

Chemical Analysis Report

CEN-DIST-2017-02-16-01

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

Event Description: **Horse Creek/Elbow Creek**
Request ID: **RQ-2017-02-13-60**
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
Attn: Mike Linger

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 15-MAR-2017 10:42

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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 and Nutrients.

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Elbow Creek @ 540m Downstream of Apollo Blvd

Collection Date/Time: 02/15/2017 10:50

Field ID: G5CE0070

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1873308	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P319995	
	EPA 300.0 Rev. 2.1	Chloride	120		mg Cl/L	P320752	
		Sulfate	35		mg SO4/L	P320750	
	SM 2120 B	Color (true)	73	A	PCU	P320001	
	SM 2320 B-97	Total Alkalinity	146		mg CaCO3/L	P320219	
	SM 2540 C-97	TDS	427	Q	mg/L	P321096	
	SM 2540 D-97	TSS	7	I	mg/L	P320451	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P320420	
1873309	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P320316	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P320038	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.098		mg N/L	P320462	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P320070	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P320098	
1873310	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.060		mg P/L	P320010	

Ref. Method and Comment:

SM 2540 C-97: Sample reanalyzed out of holding time due to analytical difficulties.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Horse Creel West of US Highway 1 Bridge

Collection Date/Time: 02/15/2017 11:20

Field ID: G5CE0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1873302	EPA 180.1 Rev. 2.0	Turbidity	14	A	NTU	P319995	
	SM 2320 B-97	Total Alkalinity	118		mg CaCO3/L	P320239	
	SM 2540 D-97	TSS	27	A	mg/L	P320452	
	SM 4500 F-C-97	Fluoride	0.69		mg F/L	P320240	
1873304	EPA 350.1 Rev. 2.0	Ammonia-N	0.083		mg N/L	P320246	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P320036	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P320349	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P320073	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P320101	
1873306	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P320011	
1873319	EPA 200.7 Rev. 4.4	Iron	970		ug/L	P320664	
	EPA 200.8 Rev. 5.4	Arsenic	3.46		ug/L	P320664	
		Cadmium	0.060	U	ug/L	P320664	
		Chromium	1.6	I	ug/L	P320664	
		Copper	2.7		ug/L	P320664	
		Lead	1.54		ug/L	P320664	
		Nickel	0.78	I	ug/L	P320664	
		Silver	0.030	U	ug/L	P320664	
		Zinc	14		ug/L	P320664	

Sample Location: Horse Creek @ Croton Road Bridge

Collection Date/Time: 02/15/2017 11:45

Field ID: G5CE0078

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1873303	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P319995	
	SM 2320 B-97	Total Alkalinity	99		mg CaCO3/L	P320219	
	SM 2540 D-97	TSS	4	I	mg/L	P320451	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P320420	
1873305	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P320316	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P320038	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.075		mg N/L	P320462	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P320070	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P320098	
1873307	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.034		mg P/L	P320010	
1873320	EPA 200.7 Rev. 4.4	Iron	95	I	ug/L	P320209	
		Zinc	5.0	U	ug/L	P320209	
	EPA 200.8 Rev. 5.4	Arsenic	2.00		ug/L	P320209	
		Cadmium	0.020	U	ug/L	P320209	
		Chromium	0.48	I	ug/L	P320209	
		Copper	0.88		ug/L	P320209	
		Lead	0.12	I	ug/L	P320209	
		Nickel	0.45	I	ug/L	P320209	
		Silver	0.010	U	ug/L	P320209	

Ref. Method and Comment:

EPA 350.1 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: P319995

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P320209

Component	Result	Code	Units
Iron	30	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P320664

Component	Result	Code	Units
Iron	30	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P320209

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320209

Component	Result	Code	Units
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L
Zinc	1.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320750

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320752

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320246

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320316

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320036

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320038

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320038

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320349

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320462

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: P320070

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320073

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320010

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320011

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

Reference Method: SM 2120 B
Batch ID: P320001

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P320219

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P320239

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

Reference Method: SM 2540 C-97
Batch ID: P321096

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320451

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P320452

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P320240

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P320420

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P320098

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

Reference Method: SM 5310 B-00
Batch ID: P320101

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: P320209

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	103		P	85 - 115
Zinc	99.3		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	92.6		P	85 - 115
Cadmium	90.5		P	85 - 115
Chromium	91.4		P	85 - 115
Copper	93.2		P	85 - 115
Lead	92.2		P	85 - 115
Nickel	94.2		P	85 - 115
Silver	85.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	87.8		P	85 - 115
Cadmium	95.0		P	85 - 115
Chromium	95.5		P	85 - 115
Copper	98.6		P	85 - 115
Lead	86.9		P	85 - 115
Nickel	86.9		P	85 - 115
Silver	91.6		P	85 - 115
Zinc	88.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320750

