

Chemical Analysis Report

SW-DIST-2020-03-04-02

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

Event Description: **Horsehole - WBID 3703**
Request ID: **RQ-2020-03-02-11**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 24-MAR-2020 16:35



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Horsehole Creek @ 19

Collection Date/Time: 03/03/2020 12:20

Field ID: G1SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161966	EPA 180.1 Rev. 2.0	Turbidity	1.4	A	NTU	P380053	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P380343	
		Sulfate	2.2		mg SO4/L	P380345	
	SM 2120 B-2011	Color (true)	97	A	PCU	P380127	
	SM 2320 B-2011	Total Alkalinity	87		mg CaCO3/L	P380590	
	SM 2540 C-2011	TDS	138	A	mg/L	P380757	
	SM 2540 D-2011	TSS	3	IA	mg/L	P380547	
2161967	SM 4500 F-C-2011	Fluoride	0.039	I	mg F/L	P380681	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P380606	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43		mg N/L	P380182	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P380286	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P380309	
2161968	SM 5310 B-2011	Organic Carbon	15		mg C/L	P380170	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.018		mg P/L	P380062	
2161971	EPA 8321B	2,4-D	0.0020	U	ug/L	P380128	
		Acesulfame K**	0.10	U	ug/L	P380189	MS
		AMPA**	0.10	U	ug/L	P380189	
		Sucralose**	0.037	I	ug/L	P380189	
		Acetaminophen**	0.0080	U	ug/L	P380128	
		Acetamiprid**	0.0020	U	ug/L	P380128	
		Endothall**	0.25	U	ug/L	P380189	
		Glufosinate**	0.10	U	ug/L	P380189	
		Glyphosate**	0.10	U	ug/L	P380189	
		Afidopyropen**	0.0020	UJ	ug/L	P380128	
		Bentazon	8.0E-04	U	ug/L	P380128	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380128	
		Carbamazepine**	8.0E-04	U	ug/L	P380128	
		Clothianidin**	0.0020	U	ug/L	P380128	
		Dinotefuran**	0.0020	U	ug/L	P380128	
		Diuron	0.0020	U	ug/L	P380128	
		Fenuron	0.016	U	ug/L	P380128	
		Fluridone**	8.0E-04	U	ug/L	P380128	
		Imazapyr**	0.0040	U	ug/L	P380128	
		Hydrocodone**	0.0020	U	ug/L	P380128	
		Ibuprofen**	0.020	U	ug/L	P380128	
		Imidacloprid	0.0020	U	ug/L	P380128	
		Linuron	0.0040	U	ug/L	P380128	
		Mandestrobin**	0.0020	UJ	ug/L	P380128	
		MCP	0.0020	U	ug/L	P380128	
		Naproxen**	0.0080	U	ug/L	P380128	RPD
		Primidone**	0.0040	U	ug/L	P380128	
		Pyraclostrobin**	0.0020	U	ug/L	P380128	
		Thiamethoxam**	0.0020	U	ug/L	P380128	

Field ID: G1SW0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161971	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P380128	
		Triclopyr**	0.0040	U	ug/L	P380128	
2161972	EPA 200.7 Rev. 4.4	Barium	5.9		ug/L	P380202	
		Calcium	36.7		mg/L	P380202	
		Iron	270		ug/L	P380202	
		Magnesium	3.64		mg/L	P380202	
		Potassium	0.30	U	mg/L	P380202	
		Sodium	7.6		mg/L	P380202	
		Zinc	5.0	U	ug/L	P380202	
	EPA 200.8 Rev. 5.4	Aluminum	158		ug/L	P380202	
		Antimony	0.061	I	ug/L	P380202	
		Arsenic	0.56		ug/L	P380202	
		Boron**	20.5		ug/L	P380202	
		Cadmium	0.020	U	ug/L	P380202	
		Chromium	0.68	I	ug/L	P380202	
		Copper	0.40	U	ug/L	P380202	
		Lead	0.20	U	ug/L	P380202	
		Nickel	0.50	U	ug/L	P380202	
		Selenium	0.20	U	ug/L	P380202	
		Silver	0.010	U	ug/L	P380202	
		Thallium	0.10	U	ug/L	P380202	
	SM 2340B	Hardness	107		mg/L	P380202	

