

Chemical Analysis Report

CEN-DIST-2019-03-26-01

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

Event Description: **Econ trib / Long X2 / Roberts / Un Drain**
Request ID: **RQ-2019-03-25-33**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Colin Wright, Program Administrator

Date Certified: 18-APR-2019 11:01

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: LONG BRANCH @ 0.7 MI DS OF CR 13

Collection Date/Time: 03/25/2019 11:15

Field ID: G2CE0036

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072421	EPA 8321B	2,4-D	0.0020	U	ug/L	P360773	
		Acesulfame K**	0.23	I	ug/L	P361130	
		AMPA**	0.10	U	ug/L	P361130	
		Sucralose**	0.37		ug/L	P361130	
		Acetaminophen**	0.0080	U	ug/L	P360773	
		Endothall**	0.25	U	ug/L	P361130	
		Glufosinate**	0.10	U	ug/L	P361130	
		Bentazon	0.0020	I	ug/L	P360773	
		Glyphosate**	0.13	I	ug/L	P361130	
		Carbamazepine**	0.0010	I	ug/L	P360773	
		Diuron	0.0020	U	ug/L	P360773	
		Fenuron	0.016	U	ug/L	P360773	
		Fluridone**	0.0030	I	ug/L	P360773	
		Imazapyr**	0.018		ug/L	P360773	
		Hydrocodone**	0.0020	U	ug/L	P360773	
		Ibuprofen**	0.020	U	ug/L	P360773	
		Imidacloprid	0.0020	U	ug/L	P360773	MS
		Linuron	0.0040	U	ug/L	P360773	
		MCPP	0.0020	U	ug/L	P360773	
		Naproxen**	0.0080	U	ug/L	P360773	
		Primidone**	0.0040	U	ug/L	P360773	
		Pyraclostrobin**	0.0020	U	ug/L	P360773	
		Triclopyr**	0.0040	U	ug/L	P360773	

Sample Location: LONG BRANCH @ 500M DS OF CR 13

Collection Date/Time: 03/25/2019 11:40

Field ID: G2CE0199

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072422	EPA 8321B	2,4-D	0.0020	U	ug/L	P360773	
		Acesulfame K**	0.23	I	ug/L	P361130	
		AMPA**	0.10	U	ug/L	P361130	
		Sucralose**	0.63		ug/L	P361130	
		Acetaminophen**	0.0080	U	ug/L	P360773	
		Endothall**	0.25	U	ug/L	P361130	
		Glufosinate**	0.10	U	ug/L	P361130	
		Bentazon	0.0020	I	ug/L	P360773	
		Glyphosate**	0.14	I	ug/L	P361130	
		Carbamazepine**	0.0012	I	ug/L	P360773	
		Diuron	0.0020	U	ug/L	P360773	
		Fenuron	0.016	U	ug/L	P360773	
		Fluridone**	0.0044		ug/L	P360773	
		Imazapyr**	0.0084	I	ug/L	P360773	
		Hydrocodone**	0.0020	U	ug/L	P360773	
		Ibuprofen**	0.020	U	ug/L	P360773	
		Imidacloprid	0.0020	U	ug/L	P360773	MS
		Linuron	0.0040	U	ug/L	P360773	
		MCPP	0.0020	U	ug/L	P360773	
		Naproxen**	0.0080	U	ug/L	P360773	
		Primidone**	0.0040	UJ	ug/L	P360773	SUR
		Pyraclostrobin**	0.0020	U	ug/L	P360773	
		Triclopyr**	0.0040	U	ug/L	P360773	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in re-extraction.

