

Chemical Analysis Report

NW-DIST-2017-05-10-01

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

Event Description: **Freeport/Bay/Washington run WBID 557 646 567 950**
Request ID: **RQ-2017-05-22-27**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government St
Suite 208A
Pensacola, FL 32502-5794
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Certified by: Colin Wright, Program Administrator

Date Certified: 06-JUN-2017 10:53

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over 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 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: Otter Creek Otter Creek Bridge

Collection Date/Time: 05/09/2017 12:20

Field ID: G3NW0133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1897960	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P325038	
	EPA 300.0 Rev. 2.1	Chloride	57		mg Cl/L	P325826	
		Sulfate	12		mg SO4/L	P325830	
	SM 2120 B	Color (true)	27	A	PCU	P325027	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P325520	
	SM 2540 C-97	TDS	160		mg/L	P325630	
	SM 2540 D-97	TSS	3	I	mg/L	P325668	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325809	RPD
1897963	EPA 350.1 Rev. 2.0	Ammonia-N	1.8		mg N/L	P325054	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P325346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P325200	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P325096	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P325359	
1897966	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P325043	
1897975	EPA 200.7 Rev. 4.4	Calcium	12.1		mg/L	P325369	
		Iron	250		ug/L	P325369	
		Magnesium	2.69		mg/L	P325369	
		Potassium	7.0		mg/L	P325369	
		Sodium	30.9		mg/L	P325369	
		Zinc	5.0	U	ug/L	P325369	
	EPA 200.8 Rev. 5.4	Arsenic	0.29		ug/L	P325369	
		Cadmium	0.020	U	ug/L	P325369	
		Chromium	0.40	U	ug/L	P325369	
		Copper	0.20	U	ug/L	P325369	
		Lead	0.084	I	ug/L	P325369	
		Silver	0.010	U	ug/L	P325369	

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: Otter Creek Otter Creek Bridge

Collection Date/Time: 05/09/2017 12:25

Field ID: G3NW0133DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1897961	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P325038	
	EPA 300.0 Rev. 2.1	Chloride	57		mg Cl/L	P325826	
		Sulfate	12		mg SO4/L	P325830	
	SM 2120 B	Color (true)	28		PCU	P325027	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P325520	
	SM 2540 C-97	TDS	170		mg/L	P325630	
	SM 2540 D-97	TSS	3	I	mg/L	P325668	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325809	RPD
1897964	EPA 350.1 Rev. 2.0	Ammonia-N	1.8		mg N/L	P325054	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P325346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P325200	

Field ID: G3NW0133DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1897964	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P325096	
	SM 5310 B-00	Organic Carbon	3.3		mg C/L	P325359	
1897967	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P325043	
1897976	EPA 200.7 Rev. 4.4	Calcium	12.0		mg/L	P325369	
		Iron	250		ug/L	P325369	
		Magnesium	2.68		mg/L	P325369	
		Potassium	6.9		mg/L	P325369	
		Sodium	30.7		mg/L	P325369	
		Zinc	5.0	U	ug/L	P325369	
	EPA 200.8 Rev. 5.4	Arsenic	0.28		ug/L	P325369	
		Cadmium	0.020	U	ug/L	P325369	
		Chromium	0.40	U	ug/L	P325369	
		Copper	0.20	U	ug/L	P325369	
		Lead	0.077	I	ug/L	P325369	
		Silver	0.010	U	ug/L	P325369	

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: 05/09/2017 12:30

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1897962	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P325038	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P325826	
		Sulfate	0.20	U	mg SO4/L	P325830	
	SM 2120 B	Color (true)	2.5	U	PCU	P325027	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P325520	
	SM 2540 C-97	TDS	15	U	mg/L	P325629	
	SM 2540 D-97	TSS	2	U	mg/L	P325667	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325809	RPD
1897965	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P325054	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P325346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P325200	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P325098	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P325359	
1897968	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325043	
1897977	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P325369	
		Iron	30	U	ug/L	P325369	
		Magnesium	0.040	U	mg/L	P325369	
		Potassium	0.30	U	mg/L	P325369	
		Sodium	0.50	U	mg/L	P325369	
		Zinc	5.0	U	ug/L	P325369	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P325369	
		Cadmium	0.020	U	ug/L	P325369	
		Chromium	0.40	U	ug/L	P325369	