Ref. Method and Comment:

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

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380053

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380343

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380309

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380062

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

Reference Method: EPA 8321B
Batch ID: P380128

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P380189

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P380127

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380590

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

Reference Method: SM 2540 C-2011
Batch ID: P380757

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380547

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380170

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: P380202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.2		P	85 - 115
Calcium	102		P	85 - 115
Iron	100		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	98.7		P	85 - 115
Sodium	99.6		P	85 - 115
Zinc	99.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.4		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	98.6		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.8		P	85 - 115
Copper	98.1		P	85 - 115
Lead	95.8		P	85 - 115
Nickel	96.3		P	85 - 115
Selenium	94.0		P	85 - 115
Silver	94.1		P	85 - 115
Thallium	99.1		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380343

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380309

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380062

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

Reference Method: EPA 8321B
Batch ID: P380128

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
Acetaminophen	109		P	30 - 160
Acetamiprid	91.6		P	30 - 160
Afidopyropen	81.1		P	30 - 160
Bentazon	89.6		P	30 - 160
Benzovindiflupyr	80.6		P	30 - 160
Carbamazepine	93.1		P	30 - 160
Clothianidin	93.9		P	30 - 160
Dinotefuran	114		P	30 - 160
Diuron	74.0		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	76.1		P	30 - 160
Hydrocodone	88.9		P	30 - 160
Ibuprofen	82.1		P	30 - 160
Imazapyr	93.5		P	30 - 160
Imidacloprid	99.2		P	30 - 160
Linuron	71.5		P	30 - 160
Mandestrobin	84.5		P	30 - 160
MCPP	120		P	30 - 160
Naproxen	102		P	30 - 160
Primidone	92.7		P	30 - 160
Pyraclostrobin	81.0		P	30 - 160
Thiamethoxam	95.3		P	30 - 160
Tolfenpyrad	40.0		P	30 - 160
Triclopyr	102		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P380189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	112		P	40 - 150
AMPA	111		P	40 - 150
Endothall	89.9		P	40 - 150
Glufosinate	115		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P380189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	118		P	40 - 140
Sucralose	94.9		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P380127

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P380590

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161902	Barium	103		P	80 - 120
2161902	Calcium	100		P	80 - 120
2161902	Iron	102		P	80 - 120
2161902	Magnesium	103		P	80 - 120
2161902	Potassium	105		P	80 - 120
2161902	Sodium	99.1		P	80 - 120
2161902	Zinc	104		P	80 - 120
2161957	Barium	102	102	P/P	80 - 120
2161957	Calcium	100	99.7	P/P	80 - 120
2161957	Iron	102	102	P/P	80 - 120
2161957	Magnesium	102	103	P/P	80 - 120
2161957	Potassium	101	101	P/P	80 - 120
2161957	Sodium	99.2	98.4	P/P	80 - 120
2161957	Zinc	101	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161902	Aluminum	95.0		P	80 - 120
2161902	Antimony	100		P	80 - 120
2161902	Arsenic	97.9		P	80 - 120
2161902	Boron	102		P	80 - 120
2161902	Cadmium	102		P	80 - 120
2161902	Chromium	97.9		P	80 - 120
2161902	Copper	93.0		P	80 - 120
2161902	Lead	96.3		P	80 - 120
2161902	Nickel	99.3		P	80 - 120
2161902	Selenium	86.9		P	80 - 120
2161902	Silver	92.2		P	80 - 120
2161902	Thallium	102		P	80 - 120
2161957	Aluminum	93.9	95.2	P/P	80 - 120
2161957	Antimony	103	103	P/P	80 - 120
2161957	Arsenic	96.6	96.3	P/P	80 - 120
2161957	Boron	102	101	P/P	80 - 120
2161957	Cadmium	103	101	P/P	80 - 120
2161957	Chromium	97.8	98.4	P/P	80 - 120
2161957	Copper	95.6	95.9	P/P	80 - 120
2161957	Lead	96.8	96.1	P/P	80 - 120
2161957	Nickel	96.2	95.1	P/P	80 - 120
2161957	Selenium	93.2	92.7	P/P	80 - 120
2161957	Silver	93.3	94.1	P/P	80 - 120
2161957	Thallium	101	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161843	Chloride	98.1		P	90 - 110
2161920	Chloride	97.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161843	Sulfate	99.6		P	90 - 110
2161920	Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161940	Ammonia-N	98.9	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161967	Kjeldahl Nitrogen	105	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161941	NO2NO3-N	96.4	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161936	Total-P	106	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161950	O-Phosphate-P	96.6	97.8	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161361	2,4-D	83.4	106	P/P	30 - 160
2161361	Acetaminophen	126	117	P/P	30 - 160
2161361	Acetamiprid	83.3	86.3	P/P	30 - 160
2161361	Afidopyropen	87.2	88.0	P/P	30 - 160
2161361	Bentazon	42.6	42.9	P/P	30 - 160
2161361	Benzovindiflupyr	86.6	80.7	P/P	30 - 160
2161361	Carbamazepine	73.9	74.2	P/P	30 - 160
2161361	Clothianidin	91.9	92.4	P/P	30 - 160
2161361	Dinotefuran	143	134	P/P	30 - 160
2161361	Diuron	65.1	61.0	P/P	30 - 160
2161361	Fenuron	77.1	74.8	P/P	30 - 160
2161361	Fluridone	79.9	65.1	P/P	30 - 160
2161361	Hydrocodone	88.4	85.6	P/P	30 - 160
2161361	Ibuprofen	78.2	67.9	P/P	30 - 160
2161361	Imidacloprid	157	145	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380128