**Sample Location: ECON RIVER TRIB @ 170M N OF JAY
BLANCHARD TRAIL**

Collection Date/Time: 03/25/2019 12:57

Field ID: G2CE0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2072401	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P361084	
	EPA 300.0 Rev. 2.1	Chloride	33	A	mg Cl/L	P361400	
		Sulfate	6.9	A	mg SO4/L	P361402	
	SM 2120 B	Color (true)	54	A	PCU	P361078	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P361651	
	SM 2540 C-97	TDS	169		mg/L	P361413	
	SM 2540 D-97	TSS	2	I	mg/L	P361417	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P361655	
2072402	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P361376	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P361159	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P361287	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P361267	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P361173	
2072403	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P361089	
2072423	EPA 200.7 Rev. 4.4	Barium	15.2		ug/L	P361160	
		Calcium	36.0		mg/L	P361160	
		Iron	280		ug/L	P361160	
		Magnesium	2.10		mg/L	P361160	
		Potassium	1.2	I	mg/L	P361160	
		Sodium	17.5		mg/L	P361160	
		Zinc	5.0	U	ug/L	P361160	
	EPA 200.8 Rev. 5.4	Aluminum	99		ug/L	P361160	
		Antimony	0.12	I	ug/L	P361160	
		Arsenic	0.39		ug/L	P361160	
		Boron**	35.0		ug/L	P361160	
		Cadmium	0.020	U	ug/L	P361160	
		Chromium	0.58	I	ug/L	P361160	
		Copper	1.15		ug/L	P361160	
		Lead	0.27	I	ug/L	P361160	
		Nickel	0.50	U	ug/L	P361160	
		Selenium	0.20	U	ug/L	P361160	
		Silver	0.010	U	ug/L	P361160	
		Thallium	0.10	U	ug/L	P361160	

Ref. Method and Comment:

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

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361084

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361160

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: P361160

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 Rev. 2.1
Batch ID: P361400

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361159

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361267

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

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

Reference Method: EPA 8321B
Batch ID: P360773

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P361130

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P361078

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361651

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

Reference Method: SM 2540 C-97
Batch ID: P361413

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P361417

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361173

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: P361160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	95.1		P	85 - 115
Calcium	96.5		P	85 - 115
Iron	99.1		P	85 - 115
Magnesium	97.1		P	85 - 115
Potassium	100		P	85 - 115
Sodium	95.4		P	85 - 115
Zinc	95.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.8		P	85 - 115
Antimony	97.7		P	85 - 115
Arsenic	100		P	85 - 115
Boron	106		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	97.5		P	85 - 115
Copper	99.9		P	85 - 115
Lead	100		P	85 - 115
Nickel	102		P	85 - 115
Selenium	98.1		P	85 - 115
Silver	102		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361400

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361159

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361267

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.7		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P360773

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.1		P	40 - 150
Acetaminophen	106		P	30 - 150
Bentazon	113		P	30 - 150
Carbamazepine	87.3		P	40 - 150
Diuron	103		P	40 - 150
Fenuron	148		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	122		P	40 - 150
Ibuprofen	63.6		P	40 - 150
Imazapyr	104		P	40 - 150
Imidacloprid	134		P	40 - 150
Linuron	80.6		P	40 - 150
MCPP	112		P	40 - 150
Naproxen	71.0		P	40 - 150
Primidone	114		P	40 - 150
Pyraclostrobin	72.3		P	40 - 150
Triclopyr	62.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P361130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	126		P	40 - 150
AMPA	99.1		P	40 - 150
Endothall	114		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	110		P	40 - 140
Sucralose	88.9		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P361078

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P361651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072482	Barium	92.1		P	80 - 120
2072482	Calcium	96.5		P	80 - 120
2072482	Iron	100		P	80 - 120
2072482	Magnesium	96.0		P	80 - 120
2072482	Potassium	94.2		P	80 - 120
2072482	Sodium	95.8		P	80 - 120
2072482	Zinc	94.4		P	80 - 120
2072801	Barium	94.3	93.8	P/P	80 - 120
2072801	Calcium	96.2		P	80 - 120
2072801	Iron	99.4	98.4	P/P	80 - 120
2072801	Magnesium	95.9		P	80 - 120
2072801	Potassium	97.3	96.8	P/P	80 - 120
2072801	Sodium	97.1		P	80 - 120
2072801	Zinc	94.0	94.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072482	Aluminum	95.9		P	80 - 120
2072482	Antimony	97.9		P	80 - 120
2072482	Arsenic	100		P	80 - 120
2072482	Boron	103		P	80 - 120
2072482	Cadmium	103		P	80 - 120
2072482	Chromium	95.0		P	80 - 120
2072482	Copper	97.6		P	80 - 120
2072482	Lead	100		P	80 - 120
2072482	Nickel	98.9		P	80 - 120
2072482	Selenium	96.9		P	80 - 120
2072482	Silver	101		P	80 - 120
2072482	Thallium	102		P	80 - 120
2072801	Aluminum	96.3	96.9	P/P	80 - 120
2072801	Antimony	97.8	97.3	P/P	80 - 120
2072801	Arsenic	101	99.8	P/P	80 - 120
2072801	Boron	106	105	P/P	80 - 120
2072801	Cadmium	103	104	P/P	80 - 120
2072801	Chromium	96.8	96.3	P/P	80 - 120
2072801	Copper	98.2	97.2	P/P	80 - 120
2072801	Lead	98.7	99.8	P/P	80 - 120
2072801	Nickel	100	99.0	P/P	80 - 120
2072801	Selenium	97.8	97.3	P/P	80 - 120
2072801	Silver	101	102	P/P	80 - 120
2072801	Thallium	101	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072330	Chloride	101		P	90 - 110
2072401	Chloride	96.7		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072330	Sulfate	104		P	90 - 110
2072401	Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072402	Ammonia-N	96.9	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072430	NO2NO3-N	98.2	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361267