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320752

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320246

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320316

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320036

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320038

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320462

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320070

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320073

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320010

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320011

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P320219

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P320239

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P320240

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P320420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P320098

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.1		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P320101

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873654	Iron	103	106	P/P	80 - 120
1873654	Zinc	99.8	99.9	P/P	80 - 120
1873658	Iron	104		P	80 - 120
1873658	Zinc	99.2		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874088	Iron	82.0		P	70 - 130
1875991	Iron	78.5	89.7	P/P	70 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P320209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873654	Arsenic	89.1	88.9	P/P	80 - 120
1873654	Cadmium	86.8	87.1	P/P	80 - 120
1873654	Chromium	87.9	87.5	P/P	80 - 120
1873654	Copper	90.3	90.5	P/P	80 - 120
1873654	Lead	88.9	88.2	P/P	80 - 120
1873654	Nickel	90.1	90.0	P/P	80 - 120
1873654	Silver	83.0	85.0	P/P	80 - 120
1873658	Arsenic	86.6		P	85 - 115
1873658	Cadmium	87.1		P	85 - 115
1873658	Chromium	86.9		P	85 - 115
1873658	Copper	87.6		P	85 - 115
1873658	Lead	88.9		P	85 - 115
1873658	Nickel	88.0		P	85 - 115
1873658	Silver	83.6		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P320664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1874088	Arsenic	107		P	70 - 130
1874088	Cadmium	95.3		P	70 - 130
1874088	Chromium	94.1		P	70 - 130
1874088	Copper	103		P	70 - 130
1874088	Lead	100		P	70 - 130
1874088	Nickel	95.6		P	70 - 130
1874088	Silver	91.1		P	70 - 130
1874088	Zinc	96.6		P	70 - 130
1875991	Arsenic	102	104	P/P	70 - 130
1875991	Cadmium	90.9	97.2	P/P	70 - 130
1875991	Chromium	94.1	94.5	P/P	70 - 130
1875991	Copper	96.2	94.9	P/P	70 - 130
1875991	Lead	96.4	97.0	P/P	70 - 130
1875991	Nickel	90.4	91.3	P/P	70 - 130
1875991	Silver	90.8	88.1	P/P	70 - 130
1875991	Zinc	90.3	91.0	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P320750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873000	Sulfate	101		P	90 - 110
1873390	Sulfate	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P320752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873000	Chloride	105		P	90 - 110
1873390	Chloride	106		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873353	Ammonia-N	107	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873022	Kjeldahl Nitrogen	103	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873393	Kjeldahl Nitrogen	99.5	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320349

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873304	NO2NO3-N	104	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873092	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320070

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873290	Total-P	98.4	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873022	Total-P	92.9	90.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873307	O-Phosphate-P	96.7	97.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873362	O-Phosphate-P	96.5	97.5	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P320240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1870137	Fluoride	97.4	98.1	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P320420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873001	Fluoride	95.8	96.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P320098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873400	Organic Carbon	95.9	94.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P320101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1873304	Organic Carbon	90.6	92.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P319995

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873302	Turbidity	0.733	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873654	Iron	2.09	Spike	P	0 - 20
1873654	Zinc	0.106	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P320664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875991	Iron	12.6	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873654	Arsenic	0.276	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873654	Cadmium	0.352	Spike	P	0 - 20
1873654	Chromium	0.465	Spike	P	0 - 20
1873654	Copper	0.143	Spike	P	0 - 20
1873654	Lead	0.752	Spike	P	0 - 20
1873654	Nickel	0.129	Spike	P	0 - 20
1873654	Silver	2.34	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P320664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875991	Arsenic	1.94	Spike	P	0 - 20
1875991	Cadmium	6.66	Spike	P	0 - 20
1875991	Chromium	0.446	Spike	P	0 - 20
1875991	Copper	1.35	Spike	P	0 - 20
1875991	Lead	0.579	Spike	P	0 - 20
1875991	Nickel	0.974	Spike	P	0 - 20
1875991	Silver	2.97	Spike	P	0 - 20
1875991	Zinc	0.783	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873000	Sulfate	0.000225	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P320752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873000	Chloride	0.0891	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873353	Ammonia-N	0.577	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P320316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873309	Ammonia-N	1.31	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873022	Kjeldahl Nitrogen	0.172	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P320038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873393	Kjeldahl Nitrogen	0.333	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873304	NO2NO3-N	1.74	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P320462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873092	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320070