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1897977	EPA 200.8 Rev. 5.4	Copper	0.20	U	ug/L	P325369	
		Lead	0.050	U	ug/L	P325369	
		Silver	0.010	U	ug/L	P325369	

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: Lafayette Creek

Collection Date/Time: 05/09/2017 13:30

Field ID: G3NW0118

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1897951	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P325038	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P325826	
		Sulfate	2.8		mg SO4/L	P325830	
	SM 2120 B	Color (true)	28		PCU	P325027	
	SM 2320 B-97	Total Alkalinity	2.6		mg CaCO3/L	P325590	
	SM 2540 C-97	TDS	31		mg/L	P325630	
	SM 2540 D-97	TSS	2	I	mg/L	P325668	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325593	
1897954	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P325054	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.14	I	mg N/L	P325158	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.22		mg N/L	P325200	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P325096	
	SM 5310 B-00	Organic Carbon	1.9		mg C/L	P325359	
1897957	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P325041	

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: Fourmile Creek

Collection Date/Time: 05/09/2017 13:45

Field ID: G3NW0112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1897952	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P325038	
	EPA 300.0 Rev. 2.1	Chloride	2.3		mg Cl/L	P325826	
		Sulfate	2.0		mg SO4/L	P325830	
	SM 2120 B	Color (true)	30		PCU	P325027	
	SM 2320 B-97	Total Alkalinity	0.88	I	mg CaCO3/L	P325590	
	SM 2540 C-97	TDS	19	I	mg/L	P325630	
	SM 2540 D-97	TSS	2	I	mg/L	P325668	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325593	
1897955	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P325054	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P325346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.066		mg N/L	P325200	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P325096	
	SM 5310 B-00	Organic Carbon	2.2		mg C/L	P325359	
1897958	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P325041	

Field ID: G3NW0112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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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: Magnolia Creek above Owl Head's Rd

Collection Date/Time: 05/09/2017 14:30

Field ID: G3NW0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1897953	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P325038	
	EPA 300.0 Rev. 2.1	Chloride	1.8		mg Cl/L	P325826	
		Sulfate	2.4		mg SO4/L	P325830	
	SM 2120 B	Color (true)	28		PCU	P325027	
	SM 2320 B-97	Total Alkalinity	1.3	I	mg CaCO3/L	P325590	
	SM 2540 C-97	TDS	28		mg/L	P325630	
	SM 2540 D-97	TSS	2	I	mg/L	P325668	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P325593	
1897956	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P325054	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I	mg N/L	P325346	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.088		mg N/L	P325200	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P325335	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P325359	
1897959	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P325041	
	dissolved						

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: P325038

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P325369

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P325369

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: P325369

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325826

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325830

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325054

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325158

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325346

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325200

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325096

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325098

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325335

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325041

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325043

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

Reference Method: SM 2120 B
Batch ID: P325027

Component	Result	Code	Units
Color (true)	2.5	U	PCU

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

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

Reference Method: SM 2320 B-97
Batch ID: P325590

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

Reference Method: SM 2540 C-97
Batch ID: P325629

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P325630

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P325667

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P325668

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P325593

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P325809

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P325359

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: P325369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	107		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	100		P	85 - 115
Sodium	104		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P325369

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	105		P	85 - 115
Copper	103		P	85 - 115
Lead	103		P	85 - 115
Silver	99.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325826

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325830

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325054

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325158

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325346

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325200

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325096

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325098

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325335

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325041

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325043

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

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 2320 B-97
Batch ID: P325590

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

Reference Method: SM 4500 F-C-97
Batch ID: P325593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	92.7		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P325809

