

Chemical Analysis Report

CEN-DIST-2017-05-04-02

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

Event Description: **Puzzle Lk Drain / Lk McCoy + D&B**
Request ID: **RQ-2017-05-01-68**
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: 01-JUN-2017 11:00

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: Saint Johns River @ 600m Downstream of
 Hatbill Park Ramp**

Collection Date/Time: 05/03/2017 10:45

Field ID: G3CE0006

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896323	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P324688	
	EPA 300.0 Rev. 2.1	Chloride	1.7E+03		mg Cl/L	P325108	
		Sulfate	500		mg SO4/L	P325111	
	SM 2120 B	Color (true)	110		PCU	P324631	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P325400	
	SM 2540 C-97	TDS	3.86E+03		mg/L	P325500	
	SM 2540 D-97	TSS	20		mg/L	P325303	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P325739	RPD
1896326	EPA 350.1 Rev. 2.0	Ammonia-N	0.44		mg N/L	P324643	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P324982	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P325083	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P324807	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P324768	
1896329	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P324711	
1896375	EPA 200.7 Rev. 4.4	Calcium	216		mg/L	P324943	
		Iron	420		ug/L	P324943	
		Magnesium	132		mg/L	P324943	
		Potassium	28		mg/L	P324943	
		Sodium	973		mg/L	P324943	
		Zinc	5.0	U	ug/L	P324943	
	EPA 200.8 Rev. 5.4	Arsenic	1.18		ug/L	P324943	
		Cadmium	0.020	U	ug/L	P324943	
		Chromium	0.44	I	ug/L	P324943	
		Copper	0.48	I	ug/L	P324943	
		Lead	0.43		ug/L	P324943	
		Nickel	0.55	I	ug/L	P324943	
		Silver	0.010	U	ug/L	P324943	

Ref. Method and Comment:

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

**Sample Location: Saint Johns River @ 600m Downstream of
 Hatbill Park Ramp (Duplicate)**

Collection Date/Time: 05/03/2017 10:45

Field ID: G3CE0006_D

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896324	EPA 180.1 Rev. 2.0	Turbidity	10		NTU	P324688	
	EPA 300.0 Rev. 2.1	Chloride	1.7E+03		mg Cl/L	P325108	
		Sulfate	500		mg SO4/L	P325111	
	SM 2120 B	Color (true)	110		PCU	P324631	
	SM 2320 B-97	Total Alkalinity	92		mg CaCO3/L	P325400	
	SM 2540 C-97	TDS	3.86E+03		mg/L	P325500	
	SM 2540 D-97	TSS	19		mg/L	P325303	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P325739	RPD
1896327	EPA 350.1 Rev. 2.0	Ammonia-N	0.44		mg N/L	P324643	

Field ID: G3CE0006_D

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896327	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P324982	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P325083	
	EPA 365.1 Rev. 2.0	Total-P	0.088		mg P/L	P324807	
	SM 5310 B-00	Organic Carbon	26		mg C/L	P324768	
1896330	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P324711	
1896376	EPA 200.7 Rev. 4.4	Calcium	219		mg/L	P324943	
		Iron	480		ug/L	P324943	
		Magnesium	133		mg/L	P324943	
		Potassium	29		mg/L	P324943	
		Sodium	984		mg/L	P324943	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P324943	
		Arsenic	1.15		ug/L	P324943	
		Cadmium	0.020	U	ug/L	P324943	
		Chromium	0.45	I	ug/L	P324943	
		Copper	0.62	I	ug/L	P324943	
		Lead	0.47		ug/L	P324943	
		Nickel	0.55	I	ug/L	P324943	
		Silver	0.010	U	ug/L	P324943	

Ref. Method and Comment:

