg/L	P415905	
	SM 2540 D-2011	TSS	4	I	mg/L	P415897	
	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P415773	
2335801	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P415673	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P415785	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P415835	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P415811	
	SM 5310 B-2011	Organic Carbon	7.5		mg C/L	P415706	
2335817	EPA 200.7 Rev. 4.4	Calcium	342		mg/L	P415704	
		Iron	120	U	ug/L	P415704	
		Magnesium	1.03E+03		mg/L	P415704	
		Potassium	320		mg/L	P415704	
		Sodium	8.42E+03		mg/L	P415704	
		Strontium	6.14E+03		ug/L	P415704	
		Tin	300	U	ug/L	P415704	
		Titanium	4.3	I	ug/L	P415704	
		Vanadium	8.0	U	ug/L	P415704	
		Zinc	20	U	ug/L	P415704	
	EPA 200.8 Rev. 5.4	Aluminum	100	U	ug/L	P415704	
		Antimony	0.20	U	ug/L	P415704	
		Arsenic	3.62		ug/L	P415704	
		Barium	15.3		ug/L	P415704	
		Beryllium	0.10	U	ug/L	P415704	
		Boron**	3.34E+03		ug/L	P415704	
		Cadmium	0.080	U	ug/L	P415704	
		Chromium	1.6	U	ug/L	P415704	
		Cobalt	0.37		ug/L	P415704	
		Copper	1.6	U	ug/L	P415704	
		Lead	2.0	U	ug/L	P415704	
		Manganese	39.7		ug/L	P415704	
		Molybdenum	8.9		ug/L	P415704	
		Nickel	2.0	U	ug/L	P415704	
		Selenium	0.80	U	ug/L	P415704	
		Silver	0.040	U	ug/L	P415704	
		Thallium	1.0	U	ug/L	P415704	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

Sample Location: McMullen Creek @ 28th Ave

Collection Date/Time: 06/20/2022 11:45

Field ID: G1SW0121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2335818	EPA 200.7 Rev. 4.4	Calcium	102		mg/L	P415516	
		Iron	98	I	ug/L	P415516	
		Magnesium	42.1		mg/L	P415516	
		Potassium	2.6		mg/L	P415516	
		Sodium	24.8		mg/L	P415516	
		Strontium	5.54E+03		ug/L	P415516	
		Tin	3.4	I	ug/L	P415516	
		Titanium	0.92	I	ug/L	P415516	
		Vanadium	2.0	U	ug/L	P415516	
		Zinc	5.0	U	ug/L	P415516	
	EPA 200.8 Rev. 5.4	Aluminum	34		ug/L	P415516	
		Antimony	0.13	I	ug/L	P415516	
		Arsenic	2.47		ug/L	P415516	
		Barium	25.2		ug/L	P415516	
		Beryllium	0.010	U	ug/L	P415516	
		Boron**	46.8		ug/L	P415516	
		Cadmium	0.020	U	ug/L	P415516	
		Chromium	0.40	U	ug/L	P415516	
		Cobalt	0.036	I	ug/L	P415516	
		Copper	1.23		ug/L	P415516	
		Lead	0.20	U	ug/L	P415516	
		Manganese	12.3		ug/L	P415516	
		Molybdenum	1.10		ug/L	P415516	
		Nickel	0.50	U	ug/L	P415516	
		Selenium	0.20	U	ug/L	P415516	
		Silver	0.010	U	ug/L	P415516	
		Thallium	0.10	U	ug/L	P415516	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P415506

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415502

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415516

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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415704

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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Component	Result	Code	Units
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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 200.8 Rev. 5.4
Batch ID: P415704

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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 Rev. 2.1
Batch ID: P415942

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415947

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415673

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P415991

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P415785

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P415835

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P416201

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P415811

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

Reference Method: EPA 8321B
 Batch ID: P415517

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: P415542

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P415542

Component	Result	Code	Units
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P415767

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P415769

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P415905

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P415895

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P415897

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P415771

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P415622

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

Reference Method: SM 5310 B-2011
Batch ID: P415706

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P415506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	91.7		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.5		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	107		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	102		P	85 - 115
Sodium	99.1		P	85 - 115
Strontium	98.3		P	85 - 115
Tin	101		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	95.8		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	106		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	103		P	85 - 115
Sodium	99.1		P	85 - 115
Strontium	104		P	85 - 115
Tin	107		P	85 - 115
Titanium	104		P	85 - 115
Vanadium	95.4		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	106		P	85 - 115
Antimony	108		P	85 - 115
Arsenic	99.9		P	85 - 115
Barium	109		P	85 - 115
Beryllium	101		P	85 - 115
Boron	106		P	85 - 115
Cadmium	106		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	103		P	85 - 115
Copper	99.9		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	98.6		P	85 - 115
Manganese	107		P	85 - 115
Molybdenum	103		P	85 - 115
Nickel	102		P	85 - 115
Selenium	101		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415704

