

Chemical Analysis Report

SW-DIST-2023-08-16-01

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

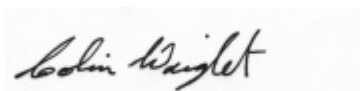
Event Description: **Sarasota Run Run 17**
Request ID: **RQ-2023-08-21-08**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Colin Wright, Program Administrator

Date Certified: 13-SEP-2023 15:29



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: WHITAKER BAYOU AT RINGLING COLLEGE
OF ART**

Collection Date/Time: 08/15/2023 09:45

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2431296	EPA 8270E	Aldrin	0.66	UQ	ng/L	P434403	
		Alpha-BHC	0.10	UQ	ng/L	P434403	
		Alpha-Chlordane	0.22	IQ	ng/L	P434403	
		PCB-1016	2.1	U	ng/L	P433861	
		Beta-BHC	0.10	UQ	ng/L	P434403	
		PCB-1221	2.1	U	ng/L	P433861	
		Beta-Cyfluthrin	1.3	UQ	ng/L	P434403	
		PCB-1232	2.1	U	ng/L	P433861	
		Bifenthrin	0.51	UQ	ng/L	P434403	
		PCB-1242	2.1	U	ng/L	P433861	
		Carbophenothion	0.91	UQ	ng/L	P434403	
		PCB-1248	2.1	U	ng/L	P433861	
		Chlorothalonil	3.7	UQ	ng/L	P434403	
		PCB-1254	2.1	U	ng/L	P433861	
		Cis-Nonachlor	0.20	UQ	ng/L	P434403	
		PCB-1260	2.1	U	ng/L	P433861	
		Cypermethrin	1.5	UQ	ng/L	P434403	
		Dacthal	0.15	UQ	ng/L	P434403	
		DDD-p,p'	0.25	UQ	ng/L	P434403	
		DDE-p,p'	0.20	UQ	ng/L	P434403	
		DDT-p,p'	0.81	UQ	ng/L	P434403	
		Delta-BHC	0.41	UQ	ng/L	P434403	
		Deltamethrin	1.3	UQ	ng/L	P434403	
		Dichlobenil	0.25	UQ	ng/L	P434403	
		Dicofol	1.3	UQ	ng/L	P434403	
		Dieldrin	0.41	UQ	ng/L	P434403	
		Endosulfan I	0.41	UQ	ng/L	P434403	
		Endosulfan II	0.91	UQ	ng/L	P434403	
		Endosulfan Sulfate	0.30	UQ	ng/L	P434403	
		Endrin	0.91	UQ	ng/L	P434403	
		Endrin Aldehyde	0.76	UQJ	ng/L	P434403	LCS
		Endrin Ketone	0.41	UQ	ng/L	P434403	
		Esfenvalerate	0.76	UQ	ng/L	P434403	
		Ethalfuralin	0.15	UQ	ng/L	P434403	
		Fenpropathrin	0.25	UQ	ng/L	P434403	
		Gamma-BHC	0.13	UQJ	ng/L	P434403	CCV
		Gamma-Chlordane	0.27	IQ	ng/L	P434403	
		Heptachlor	0.20	UQ	ng/L	P434403	
		Heptachlor Epoxide	0.25	UQ	ng/L	P434403	
		Hexachlorobenzene**	1.0	UQ	ng/L	P434403	
		Kepone	14	UQJ	ng/L	P434403	CCV
		Lambda-Cyhalothrin	0.76	UQ	ng/L	P434403	
		Methoprene	0.76	UQ	ng/L	P434403	

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2431296	EPA 8270E	Methoxychlor	0.30	UQ	ng/L	P434403	
		MGK-264	0.20	UQ	ng/L	P434403	
		Mirex	0.35	UQ	ng/L	P434403	
		Oxychlordane	0.30	UQ	ng/L	P434403	
		Permethrin	1.6	UQ	ng/L	P434403	
		Phenothrin	0.91	UQ	ng/L	P434403	
		Piperonyl Butoxide	4.4	Q	ng/L	P434403	
		Prallethrin	2.0	UQ	ng/L	P434403	
		Tau-Fluvalinate	0.25	UQ	ng/L	P434403	
		Tetramethrin	0.76	UQ	ng/L	P434403	
		Trans-Nonachlor	0.20	UQ	ng/L	P434403	
		Triclosan Methyl	0.15	UQ	ng/L	P434403	
		Trifluralin	0.20	UQ	ng/L	P434403	RPD
	EPA 8276	Chlordane	2.1	U	ng/L	P433861	
		Toxaphene	16	U	ng/L	P433861	