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P325359

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P325369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897181	Calcium	106		P	80 - 120
1897181	Iron	108		P	80 - 120
1897181	Magnesium	109		P	80 - 120
1897181	Potassium	104		P	80 - 120
1897181	Sodium	107		P	80 - 120
1897181	Zinc	99.3		P	80 - 120
1898250	Calcium	103		P	80 - 120
1898250	Iron	107	108	P/P	80 - 120
1898250	Magnesium	107	106	P/P	80 - 120
1898250	Potassium	101	98.8	P/P	80 - 120
1898250	Sodium	104		P	80 - 120
1898250	Zinc	101	103	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P325369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897181	Arsenic	109		P	80 - 120
1897181	Cadmium	106		P	80 - 120
1897181	Chromium	105		P	80 - 120
1897181	Copper	103		P	80 - 120
1897181	Lead	103		P	80 - 120
1897181	Silver	99.1		P	80 - 120
1898250	Arsenic	108	107	P/P	80 - 120
1898250	Cadmium	106	106	P/P	80 - 120
1898250	Chromium	105	105	P/P	80 - 120
1898250	Copper	103	102	P/P	80 - 120
1898250	Lead	103	103	P/P	80 - 120
1898250	Silver	99.7	98.1	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325826

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898024	Chloride	101		P	90 - 110
1898025	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325830

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898024	Sulfate	98.7		P	90 - 110
1898025	Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897954	Ammonia-N	108	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897698	Kjeldahl Nitrogen	94.7	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897955	Kjeldahl Nitrogen	99.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325200

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897963	NO2NO3-N	104		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897954	Total-P	102	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898031	Total-P	98.9	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898804	Total-P	99.2	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897732	O-Phosphate-P	95.9	97.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325043

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897966	O-Phosphate-P	96.2	98.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P325593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898370	Fluoride	99.0	100	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P325809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898240	Fluoride	93.8	98.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P325359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1897954	Organic Carbon	89.0	92.2	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P325038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897790	Turbidity	5.17	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P325369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898250	Calcium	0.759	Spike	P	0 - 20
1898250	Iron	0.0484	Spike	P	0 - 20
1898250	Magnesium	0.229	Spike	P	0 - 20
1898250	Potassium	1.53	Spike	P	0 - 20
1898250	Sodium	0.535	Spike	P	0 - 20
1898250	Zinc	1.89	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P325369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898250	Arsenic	0.662	Spike	P	0 - 20
1898250	Cadmium	0.0367	Spike	P	0 - 20
1898250	Chromium	0.241	Spike	P	0 - 20
1898250	Copper	0.611	Spike	P	0 - 20
1898250	Lead	0.515	Spike	P	0 - 20
1898250	Silver	1.65	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325826

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898024	Chloride	0.249	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P325830

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898024	Sulfate	6.13	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897954	Ammonia-N	0.697	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897698	Kjeldahl Nitrogen	1.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897955	Kjeldahl Nitrogen	1.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325200

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897963	NO2NO3-N	0.777	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897954	Total-P	6.81	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898031	Total-P	0.370	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898804	Total-P	1.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897732	O-Phosphate-P	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897966	O-Phosphate-P	2.39	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P325027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897960	Color (true)	4.70	Sample	P	0 - 20

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 2320 B-97
Batch ID: P325590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898370	Total Alkalinity	0.201	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P325629

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897697	TDS	2.04	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P325630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897739	TDS	2.31	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P325593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898370	Fluoride	1.00	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P325809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898240	Fluoride	4.09	Spike	F	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P325359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1897954	Organic Carbon	3.19	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A76330

Included Lab Sample IDs: 1897951, 1897952, 1897953, 1897960, 1897961, 1897962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	99.4	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A76333

Included Lab Sample IDs: 1897957, 1897958, 1897959, 1897966, 1897967, 1897968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.7	P/P	90 - 110
O-Phosphate-P	99.5	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A76334

Included Lab Sample IDs: 1897951, 1897952, 1897953, 1897960, 1897961, 1897962

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76336

Included Lab Sample IDs: 1897954, 1897955, 1897956, 1897963, 1897964, 1897965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	98.7	P/P	90 - 110
Ammonia-N	101	101	P/P	90 - 110
Ammonia-N	104	104	P/P	90 - 110
Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76377