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	98.4		P	85 - 115
Arsenic	98.3		P	85 - 115
Barium	101		P	85 - 115
Beryllium	89.8		P	85 - 115
Boron	107		P	85 - 115
Cadmium	98.1		P	85 - 115
Chromium	95.5		P	85 - 115
Cobalt	97.5		P	85 - 115
Copper	95.4		P	85 - 115
Lead	98.9		P	85 - 115
Manganese	96.4		P	85 - 115
Molybdenum	99.1		P	85 - 115
Nickel	97.9		P	85 - 115
Selenium	95.0		P	85 - 115
Silver	96.9		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

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

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	95.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

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

Reference Method: EPA 8321B
Batch ID: P415517

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	86.3		P	40 - 150
AMPA	107		P	40 - 150
Endothall	105		P	40 - 150
Glufosinate	117		P	40 - 150
Glyphosate	101		P	40 - 150
Sucralose	97.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P415542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	62.0		P	40 - 150
2,4,5-T	40.5		P	40 - 150
Acetaminophen	75.5		P	30 - 150
Acetamiprid	70.1		P	40 - 150
Afidopyropen	56.4		P	30 - 150
Bentazon	72.6		P	30 - 150
Benzovindiflupyr	80.1		P	40 - 150
Carbamazepine	82.6		P	40 - 150
Clothianidin	89.5		P	40 - 150
Dinotefuran	87.8		P	40 - 150
Diuron	75.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P415542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	85.8		P	40 - 150
Fluridone	81.5		P	40 - 150
Hydrocodone	79.6		P	40 - 150
Ibuprofen	67.0		P	40 - 150
Imazapyr	82.4		P	40 - 150
Imidacloprid	94.6		P	40 - 150
Linuron	80.9		P	40 - 150
Mandestrobin	79.8		P	40 - 150
MCPP	74.9		P	40 - 150
Naproxen	62.5		P	40 - 150
Primidone	94.8		P	40 - 150
Pyraclostrobin	66.0		P	40 - 150
Silvex	45.1		P	40 - 150
Thiamethoxam	86.5		P	40 - 150
Tolfenpyrad	37.2		P	30 - 150
Triclopyr	46.9		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P415767

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P415769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P415771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P415706

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P415516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334462	Calcium	96.4		P	80 - 120
2334462	Iron	109		P	80 - 120
2334462	Magnesium	109		P	80 - 120
2334462	Potassium	101		P	80 - 120
2334462	Sodium	103		P	80 - 120
2334462	Strontium	101		P	80 - 120
2334462	Tin	103		P	80 - 120
2334462	Titanium	106		P	80 - 120
2334462	Vanadium	102		P	80 - 120
2334462	Zinc	103		P	80 - 120
2336029	Calcium	98.6		P	80 - 120
2336029	Iron	104	107	P/P	80 - 120
2336029	Magnesium	104	108	P/P	80 - 120
2336029	Potassium	100	101	P/P	80 - 120
2336029	Sodium	95.5	97.6	P/P	80 - 120
2336029	Strontium	97.7	99.2	P/P	80 - 120
2336029	Tin	97.8	99.7	P/P	80 - 120
2336029	Titanium	102	103	P/P	80 - 120
2336029	Vanadium	94.9	95.8	P/P	80 - 120
2336029	Zinc	100	101	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P415704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335868	Iron	105	105	P/P	70 - 130
2335868	Tin	105	112	P/P	70 - 130
2335868	Titanium	100	101	P/P	70 - 130
2335868	Vanadium	96.6	95.8	P/P	70 - 130
2335868	Zinc	101	101	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334462	Aluminum	105		P	80 - 120
2334462	Antimony	109		P	80 - 120
2334462	Arsenic	101		P	80 - 120
2334462	Barium	109		P	80 - 120
2334462	Beryllium	101		P	80 - 120
2334462	Boron	108		P	80 - 120
2334462	Cadmium	108		P	80 - 120
2334462	Chromium	104		P	80 - 120
2334462	Cobalt	103		P	80 - 120
2334462	Copper	97.8		P	80 - 120
2334462	Lead	98.8		P	80 - 120
2334462	Manganese	107		P	80 - 120
2334462	Molybdenum	106		P	80 - 120
2334462	Nickel	99.9		P	80 - 120
2334462	Selenium	99.9		P	80 - 120
2334462	Silver	104		P	80 - 120
2334462	Thallium	105		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336029	Aluminum	108	108	P/P	80 - 120
2336029	Antimony	105	109	P/P	80 - 120
2336029	Arsenic	102	103	P/P	80 - 120
2336029	Barium	109	110	P/P	80 - 120
2336029	Beryllium	102	104	P/P	80 - 120
2336029	Boron	108	106	P/P	80 - 120
2336029	Cadmium	103	104	P/P	80 - 120
2336029	Chromium	102	104	P/P	80 - 120
2336029	Cobalt	103	105	P/P	80 - 120
2336029	Copper	102	104	P/P	80 - 120
2336029	Lead	99.4	99.7	P/P	80 - 120
2336029	Manganese	105	107	P/P	80 - 120
2336029	Molybdenum	104	106	P/P	80 - 120
2336029	Nickel	99.6	102	P/P	80 - 120
2336029	Selenium	103	103	P/P	80 - 120
2336029	Silver	103	104	P/P	80 - 120
2336029	Thallium	105	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415704