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873290	Total-P	0.406	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P320073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873022	Total-P	2.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873307	O-Phosphate-P	0.536	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P320011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873362	O-Phosphate-P	0.943	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P320001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873308	Color (true)	0.845	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P320219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873001	Total Alkalinity	0.0674	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P320239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873348	Total Alkalinity	0.0568	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P321096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1875742	TDS	5.71	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P320451

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873314	TSS	2.27	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P320452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873302	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P320240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1870137	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P320420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873001	Fluoride	0.996	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P320098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873400	Organic Carbon	1.32	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P320101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1873304	Organic Carbon	1.38	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 Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A74532
Included Lab Sample IDs: 1873302, 1873303, 1873308

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

Reference Method: SM 2120 B
Run ID: A74534
Included Lab Sample IDs: 1873308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.5	97.6	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A74536
Included Lab Sample IDs: 1873306, 1873307, 1873310

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

Reference Method: SM 5310 B-00
Run ID: A74569
Included Lab Sample IDs: 1873304, 1873305, 1873309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	96.4	P/P	90 - 110
Organic Carbon	96.4	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A74581
Included Lab Sample IDs: 1873304

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74581

Included Lab Sample IDs: 1873304

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A74583

Included Lab Sample IDs: 1873304, 1873305, 1873309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.9	P/P	90 - 110
Total-P	99.0	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A74614

Included Lab Sample IDs: 1873305, 1873309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	96.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A74621

Included Lab Sample IDs: 1873303, 1873308

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A74623

Included Lab Sample IDs: 1873320

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

Reference Method: SM 2320 B-97

Run ID: A74626

Included Lab Sample IDs: 1873302

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

Reference Method: SM 4500 F-C-97

Run ID: A74626

Included Lab Sample IDs: 1873302

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	98.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74627

Included Lab Sample IDs: 1873304

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: A74627

Included Lab Sample IDs: 1873304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A74655

Included Lab Sample IDs: 1873305, 1873309

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74669

Included Lab Sample IDs: 1873304

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A74681

Included Lab Sample IDs: 1873320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.2	93.3	P/P	90 - 110
Cadmium	92.1	91.9	P/P	90 - 110
Chromium	94.9	94.4	P/P	90 - 110
Copper	96.3	94.2	P/P	90 - 110
Lead	92.7	92.6	P/P	90 - 110
Nickel	98.1	94.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A74690

Included Lab Sample IDs: 1873303, 1873308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A74706

Included Lab Sample IDs: 1873305, 1873309

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A74765

Included Lab Sample IDs: 1873308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	106	105	P/P	90 - 110
Sulfate	93.0	99.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A74817
 Included Lab Sample IDs: 1873319, 1873320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.0	96.2	P/P	90 - 110
Lead	92.7	90.3	P/P	90 - 110
Nickel	96.7	93.4	P/P	90 - 110
Silver	96.7	95.2	P/P	90 - 110
Zinc	97.5	93.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
 Run ID: A74833
 Included Lab Sample IDs: 1873319

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

Reference Method: EPA 200.8 Rev. 5.4
 Run ID: A74889
 Included Lab Sample IDs: 1873319

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	95.3	95.0	P/P	90 - 110
Chromium	96.0	95.7	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Silver	92.1	93.0	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.733	
EPA 200.7 Rev. 4.4	Iron	103	103	106	104		2.09
	Iron	102	78.5	89.7	82.0		12.6
	Zinc	99.3	99.8	99.9	99.2		0.106
EPA 200.8 Rev. 5.4	Arsenic	92.6	86.6	89.1	88.9		0.276
	Arsenic	87.8	107	102	104		1.94
	Cadmium	90.5	87.1	86.8	87.1		0.352
	Cadmium	95.0	95.3	90.9	97.2		6.66
	Chromium	91.4	86.9	87.9	87.5		0.465
	Chromium	95.5	94.1	94.1	94.5		0.446
	Copper	93.2	87.6	90.3	90.5		0.143
	Copper	98.6	103	96.2	94.9		1.35
	Lead	92.2	88.9	88.9	88.2		0.752
	Lead	86.9	100	96.4	97.0		0.579
	Nickel	94.2	88.0	90.1	90.0		0.129
	Nickel	86.9	95.6	90.4	91.3		0.974
	Silver	85.6	83.0	85.0	83.6		2.34
	Silver	91.6	91.1	90.8	88.1		2.97

