

Chemical Analysis Report

NE-DIST-2023-11-07-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **LSJR East**
Request ID: **RQ-2023-11-06-27**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 04-DEC-2023 10:24



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: GREENFIELD CR AT HODGES RD

Collection Date/Time: 11/06/2023 10:15

Field ID: G2NE1145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449439	DEP SOP: NU-094-1	Color (true)	49		PCU	P437487	
	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P437493	
	EPA 300.0 Rev. 2.1	Chloride	47		mg Cl/L	P437936	
		Sulfate	55		mg SO4/L	P437940	
	SM 2320 B-2011	Total Alkalinity	97		mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	306		mg/L	P438106	
	SM 2540 D-2015	TSS	10	I	mg/L	P437819	
	SM 4500-F- C-2011	Fluoride	0.076	I	mg F/L	P437920	
2449440	EPA 350.1 Rev. 2.0	Ammonia-N	0.16		mg N/L	P437841	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P437560	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P437974	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P437712	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P437788	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: GREENFIELD CREEK AT QUEENS HARBOUR BLVD **Collection Date/Time: 11/06/2023 10:35**

Field ID: 20030809

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449451	EPA 200.7 Rev. 4.4	Calcium	171		mg/L	P437686	
		Iron	170	I	ug/L	P437686	
		Magnesium	454		mg/L	P437686	
		Potassium	143		mg/L	P437686	
		Sodium	3.87E+03		mg/L	P437686	
		Strontium	3.07E+03		ug/L	P437686	
		Tin	9.0	U	ug/L	P437686	
		Titanium	2.2	U	ug/L	P437686	
		Vanadium	6.0	U	ug/L	P437686	
		Zinc	15	U	ug/L	P437686	
	EPA 200.8 Rev. 5.4	Aluminum	94		ug/L	P437686	
		Antimony	0.20	U	ug/L	P437686	
		Arsenic	1.57		ug/L	P437686	
		Barium	30.2		ug/L	P437686	
		Beryllium	0.040	U	ug/L	P437686	
		Boron	1.41E+03		ug/L	P437686	
		Cadmium	0.080	U	ug/L	P437686	
		Chromium	4.0	U	ug/L	P437686	
		Cobalt	0.24	I	ug/L	P437686	
		Copper	2.7	I	ug/L	P437686	
		Lead	0.80	U	ug/L	P437686	
		Manganese	20.3		ug/L	P437686	
		Molybdenum	4.4		ug/L	P437686	
		Nickel	2.0	U	ug/L	P437686	
		Selenium	0.80	U	ug/L	P437686	
		Silver	0.040	U	ug/L	P437686	
		Thallium	0.40	U	ug/L	P437686	
	SM 2340 B-2011	Hardness	2.30E+03		mg/L	P437686	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, sodium and strontium are unavailable because of high analyte concentration in the QC sample.

Sample Location: HOGPEN CR AT SAN PABLO ROAD

Collection Date/Time: 11/06/2023 10:55

Field ID: 20030696

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449437	DEP SOP: NU-094-1	Color (true)	40		PCU	P437487	
	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P437493	
	EPA 300.0 Rev. 2.1	Chloride	7.4E+03		mg Cl/L	P437936	
		Sulfate	1.0E+03		mg SO4/L	P437940	
	SM 2320 B-2011	Total Alkalinity	96		mg CaCO3/L	P437666	
	SM 2540 C-2015	TDS	1.20E+04		mg/L	P438106	
	SM 2540 D-2015	TSS	5	IA	mg/L	P437822	
2449438	SM 4500-F- C-2011	Fluoride	0.51		mg F/L	P438029	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P437693	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P437559	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P437835	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P437708	
	SM 5310 B-2011	Organic Carbon	9.3		mg C/L	P437789	

Ref. Method and Comment:

SM 2540 C-2015: The reported result is consistent with the conductivity measured in the laboratory, 21000 umhos/cm.

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: OPEN CREEK AT SAN PABLO ROAD