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161361	Linuron	66.0	61.7	P/P	30 - 160
2161361	Mandestrobin	86.2	81.0	P/P	30 - 160
2161361	MCCP	125	104	P/P	30 - 160
2161361	Naproxen	105	68.3	P/P	30 - 160
2161361	Primidone	96.6	89.8	P/P	30 - 160
2161361	Pyraclostrobin	99.5	83.6	P/P	30 - 160
2161361	Thiamethoxam	138	136	P/P	30 - 160
2161361	Tolfenpyrad	47.2	46.0	P/P	30 - 160
2161361	Triclopyr	105	99.7	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P380189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161916	Acesulfame K	21.9	22.4	F/F	40 - 150
2161916	AMPA	88.9	87.7	P/P	40 - 150
2161916	Endothall	102	126	P/P	40 - 150
2161916	Glufosinate	103	100	P/P	40 - 150
2161916	Glyphosate	71.1	83.7	P/P	40 - 140
2161916	Sucralose	73.4	47.3	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162166	Fluoride	97.5	98.6	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P380170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161936	Organic Carbon	99.3	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380053

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161966	Turbidity	8.89	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161957	Barium	0.0477	Spike	P	0 - 20
2161957	Calcium	0.189	Spike	P	0 - 20
2161957	Iron	0.0367	Spike	P	0 - 20
2161957	Magnesium	0.464	Spike	P	0 - 20
2161957	Potassium	0.406	Spike	P	0 - 20
2161957	Sodium	0.618	Spike	P	0 - 20
2161957	Zinc	0.276	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161957	Aluminum	1.12	Spike	P	0 - 20
2161957	Antimony	0.301	Spike	P	0 - 20
2161957	Arsenic	0.311	Spike	P	0 - 20
2161957	Boron	1.74	Spike	P	0 - 20
2161957	Cadmium	1.39	Spike	P	0 - 20
2161957	Chromium	0.663	Spike	P	0 - 20
2161957	Copper	0.357	Spike	P	0 - 20
2161957	Lead	0.709	Spike	P	0 - 20
2161957	Nickel	1.20	Spike	P	0 - 20
2161957	Selenium	0.531	Spike	P	0 - 20
2161957	Silver	0.904	Spike	P	0 - 20
2161957	Thallium	0.455	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161920	Chloride	0.575	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161920	Sulfate	0.615	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161940	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161967	Kjeldahl Nitrogen	5.24	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161941	NO2NO3-N	0.425	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161936	Total-P	1.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161950	O-Phosphate-P	1.23	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P380128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161361	2,4-D	22.3	Spike	P	0 - 30
2161361	Acetaminophen	7.86	Spike	P	0 - 30
2161361	Acetamiprid	3.60	Spike	P	0 - 30
2161361	Afidopyropen	0.972	Spike	P	0 - 30
2161361	Bentazon	0.354	Spike	P	0 - 30
2161361	Benzovindiflupyr	7.01	Spike	P	0 - 30
2161361	Carbamazepine	0.359	Spike	P	0 - 30
2161361	Clothianidin	0.562	Spike	P	0 - 30
2161361	Dinotefuran	6.70	Spike	P	0 - 30
2161361	Diuron	6.47	Spike	P	0 - 30
2161361	Fenuron	3.00	Spike	P	0 - 30
2161361	Fluridone	19.0	Spike	P	0 - 30
2161361	Hydrocodone	3.30	Spike	P	0 - 30
2161361	Ibuprofen	14.2	Spike	P	0 - 30
2161361	Imazapyr	2.13	Spike	P	0 - 30
2161361	Imidacloprid	7.96	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380128