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision	MS
			LCS	SMP	MS		
EPA 200.8 Rev. 5.4	Zinc	88.4	96.6	90.3	91.0		0.783
EPA 300.0 Rev. 2.1	Chloride	107	105	106		0.0891	
	Sulfate	101	101	96.8		0.0002	
EPA 350.1 Rev. 2.0	Ammonia-N	101	107	106			0.577
	Ammonia-N	101					1.31
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	103	103			0.172
	Kjeldahl Nitrogen	103	99.5	99.1			0.333
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	106			1.74
	NO2NO3-N	104	102	100			0.990
EPA 365.1 Rev. 2.0	Total-P	94.4	98.4	98.8			0.406
	Total-P	96.2	92.9	90.9			2.12
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	96.7	97.4			0.536
	O-Phosphate-P	104	96.5	97.5			0.943
SM 2120 B	Color (true)					0.845	
SM 2320 B-97	Total Alkalinity	104				0.0674	
	Total Alkalinity	103				0.0568	
SM 2540 C-97	TDS					5.71	
SM 2540 D-97	TSS					2.27	
	TSS					0.0	
SM 4500 F-C-97	Fluoride	99.2	97.4	98.1			0.473
	Fluoride	96.6	95.8	96.9			0.996
SM 5310 B-00	Organic Carbon	93.1	95.9	94.6			1.32
	Organic Carbon	95.1	90.6	92.3			1.38

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1873302, 1873303, 1873308
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1873319, 1873320
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1873319, 1873320
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1873308
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1873308
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1873304, 1873305, 1873309
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1873304, 1873305, 1873309
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1873304, 1873305, 1873309
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1873304, 1873305, 1873309
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1873306, 1873307, 1873310
SM 2120 B / E31780	True Color measured at 450 nm	1873308
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1873302, 1873303, 1873308
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1873308
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1873302, 1873303, 1873308
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1873302, 1873303, 1873308
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1873304, 1873305, 1873309

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	02/16/2017			02/16/2017 14:44	Julie Michelle Frank	1873302, 1873303, 1873308
EPA 200.7 Rev. 4.4	02/16/2017	02/21/2017	Michael I. Thompson	02/21/2017	Joshua Ayres	1873320
	02/16/2017	02/28/2017	Elliott D. Healy	03/01/2017	Joshua Ayres	1873319
EPA 200.8 Rev. 5.4	02/16/2017	02/21/2017	Michael I. Thompson	02/22/2017	Betina Topolski	1873320
	02/16/2017	02/21/2017	Michael I. Thompson	03/01/2017	Betina Topolski	1873320
	02/16/2017	02/28/2017	Elliott D. Healy	03/01/2017	Betina Topolski	1873319
	02/16/2017	02/28/2017	Elliott D. Healy	03/03/2017	Betina Topolski	1873319
EPA 300.0 Rev. 2.1	02/16/2017			03/01/2017	Ping Hua	1873308
EPA 350.1 Rev. 2.0	02/16/2017			02/21/2017	Sofia Elnemr	1873304
	02/16/2017			02/22/2017	Sofia Elnemr	1873305, 1873309
EPA 351.2 Rev. 2.0	02/16/2017	02/17/2017	Adrian Shelby	02/20/2017	Virginia P. Brown	1873304
	02/16/2017	02/17/2017	Adrian Shelby	02/21/2017	Joseph Suarez	1873305, 1873309
EPA 353.2 Rev. 2.0	02/16/2017			02/23/2017	Beverly Y. Sanders	1873304
	02/16/2017			02/24/2017	Beverly Y. Sanders	1873305, 1873309
EPA 365.1 Rev. 2.0	02/16/2017	02/17/2017	Vijayalakshmi Reddy	02/20/2017	Lipi Saha	1873304, 1873305, 1873309
EPA 365.1 Rev. 2.0 dissolved	02/16/2017			02/16/2017 15:59	Julia Storbeck	1873307
	02/16/2017			02/16/2017 16:10	Julia Storbeck	1873310
	02/16/2017			02/16/2017 16:11	Julia Storbeck	1873306
SM 2120 B	02/16/2017			02/16/2017 15:29	Julie Michelle Frank	1873308
SM 2320 B-97	02/16/2017			02/21/2017	Dale L. Simmons	1873303, 1873308
	02/16/2017			02/22/2017	Dale L. Simmons	1873302
SM 2540 C-97	02/16/2017			03/01/2017	Yijie Li	1873308
SM 2540 D-97	02/16/2017			02/20/2017	Sima Feizi	1873302, 1873303, 1873308
SM 4500 F-C-97	02/16/2017			02/21/2017	Dale L. Simmons	1873302
	02/16/2017			02/23/2017	Dale L. Simmons	1873303, 1873308
SM 5310 B-00	02/16/2017			02/17/2017	Julie Michelle Frank	1873305, 1873309
	02/16/2017			02/18/2017	Julie Michelle Frank	1873304