Collection Date/Time: 11/06/2023 11:20

Field ID: 20030695

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449450	EPA 8270E	Aldrin	0.68	U	ng/L	P437481	
		Alpha-BHC	0.11	U	ng/L	P437481	
		Alpha-Chlordane	0.21	U	ng/L	P437481	
		PCB-1016	2.1	U	ng/L	P437481	MS
		Beta-BHC	0.11	U	ng/L	P437481	
		PCB-1221	2.1	U	ng/L	P437481	
		Beta-Cyfluthrin	1.3	U	ng/L	P437481	
		PCB-1232	2.1	U	ng/L	P437481	
		Bifenthrin	0.53	U	ng/L	P437481	
		PCB-1242	2.1	U	ng/L	P437481	
		PCB-1248	2.1	U	ng/L	P437481	
		Chlorothalonil	3.8	U	ng/L	P437481	
		PCB-1254	2.1	U	ng/L	P437481	
		Cis-Nonachlor	0.21	U	ng/L	P437481	
		PCB-1260	2.1	UJ	ng/L	P437481	LCS, MS
		Cypermethrin	1.6	U	ng/L	P437481	
		Dacthal	0.16	U	ng/L	P437481	
		DDD-p,p'	0.26	U	ng/L	P437481	
		DDE-p,p'	0.21	U	ng/L	P437481	
		DDT-p,p'	0.84	U	ng/L	P437481	
		Delta-BHC	0.42	U	ng/L	P437481	
		Deltamethrin	1.3	U	ng/L	P437481	
		Dichlobenil	0.26	U	ng/L	P437481	
		Dicofol	1.3	U	ng/L	P437481	
		Dieldrin	0.42	U	ng/L	P437481	RPD
		Endosulfan I	0.42	U	ng/L	P437481	
		Endosulfan II	0.95	U	ng/L	P437481	
		Endosulfan Sulfate	0.32	U	ng/L	P437481	
		Endrin	0.95	U	ng/L	P437481	RPD
		Endrin Aldehyde	0.79	U	ng/L	P437481	
		Endrin Ketone	0.42	U	ng/L	P437481	
		Esfenvalerate	0.79	U	ng/L	P437481	
		Ethalfuralin	0.16	U	ng/L	P437481	RPD
		Fenpropathrin	0.26	U	ng/L	P437481	
		Gamma-BHC	0.13	U	ng/L	P437481	MS
		Gamma-Chlordane	0.21	U	ng/L	P437481	MS
		Heptachlor	0.21	U	ng/L	P437481	
		Heptachlor Epoxide	0.26	U	ng/L	P437481	
		Hexachlorobenzene**	1.1	U	ng/L	P437481	
		Kepone	14	U	ng/L	P437481	
		Lambda-Cyhalothrin	0.79	U	ng/L	P437481	
		Methoprene	0.79	U	ng/L	P437481	
		Methoxychlor	0.32	U	ng/L	P437481	
		MGK-264	0.21	U	ng/L	P437481	MS

Field ID: 20030695

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2449450	EPA 8270E	Mirex	0.37	U	ng/L	P437481	
		Oxychlorane	0.32	U	ng/L	P437481	
		Permethrin	1.7	U	ng/L	P437481	
		Phenothrin	0.95	U	ng/L	P437481	
		Piperonyl Butoxide	0.18	I	ng/L	P437481	
		Prallethrin	2.1	U	ng/L	P437481	
		Tau-Fluvalinate	0.26	U	ng/L	P437481	
		Tetramethrin	0.79	U	ng/L	P437481	
		Trans-Nonachlor	0.21	U	ng/L	P437481	
		Triclosan Methyl	0.16	U	ng/L	P437481	
		Trifluralin	0.21	U	ng/L	P437481	
	EPA 8276	Chlordane	2.1	U	ng/L	P437481	
		Toxaphene	16	U	ng/L	P437481	

Ref. Method and Comment:
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P437487

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437493

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437686

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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437686

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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: P437936

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437940

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437693

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437841

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437559

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437560

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437835

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437708

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437712

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P437481

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E
Batch ID: P437481

Component	Result	Code	Units
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276
Batch ID: P437481

Component	Result	Code	Units
Chlordane	2.0	U	ng/L
Toxaphene	15	U	ng/L

Reference Method: SM 2320 B-2011
Batch ID: P437666

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

Reference Method: SM 2540 C-2015
Batch ID: P438106

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437819

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P437822

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438029

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P437788

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P437789

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P437487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437493

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	98.2		P	85 - 115
Iron	100		P	85 - 115
Magnesium	96.8		P	85 - 115
Potassium	101		P	85 - 115
Sodium	103		P	85 - 115
Strontium	104		P	85 - 115
Tin	98.6		P	85 - 115
Titanium	100		P	85 - 115
Vanadium	99.7		P	85 - 115
Zinc	98.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	99.8		P	85 - 115
Arsenic	101		P	85 - 115
Barium	104		P	85 - 115
Beryllium	92.7		P	85 - 115
Boron	105		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	103		P	85 - 115
Cobalt	99.5		P	85 - 115
Copper	97.8		P	85 - 115
Lead	107		P	85 - 115
Manganese	102		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	98.7		P	85 - 115
Selenium	101		P	85 - 115
Silver	106		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437936