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161361	Linuron	6.70	Spike	P	0 - 30
2161361	Mandestrobin	6.29	Spike	P	0 - 30
2161361	MCP	18.9	Spike	P	0 - 30
2161361	Naproxen	42.3	Spike	F	0 - 30
2161361	Primidone	7.29	Spike	P	0 - 30
2161361	Pyraclostrobin	17.3	Spike	P	0 - 30
2161361	Thiamethoxam	1.24	Spike	P	0 - 30
2161361	Tolfenpyrad	2.52	Spike	P	0 - 30
2161361	Triclopyr	5.53	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P380189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161916	Acesulfame K	2.32	Spike	P	0 - 30
2161916	AMPA	0.809	Spike	P	0 - 30
2161916	Endothall	21.7	Spike	P	0 - 30
2161916	Glufosinate	3.17	Spike	P	0 - 30
2161916	Glyphosate	5.63	Spike	P	0 - 30
2161916	Sucralose	27.9	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P380127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161966	Color (true)	1.43	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380590

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162559	Total Alkalinity	0.0108	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P380757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161966	TDS	0.722	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P380681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162166	Fluoride	0.963	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P380170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161936	Organic Carbon	2.81	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2161971
Field Sample ID: G1SW0103

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	124	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	56.7	P	30 - 160
EPA 8321B	Endothall-d6	84.0	P	30 - 160
EPA 8321B	Endothall-d6	84.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.2	P	30 - 160
EPA 8321B	Primidone-d5	113	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97995

Included Lab Sample IDs: 2161966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97998

Included Lab Sample IDs: 2161968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.5	96.4	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A98019

Included Lab Sample IDs: 2161966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115

Reference Method: SM 5310 B-2011

Run ID: A98030

Included Lab Sample IDs: 2161967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	98.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98048

Included Lab Sample IDs: 2161972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	102	P/P	90 - 110
Calcium	100	101	P/P	90 - 110
Iron	103	104	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	104	104	P/P	90 - 110
Zinc	99.8	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98061

Included Lab Sample IDs: 2161967

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

Reference Method: EPA 8321B

Run ID: A98063

Included Lab Sample IDs: 2161971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	120	107	P/P	60 - 160
Endothall	98.1	130	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98065

Included Lab Sample IDs: 2161967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98081

Included Lab Sample IDs: 2161972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.4	95.9	P/P	90 - 110
Arsenic	100	99.1	P/P	90 - 110
Boron	102	101	P/P	90 - 110
Chromium	98.2	97.3	P/P	90 - 110
Copper	93.6	93.3	P/P	90 - 110
Lead	98.2	97.5	P/P	90 - 110
Nickel	100	98.3	P/P	90 - 110
Selenium	97.1	95.3	P/P	90 - 110
Silver	90.6	90.2	P/P	90 - 110
Thallium	96.0	94.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98096

Included Lab Sample IDs: 2161966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	100	P/P	90 - 110
Sulfate	98.8	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98125

Included Lab Sample IDs: 2161971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	119	121	P/P	40 - 200
Glufosinate	114	124	P/P	40 - 200
Glyphosate	125	125	P/P	40 - 200