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335868	Aluminum	101	103	P/P	70 - 130
2335868	Antimony	96.8	96.1	P/P	70 - 130
2335868	Arsenic	110	107	P/P	70 - 130
2335868	Barium	99.7	98.7	P/P	70 - 130
2335868	Beryllium	108	112	P/P	70 - 130
2335868	Cadmium	90.8	89.7	P/P	70 - 130
2335868	Chromium	95.3	93.4	P/P	70 - 130
2335868	Cobalt	111	109	P/P	70 - 130
2335868	Copper	102	101	P/P	70 - 130
2335868	Lead	102	101	P/P	70 - 130
2335868	Manganese	97.0	92.1	P/P	70 - 130
2335868	Molybdenum	109	109	P/P	70 - 130
2335868	Nickel	114	111	P/P	70 - 130
2335868	Selenium	99.7	97.6	P/P	70 - 130
2335868	Silver	89.1	87.4	P/P	70 - 130
2335868	Thallium	104	104	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336037	Chloride	98.2		P	90 - 110
2336038	Chloride	95.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336037	Sulfate	98.3		P	90 - 110
2336038	Sulfate	96.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2334346	Ammonia-N	98.2	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335950	Ammonia-N	95.4	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335801	Kjeldahl Nitrogen	110	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337061	NO2NO3-N	91.4	91.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335950	NO2NO3-N	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335406	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P415517

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335341	Acesulfame K	80.6	79.9	P/P	40 - 150
2335341	AMPA	104	100	P/P	40 - 150
2335341	Endothall	108	112	P/P	40 - 150
2335341	Glufosinate	94.8	97.4	P/P	40 - 150
2335341	Glyphosate	87.7	94.8	P/P	40 - 150
2335341	Sucralose	94.0	96.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P415542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335680	2,4-D	80.4	55.2	P/P	40 - 150
2335680	2,4,5-T	43.1	29.3	P/F	40 - 150
2335680	Acetaminophen	96.2	93.8	P/P	30 - 150
2335680	Acetamiprid	93.2	83.2	P/P	40 - 150
2335680	Afidopyropen	84.1	66.4	P/P	30 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P415542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335680	Benzovindiflupyr	94.2	87.7	P/P	40 - 150
2335680	Carbamazepine	92.8	94.4	P/P	40 - 150
2335680	Clothianidin	112	108	P/P	40 - 150
2335680	Dinotefuran	137	129	P/P	40 - 150
2335680	Diuron	83.2	77.9	P/P	40 - 150
2335680	Fenuron	82.5	76.4	P/P	40 - 150
2335680	Hydrocodone	99.1	91.1	P/P	40 - 150
2335680	Ibuprofen	49.7	47.8	P/P	40 - 150
2335680	Imidacloprid	158	137	F/P	40 - 150
2335680	Linuron	75.2	82.1	P/P	40 - 150
2335680	Mandestrobin	79.6	75.5	P/P	40 - 150
2335680	MCPPP	66.6	59.3	P/P	40 - 150
2335680	Naproxen	27.6	58.0	F/P	40 - 150
2335680	Primidone	92.5	93.2	P/P	40 - 150
2335680	Pyraclostrobin	86.0	79.5	P/P	40 - 150
2335680	Silvex	52.5	42.6	P/P	40 - 150
2335680	Thiamethoxam	150	142	F/P	40 - 150
2335680	Tolfenpyrad	51.6	50.3	P/P	30 - 150
2335680	Triclopyr	44.5	35.1	P/F	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P415771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335661	Fluoride	99.9	99.9	P/P	94 - 104