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437940

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437559

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437560

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437835

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437708

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437712

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.6		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P437481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	61.8		P	30 - 96.0
Alpha-BHC	74.4		P	70 - 109
Alpha-Chlordane	71.0		P	45 - 107
Beta-BHC	89.2		P	64 - 138
Beta-Cyfluthrin	87.9		P	17 - 141
Bifenthrin	72.9		P	10 - 113
Chlorothalonil	56.3		P	26 - 180
Cis-Nonachlor	63.9		P	37 - 102
Cypermethrin	82.4		P	20 - 133
Dacthal	107		P	69 - 114
DDD-p,p'	75.9		P	42 - 105
DDE-p,p'	69.3		P	42 - 106
DDT-p,p'	70.9		P	42 - 107
Delta-BHC	116		P	67 - 144
Deltamethrin	90.1		P	15 - 149
Dichlobenil	58.8		P	46 - 117
Dicofol	87.9		P	34 - 114
Dieldrin	71.0		P	50 - 108
Endosulfan I	68.7		P	55 - 104
Endosulfan II	100		P	51 - 111
Endosulfan Sulfate	98.2		P	56 - 121
Endrin	74.9		P	10 - 106
Endrin Aldehyde	81.1		P	34 - 114
Endrin Ketone	71.7		P	63 - 177
Esfenvalerate	82.4		P	29 - 143
Ethalfuralin	60.8		P	46 - 96.0
Fenpropathrin	75.0		P	28 - 115
Gamma-BHC	74.9		P	65 - 121
Gamma-Chlordane	83.6		P	39 - 103
Heptachlor	59.5		P	39 - 94.0
Heptachlor Epoxide	66.9		P	54 - 104
Hexachlorobenzene	52.0		P	36 - 100
Kepone	120		P	10 - 225
Lambda-Cyhalothrin	74.6		P	10 - 135
Methoprene	68.4		P	10 - 109
Methoxychlor	87.5		P	52 - 112
MGK-264	101		P	44 - 117
Mirex	61.6		P	20 - 90.0
Oxychlordane	73.9		P	44 - 102
PCB-1016	91.4		P	45 - 107
PCB-1260	155		F	40 - 118
Permethrin	91.4		P	18 - 135
Phenothrin	69.7		P	10 - 102
Piperonyl Butoxide	102		P	28 - 156
Prallethrin	78.7		P	28 - 113
Tau-Fluvalinate	86.2		P	10 - 123
Tetramethrin	83.0		P	18 - 158
Trans-Nonachlor	75.1		P	39 - 104
Triclosan Methyl	75.9		P	54 - 108
Trifluralin	71.9		P	46 - 97.0

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P437481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	81.0		P	43 - 123
Toxaphene	88.6		P	27 - 156

Reference Method: SM 2320 B-2011
Batch ID: P437666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P438106

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.0		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P437819

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

Reference Method: SM 2540 D-2015
Batch ID: P437822

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.4		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P438029

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P437789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P437686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449451	Iron	95.8	95.7	P/P	70 - 130
2449451	Tin	81.3	81.3	P/P	70 - 130
2449451	Titanium	101	100	P/P	70 - 130
2449451	Vanadium	98.4	97.6	P/P	70 - 130
2449451	Zinc	95.3	95.2	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P437686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449451	Aluminum	107	106	P/P	70 - 130
2449451	Antimony	99.4	102	P/P	70 - 130
2449451	Arsenic	113	113	P/P	70 - 130
2449451	Barium	105	106	P/P	70 - 130
2449451	Beryllium	105	97.4	P/P	70 - 130
2449451	Boron	86.2	79.9	P/P	70 - 130
2449451	Cadmium	95.1	97.1	P/P	70 - 130
2449451	Chromium	93.5	95.2	P/P	70 - 130
2449451	Cobalt	91.5	91.5	P/P	70 - 130
2449451	Copper	90.6	102	P/P	70 - 130
2449451	Lead	115	116	P/P	70 - 130
2449451	Manganese	84.6	86.0	P/P	70 - 130
2449451	Molybdenum	117	118	P/P	70 - 130
2449451	Nickel	91.5	91.7	P/P	70 - 130
2449451	Selenium	103	102	P/P	70 - 130
2449451	Silver	94.9	95.9	P/P	70 - 130
2449451	Thallium	112	115	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P437936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449420	Chloride	107		P	90 - 110
2449615	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P437940

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449420	Sulfate	107		P	90 - 110
2449615	Sulfate	108		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P437693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448717	Ammonia-N	102	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P437841

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449421	Ammonia-N	99.0	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437559

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449438	Kjeldahl Nitrogen	96.3	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449421	Kjeldahl Nitrogen	97.5	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449356	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449272	NO2NO3-N	99.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449358	Total-P	96.1	96.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P437712

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449095	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P437481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449389	Aldrin	59.7	49.2	P/P	24 - 81.0
2449389	Alpha-BHC	77.4	81.0	P/P	65 - 110
2449389	Alpha-Chlordane	55.9	57.3	P/P	43 - 119
2449389	Beta-BHC	88.2	87.0	P/P	54 - 165
2449389	Beta-Cyfluthrin	61.5	55.6	P/P	27 - 165
2449389	Bifenthrin	73.0	47.1	P/P	17 - 117
2449389	Chlorothalonil	85.4	119	P/P	10 - 255
2449389	Cis-Nonachlor	57.7	74.4	P/P	34 - 98.0
2449389	Cypermethrin	64.8	48.7	P/P	25 - 143
2449389	Dacthal	81.0	68.2	P/P	55 - 139