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

Sample Location: Field Blank

Collection Date/Time: 05/03/2017 13:20

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896325	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P324688	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P325108	
		Sulfate	0.20	U	mg SO4/L	P325111	
		Color (true)	2.5	U	PCU	P324631	
	SM 2320 B-97	Total Alkalinity	0.65	UQ	mg CaCO3/L	P325520	
	SM 2540 C-97	TDS	15	U	mg/L	P325500	
	SM 2540 D-97	TSS	2	U	mg/L	P325303	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325739	RPD
1896328	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P324644	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P324983	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324972	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P324795	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P324770	
1896331	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324711	
1896377	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P324943	
		Iron	30	U	ug/L	P324943	
		Magnesium	0.040	U	mg/L	P324943	
		Potassium	0.30	U	mg/L	P324943	
		Sodium	0.50	U	mg/L	P324943	
		Zinc	5.0	U	ug/L	P324943	

Field ID: Field Blank

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896377	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P324943	
		Cadmium	0.020	U	ug/L	P324943	
		Chromium	0.40	U	ug/L	P324943	
		Copper	0.20	U	ug/L	P324943	
		Lead	0.050	U	ug/L	P324943	
		Nickel	0.20	U	ug/L	P324943	
		Silver	0.010	U	ug/L	P324943	

Ref. Method and Comment:

SM 2320 B-97: Sample expired prior to analysis due to analytical difficulties.

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

Sample Location: Lake McCoy @ Center of Southern Lobe

Collection Date/Time: 05/03/2017 13:35

Field ID: G2CE0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1896332	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P324688	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P325108	
		Sulfate	29		mg SO4/L	P325111	
	SM 2120 B	Color (true)	50		PCU	P324631	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P325401	
	SM 2540 C-97	TDS	128		mg/L	P325500	
	SM 2540 D-97	TSS	6	I	mg/L	P325303	
	SM 4500 F-C-97	Fluoride	0.061	I	mg F/L	P325404	RPD
1896333	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P324644	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P324983	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P324972	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P324795	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P324770	
1896334	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P324707	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P324688

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P324943

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324943

Component	Result	Code	Units
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325108

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325111

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324644

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324983

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324972

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324795

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324807

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324707

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324711

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

Reference Method: SM 2120 B
Batch ID: P324631

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P325400

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

Reference Method: SM 2320 B-97
Batch ID: P325401

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P325520

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

Reference Method: SM 2540 C-97
Batch ID: P325500

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325303

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P324768

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

Reference Method: SM 5310 B-00
Batch ID: P324770

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: P324943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	107		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	100		P	85 - 115
Sodium	102		P	85 - 115
Zinc	99.4		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	103		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	100		P	85 - 115
Copper	98.9		P	85 - 115
Lead	100		P	85 - 115
Nickel	101		P	85 - 115
Silver	97.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325108

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325111

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324644

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.4		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324972

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

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: P324795

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324807

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324707

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324711

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

Reference Method: SM 2320 B-97
Batch ID: P325400

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

Reference Method: SM 2320 B-97
Batch ID: P325401

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

Reference Method: SM 2320 B-97
Batch ID: P325520

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

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.3		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P324768

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P324770

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896164	Calcium	101		P	80 - 120
1896164	Iron	106		P	80 - 120
1896164	Magnesium	103		P	80 - 120
1896164	Potassium	101		P	80 - 120
1896164	Sodium	104		P	80 - 120
1896164	Zinc	96.8		P	80 - 120
1896381	Calcium	104		P	80 - 120
1896381	Iron	104	105	P/P	80 - 120
1896381	Magnesium	105		P	80 - 120
1896381	Potassium	99.0	96.6	P/P	80 - 120
1896381	Sodium	103		P	80 - 120
1896381	Zinc	98.7	98.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896164	Arsenic	104		P	80 - 120
1896164	Cadmium	105		P	80 - 120
1896164	Chromium	97.6		P	80 - 120
1896164	Copper	96.6		P	80 - 120
1896164	Lead	100		P	80 - 120
1896164	Nickel	98.5		P	80 - 120
1896164	Silver	97.0		P	80 - 120
1896381	Arsenic	105	106	P/P	80 - 120
1896381	Cadmium	106	105	P/P	80 - 120
1896381	Chromium	96.2	95.9	P/P	80 - 120
1896381	Copper	94.8	96.2	P/P	80 - 120
1896381	Lead	101	102	P/P	80 - 120
1896381	Nickel	96.1	96.8	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896381	Silver	95.1	96.2	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896204	Chloride	98.2		P	90 - 110
1896332	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896204	Sulfate	94.1		P	90 - 110
1896332	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896279	Ammonia-N	108	108	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896333	Ammonia-N	105	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896350	Kjeldahl Nitrogen	97.9	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896339	Kjeldahl Nitrogen	97.7	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896333	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896350	NO2NO3-N	105	108	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324795