Reference Method: SM 4500-F- C-2011

Batch ID: P415773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333620	Fluoride	99.0	99.0	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P415622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335689	Organic Carbon	97.1	97.6	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P415706

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2335829	Organic Carbon	96.1	95.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P415506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335777	Color (true)	0.0114	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335624	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336029	Calcium	1.02	Spike	P	0 - 20
2336029	Iron	3.02	Spike	P	0 - 20
2336029	Magnesium	2.62	Spike	P	0 - 20
2336029	Potassium	1.17	Spike	P	0 - 20
2336029	Sodium	1.35	Spike	P	0 - 20
2336029	Strontium	1.56	Spike	P	0 - 20
2336029	Tin	1.97	Spike	P	0 - 20
2336029	Titanium	0.697	Spike	P	0 - 20
2336029	Vanadium	0.898	Spike	P	0 - 20
2336029	Zinc	1.02	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P415704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335868	Calcium	3.12	Spike	P	0 - 20
2335868	Iron	0.0577	Spike	P	0 - 20
2335868	Magnesium	3.46	Spike	P	0 - 20
2335868	Potassium	3.71	Spike	P	0 - 20
2335868	Sodium	2.17	Spike	P	0 - 20
2335868	Strontium	1.02	Spike	P	0 - 20
2335868	Tin	6.07	Spike	P	0 - 20
2335868	Titanium	0.468	Spike	P	0 - 20
2335868	Vanadium	0.749	Spike	P	0 - 20
2335868	Zinc	0.781	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P415516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336029	Aluminum	0.0885	Spike	P	0 - 20
2336029	Antimony	3.15	Spike	P	0 - 20
2336029	Arsenic	0.482	Spike	P	0 - 20
2336029	Barium	1.24	Spike	P	0 - 20
2336029	Beryllium	2.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336029	Boron	1.65	Spike	P	0 - 20
2336029	Cadmium	0.997	Spike	P	0 - 20
2336029	Chromium	2.58	Spike	P	0 - 20
2336029	Cobalt	1.63	Spike	P	0 - 20
2336029	Copper	1.81	Spike	P	0 - 20
2336029	Lead	0.232	Spike	P	0 - 20
2336029	Manganese	1.39	Spike	P	0 - 20
2336029	Molybdenum	1.49	Spike	P	0 - 20
2336029	Nickel	1.95	Spike	P	0 - 20
2336029	Selenium	0.426	Spike	P	0 - 20
2336029	Silver	1.10	Spike	P	0 - 20
2336029	Thallium	0.883	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P415704

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335868	Aluminum	2.09	Spike	P	0 - 20
2335868	Antimony	0.707	Spike	P	0 - 20
2335868	Arsenic	2.36	Spike	P	0 - 20
2335868	Barium	0.946	Spike	P	0 - 20
2335868	Beryllium	3.46	Spike	P	0 - 20
2335868	Boron	5.39	Spike	P	0 - 20
2335868	Cadmium	1.23	Spike	P	0 - 20
2335868	Chromium	2.02	Spike	P	0 - 20
2335868	Cobalt	1.79	Spike	P	0 - 20
2335868	Copper	1.40	Spike	P	0 - 20
2335868	Lead	0.827	Spike	P	0 - 20
2335868	Manganese	3.28	Spike	P	0 - 20
2335868	Molybdenum	0.684	Spike	P	0 - 20
2335868	Nickel	2.10	Spike	P	0 - 20
2335868	Selenium	2.08	Spike	P	0 - 20
2335868	Silver	1.94	Spike	P	0 - 20
2335868	Thallium	0.392	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336037	Chloride	0.461	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P415947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336037	Sulfate	0.155	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2334346	Ammonia-N	1.78	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335950	Ammonia-N	2.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335801	Kjeldahl Nitrogen	2.46	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337061	NO2NO3-N	0.546	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335950	NO2NO3-N	2.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P415811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335406	Total-P	0.489	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P415517