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P437481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449389	DDD-p,p'	53.3	53.7	P/P	30 - 109
2449389	DDE-p,p'	53.9	71.0	P/P	35 - 106
2449389	DDT-p,p'	77.1	68.1	P/P	41 - 101
2449389	Delta-BHC	69.6	75.3	P/P	58 - 165
2449389	Deltamethrin	59.1	74.6	P/P	10 - 194
2449389	Dichlobenil	68.6	101	P/P	22 - 114
2449389	Dicofol	81.9	58.6	P/P	17 - 133
2449389	Dieldrin	53.8	80.4	P/P	45 - 129
2449389	Endosulfan I	60.5	66.3	P/P	49 - 104
2449389	Endosulfan II	54.9	70.7	P/P	37 - 117
2449389	Endosulfan Sulfate	110	99.0	P/P	38 - 128
2449389	Endrin	46.5	74.6	P/P	35 - 116
2449389	Endrin Aldehyde	62.7	73.4	P/P	19 - 108
2449389	Endrin Ketone	87.6	112	P/P	44 - 134
2449389	Esfenvalerate	83.2	75.3	P/P	27 - 176
2449389	Ethalfuralin	77.0	51.5	P/P	49 - 100
2449389	Fenpropathrin	60.2	37.0	P/P	34 - 117
2449389	Gamma-BHC	62.4	56.0	P/F	59 - 129
2449389	Gamma-Chlordane	120	102	F/P	33 - 107
2449389	Heptachlor	50.6	44.5	P/P	37 - 94.0
2449389	Heptachlor Epoxide	81.8	79.7	P/P	38 - 118
2449389	Hexachlorobenzene	61.0	86.9	P/P	35 - 97.0
2449389	Kepone	88.8	139	P/P	10 - 221
2449389	Lambda-Cyhalothrin	86.9	102	P/P	23 - 190
2449389	Methoprene	76.5	59.9	P/P	21 - 109
2449389	Methoxychlor	95.3	67.8	P/P	46 - 118
2449389	MGK-264	121	161	P/F	39 - 122
2449389	Mirex	50.5	57.4	P/P	25 - 90.0
2449389	Oxychlordane	76.8	73.0	P/P	42 - 100
2449389	Permethrin	79.4	63.6	P/P	33 - 181
2449389	Phenothrin	67.9	52.7	P/P	12 - 125
2449389	Piperonyl Butoxide	68.6	88.7	P/P	10 - 178
2449389	Prallethrin	57.9	65.2	P/P	24 - 122
2449389	Tau-Fluvalinate	82.8	66.2	P/P	13 - 151
2449389	Tetramethrin	64.7	54.4	P/P	16 - 172
2449389	Trans-Nonachlor	93.3	72.1	P/P	39 - 100
2449389	Triclosan Methyl	64.0	74.3	P/P	43 - 110
2449389	Trifluralin	83.1	90.0	P/P	45 - 94.0
2449434	PCB-1016	110	107	F/P	45 - 107
2449434	PCB-1260	158	163	F/F	40 - 112

Reference Method: EPA 8276
Batch ID: P437481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449434	Chlordane	68.2	85.6	P/P	43 - 123
2449434	Toxaphene	93.0	107	P/P	27 - 156

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

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

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2449025	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P438029

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450882	Fluoride	102	104	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P437788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448881	Organic Carbon	94.2	96.4	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P437789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2448777	Organic Carbon	88.5	90.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449399	Color (true)	4.49	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437493

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449273	Turbidity	1.18	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P437686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449451	Calcium	1.27	Spike	P	0 - 20
2449451	Iron	0.0575	Spike	P	0 - 20
2449451	Magnesium	0.373	Spike	P	0 - 20
2449451	Potassium	0.226	Spike	P	0 - 20
2449451	Sodium	1.57	Spike	P	0 - 20
2449451	Strontium	0.897	Spike	P	0 - 20
2449451	Tin	0.0835	Spike	P	0 - 20
2449451	Titanium	0.350	Spike	P	0 - 20
2449451	Vanadium	0.800	Spike	P	0 - 20
2449451	Zinc	0.119	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P437686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449451	Aluminum	0.592	Spike	P	0 - 20
2449451	Antimony	2.34	Spike	P	0 - 20
2449451	Arsenic	0.425	Spike	P	0 - 20
2449451	Barium	0.690	Spike	P	0 - 20
2449451	Beryllium	7.77	Spike	P	0 - 20
2449451	Boron	0.796	Spike	P	0 - 20
2449451	Cadmium	2.03	Spike	P	0 - 20
2449451	Chromium	1.71	Spike	P	0 - 20
2449451	Cobalt	0.0728	Spike	P	0 - 20
2449451	Copper	11.3	Spike	P	0 - 20
2449451	Lead	0.996	Spike	P	0 - 20
2449451	Manganese	1.25	Spike	P	0 - 20
2449451	Molybdenum	0.295	Spike	P	0 - 20
2449451	Nickel	0.180	Spike	P	0 - 20
2449451	Selenium	0.627	Spike	P	0 - 20
2449451	Silver	0.973	Spike	P	0 - 20
2449451	Thallium	2.12	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449420	Chloride	1.95	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P437940