Ref. Method and Comment:
 EPA 8270E: Sample expired for preparation due to need for re-extraction. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: ISLAND PARK BOAT BASIN OFF DOCK

Collection Date/Time: 08/15/2023 10:45

Field ID: G3SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2431275	DEP SOP: NU-094-1	Color (true)	5.0	U	PCU	P433942	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P433949	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+04		mg Cl/L	P434296	
		Sulfate	2.8E+03		mg SO4/L	P434301	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P434025	
	SM 2540 C-2015	TDS	3.70E+04		mg/L	P434488	
	SM 2540 D-2015	TSS	6	I	mg/L	P434270	
2431276	SM 4500-F- C-2011	Fluoride	1.3		mg F/L	P434032	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P434388	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P434458	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P434628	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P433967	
2431297	SM 5310 B-2011	Organic Carbon	3.3	I	mg C/L	P434116	
	EPA 200.7 Rev. 4.4	Calcium	452		mg/L	P434120	
		Iron	120	U	ug/L	P434120	
		Magnesium	1.46E+03		mg/L	P434120	
		Potassium	420		mg/L	P434120	
		Sodium	1.21E+04		mg/L	P434120	
		Strontium	8.45E+03		ug/L	P434120	
		Tin	300	U	ug/L	P434120	
		Titanium	3.0	U	ug/L	P434120	
		Vanadium	8.0	U	ug/L	P434120	
		Zinc	20	U	ug/L	P434120	
	EPA 200.8 Rev. 5.4	Aluminum	69	I	ug/L	P434120	
		Antimony	0.20	U	ug/L	P434120	
		Arsenic	3.34		ug/L	P434120	
		Barium	11.1		ug/L	P434120	
		Beryllium	0.040	U	ug/L	P434120	
		Boron	4.38E+03		ug/L	P434120	
		Cadmium	0.080	U	ug/L	P434120	
		Chromium	1.6	U	ug/L	P434120	
		Cobalt	0.080	U	ug/L	P434120	
		Copper	3.1	I	ug/L	P434120	
		Lead	2.0	U	ug/L	P434120	
		Manganese	5.7		ug/L	P434120	
		Molybdenum	12.8		ug/L	P434120	
		Nickel	2.0	U	ug/L	P434120	
		Selenium	0.80	U	ug/L	P434120	
		Silver	0.040	U	ug/L	P434120	
		Thallium	1.0	U	ug/L	P434120	
	SM 2340 B-2011	Hardness	7.16E+03		mg/L	P434120	

Field ID: G3SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
DEP SOP: NU-094-1: The MDL was elevated because of sample matrix interference.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

**Sample Location: HUDSON BAYOU TIDAL BY MARIE SELBY
BOTANICAL GARDENS**

Collection Date/Time: 08/15/2023 10:15

Field ID: G3SW0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2431277	DEP SOP: NU-094-1	Color (true)	4.2	I	PCU	P433942	
	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P433949	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+04		mg Cl/L	P434296	
		Sulfate	2.8E+03		mg SO4/L	P434301	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P434025	
	SM 2540 C-2015	TDS	3.64E+04		mg/L	P434488	
	SM 2540 D-2015	TSS	3	U	mg/L	P434270	
	SM 4500-F- C-2011	Fluoride	1.3		mg F/L	P434032	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P434388	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P434035	
2431278	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P434628	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P433967	
	SM 5310 B-2011	Organic Carbon	4.0		mg C/L	P434116	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P433942

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433949

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P434120

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: P434120

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: P434296

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: P434301

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434388

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434035

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434458

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434628

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433967

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

Reference Method: EPA 8270E
Batch ID: P433861

Component	Result	Code	Units
PCB-1016	2.0	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
PCB-1260	2.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P434403

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P434403

Component	Result	Code	Units
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P433861

Component	Result	Code	Units
Chlordane	2.0	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8276
Batch ID: P433861