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335341	Acesulfame K	0.916	Spike	P	0 - 30
2335341	AMPA	3.24	Spike	P	0 - 30
2335341	Endothall	3.05	Spike	P	0 - 30
2335341	Glufosinate	2.62	Spike	P	0 - 30
2335341	Glyphosate	7.05	Spike	P	0 - 30
2335341	Sucralose	2.98	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P415542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335680	2,4-D	19.8	Spike	P	0 - 30
2335680	2,4,5-T	38.2	Spike	F	0 - 30
2335680	Acetaminophen	2.51	Spike	P	0 - 30
2335680	Acetamiprid	11.4	Spike	P	0 - 30
2335680	Afidopyropen	23.5	Spike	P	0 - 30
2335680	Bentazon	5.57	Spike	P	0 - 30
2335680	Benzovindiflupyr	7.18	Spike	P	0 - 30
2335680	Carbamazepine	1.75	Spike	P	0 - 30
2335680	Clothianidin	4.11	Spike	P	0 - 30
2335680	Dinotefuran	5.75	Spike	P	0 - 30
2335680	Diuron	5.60	Spike	P	0 - 30
2335680	Fenuron	7.69	Spike	P	0 - 30
2335680	Fluridone	1.26	Spike	P	0 - 30
2335680	Hydrocodone	8.37	Spike	P	0 - 30
2335680	Ibuprofen	3.99	Spike	P	0 - 30
2335680	Imazapyr	3.68	Spike	P	0 - 30
2335680	Imidacloprid	13.8	Spike	P	0 - 30
2335680	Linuron	8.74	Spike	P	0 - 30
2335680	Mandestrobin	5.25	Spike	P	0 - 30
2335680	MCPP	11.6	Spike	P	0 - 30
2335680	Naproxen	71.1	Spike	F	0 - 30
2335680	Primidone	0.743	Spike	P	0 - 30
2335680	Pyraclostrobin	7.85	Spike	P	0 - 30
2335680	Silvex	20.8	Spike	P	0 - 30
2335680	Thiamethoxam	5.99	Spike	P	0 - 30
2335680	Tolfenpyrad	2.45	Spike	P	0 - 30
2335680	Triclopyr	23.5	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P415767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335661	Total Alkalinity	0.256	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P415769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335322	Total Alkalinity	0.391	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P415905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336687	TDS	6.27	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P415771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335661	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P415773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333620	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P415622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335689	Organic Carbon	0.372	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P415706

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2335829	Organic Carbon	0.399	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2335816

Field Sample ID: G2SW0112

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	98.2	P	30 - 160
EPA 8321B	Diuron-d6	61.9	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	86.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.9	P	30 - 160
EPA 8321B	Primidone-d5	105	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	30 - 160

Lab Sample ID: 2335827

Field Sample ID: G2SW0102

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	63.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.0	P	30 - 160
EPA 8321B	Diuron-d6	70.3	P	30 - 160
EPA 8321B	Endothall-d6	64.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	40.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	57.9	P	30 - 160
EPA 8321B	Primidone-d5	106	P	30 - 160
EPA 8321B	Sucralose-d6	44.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A112963

Included Lab Sample IDs: 2335800, 2335803

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

Reference Method: DEP SOP: NU-094-1

Run ID: A112965

Included Lab Sample IDs: 2335800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.2	97.6	P/P	85 - 115

Reference Method: SM 5310 B-2011

Run ID: A113000

Included Lab Sample IDs: 2335804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113016

Included Lab Sample IDs: 2335816, 2335827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	104	P/P	60 - 160
Endothall	81.9	80.6	P/P	60 - 160
Glufosinate	89.6	92.2	P/P	60 - 160
Glyphosate	98.7	102	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113018

Included Lab Sample IDs: 2335801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	97.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A113025

Included Lab Sample IDs: 2335818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	95.2	P/P	90 - 110
Iron	103	96.0	P/P	90 - 110
Magnesium	104	96.9	P/P	90 - 110
Potassium	100	93.8	P/P	90 - 110
Sodium	99.5	91.4	P/P	90 - 110
Strontium	100	94.3	P/P	90 - 110
Tin	102	94.6	P/P	90 - 110
Titanium	103	96.2	P/P	90 - 110
Vanadium	102	96.2	P/P	90 - 110
Zinc	102	95.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A113034

Included Lab Sample IDs: 2335816, 2335827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	100	99.8	P/P	50 - 150
2,4,5-T	99.1	112	P/P	50 - 150
Acetaminophen	96.6	98.6	P/P	60 - 160
Acetamiprid	100	105	P/P	50 - 150
Afidopyropen	100	89.6	P/P	50 - 150
Bentazon	93.8	94.5	P/P	50 - 160
Benzovindiflupyr	108	107	P/P	50 - 150
Carbamazepine	99.0	101	P/P	60 - 150
Clothianidin	126	108	P/P	60 - 150
Dinotefuran	105	102	P/P	50 - 150
Diuron	99.3	98.0	P/P	60 - 160
Fenuron	100	98.2	P/P	60 - 150
Fluridone	106	110	P/P	60 - 160
Hydrocodone	97.4	104	P/P	60 - 150
Ibuprofen	71.4	80.5	P/P	50 - 160
Imazapyr	85.5	85.2	P/P	50 - 150
Imidacloprid	94.2	101	P/P	60 - 150
Linuron	105	86.8	P/P	60 - 150
Mandestrobin	96.0	99.2	P/P	50 - 150
MCPP	110	109	P/P	50 - 150
Naproxen	112	89.2	P/P	50 - 160
Primidone	116	96.2	P/P	60 - 150
Pyraclostrobin	101	101	P/P	60 - 150
Silvex	90.4	96.7	P/P	50 - 150
Thiamethoxam	95.3	98.9	P/P	50 - 150
Tolfenpyrad	98.4	101	P/P	60 - 150
Triclopyr	100	103	P/P	50 - 150