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449420	Sulfate	1.22	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448717	Ammonia-N	0.535	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P437841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449421	Ammonia-N	1.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437559

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449438	Kjeldahl Nitrogen	6.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P437560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449421	Kjeldahl Nitrogen	3.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449356	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P437974

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449272	NO2NO3-N	0.669	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P437708

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449358	Total-P	0.623	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P437712

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449095	Total-P	1.18	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P437481

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449389	Aldrin	19.3	Spike	P	0 - 41
2449389	Alpha-BHC	4.65	Spike	P	0 - 25
2449389	Alpha-Chlordane	2.45	Spike	P	0 - 32
2449389	Beta-BHC	1.35	Spike	P	0 - 33
2449389	Beta-Cyfluthrin	9.91	Spike	P	0 - 43
2449389	Bifenthrin	43.1	Spike	P	0 - 52
2449389	Chlorothalonil	32.7	Spike	P	0 - 82
2449389	Cis-Nonachlor	25.2	Spike	P	0 - 33
2449389	Cypermethrin	28.4	Spike	P	0 - 51
2449389	Dacthal	17.2	Spike	P	0 - 27
2449389	DDD-p,p'	0.733	Spike	P	0 - 39
2449389	DDE-p,p'	27.5	Spike	P	0 - 31
2449389	DDT-p,p'	12.4	Spike	P	0 - 29
2449389	Delta-BHC	7.87	Spike	P	0 - 35
2449389	Deltamethrin	23.1	Spike	P	0 - 100
2449389	Dichlobenil	38.5	Spike	P	0 - 40
2449389	Dicofol	33.1	Spike	P	0 - 37
2449389	Dieldrin	39.7	Spike	F	0 - 27
2449389	Endosulfan I	9.05	Spike	P	0 - 23
2449389	Endosulfan II	25.1	Spike	P	0 - 34
2449389	Endosulfan Sulfate	11.0	Spike	P	0 - 36
2449389	Endrin	46.4	Spike	F	0 - 45
2449389	Endrin Aldehyde	15.7	Spike	P	0 - 76
2449389	Endrin Ketone	24.6	Spike	P	0 - 43
2449389	Esfenvalerate	9.96	Spike	P	0 - 51
2449389	Ethalfuralin	39.7	Spike	F	0 - 22
2449389	Fenpropathrin	47.8	Spike	P	0 - 49
2449389	Gamma-BHC	10.8	Spike	P	0 - 28
2449389	Gamma-Chlordane	16.1	Spike	P	0 - 40
2449389	Heptachlor	12.7	Spike	P	0 - 29
2449389	Heptachlor Epoxide	2.69	Spike	P	0 - 33
2449389	Hexachlorobenzene	35.0	Spike	P	0 - 36
2449389	Kepone	44.0	Spike	P	0 - 85
2449389	Lambda-Cyhalothrin	16.4	Spike	P	0 - 55
2449389	Methoprene	24.2	Spike	P	0 - 53
2449389	Methoxychlor	33.7	Spike	P	0 - 50
2449389	MGK-264	28.0	Spike	P	0 - 43

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P437481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449389	Mirex	12.8	Spike	P	0 - 40
2449389	Oxychlordane	5.08	Spike	P	0 - 31
2449389	Permethrin	22.1	Spike	P	0 - 50
2449389	Phenothrin	25.3	Spike	P	0 - 58
2449389	Piperonyl Butoxide	25.5	Spike	P	0 - 100
2449389	Prallethrin	11.9	Spike	P	0 - 39
2449389	Tau-Fluvalinate	22.3	Spike	P	0 - 54
2449389	Tetramethrin	17.3	Spike	P	0 - 51
2449389	Trans-Nonachlor	25.7	Spike	P	0 - 39
2449389	Triclosan Methyl	14.9	Spike	P	0 - 31
2449389	Trifluralin	7.99	Spike	P	0 - 22
2449434	PCB-1016	2.59	Spike	P	0 - 25
2449434	PCB-1260	3.21	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P437481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449434	Chlordane	22.6	Spike	P	0 - 28
2449434	Toxaphene	14.2	Spike	P	0 - 27

Reference Method: SM 2320 B-2011
Batch ID: P437666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448305	Total Alkalinity	0.0855	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P438106

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449420	TDS	6.99	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P437920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2449025	Fluoride	0.479	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P438029

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450882	Fluoride	1.40	Spike	P	0 - 1.9

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P437788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448881	Organic Carbon	1.45	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P437789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2448777	Organic Carbon	1.31	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2449450
Field Sample ID: 20030695