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

Reference Method: SM 2320 B-2011
Batch ID: P434025

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

Reference Method: SM 2540 C-2015
Batch ID: P434488

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P434270

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P434032

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P434116

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: P433942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433949

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P434120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	105		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	104		P	85 - 115
Sodium	105		P	85 - 115
Strontium	104		P	85 - 115
Tin	103		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	104		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434120

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.1		P	85 - 115
Antimony	96.8		P	85 - 115
Arsenic	97.5		P	85 - 115
Barium	99.6		P	85 - 115
Beryllium	93.3		P	85 - 115
Boron	98.0		P	85 - 115
Cadmium	95.6		P	85 - 115
Chromium	96.5		P	85 - 115
Cobalt	96.3		P	85 - 115
Copper	98.3		P	85 - 115
Lead	93.8		P	85 - 115
Manganese	98.1		P	85 - 115
Molybdenum	95.6		P	85 - 115
Nickel	97.0		P	85 - 115
Selenium	100		P	85 - 115
Silver	108		P	85 - 115
Thallium	98.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434296

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.5		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434301

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434035

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434458

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434628

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: P433967

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

Reference Method: EPA 8270E
Batch ID: P433861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
PCB-1016	64.9		P	45 - 107
PCB-1260	62.8		P	40 - 118

Reference Method: EPA 8270E
Batch ID: P434403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	42.0		P	30 - 96.0
Alpha-BHC	78.9		P	70 - 109
Alpha-Chlordane	63.3		P	45 - 107
Beta-BHC	67.7		P	64 - 138
Beta-Cyfluthrin	61.5		P	17 - 141
Bifenthrin	52.6		P	10 - 113
Carbophenothion	42.5		P	24 - 91.0
Chlorothalonil	59.1		P	26 - 180
Cis-Nonachlor	61.2		P	37 - 102

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P434403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cypermethrin	81.8		P	20 - 133
Dacthal	77.4		P	69 - 114
DDD-p,p'	61.4		P	42 - 105
DDE-p,p'	58.9		P	42 - 106
DDT-p,p'	50.5		P	42 - 107
Delta-BHC	78.4		P	67 - 144
Deltamethrin	81.1		P	15 - 149
Dichlobenil	55.7		P	46 - 117
Dicofol	52.5		P	34 - 114
Dieldrin	60.2		P	50 - 108
Endosulfan I	62.1		P	55 - 104
Endosulfan II	65.3		P	51 - 111
Endosulfan Sulfate	76.3		P	56 - 121
Endrin	65.1		P	10 - 106
Endrin Aldehyde	7.56		F	34 - 114
Endrin Ketone	104		P	63 - 177
Esfenvalerate	72.2		P	29 - 143
Ethalfuralin	57.2		P	46 - 96.0
Fenpropathrin	69.7		P	28 - 115
Gamma-BHC	114		P	65 - 121
Gamma-Chlordane	64.1		P	39 - 103
Heptachlor	65.1		P	39 - 94.0
Heptachlor Epoxide	62.2		P	54 - 104
Hexachlorobenzene	39.4		P	36 - 100
Kepone	67.2		P	10 - 225
Lambda-Cyhalothrin	63.0		P	10 - 135
Methoprene	52.6		P	10 - 109
Methoxychlor	62.7		P	52 - 112
MGK-264	81.5		P	44 - 117
Mirex	52.0		P	20 - 90.0
Oxychlordane	60.8		P	44 - 102
Permethrin	65.5		P	18 - 135
Phenothrin	50.9		P	10 - 102
Piperonyl Butoxide	95.2		P	28 - 156
Prallethrin	67.7		P	28 - 113
Tau-Fluvalinate	69.5		P	10 - 123
Tetramethrin	76.5		P	18 - 158
Trans-Nonachlor	66.1		P	39 - 104
Triclosan Methyl	59.3		P	54 - 108
Trifluralin	53.2		P	46 - 97.0

Reference Method: EPA 8276
Batch ID: P433861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	83.7		P	52 - 117
Toxaphene	85.4		P	44 - 125

Reference Method: SM 2320 B-2011
Batch ID: P434025

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

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P434025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.6		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P434488