Included Lab Sample IDs: 1897954, 1897955, 1897956, 1897963, 1897964, 1897965

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76417

Included Lab Sample IDs: 1897954, 1897955, 1897963, 1897964, 1897965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.0	P/P	90 - 110
Total-P	99.2	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A76450

Included Lab Sample IDs: 1897954, 1897955, 1897956, 1897963, 1897964, 1897965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.7	93.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76491

Included Lab Sample IDs: 1897956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76495

Included Lab Sample IDs: 1897954

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76520

Included Lab Sample IDs: 1897955, 1897956, 1897963, 1897964, 1897965

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	96.5	P/P	90 - 110
Kjeldahl Nitrogen	99.3	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A76528

Included Lab Sample IDs: 1897960, 1897961, 1897962

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A76530

Included Lab Sample IDs: 1897975, 1897976, 1897977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	101	P/P	90 - 110
Arsenic	98.9	99.3	P/P	90 - 110
Cadmium	97.6	98.1	P/P	90 - 110
Cadmium	99.8	98.9	P/P	90 - 110
Chromium	103	101	P/P	90 - 110
Chromium	99.8	101	P/P	90 - 110
Copper	103	102	P/P	90 - 110
Copper	99.7	99.9	P/P	90 - 110
Lead	97.6	96.9	P/P	90 - 110
Lead	99.1	97.5	P/P	90 - 110
Silver	101	98.9	P/P	90 - 110
Silver	96.8	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A76561

Included Lab Sample IDs: 1897951, 1897952, 1897953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76561

Included Lab Sample IDs: 1897951, 1897952, 1897953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	95.7	95.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A76661

Included Lab Sample IDs: 1897960, 1897961, 1897962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	96.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A76672

Included Lab Sample IDs: 1897951, 1897952, 1897953, 1897960, 1897961, 1897962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	102	P/P	90 - 110
Chloride	103	103	P/P	90 - 110
Sulfate	100	96.0	P/P	90 - 110
Sulfate	96.0	97.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A76793

Included Lab Sample IDs: 1897975, 1897976, 1897977

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	101	P/P	90 - 110
Calcium	102	100	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Iron	104	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	100	101	P/P	90 - 110
Sodium	101	101	P/P	90 - 110
Zinc	102	103	P/P	90 - 110
Zinc	102	102	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					5.17	
EPA 200.7 Rev. 4.4	Calcium	106	106	103			0.759
	Iron	107	108	107	108		0.0484
	Magnesium	109	109	107	106		0.229
	Potassium	100	104	101	98.8		1.53
	Sodium	104	107	104			0.535
	Zinc	101	99.3	101	103		1.89
EPA 200.8 Rev. 5.4	Arsenic	105	109	108	107		0.662
	Cadmium	104	106	106	106		0.0367
	Chromium	105	105	105	105		0.241
	Copper	103	103	103	102		0.611
	Lead	103	103	103	103		0.515
	Silver	99.1	99.1	99.7	98.1		1.65
EPA 300.0 Rev. 2.1	Chloride	103	101	101		0.249	
	Sulfate	99.9	98.7	97.6		6.13	
EPA 350.1 Rev. 2.0	Ammonia-N	106	108	107			0.697
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	94.7	97.0			1.36
	Kjeldahl Nitrogen	101	99.0	101			1.76
EPA 353.2 Rev. 2.0	NO2NO3-N	105	104				0.777
EPA 365.1 Rev. 2.0	Total-P	104	102	109			6.81
	Total-P	102	98.9	99.3			0.370
	Total-P	102	99.2	100			1.22
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	95.9	97.1			1.16
	O-Phosphate-P	101	96.2	98.7			2.39
SM 2120 B	Color (true)					4.70	
SM 2320 B-97	Total Alkalinity	104				0.0020	
	Total Alkalinity	103				0.201	
SM 2540 C-97	TDS					2.04	
	TDS					2.31	
SM 4500 F-C-97	Fluoride	92.7	99.0	100			1.00
	Fluoride	99.9	93.8	98.5			4.09
SM 5310 B-00	Organic Carbon	92.2	89.0	92.2			3.19