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896208	Total-P	106	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896279	Total-P	98.5	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896156	O-Phosphate-P	98.1	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896235	O-Phosphate-P	99.1	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896397	Fluoride	97.0	101	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896078	Fluoride	99.7	104	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P324768

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896326	Organic Carbon	102	103	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P324770

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1896168	Organic Carbon	100	100	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P324688

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896205	Turbidity	7.41	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P324943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896381	Calcium	2.34	Spike	P	0 - 20
1896381	Iron	0.798	Spike	P	0 - 20
1896381	Magnesium	0.858	Spike	P	0 - 20
1896381	Potassium	1.39	Spike	P	0 - 20
1896381	Sodium	1.72	Spike	P	0 - 20
1896381	Zinc	0.126	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P324943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896381	Arsenic	0.754	Spike	P	0 - 20
1896381	Cadmium	0.292	Spike	P	0 - 20
1896381	Chromium	0.332	Spike	P	0 - 20
1896381	Copper	1.42	Spike	P	0 - 20
1896381	Lead	0.920	Spike	P	0 - 20
1896381	Nickel	0.674	Spike	P	0 - 20
1896381	Silver	1.13	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896204	Chloride	0.101	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896204	Sulfate	0.118	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896279	Ammonia-N	0.313	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P324644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896333	Ammonia-N	2.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896350	Kjeldahl Nitrogen	0.368	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P324983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896339	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P324972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896333	NO2NO3-N	1.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896350	NO2NO3-N	2.35	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896208	Total-P	5.34	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P324807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896279	Total-P	0.438	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896156	O-Phosphate-P	0.213	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P324711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896235	O-Phosphate-P	0.0598	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P324631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896205	Color (true)	2.04	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P325400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896144	Total Alkalinity	0.0829	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P325401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896397	Total Alkalinity	0.451	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P325520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898240	Total Alkalinity	0.00206	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P325500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896335	TDS	1.07	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P325404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896397	Fluoride	3.56	Spike	F	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P325739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896078	Fluoride	3.49	Spike	F	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P324768

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896326	Organic Carbon	0.809	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P324770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1896168	Organic Carbon	0.0255	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: SM 2120 B
Run ID: A76192
Included Lab Sample IDs: 1896323, 1896324, 1896325, 1896332

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A76193
Included Lab Sample IDs: 1896326, 1896327, 1896328, 1896333

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76202
Included Lab Sample IDs: 1896323, 1896324, 1896325, 1896332

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76210
Included Lab Sample IDs: 1896329, 1896330, 1896331, 1896334

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	98.5	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A76230
Included Lab Sample IDs: 1896326, 1896327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A76231

Included Lab Sample IDs: 1896328, 1896333

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76269

Included Lab Sample IDs: 1896323, 1896324, 1896325, 1896332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	101	P/P	90 - 110
Chloride	103	103	P/P	90 - 110
Chloride	104	103	P/P	90 - 110
Sulfate	97.9	98.5	P/P	90 - 110
Sulfate	98.2	98.6	P/P	90 - 110
Sulfate	98.6	97.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76286

Included Lab Sample IDs: 1896326, 1896327, 1896328, 1896333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.5	P/P	90 - 110
Total-P	99.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76313