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

Reference Method: SM 2540 D-2015
Batch ID: P434270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	100		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434032

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P434120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431398	Calcium	111		P	80 - 120
2431398	Iron	97.5	107	P/P	80 - 120
2431398	Strontium	95.1	106	P/P	80 - 120
2431398	Tin	95.2	108	P/P	80 - 120
2431398	Titanium	102	108	P/P	80 - 120
2431398	Vanadium	103	108	P/P	80 - 120
2431398	Zinc	105	109	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P434120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431398	Aluminum	97.2	99.2	P/P	70 - 130
2431398	Antimony	99.1	98.8	P/P	70 - 130
2431398	Arsenic	106	105	P/P	70 - 130
2431398	Barium	103	102	P/P	70 - 130
2431398	Beryllium	107	98.8	P/P	70 - 130
2431398	Cadmium	96.4	93.8	P/P	70 - 130
2431398	Chromium	102	101	P/P	70 - 130
2431398	Cobalt	96.3	94.8	P/P	70 - 130
2431398	Copper	109	106	P/P	70 - 130
2431398	Lead	96.6	95.9	P/P	70 - 130
2431398	Manganese	106	103	P/P	70 - 130
2431398	Molybdenum	101	101	P/P	70 - 130
2431398	Nickel	96.8	95.3	P/P	70 - 130
2431398	Selenium	111	108	P/P	70 - 130
2431398	Silver	104	104	P/P	70 - 130
2431398	Thallium	99.8	101	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P434296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430372	Chloride	101		P	90 - 110
2430510	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P434301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430372	Sulfate	97.8		P	90 - 110
2430510	Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P434388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431289	Ammonia-N	99.8	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431367	Kjeldahl Nitrogen	109	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434458

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2430973	Kjeldahl Nitrogen	95.3	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431276	NO2NO3-N	99.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431276	Total-P	97.3	95.6	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P433861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431296	PCB-1016	75.7	81.2	P/P	45 - 107
2431296	PCB-1260	63.4	65.8	P/P	40 - 112

Reference Method: EPA 8270E
Batch ID: P434403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2433693	Aldrin	40.0	40.4	P/P	24 - 81.0
2433693	Alpha-BHC	72.9	80.7	P/P	65 - 110
2433693	Alpha-Chlordane	69.6	69.8	P/P	43 - 119
2433693	Beta-BHC	90.0	89.9	P/P	54 - 165
2433693	Beta-Cyfluthrin	37.3	53.4	P/P	27 - 165
2433693	Bifenthrin	30.4	47.2	P/P	17 - 117
2433693	Carbophenothion	51.4	43.1	P/P	21 - 108
2433693	Chlorothalonil	77.8	87.3	P/P	10 - 255
2433693	Cis-Nonachlor	60.2	61.8	P/P	34 - 98.0
2433693	Cypermethrin	37.9	55.9	P/P	25 - 143
2433693	Dacthal	70.3	58.8	P/P	55 - 139
2433693	DDD-p,p'	52.3	53.2	P/P	30 - 109
2433693	DDE-p,p'	52.6	52.6	P/P	35 - 106
2433693	DDT-p,p'	45.5	53.9	P/P	41 - 101
2433693	Delta-BHC	87.6	109	P/P	58 - 165
2433693	Deltamethrin	32.5	55.5	P/P	10 - 194
2433693	Dichlobenil	63.1	66.3	P/P	22 - 114
2433693	Dicofol	54.2	55.7	P/P	17 - 133
2433693	Dieldrin	52.9	54.4	P/P	45 - 129
2433693	Endosulfan I	69.7	56.9	P/P	49 - 104
2433693	Endosulfan II	70.8	76.3	P/P	37 - 117