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1897975, 1897976, 1897977
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1897975, 1897976, 1897977
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1897954, 1897955, 1897956, 1897963, 1897964, 1897965
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1897954, 1897955, 1897956, 1897963, 1897964, 1897965
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1897954, 1897955, 1897956, 1897963, 1897964, 1897965
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1897954, 1897955, 1897956, 1897963, 1897964, 1897965

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 365.1 Rev. 2.0 dissolved / E31780 SM 2120 B / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L True Color measured at 450 nm	1897957, 1897958, 1897959, 1897966, 1897967, 1897968 1897951, 1897952, 1897953, 1897960, 1897961, 1897962
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1897954, 1897955, 1897956, 1897963, 1897964, 1897965

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	05/10/2017			05/10/2017 15:36	Sima Feizi	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
EPA 200.7 Rev. 4.4	05/10/2017	05/16/2017	Elliott D. Healy	05/31/2017	Betina Topolski	1897975, 1897976, 1897977
EPA 200.8 Rev. 5.4	05/10/2017	05/16/2017	Elliott D. Healy	05/18/2017	Betina Topolski	1897975, 1897976, 1897977
EPA 300.0 Rev. 2.1	05/10/2017			05/24/2017	Ping Hua	1897951
	05/10/2017			05/25/2017	Ping Hua	1897952, 1897953, 1897960, 1897961, 1897962
EPA 350.1 Rev. 2.0	05/10/2017			05/10/2017	Julie Michelle Frank	1897954, 1897955, 1897956, 1897963, 1897964, 1897965
EPA 351.2 Rev. 2.0	05/10/2017	05/12/2017	Adrian Shelby	05/17/2017	Joseph Suarez	1897954
	05/10/2017	05/16/2017	Adrian Shelby	05/18/2017	Joseph Suarez	1897955, 1897956, 1897963, 1897964, 1897965
EPA 353.2 Rev. 2.0	05/10/2017			05/12/2017	Beverly Y. Sanders	1897954, 1897955, 1897956, 1897963, 1897964, 1897965
EPA 365.1 Rev. 2.0	05/10/2017	05/11/2017	Adrian Shelby	05/15/2017	Lipi Saha	1897954, 1897955, 1897963, 1897964, 1897965
	05/10/2017	05/16/2017	Adrian Shelby	05/17/2017	Lipi Saha	1897956
EPA 365.1 Rev. 2.0 dissolved	05/10/2017			05/10/2017 15:11	Anthony C. Onicha	1897966
	05/10/2017			05/10/2017 15:22	Anthony C. Onicha	1897957
	05/10/2017			05/10/2017 15:23	Anthony C. Onicha	1897958
	05/10/2017			05/10/2017 15:24	Anthony C. Onicha	1897959
	05/10/2017			05/10/2017 15:25	Anthony C. Onicha	1897967, 1897968
SM 2120 B	05/10/2017			05/10/2017 15:08	Julia Storbeck	1897960
	05/10/2017			05/10/2017 15:09	Julia Storbeck	1897961
	05/10/2017			05/10/2017 15:10	Julia Storbeck	1897951, 1897952
	05/10/2017			05/10/2017 15:11	Julia Storbeck	1897953
	05/10/2017			05/10/2017 15:12	Julia Storbeck	1897962
SM 2320 B-97	05/10/2017			05/18/2017	Dale L. Simmons	1897960
	05/10/2017			05/19/2017	Dale L. Simmons	1897951, 1897952, 1897961, 1897962
	05/10/2017			05/20/2017	Dale L. Simmons	1897953
SM 2540 C-97	05/10/2017			05/12/2017	Yijie Li	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
SM 2540 D-97	05/10/2017			05/12/2017	Yijie Li	1897951, 1897952, 1897953, 1897960, 1897961, 1897962
SM 4500 F-C-97	05/10/2017			05/19/2017	Dale L. Simmons	1897951, 1897952
	05/10/2017			05/20/2017	Dale L. Simmons	1897953
	05/10/2017			05/24/2017	Dale L. Simmons	1897960, 1897961, 1897962
SM 5310 B-00	05/10/2017			05/15/2017	Christopher Armour	1897954, 1897955, 1897956, 1897963, 1897964, 1897965