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98139

Included Lab Sample IDs: 2161972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	98.8	97.7	P/P	90 - 110
Cadmium	98.0	97.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98160

Included Lab Sample IDs: 2161971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.2	94.3	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A98174

Included Lab Sample IDs: 2161966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98179

Included Lab Sample IDs: 2161967

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

Reference Method: SM 4500 F-C-2011

Run ID: A98204

Included Lab Sample IDs: 2161966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98211

Included Lab Sample IDs: 2161967

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

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2161971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	77.9	80.1	P/P	50 - 150
Acetaminophen	104	128	P/P	60 - 160
Acetamiprid	95.9	101	P/P	50 - 150
Afidopyropen	93.4	84.6	P/P	50 - 150
Bentazon	112	133	P/P	50 - 160
Benzovindiflupyr	91.1	92.5	P/P	50 - 150
Carbamazepine	91.5	102	P/P	60 - 150
Clothianidin	95.7	104	P/P	60 - 150
Dinotefuran	105	110	P/P	50 - 150
Diuron	89.6	90.8	P/P	60 - 150
Fenuron	92.9	95.8	P/P	60 - 150
Fluridone	73.7	85.3	P/P	60 - 160
Hydrocodone	95.4	105	P/P	60 - 150
Ibuprofen	85.0	70.8	P/P	50 - 160
Imazapyr	89.8	89.2	P/P	50 - 150
Imidacloprid	89.4	88.3	P/P	60 - 150
Linuron	100	104	P/P	60 - 150
Mandestrobin	84.2	83.5	P/P	50 - 150
MCPP	70.3	72.4	P/P	50 - 150
Naproxen	79.6	121	P/P	50 - 160
Primidone	92.0	83.8	P/P	60 - 150
Pyraclostrobin	97.1	96.9	P/P	60 - 150
Thiamethoxam	93.6	101	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2161971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tolfenpyrad	80.4	82.3	P/P	60 - 150
Triclopyr	87.6	81.9	P/P	50 - 150

* 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						8.89	
EPA 200.7 Rev. 4.4	Barium	99.2	103	102	102			0.0477
	Calcium	102	100	100	99.7			0.189
	Iron	100	102	102	102			0.0367
	Magnesium	102	103	102	103			0.464
	Potassium	98.7	105	101	101			0.406
	Sodium	99.6	99.1	99.2	98.4			0.618
	Zinc	99.8	104	101	101			0.276
EPA 200.8 Rev. 5.4	Aluminum	94.4	93.9	95.2	95.0			1.12
	Antimony	103	103	103	100			0.301
	Arsenic	98.6	96.6	96.3	97.9			0.311
	Boron	99.4	102	101	102			1.74
	Cadmium	101	103	101	102			1.39
	Chromium	98.8	97.8	98.4	97.9			0.663
	Copper	98.1	95.6	95.9	93.0			0.357
	Lead	95.8	96.8	96.1	96.3			0.709
	Nickel	96.3	96.2	95.1	99.3			1.20
	Selenium	94.0	93.2	92.7	86.9			0.531
	Silver	94.1	93.3	94.1	92.2			0.904
	Thallium	99.1	101	100	102			0.455
EPA 300.0 Rev. 2.1	Chloride	99.5	97.4	98.1			0.575	
	Sulfate	99.8	98.9	99.6			0.615	
EPA 350.1 Rev. 2.0	Ammonia-N	100	98.9	101				1.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	105	97.5				5.24
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	96.4	96.8				0.425
EPA 365.1 Rev. 2.0	Total-P	106	106	105				1.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.5	96.6	97.8				1.23
EPA 8321B	2,4-D	127	83.4	106				22.3
	Acesulfame K	112	22.4	21.9				2.32
	Acetaminophen	109	126	117				7.86
	Acetamiprid	91.6	83.3	86.3				3.60
	Afidopyropen	81.1	87.2	88.0				0.972
	AMPA	111	88.9	87.7				0.809
	Bentazon	89.6	42.6	42.9				0.354
	Benzovindiflupyr	80.6	86.6	80.7				7.01
	Carbamazepine	93.1	73.9	74.2				0.359
	Clothianidin	93.9	91.9	92.4				0.562
	Dinotefuran	114	143	134				6.70
	Diuron	74.0	65.1	61.0				6.47
	Endothall	89.9	126	102				21.7
	Fenuron	102	77.1	74.8				3.00
	Fluridone	76.1	79.9	65.1				19.0
	Glufosinate	115	103	100				3.17
	Glyphosate	118	71.1	83.7				5.63
	Hydrocodone	88.9	88.4	85.6				3.30
	Ibuprofen	82.1	78.2	67.9				14.2
	Imazapyr	93.5						2.13
	Imidacloprid	99.2	157	145				7.96
	Linuron	71.5	66.0	61.7				6.70
	Mandestrobin	84.5	86.2	81.0				6.29
	MCPP	120	125	104				18.9
	Naproxen	102	105	68.3				42.3
	Primidone	92.7	96.6	89.8				7.29
	Pyraclostrobin	81.0	99.5	83.6				17.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Sucralose	94.9	73.4	47.3			27.9
	Thiamethoxam	95.3	138	136			1.24
	Tolfenpyrad	40.0	47.2	46.0			2.52
	Triclopyr	102	105	99.7			5.53
SM 2120 B-2011	Color (true)	99.2				1.43	
SM 2320 B-2011	Total Alkalinity	102				0.0108	
SM 2540 C-2011	TDS					0.722	
SM 4500 F-C-2011	Fluoride	96.4	97.5	98.6			0.963
SM 5310 B-2011	Organic Carbon	99.8	99.3	103			2.81