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072449	Total-P	98.8	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072403	O-Phosphate-P	96.2	97.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P360773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2071546	2,4-D	68.7	89.6	P/P	40 - 150
2071546	Acetaminophen	137	128	P/P	30 - 150
2071546	Bentazon	100	94.2	P/P	30 - 150
2071546	Carbamazepine	114	103	P/P	40 - 150
2071546	Diuron	99.9	102	P/P	40 - 150
2071546	Fenuron	144	138	P/P	40 - 150
2071546	Fluridone	118	114	P/P	40 - 150
2071546	Hydrocodone	102	109	P/P	40 - 150
2071546	Ibuprofen	65.8	65.5	P/P	40 - 150
2071546	Imazapyr	113	98.6	P/P	40 - 150
2071546	Imidacloprid	184	174	F/F	40 - 150
2071546	Linuron	90.5	85.2	P/P	40 - 150
2071546	MCPP	114	105	P/P	40 - 150
2071546	Naproxen	99.4	87.0	P/P	40 - 150
2071546	Primidone	122	94.3	P/P	40 - 150
2071546	Pyraclostrobin	107	108	P/P	40 - 150
2071546	Triclopyr	62.1	58.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P361130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072421	Acesulfame K	105	113	P/P	40 - 150
2072421	AMPA	103	96.2	P/P	40 - 150
2072421	Endothall	82.8	78.6	P/P	40 - 150
2072421	Glufosinate	99.9	100	P/P	40 - 150
2072421	Glyphosate	93.8	103	P/P	40 - 140
2072421	Sucralose	57.2	73.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P361655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072446	Fluoride	99.5	99.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P361173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2072332	Organic Carbon	97.7	98.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072444	Turbidity	2.40	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P361160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072801	Barium	0.562	Spike	P	0 - 20
2072801	Calcium	1.10	Spike	P	0 - 20
2072801	Iron	1.04	Spike	P	0 - 20
2072801	Magnesium	0.190	Spike	P	0 - 20
2072801	Potassium	0.491	Spike	P	0 - 20
2072801	Sodium	0.142	Spike	P	0 - 20
2072801	Zinc	0.0344	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P361160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072801	Aluminum	0.667	Spike	P	0 - 20
2072801	Antimony	0.469	Spike	P	0 - 20
2072801	Arsenic	1.47	Spike	P	0 - 20
2072801	Boron	0.786	Spike	P	0 - 20
2072801	Cadmium	0.285	Spike	P	0 - 20
2072801	Chromium	0.514	Spike	P	0 - 20
2072801	Copper	0.963	Spike	P	0 - 20
2072801	Lead	1.04	Spike	P	0 - 20
2072801	Nickel	0.959	Spike	P	0 - 20
2072801	Selenium	0.404	Spike	P	0 - 20
2072801	Silver	1.09	Spike	P	0 - 20
2072801	Thallium	1.06	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072401	Chloride	0.945	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072401	Sulfate	1.06	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072402	Ammonia-N	3.81	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P361159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072357	Kjeldahl Nitrogen	2.85	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072430	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361267