Included Lab Sample IDs: 1896328, 1896333

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76348

Included Lab Sample IDs: 1896326, 1896327

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76365

Included Lab Sample IDs: 1896375, 1896376, 1896377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.0	99.2	P/P	90 - 110
Arsenic	99.2	97.2	P/P	90 - 110
Cadmium	98.6	99.3	P/P	90 - 110
Cadmium	99.3	98.6	P/P	90 - 110
Chromium	96.3	95.1	P/P	90 - 110
Chromium	98.1	96.3	P/P	90 - 110
Copper	100	98.0	P/P	90 - 110
Copper	101	100	P/P	90 - 110
Lead	98.2	98.4	P/P	90 - 110
Lead	98.3	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76365

Included Lab Sample IDs: 1896375, 1896376, 1896377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	98.3	96.3	P/P	90 - 110
Nickel	98.8	98.3	P/P	90 - 110
Silver	99.2	98.4	P/P	90 - 110
Silver	99.5	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76391

Included Lab Sample IDs: 1896326, 1896327, 1896333

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76399

Included Lab Sample IDs: 1896328

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76431

Included Lab Sample IDs: 1896375, 1896376, 1896377

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Calcium	102	101	P/P	95 - 105
Iron	101	101	P/P	95 - 105
Magnesium	102	103	P/P	90 - 110
Magnesium	103	102	P/P	95 - 105
Potassium	101	101	P/P	95 - 105
Potassium	102	102	P/P	90 - 110
Sodium	101	100	P/P	95 - 105
Sodium	101	102	P/P	90 - 110
Zinc	100	100	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A76469

Included Lab Sample IDs: 1896323, 1896324, 1896332

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

Reference Method: SM 4500 F-C-97

Run ID: A76469

Included Lab Sample IDs: 1896332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	95.3	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
 Run ID: A76497
 Included Lab Sample IDs: 1896375, 1896376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	98.5	98.3	P/P	90 - 110
Zinc	99.2	100	P/P	90 - 110

Reference Method: SM 2320 B-97
 Run ID: A76528
 Included Lab Sample IDs: 1896325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
 Run ID: A76633
 Included Lab Sample IDs: 1896323, 1896324, 1896325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	104	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						7.41	
EPA 200.7 Rev. 4.4	Calcium	101	101	104				2.34
	Iron	107	106	104	105			0.798
	Magnesium	104	103	105				0.858
	Potassium	100	101	99.0	96.6			1.39
	Sodium	102	104	103				1.72
	Zinc	99.4	96.8	98.7	98.9			0.126
EPA 200.8 Rev. 5.4	Arsenic	103	104	105	106			0.754
	Cadmium	103	105	106	105			0.292
	Chromium	100	97.6	96.2	95.9			0.332
	Copper	98.9	96.6	94.8	96.2			1.42
	Lead	100	100	101	102			0.920
	Nickel	101	98.5	96.1	96.8			0.674
	Silver	97.5	97.0	95.1	96.2			1.13
EPA 300.0 Rev. 2.1	Chloride	101	98.2	97.2			0.101	
	Sulfate	96.0	94.1	99.1			0.118	
EPA 350.1 Rev. 2.0	Ammonia-N	108	108	108				0.313
	Ammonia-N	107	105	107				2.08
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.9	98.5				0.368
	Kjeldahl Nitrogen	99.4	97.7	99.4				1.16
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	103				1.47
	NO2NO3-N	104	105	108				2.35
EPA 365.1 Rev. 2.0	Total-P	105	106	99.5				5.34
	Total-P	99.5	98.5	98.1				0.438

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	98.1	97.8			0.213
	O-Phosphate-P	102	99.1	99.2			0.0598
SM 2120 B	Color (true)					2.04	
SM 2320 B-97	Total Alkalinity	103				0.0829	
	Total Alkalinity	103				0.451	
	Total Alkalinity	104				0.0020	
SM 2540 C-97	TDS					1.07	
SM 4500 F-C-97	Fluoride	94.3	97.0	101			3.56
	Fluoride	101	99.7	104			3.49
SM 5310 B-00	Organic Carbon	99.0	102	103			0.809
	Organic Carbon	101	100	100			0.0255