Reference Method: SM 5310 B-2011

Run ID: A113036

Included Lab Sample IDs: 2335801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.7	98.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A113044

Included Lab Sample IDs: 2335816, 2335827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	77.7	75.6	P/P	60 - 160
Sucralose	96.3	94.9	P/P	60 - 160

Reference Method: SM 2320 B-2011

Run ID: A113067

Included Lab Sample IDs: 2335800, 2335803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.8	P/P	90 - 110
Total Alkalinity	100	97.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A113067

Included Lab Sample IDs: 2335800, 2335803

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110
Fluoride	102	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A113085

Included Lab Sample IDs: 2335818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	105	104	P/P	90 - 110
Antimony	104	104	P/P	90 - 110
Arsenic	101	99.4	P/P	90 - 110
Barium	105	103	P/P	90 - 110
Beryllium	102	98.3	P/P	90 - 110
Boron	101	103	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	103	100	P/P	90 - 110
Cobalt	102	99.5	P/P	90 - 110
Copper	101	97.9	P/P	90 - 110
Lead	97.1	96.4	P/P	90 - 110
Manganese	105	104	P/P	90 - 110
Molybdenum	101	99.2	P/P	90 - 110
Nickel	101	98.0	P/P	90 - 110
Selenium	103	101	P/P	90 - 110
Silver	103	101	P/P	90 - 110
Thallium	101	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113114

Included Lab Sample IDs: 2335801

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	94.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A113117

Included Lab Sample IDs: 2335817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	97.2	96.4	P/P	90 - 110
Arsenic	102	101	P/P	90 - 110
Barium	99.1	98.3	P/P	90 - 110
Cadmium	96.6	96.8	P/P	90 - 110
Chromium	96.0	96.1	P/P	90 - 110
Cobalt	102	102	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Lead	97.4	96.7	P/P	90 - 110
Manganese	96.3	97.3	P/P	90 - 110
Molybdenum	99.3	98.4	P/P	90 - 110
Nickel	104	104	P/P	90 - 110
Selenium	98.3	97.6	P/P	90 - 110
Silver	99.6	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A113117

Included Lab Sample IDs: 2335817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	96.8	96.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A113147

Included Lab Sample IDs: 2335817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	107	P/P	90 - 110
Iron	100	102	P/P	90 - 110
Magnesium	100	102	P/P	90 - 110
Potassium	101	103	P/P	90 - 110
Sodium	98.7	101	P/P	90 - 110
Strontium	99.0	103	P/P	90 - 110
Tin	100	101	P/P	90 - 110
Titanium	99.1	99.5	P/P	90 - 110
Vanadium	99.4	101	P/P	90 - 110
Zinc	102	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A113148

Included Lab Sample IDs: 2335817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.1	101	P/P	90 - 110
Beryllium	97.0	97.6	P/P	90 - 110
Boron	97.7	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113156

Included Lab Sample IDs: 2335800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.4	P/P	90 - 110
Sulfate	99.2	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113163

Included Lab Sample IDs: 2335801, 2335804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113171

Included Lab Sample IDs: 2335804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113200

Included Lab Sample IDs: 2335801, 2335804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.0	P/P	90 - 110
Total-P	99.9	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113298