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072449	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072403	O-Phosphate-P	1.25	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P360773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071546	2,4-D	26.4	Spike	P	0 - 30
2071546	Acetaminophen	6.76	Spike	P	0 - 30
2071546	Bentazon	5.99	Spike	P	0 - 30
2071546	Carbamazepine	10.1	Spike	P	0 - 30
2071546	Diuron	1.87	Spike	P	0 - 30
2071546	Fenuron	3.97	Spike	P	0 - 30
2071546	Fluridone	2.86	Spike	P	0 - 30
2071546	Hydrocodone	5.95	Spike	P	0 - 30
2071546	Ibuprofen	0.352	Spike	P	0 - 30
2071546	Imazapyr	13.9	Spike	P	0 - 30
2071546	Imidacloprid	5.26	Spike	P	0 - 30
2071546	Linuron	5.94	Spike	P	0 - 30
2071546	MCP	7.83	Spike	P	0 - 30
2071546	Naproxen	13.3	Spike	P	0 - 30
2071546	Primidone	25.9	Spike	P	0 - 30
2071546	Pyraclostrobin	0.860	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P360773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2071546	Triclopyr	5.22	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P361130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072421	Acesulfame K	6.91	Spike	P	0 - 30
2072421	AMPA	6.83	Spike	P	0 - 30
2072421	Endothall	5.17	Spike	P	0 - 30
2072421	Glufosinate	0.383	Spike	P	0 - 30
2072421	Glyphosate	7.87	Spike	P	0 - 30
2072421	Sucralose	19.9	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P361078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072401	Color (true)	0.128	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P361651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Total Alkalinity	0.791	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P361413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072351	TDS	4.98	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P361655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072446	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P361173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2072332	Organic Carbon	0.587	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2072421
Field Sample ID: G2CE0036

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	78.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	85.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	70.8	P	30 - 160
EPA 8321B	Diuron-d6	66.4	P	30 - 160
EPA 8321B	Endothall-d6	43.6	P	30 - 160
EPA 8321B	Endothall-d6	43.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	98.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	98.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	50.5	P	30 - 160
EPA 8321B	Primidone-d5	71.6	P	30 - 160
EPA 8321B	Sucralose-d6	62.8	P	30 - 160
EPA 8321B	Sucralose-d6	62.8	P	30 - 160

Lab Sample ID: 2072422
Field Sample ID: G2CE0199

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	63.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.5	P	30 - 160
EPA 8321B	Diuron-d6	66.4	P	30 - 160
EPA 8321B	Endothall-d6	43.4	P	30 - 160
EPA 8321B	Endothall-d6	43.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	99.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	67.7	P	30 - 160
EPA 8321B	Primidone-d5	15.9	F	30 - 160
EPA 8321B	Sucralose-d6	60.8	P	30 - 160
EPA 8321B	Sucralose-d6	60.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A90241

Included Lab Sample IDs: 2072401

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	100	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90242

Included Lab Sample IDs: 2072401

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90243

Included Lab Sample IDs: 2072403

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	99.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90274

Included Lab Sample IDs: 2072421, 2072422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.9	92.9	P/P	50 - 150
Acetaminophen	92.7	123	P/P	60 - 160
Bentazon	91.8	80.6	P/P	50 - 160
Carbamazepine	91.9	110	P/P	60 - 150
Diuron	108	109	P/P	60 - 150
Fenuron	109	106	P/P	60 - 150
Fluridone	93.4	69.9	P/P	60 - 160
Hydrocodone	99.1	114	P/P	60 - 150
Ibuprofen	108	86.4	P/P	50 - 160
Imazapyr	83.8	85.8	P/P	50 - 150
Imidacloprid	106	95.3	P/P	60 - 150
Linuron	104	85.8	P/P	60 - 150
MCPP	96.6	92.9	P/P	50 - 150
Naproxen	125	84.5	P/P	50 - 160
Primidone	135	112	P/P	60 - 150
Pyraclostrobin	87.3	89.2	P/P	60 - 150
Triclopyr	101	98.2	P/P	50 - 150