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	86.6	P	37 - 129
EPA 8270E	Decachlorobiphenyl	69.4	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	63.6	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	41.3	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	53.3	P	28 - 102
EPA 8276	PCNB	85.8	P	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122603

Included Lab Sample IDs: 2449437, 2449439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122605

Included Lab Sample IDs: 2449437, 2449439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A122678

Included Lab Sample IDs: 2449437, 2449439

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.8	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122689

Included Lab Sample IDs: 2449438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	93.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122694

Included Lab Sample IDs: 2449438

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122697

Included Lab Sample IDs: 2449440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122714

Included Lab Sample IDs: 2449440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.6	99.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122725

Included Lab Sample IDs: 2449438, 2449440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	95.5	P/P	90 - 110
Organic Carbon	95.4	95.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122736

Included Lab Sample IDs: 2449437, 2449439

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122741

Included Lab Sample IDs: 2449438

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122742

Included Lab Sample IDs: 2449438

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122744

Included Lab Sample IDs: 2449440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	97.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122753

Included Lab Sample IDs: 2449451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.1	95.7	P/P	90 - 110
Iron	96.4	94.6	P/P	90 - 110
Magnesium	95.8	94.4	P/P	90 - 110
Potassium	102	100	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Strontium	105	104	P/P	90 - 110
Tin	98.4	99.1	P/P	90 - 110
Titanium	99.9	99.2	P/P	90 - 110
Vanadium	98.8	98.1	P/P	90 - 110
Zinc	99.6	98.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122754

Included Lab Sample IDs: 2449451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	97.4	97.9	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Barium	101	102	P/P	90 - 110
Beryllium	102	104	P/P	90 - 110
Boron	97.5	92.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122754

Included Lab Sample IDs: 2449451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cadmium	99.8	99.7	P/P	90 - 110
Chromium	102	101	P/P	90 - 110
Cobalt	99.1	98.1	P/P	90 - 110
Copper	99.0	98.0	P/P	90 - 110
Lead	104	103	P/P	90 - 110
Manganese	102	101	P/P	90 - 110
Molybdenum	99.5	99.7	P/P	90 - 110
Nickel	99.7	98.9	P/P	90 - 110
Selenium	102	102	P/P	90 - 110
Silver	99.0	99.0	P/P	90 - 110
Thallium	99.1	98.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122774

Included Lab Sample IDs: 2449439

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122800

Included Lab Sample IDs: 2449440

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122818

Included Lab Sample IDs: 2449437

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

Reference Method: EPA 8276

Run ID: A122856

Included Lab Sample IDs: 2449450

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	105		P	80 - 120
Toxaphene	114		P	80 - 120

Reference Method: EPA 8270E

Run ID: A122882

Included Lab Sample IDs: 2449450

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	99.7		P	80 - 120
PCB-1260	117		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A122942
Included Lab Sample IDs: 2449450

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	99.3		P	80 - 120
Alpha-Chlordane	104		P	80 - 120
Beta-BHC	84.9		P	80 - 120
Beta-Cyfluthrin	99.2		P	80 - 120
Bifenthrin	101		P	80 - 120
Chlorothalonil	108		P	80 - 120
Cis-Nonachlor	102		P	80 - 120
Cypermethrin	102		P	80 - 120
Dacthal	103		P	80 - 120
DDD-p,p'	102		P	80 - 120
DDE-p,p'	102		P	80 - 120
DDT-p,p'	106		P	80 - 120
Delta-BHC	107		P	80 - 120
Deltamethrin	109		P	80 - 120
Dichlobenil	104		P	80 - 120
Dicofol	101		P	80 - 120
Dieldrin	106		P	80 - 120
Endosulfan I	106		P	80 - 120
Endosulfan II	106		P	80 - 120
Endosulfan Sulfate	98.7		P	80 - 120
Endrin	104		P	80 - 120
Endrin Aldehyde	80.6		P	80 - 120
Endrin Ketone	110		P	80 - 120
Esfenvalerate	103		P	80 - 120
Ethalfuralin	97.6		P	80 - 120
Fenpropathrin	108		P	80 - 120
Gamma-BHC	97.0		P	80 - 120
Gamma-Chlordane	87.6		P	80 - 120
Heptachlor	91.6		P	80 - 120
Heptachlor Epoxide	99.1		P	80 - 120
Hexachlorobenzene	95.1		P	80 - 120
Kepone	99.0		P	80 - 120
Lambda-Cyhalothrin	101		P	80 - 120
Methoprene	97.4		P	80 - 120
Methoxychlor	102		P	80 - 120
MGK-264	92.1		P	80 - 120
Mirex	111		P	80 - 120
Oxychlordane	100		P	80 - 120
Permethrin	99.3		P	80 - 120
Phenothrin	99.3		P	80 - 120
Piperonyl Butoxide	86.2		P	80 - 120
Prallethrin	88.6		P	80 - 120
Tau-Fluvalinate	103		P	80 - 120
Tetramethrin	93.9		P	80 - 120
Trans-Nonachlor	108		P	80 - 120
Triclosan Methyl	116		P	80 - 120
Trifluralin	96.8		P	80 - 120