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1896323, 1896324, 1896325, 1896332
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1896375, 1896376, 1896377
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1896375, 1896376, 1896377
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1896323, 1896324, 1896325, 1896332
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1896323, 1896324, 1896325, 1896332
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1896326, 1896327, 1896328, 1896333
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1896326, 1896327, 1896328, 1896333
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1896326, 1896327, 1896328, 1896333
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1896326, 1896327, 1896328, 1896333
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1896329, 1896330, 1896331, 1896334
SM 2120 B / E31780	True Color measured at 450 nm	1896323, 1896324, 1896325, 1896332
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1896323, 1896324, 1896325, 1896332
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1896323, 1896324, 1896325, 1896332
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1896323, 1896324, 1896325, 1896332
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1896323, 1896324, 1896325, 1896332
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1896326, 1896327, 1896328, 1896333

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	05/04/2017			05/04/2017 17:05	Sima Feizi	1896323, 1896324, 1896325, 1896332
EPA 200.7 Rev. 4.4	05/04/2017	05/09/2017	Elliott D. Healy	05/15/2017	Martin Acosta	1896375, 1896376, 1896377
	05/04/2017	05/09/2017	Elliott D. Healy	05/17/2017	Martin Acosta	1896375, 1896376
EPA 200.8 Rev. 5.4	05/04/2017	05/09/2017	Elliott D. Healy	05/11/2017	Betina Topolski	1896375, 1896376, 1896377
EPA 300.0 Rev. 2.1	05/04/2017			05/10/2017	Ping Hua	1896323, 1896332
	05/04/2017			05/11/2017	Ping Hua	1896324, 1896325
EPA 350.1 Rev. 2.0	05/04/2017			05/04/2017	Julie Michelle Frank	1896326, 1896327, 1896328, 1896333
EPA 351.2 Rev. 2.0	05/04/2017	05/10/2017	Adrian Shelby	05/12/2017	Joseph Suarez	1896326, 1896327, 1896333
	05/04/2017	05/10/2017	Adrian Shelby	05/15/2017	Joseph Suarez	1896328
EPA 353.2 Rev. 2.0	05/04/2017			05/09/2017	Beverly Y. Sanders	1896328, 1896333
	05/04/2017			05/11/2017	Beverly Y. Sanders	1896326, 1896327
EPA 365.1 Rev. 2.0	05/04/2017	05/08/2017	Vijayalakshmi Reddy	05/09/2017	Lipi Saha	1896326, 1896327, 1896328, 1896333
EPA 365.1 Rev. 2.0 dissolved	05/04/2017			05/04/2017 16:07	Anthony C. Onicha	1896329
	05/04/2017			05/04/2017 16:08	Anthony C. Onicha	1896330
	05/04/2017			05/04/2017 16:09	Anthony C. Onicha	1896331, 1896334
SM 2120 B	05/04/2017			05/04/2017 15:35	Julia Storbeck	1896323
	05/04/2017			05/04/2017 15:36	Julia Storbeck	1896324
	05/04/2017			05/04/2017 15:37	Julia Storbeck	1896325
	05/04/2017			05/04/2017 15:38	Julia Storbeck	1896332
SM 2320 B-97	05/04/2017			05/16/2017	Dale L. Simmons	1896323, 1896324, 1896332
	05/04/2017			05/18/2017	Dale L. Simmons	1896325
SM 2540 C-97	05/04/2017			05/08/2017	Sima Feizi	1896323, 1896324, 1896325, 1896332
SM 2540 D-97	05/04/2017			05/08/2017	Sima Feizi	1896323, 1896324, 1896325, 1896332
SM 4500 F-C-97	05/04/2017			05/16/2017	Dale L. Simmons	1896332
	05/04/2017			05/24/2017	Dale L. Simmons	1896323, 1896324, 1896325
SM 5310 B-00	05/04/2017			05/05/2017	Julie Michelle Frank	1896328, 1896333
	05/04/2017			05/06/2017	Julie Michelle Frank	1896326, 1896327