Reference Method: SM 5310 B-00

Run ID: A90286

Included Lab Sample IDs: 2072402

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90307

Included Lab Sample IDs: 2072423

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90307

Included Lab Sample IDs: 2072423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	97.0	96.0	P/P	90 - 110
Calcium	98.1	98.1	P/P	90 - 110
Iron	98.0	97.5	P/P	90 - 110
Magnesium	98.7	98.5	P/P	90 - 110
Potassium	96.5	96.2	P/P	90 - 110
Sodium	97.3	97.8	P/P	90 - 110
Zinc	97.8	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90310

Included Lab Sample IDs: 2072402

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.6	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90326

Included Lab Sample IDs: 2072402

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90333

Included Lab Sample IDs: 2072423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.5	98.1	P/P	90 - 110
Antimony	95.5	96.8	P/P	90 - 110
Boron	104	101	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	101	100	P/P	90 - 110
Copper	99.0	98.2	P/P	90 - 110
Lead	98.5	100	P/P	90 - 110
Nickel	99.4	98.4	P/P	90 - 110
Selenium	98.5	97.4	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	93.3	93.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90347

Included Lab Sample IDs: 2072402

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90355

Included Lab Sample IDs: 2072402

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90355

Included Lab Sample IDs: 2072402

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

Reference Method: EPA 8321B

Run ID: A90372

Included Lab Sample IDs: 2072421, 2072422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	100	P/P	60 - 160
Glufosinate	106	116	P/P	60 - 160
Glyphosate	101	114	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90374

Included Lab Sample IDs: 2072401

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

Reference Method: EPA 8321B

Run ID: A90375

Included Lab Sample IDs: 2072421, 2072422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	79.6	78.6	P/P	60 - 160
Endothall	102	103	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90422

Included Lab Sample IDs: 2072423

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.4	97.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90431

Included Lab Sample IDs: 2072421, 2072422

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	86.9	85.0	P/P	60 - 160

Reference Method: SM 2320 B-97

Run ID: A90475

Included Lab Sample IDs: 2072401

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A90475

Included Lab Sample IDs: 2072401

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	100	P/P	90 - 110

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

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.40	
EPA 200.7 Rev. 4.4	Barium	95.1	92.1	94.3	93.8			0.562
	Calcium	96.5	96.5	96.2				1.10
	Iron	99.1	100	99.4	98.4			1.04
	Magnesium	97.1	96.0	95.9				0.190
	Potassium	100	94.2	97.3	96.8			0.491
	Sodium	95.4	95.8	97.1				0.142
	Zinc	95.0	94.4	94.0	94.0			0.0344
EPA 200.8 Rev. 5.4	Aluminum	98.8	95.9	96.3	96.9			0.667
	Antimony	97.7	97.9	97.8	97.3			0.469
	Arsenic	100	100	101	99.8			1.47
	Boron	106	103	106	105			0.786
	Cadmium	103	103	103	104			0.285
	Chromium	97.5	95.0	96.8	96.3			0.514
	Copper	99.9	97.6	98.2	97.2			0.963
	Lead	100	100	98.7	99.8			1.04
	Nickel	102	98.9	100	99.0			0.959
	Selenium	98.1	96.9	97.8	97.3			0.404
	Silver	102	101	101	102			1.09
	Thallium	102	102	101	102			1.06
EPA 300.0 Rev. 2.1	Chloride	102	96.7	101			0.945	
	Sulfate	103	99.2	104			1.06	
EPA 350.1 Rev. 2.0	Ammonia-N	100	96.9	103				3.81
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102						2.85
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	98.2	97.7				0.499
EPA 365.1 Rev. 2.0	Total-P	103	98.8	100				1.32
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	96.2	97.8				1.25
EPA 8321B	2,4-D	84.1	68.7	89.6				26.4
	Acesulfame K	126	105	113				6.91
	Acetaminophen	106	137	128				6.76
	AMPA	99.1	103	96.2				6.83
	Bentazon	113	100	94.2				5.99
	Carbamazepine	87.3	114	103				10.1
	Diuron	103	99.9	102				1.87
	Endothall	114	82.8	78.6				5.17
	Fenuron	148	144	138				3.97
	Fluridone	114	118	114				2.86
	Glufosinate	109	99.9	100				0.383
	Glyphosate	110	93.8	103				7.87
	Hydrocodone	122	102	109				5.95
	Ibuprofen	63.6	65.8	65.5				0.352
	Imazapyr	104	113	98.6				13.9
	Imidacloprid	134	184	174				5.26
	Linuron	80.6	90.5	85.2				5.94
	MCPP	112	114	105				7.83
	Naproxen	71.0	99.4	87.0				13.3
	Primidone	114	122	94.3				25.9
	Pyraclostrobin	72.3	107	108				0.860
	Sucralose	88.9	57.2	73.2				19.9
	Triclopyr	62.3	62.1	58.9				5.22
SM 2120 B	Color (true)	101					0.128	
SM 2320 B-97	Total Alkalinity	99.1					0.791	
SM 2540 C-97	TDS						4.98	
SM 4500 F-C-97	Fluoride	99.3	99.5	99.5				0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 5310 B-00	Organic Carbon	98.8	97.7 98.4			0.587