Quality Assurance Report

Calibration Verification

* 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
DEP SOP: NU-094-1	Color (true)	99.3				4.49	
EPA 180.1 Rev. 2.0	Turbidity	103				1.18	
EPA 200.7 Rev. 4.4	Calcium	98.2					1.27
	Iron	100	95.8	95.7			0.0575
	Magnesium	96.8					0.373
	Potassium	101					0.226
	Sodium	103					1.57
	Strontium	104					0.897
	Tin	98.6	81.3	81.3			0.0835
	Titanium	100	101	100			0.350
	Vanadium	99.7	98.4	97.6			0.800
	Zinc	98.3	95.3	95.2			0.119
EPA 200.8 Rev. 5.4	Aluminum	103	107	106			0.592
	Antimony	99.8	99.4	102			2.34
	Arsenic	101	113	113			0.425
	Barium	104	105	106			0.690
	Beryllium	92.7	105	97.4			7.77
	Boron	105	86.2	79.9			0.796
	Cadmium	103	95.1	97.1			2.03
	Chromium	103	93.5	95.2			1.71
	Cobalt	99.5	91.5	91.5			0.0728
	Copper	97.8	90.6	102			11.3
	Lead	107	115	116			0.996
	Manganese	102	84.6	86.0			1.25
	Molybdenum	101	117	118			0.295
	Nickel	98.7	91.5	91.7			0.180
	Selenium	101	103	102			0.627
	Silver	106	94.9	95.9			0.973
	Thallium	104	112	115			2.12
EPA 300.0 Rev. 2.1	Chloride	106	107	107		1.95	
	Sulfate	107	107	108		1.22	
EPA 350.1 Rev. 2.0	Ammonia-N	96.6	102	103			0.535
	Ammonia-N	98.4	99.0	101			1.16
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	96.3	104			6.49
	Kjeldahl Nitrogen	93.5	97.5	103			3.62
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104			0.0
	NO2NO3-N	99.5	99.0	98.0			0.669
EPA 365.1 Rev. 2.0	Total-P	103	96.1	96.7			0.623
	Total-P	98.6	100	102			1.18
EPA 8270E	Aldrin	61.8	59.7	49.2			19.3
	Alpha-BHC	74.4	77.4	81.0			4.65
	Alpha-Chlordane	71.0	55.9	57.3			2.45
	Beta-BHC	89.2	88.2	87.0			1.35
	Beta-Cyfluthrin	87.9	61.5	55.6			9.91
	Bifenthrin	72.9	73.0	47.1			43.1
	Chlorothalonil	56.3	85.4	119			32.7
	Cis-Nonachlor	63.9	57.7	74.4			25.2
	Cypermethrin	82.4	64.8	48.7			28.4
	Dacthal	107	81.0	68.2			17.2
	DDD-p,p'	75.9	53.3	53.7			0.733
	DDE-p,p'	69.3	53.9	71.0			27.5
	DDT-p,p'	70.9	77.1	68.1			12.4
	Delta-BHC	116	69.6	75.3			7.87
	Deltamethrin	90.1	59.1	74.6			23.1

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8270E	Dichlobenil	58.8	68.6	101			38.5
	Dicofol	87.9	81.9	58.6			33.1
	Dieldrin	71.0	53.8	80.4			39.7
	Endosulfan I	68.7	60.5	66.3			9.05
	Endosulfan II	100	54.9	70.7			25.1
	Endosulfan Sulfate	98.2	110	99.0			11.0
	Endrin	74.9	46.5	74.6			46.4
	Endrin Aldehyde	81.1	62.7	73.4			15.7
	Endrin Ketone	71.7	87.6	112			24.6
	Esfenvalerate	82.4	83.2	75.3			9.96
	Ethalfuralin	60.8	77.0	51.5			39.7
	Fenpropathrin	75.0	60.2	37.0			47.8
	Gamma-BHC	74.9	62.4	56.0			10.8
	Gamma-Chlordane	83.6	120	102			16.1
	Heptachlor	59.5	50.6	44.5			12.7
	Heptachlor Epoxide	66.9	81.8	79.7			2.69
	Hexachlorobenzene	52.0	61.0	86.9			35.0
	Kepone	120	88.8	139			44.0
	Lambda-Cyhalothrin	74.6	86.9	102			16.4
	Methoprene	68.4	76.5	59.9			24.2
	Methoxychlor	87.5	95.3	67.8			33.7
	MGK-264	101	121	161			28.0
	Mirex	61.6	50.5	57.4			12.8
	Oxychlordane	73.9	76.8	73.0			5.08
	PCB-1016	91.4	110	107			2.59
	PCB-1260	155	158	163			3.21
	Permethrin	91.4	79.4	63.6			22.1
	Phenothrin	69.7	67.9	52.7			25.3
	Piperonyl Butoxide	102	68.6	88.7			25.5
	Prallethrin	78.7	57.9	65.2			11.9
	Tau-Fluvalinate	86.2	82.8	66.2			22.3
	Tetramethrin	83.0	64.7	54.4			17.3
	Trans-Nonachlor	75.1	93.3	72.1			25.7
	Triclosan Methyl	75.9	64.0	74.3			14.9
	Trifluralin	71.9	83.1	90.0			7.99
EPA 8276	Chlordane	81.0	68.2	85.6			22.6
	Toxaphene	88.6	93.0	107			14.2
SM 2320 B-2011	Total Alkalinity	99.2				0.0855	
SM 2540 C-2015	TDS	94.0				6.99	
SM 2540 D-2015	TSS	102					
	TSS	94.4					
SM 4500-F- C-2011	Fluoride	101	101	101			0.479
	Fluoride	102	102	104			1.40
SM 5310 B-2011	Organic Carbon	94.5	94.2	96.4			1.45
	Organic Carbon	94.4	88.5	90.0			1.31