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2161966
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2161972
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2161972
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2161966
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2161966
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2161967
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2161967
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2161967
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2161967
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2161968
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2161971
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2161971
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2161966
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2161966
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2161972
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2161966
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2161966
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2161966
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2161967

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/04/2020			03/04/2020 16:33	Yen Ta	2161966
EPA 200.7 Rev. 4.4	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/06/2020 20:00	Betina Topolski	2161972
EPA 200.8 Rev. 5.4	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/09/2020 19:58	Alexander Thompson	2161972
	03/04/2020	03/05/2020 13:55	Elliott D. Healy	03/10/2020 16:12	Justin Cutchin	2161972
EPA 300.0 Rev. 2.1	03/04/2020			03/10/2020 04:32	Lipi Saha	2161966
EPA 350.1 Rev. 2.0	03/04/2020			03/10/2020 12:28	Ping Hua	2161967
EPA 351.2 Rev. 2.0	03/04/2020	03/06/2020 12:12	Sima Feizi	03/09/2020 12:33	Jhamieka S. Greenwood	2161967
EPA 353.2 Rev. 2.0	03/04/2020			03/09/2020 10:32	Beverly Y. Sanders	2161967
EPA 365.1 Rev. 2.0	03/04/2020	03/09/2020 14:56	Yen Ta	03/13/2020 13:45	Benjamin T. Nordmann	2161967
EPA 365.1 Rev. 2.0 dissolved	03/04/2020			03/04/2020 16:02	Carlos Miranda	2161968
EPA 8321B	03/04/2020	03/06/2020 10:00	Hoor Shaik	03/13/2020 16:27	Juyoung Kim	2161971
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/06/2020 16:27	Rebecca Ware	2161971
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/09/2020 11:19	Rebecca Ware	2161971
	03/04/2020	03/06/2020 13:00	Rebecca Ware	03/11/2020 18:17	Rebecca Ware	2161971
SM 2120 B-2011	03/04/2020			03/04/2020 17:32	Madeline Gruver	2161966
SM 2320 B-2011	03/04/2020			03/12/2020 06:53	Dale L. Simmons	2161966
SM 2340B	03/04/2020			03/06/2020 20:00	Betina Topolski	2161972
SM 2540 C-2011	03/04/2020			03/09/2020 15:13	Yijie Li	2161966
SM 2540 D-2011	03/04/2020			03/09/2020 15:13	Yijie Li	2161966
SM 4500 F-C-2011	03/04/2020			03/14/2020 03:01	Dale L. Simmons	2161966
SM 5310 B-2011	03/04/2020			03/05/2020 20:10	Lauren Lees	2161967