Included Lab Sample IDs: 2335804

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	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
DEP SOP: NU-094-1	Color (true)	91.7					0.0114	
EPA 180.1 Rev. 2.0	Turbidity	96.5					0.0	
EPA 200.7 Rev. 4.4	Calcium	104	96.4	98.6				1.02
	Calcium	106						3.12
	Iron	107	109	104	107			3.02
	Iron	106	105	105				0.0577
	Magnesium	110	109	104	108			2.62
	Magnesium	102						3.46
	Potassium	102	101	100	101			1.17
	Potassium	103						3.71
	Sodium	99.1	103	95.5	97.6			1.35
	Sodium	99.1						2.17
	Strontium	98.3	101	97.7	99.2			1.56
	Strontium	104						1.02
	Tin	101	103	97.8	99.7			1.97
	Tin	107	105	112				6.07
	Titanium	103	106	102	103			0.697
	Titanium	104	100	101				0.468
	Vanadium	95.8	102	94.9	95.8			0.898
	Vanadium	95.4	96.6	95.8				0.749
	Zinc	101	103	100	101			1.02
	Zinc	103	101	101				0.781
EPA 200.8 Rev. 5.4	Aluminum	106	108	108	105			0.0885
	Aluminum	100	101	103				2.09
	Antimony	108	105	109	109			3.15
	Antimony	98.4	96.8	96.1				0.707
	Arsenic	99.9	102	103	101			0.482
	Arsenic	98.3	110	107				2.36
	Barium	109	109	110	109			1.24
	Barium	101	99.7	98.7				0.946
	Beryllium	101	102	104	101			2.03
	Beryllium	89.8	108	112				3.46
	Boron	106	108	106	108			1.65
	Boron	107						5.39
	Cadmium	106	104	108	103			0.997
	Cadmium	98.1	90.8	89.7				1.23
	Chromium	102	102	104	104			2.58
	Chromium	95.5	95.3	93.4				2.02
	Cobalt	103	103	105	103			1.63
	Cobalt	97.5	111	109				1.79
	Copper	99.9	102	104	97.8			1.81
	Copper	95.4	102	101				1.40
	Lead	98.6	99.4	99.7	98.8			0.232
	Lead	98.9	102	101				0.827
	Manganese	107	105	107	107			1.39
	Manganese	96.4	97.0	92.1				3.28
	Molybdenum	103	104	106	106			1.49
	Molybdenum	99.1	109	109				0.684
	Nickel	102	99.6	102	99.9			1.95
	Nickel	97.9	114	111				2.10
	Selenium	101	103	103	99.9			0.426
	Selenium	95.0	99.7	97.6				2.08
	Silver	104	103	104	104			1.10
	Silver	96.9	89.1	87.4				1.94

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.8 Rev. 5.4	Thallium	103	105	105	105		0.883
	Thallium	101	104	104			0.392
EPA 300.0 Rev. 2.1	Chloride	97.6	98.2	95.7		0.461	
	Sulfate	97.5	98.3	96.8		0.155	
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	98.2	101			1.78
	Ammonia-N	98.4	95.4	99.4			2.91
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	110	106			2.46
EPA 353.2 Rev. 2.0	NO2NO3-N	95.0	91.4	91.9			0.546
	NO2NO3-N	103	100	103			2.84
EPA 365.1 Rev. 2.0	Total-P	102	102	103			0.489
EPA 8321B	2,4-D	62.0	80.4	55.2			19.8
	2,4,5-T	40.5	43.1	29.3			38.2
	Acesulfame K	86.3	80.6	79.9			0.916
	Acetaminophen	75.5	96.2	93.8			2.51
	Acetamiprid	70.1	93.2	83.2			11.4
	Afidopyropen	56.4	84.1	66.4			23.5
	AMPA	107	104	100			3.24
	Bentazon	72.6					5.57
	Benzovindiflupyr	80.1	94.2	87.7			7.18
	Carbamazepine	82.6	92.8	94.4			1.75
	Clothianidin	89.5	112	108			4.11
	Dinotefuran	87.8	137	129			5.75
	Diuron	75.1	83.2	77.9			5.60
	Endothall	105	108	112			3.05
	Fenuron	85.8	82.5	76.4			7.69
	Fluridone	81.5					1.26
	Glufosinate	117	94.8	97.4			2.62
	Glyphosate	101	87.7	94.8			7.05
	Hydrocodone	79.6	99.1	91.1			8.37
	Ibuprofen	67.0	49.7	47.8			3.99
	Imazapyr	82.4					3.68
	Imidacloprid	94.6	158	137			13.8
	Linuron	80.9	75.2	82.1			8.74
	Mandestrobin	79.8	79.6	75.5			5.25
	MCPP	74.9	66.6	59.3			11.6
	Naproxen	62.5	27.6	58.0			71.1
	Primidone	94.8	92.5	93.2			0.743
	Pyraclostrobin	66.0	86.0	79.5			7.85
	Silvex	45.1	52.5	42.6			20.8
	Sucralose	97.2	94.0	96.9			2.98
	Thiamethoxam	86.5	150	142			5.99
	Tolfenpyrad	37.2	51.6	50.3			2.45
	Triclopyr	46.9	44.5	35.1			23.5
SM 2320 B-2011	Total Alkalinity	101				0.256	
	Total Alkalinity	102				0.391	
SM 2540 C-2011	TDS					6.27	
SM 4500-F- C-2011	Fluoride	99.9	99.9	99.9			0.0
	Fluoride	98.9	99.0	99.0			0.0
SM 5310 B-2011	Organic Carbon	94.0	97.1	97.6			0.372
	Organic Carbon	96.8	96.1	95.5			0.399