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2449437, 2449439
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2449437, 2449439
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2449451

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2449451
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2449437, 2449439
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2449437, 2449439
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2449438, 2449440
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2449438, 2449440
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2449438, 2449440
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2449438, 2449440
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2449450
EPA 8270E	PCBs in water matrices by GC/MS/MS	2449450
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2449450
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2449437, 2449439
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2449451
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2449437, 2449439
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2449437, 2449439
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2449437, 2449439
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2449438, 2449440

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	11/07/2023			11/07/2023 15:45	Chandler E Cox	2449437, 2449439
EPA 180.1 Rev. 2.0	11/07/2023			11/07/2023 14:20	Khloe J Berg	2449437
	11/07/2023			11/07/2023 14:21	Khloe J Berg	2449439
EPA 200.7 Rev. 4.4	11/07/2023	11/13/2023 13:35	George D Taylor	11/15/2023 20:19	Samatha Luckman	2449451
	11/07/2023	11/13/2023 13:35	George D Taylor	11/15/2023 21:00	Samatha Luckman	2449451
EPA 200.8 Rev. 5.4	11/07/2023	11/13/2023 13:35	George D Taylor	11/15/2023 19:48	Emily M Philpot	2449451
	11/07/2023	11/13/2023 13:35	George D Taylor	11/15/2023 21:52	Emily M Philpot	2449451
EPA 300.0 Rev. 2.1	11/07/2023			11/16/2023 01:30	James L Waggeberby	2449437
	11/07/2023			11/16/2023 01:45	James L Waggeberby	2449439
EPA 350.1 Rev. 2.0	11/07/2023			11/13/2023 13:04	Ping Hua	2449438
	11/07/2023			11/15/2023 11:41	Ping Hua	2449440
EPA 351.2 Rev. 2.0	11/07/2023	11/09/2023 10:53	Simonne.V. Calhoun	11/13/2023 10:32	Samantha L Bates	2449438
	11/07/2023	11/09/2023 10:53	Simonne.V. Calhoun	11/13/2023 14:26	Samantha L Bates	2449440
EPA 353.2 Rev. 2.0	11/07/2023			11/15/2023 11:20	Anna M. Plaviak	2449438
	11/07/2023			11/17/2023 11:42	Fadila Guebre	2449440
EPA 365.1 Rev. 2.0	11/07/2023	11/14/2023 15:38	Adam P Silver	11/14/2023 19:09	James L Waggeberby	2449440
	11/07/2023	11/14/2023 15:38	Adam P Silver	11/15/2023 11:00	James L Waggeberby	2449438
EPA 8270E	11/07/2023	11/09/2023 08:00	Fe-Val Siddell	11/22/2023 03:44	Lipi Saha	2449450
	11/07/2023	11/09/2023 08:00	Fe-Val Siddell	11/28/2023 21:19	Julie Wi	2449450
EPA 8276	11/07/2023	11/09/2023 08:00	Fe-Val Siddell	11/16/2023 16:28	Arthur Maknenko	2449450
SM 2320 B-2011	11/07/2023			11/10/2023 00:13	Chandler E Cox	2449439
	11/07/2023			11/10/2023 00:34	Chandler E Cox	2449437
SM 2340 B-2011	11/07/2023			11/15/2023 21:00	Samatha Luckman	2449451
SM 2540 C-2015	11/07/2023			11/09/2023 13:42	Yijie Li	2449437, 2449439
SM 2540 D-2015	11/07/2023			11/09/2023 13:42	Yijie Li	2449437, 2449439
SM 4500-F- C-2011	11/07/2023			11/16/2023 06:27	Dale L. Simmons	2449439
	11/07/2023			11/17/2023 06:35	Dale L. Simmons	2449437
SM 5310 B-2011	11/07/2023			11/13/2023 22:54	Khloe J Berg	2449440
	11/07/2023			11/14/2023 06:04	Khloe J Berg	2449438