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2072401
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2072423
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2072423
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2072401
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2072401
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2072402
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2072402
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2072402
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2072402
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2072403
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2072421, 2072422
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2072421, 2072422
SM 2120 B / E31780	True Color measured at 450 nm	2072401
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2072401
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2072401
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2072401
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2072401
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2072402

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	03/26/2019			03/26/2019 16:32	Adrian Shelby	2072401
EPA 200.7 Rev. 4.4	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/28/2019 14:29	Betina Topolski	2072423
EPA 200.8 Rev. 5.4	03/26/2019	03/27/2019 16:20	Elliott D. Healy	03/29/2019 23:20	Robert K Palmer	2072423
	03/26/2019	03/27/2019 16:20	Elliott D. Healy	04/03/2019 15:56	Robert K Palmer	2072423
EPA 300.0 Rev. 2.1	03/26/2019			03/29/2019 03:46	Lipi Saha	2072401
EPA 350.1 Rev. 2.0	03/26/2019			03/29/2019 11:08	Ping Hua	2072402
EPA 351.2 Rev. 2.0	03/26/2019	03/27/2019 14:00	Jhamieka S. Greenwood	03/29/2019 09:19	Joseph Suarez	2072402
EPA 353.2 Rev. 2.0	03/26/2019			03/29/2019 11:06	Virginia P. Brown	2072402
EPA 365.1 Rev. 2.0	03/26/2019	03/29/2019 12:25	Adrian Shelby	04/01/2019 12:30	Rosalyn Ballman	2072402
EPA 365.1 Rev. 2.0 dissolved	03/26/2019			03/26/2019 15:38	Jhamieka S. Greenwood	2072403
EPA 8321B	03/26/2019	03/26/2019 12:30	Hoor Shaik	03/28/2019 04:16	Juyoung Kim	2072421
	03/26/2019	03/26/2019 12:30	Hoor Shaik	03/28/2019 04:51	Juyoung Kim	2072422
	03/26/2019	03/28/2019 09:45	Rebecca Ware	03/28/2019 15:53	Rebecca Ware	2072421
	03/26/2019	03/28/2019 09:45	Rebecca Ware	03/28/2019 16:01	Rebecca Ware	2072422
	03/26/2019	03/28/2019 09:45	Rebecca Ware	03/29/2019 14:06	Rebecca Ware	2072421
	03/26/2019	03/28/2019 09:45	Rebecca Ware	03/29/2019 14:19	Rebecca Ware	2072422
	03/26/2019	03/28/2019 09:45	Rebecca Ware	04/01/2019 20:29	Rebecca Ware	2072421
	03/26/2019	03/28/2019 09:45	Rebecca Ware	04/01/2019 20:39	Rebecca Ware	2072422
SM 2120 B	03/26/2019			03/26/2019 16:08	Mariam Hanna	2072401
SM 2320 B-97	03/26/2019			04/04/2019 07:56	Dale L. Simmons	2072401
SM 2540 C-97	03/26/2019			03/27/2019 14:03	Yijie Li	2072401
SM 2540 D-97	03/26/2019			03/27/2019 14:03	Yijie Li	2072401
SM 4500 F-C-97	03/26/2019			04/04/2019 07:56	Dale L. Simmons	2072401
SM 5310 B-00	03/26/2019			03/27/2019 20:14	Julia Storbeck	2072402