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2335800
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2335800, 2335803
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2335817, 2335818
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2335817, 2335818
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2335800
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2335800
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2335801, 2335804
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2335801, 2335804
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2335801, 2335804
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2335801, 2335804
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2335816, 2335827
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2335800, 2335803
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2335800
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2335800, 2335803
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2335800, 2335803
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2335801, 2335804

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	06/21/2022			06/21/2022 16:08	Anna M. Plaviak	2335800
EPA 180.1 Rev. 2.0	06/21/2022			06/21/2022 15:28	Khloe J Berg	2335800
	06/21/2022			06/21/2022 15:29	Khloe J Berg	2335803
EPA 200.7 Rev. 4.4	06/21/2022	06/22/2022 09:56	Megan Whitefoot	06/23/2022 18:51	McKinley C Carter	2335818
	06/21/2022	06/24/2022 10:02	Mackenzie Hunt	06/28/2022 21:32	McKinley C Carter	2335817
	06/21/2022	06/24/2022 10:02	Mackenzie Hunt	06/28/2022 21:40	McKinley C Carter	2335817
EPA 200.8 Rev. 5.4	06/21/2022	06/22/2022 09:56	Megan Whitefoot	06/24/2022 19:08	Emily M Philpot	2335818
	06/21/2022	06/24/2022 10:02	Mackenzie Hunt	06/27/2022 17:24	Alexander Thompson	2335817
	06/21/2022	06/24/2022 10:02	Mackenzie Hunt	06/27/2022 19:20	Alexander Thompson	2335817
	06/21/2022	06/24/2022 10:02	Mackenzie Hunt	06/28/2022 11:45	Alexander Thompson	2335817
	06/21/2022	06/24/2022 10:02	Mackenzie Hunt	06/28/2022 16:23	Alexander Thompson	2335817
EPA 300.0 Rev. 2.1	06/21/2022			06/28/2022 14:00	Anna M. Plaviak	2335800
EPA 350.1 Rev. 2.0	06/21/2022			06/23/2022 11:27	Judith K. Clark	2335801
	06/21/2022			06/29/2022 15:07	Judith K. Clark	2335804
EPA 351.2 Rev. 2.0	06/21/2022	06/28/2022 15:50	Samantha L Bates	06/29/2022 13:11	Alexandra J Mattheus	2335801
	06/21/2022	06/28/2022 15:50	Samantha L Bates	06/29/2022 13:16	Alexandra J Mattheus	2335804
EPA 353.2 Rev. 2.0	06/21/2022			06/27/2022 15:34	Touraj Touran	2335801
	06/21/2022			07/05/2022 14:54	Touraj Touran	2335804
EPA 365.1 Rev. 2.0	06/21/2022	06/28/2022 16:02	Adam P Silver	06/30/2022 10:58	James L Waggeberby	2335801
	06/21/2022	06/28/2022 16:02	Adam P Silver	06/30/2022 11:01	James L Waggeberby	2335804
EPA 8321B	06/21/2022	06/22/2022 12:00	Umesh Chiluwal	06/22/2022 14:55	Umesh Chiluwal	2335816
	06/21/2022	06/22/2022 12:00	Umesh Chiluwal	06/22/2022 15:08	Umesh Chiluwal	2335827
	06/21/2022	06/22/2022 12:00	Umesh Chiluwal	06/23/2022 04:22	Umesh Chiluwal	2335816
	06/21/2022	06/22/2022 12:00	Umesh Chiluwal	06/23/2022 04:36	Umesh Chiluwal	2335827
	06/21/2022	06/23/2022 09:00	June Rhew	06/24/2022 00:19	Juyoung Kim	2335816
	06/21/2022	06/23/2022 09:00	June Rhew	06/24/2022 00:40	Juyoung Kim	2335827
SM 2320 B-2011	06/21/2022			06/25/2022 07:46	Dale L. Simmons	2335803
	06/21/2022			06/25/2022 19:52	Dale L. Simmons	2335800
SM 2540 C-2011	06/21/2022			06/24/2022 15:21	Yijie Li	2335800
SM 2540 D-2011	06/21/2022			06/24/2022 15:21	Yijie Li	2335800, 2335803
SM 4500-F- C-2011	06/21/2022			06/25/2022 07:46	Dale L. Simmons	2335803
	06/21/2022			06/25/2022 16:54	Dale L. Simmons	2335800
SM 5310 B-2011	06/21/2022			06/22/2022 18:50	Khloe J Berg	2335804
	06/21/2022			06/24/2022 00:36	Khloe J Berg	2335801