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P434403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2433693	Endosulfan Sulfate	60.9	59.8	P/P	38 - 128
2433693	Endrin	50.3	47.4	P/P	35 - 116
2433693	Endrin Aldehyde	54.8	30.4	P/P	19 - 108
2433693	Endrin Ketone	65.3	58.3	P/P	44 - 134
2433693	Esfenvalerate	81.5	101	P/P	27 - 176
2433693	Ethalfuralin	57.0	59.5	P/P	49 - 100
2433693	Fenpropathrin	40.0	64.8	P/P	34 - 117
2433693	Gamma-BHC	89.8	87.8	P/P	59 - 129
2433693	Gamma-Chlordane	64.6	54.1	P/P	33 - 107
2433693	Heptachlor	46.7	42.0	P/P	37 - 94.0
2433693	Heptachlor Epoxide	78.3	79.7	P/P	38 - 118
2433693	Hexachlorobenzene	52.1	52.0	P/P	35 - 97.0
2433693	Kepone	76.9	62.4	P/P	10 - 221
2433693	Lambda-Cyhalothrin	37.4	51.6	P/P	23 - 190
2433693	Methoprene	66.0	66.0	P/P	21 - 109
2433693	Methoxychlor	58.1	65.0	P/P	46 - 118
2433693	MGK-264	96.2	102	P/P	39 - 122
2433693	Mirex	34.7	42.8	P/P	25 - 90.0
2433693	Oxychlordane	64.6	55.1	P/P	42 - 100
2433693	Permethrin	49.3	51.6	P/P	33 - 181
2433693	Phenothrin	32.9	40.1	P/P	12 - 125
2433693	Piperonyl Butoxide	60.4	85.9	P/P	10 - 178
2433693	Prallethrin	76.8	69.1	P/P	24 - 122
2433693	Tau-Fluvalinate	33.9	50.4	P/P	13 - 151
2433693	Tetramethrin	70.6	76.3	P/P	16 - 172
2433693	Trans-Nonachlor	66.0	64.4	P/P	39 - 100
2433693	Triclosan Methyl	58.8	53.8	P/P	43 - 110
2433693	Trifluralin	51.3	64.5	P/P	45 - 94.0

Reference Method: EPA 8276

Batch ID: P433861

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431296	Chlordane	62.2	68.9	P/P	43 - 123
2431296	Toxaphene	73.3	76.2	P/P	27 - 156

Reference Method: SM 4500-F- C-2011

Batch ID: P434032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431365	Fluoride	99.3	100	P/P	94 - 106

Reference Method: SM 5310 B-2011

Batch ID: P434116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2431368	Organic Carbon	90.2	92.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P433942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431220	Color (true)	2.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P433949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431113	Turbidity	10.7	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P434120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431398	Calcium	7.86	Spike	P	0 - 20
2431398	Iron	8.47	Spike	P	0 - 20
2431398	Magnesium	8.42	Spike	P	0 - 20
2431398	Potassium	8.36	Spike	P	0 - 20
2431398	Sodium	0.421	Spike	P	0 - 20
2431398	Strontium	7.84	Spike	P	0 - 20
2431398	Tin	12.4	Spike	P	0 - 20
2431398	Titanium	5.20	Spike	P	0 - 20
2431398	Vanadium	5.10	Spike	P	0 - 20
2431398	Zinc	3.04	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P434120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431398	Aluminum	1.86	Spike	P	0 - 20
2431398	Antimony	0.307	Spike	P	0 - 20
2431398	Arsenic	0.547	Spike	P	0 - 20
2431398	Barium	0.701	Spike	P	0 - 20
2431398	Beryllium	7.88	Spike	P	0 - 20
2431398	Boron	3.52	Spike	P	0 - 20
2431398	Cadmium	2.77	Spike	P	0 - 20
2431398	Chromium	1.48	Spike	P	0 - 20
2431398	Cobalt	1.59	Spike	P	0 - 20
2431398	Copper	2.57	Spike	P	0 - 20
2431398	Lead	0.777	Spike	P	0 - 20
2431398	Manganese	1.65	Spike	P	0 - 20
2431398	Molybdenum	0.605	Spike	P	0 - 20
2431398	Nickel	1.60	Spike	P	0 - 20
2431398	Selenium	3.16	Spike	P	0 - 20
2431398	Silver	0.279	Spike	P	0 - 20
2431398	Thallium	1.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430372	Chloride	0.114	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430372	Sulfate	0.550	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431289	Ammonia-N	1.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431367	Kjeldahl Nitrogen	1.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430973	Kjeldahl Nitrogen	1.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431276	NO2NO3-N	0.962	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P433967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431276	Total-P	1.70	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P433861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431296	PCB-1016	6.98	Spike	P	0 - 25
2431296	PCB-1260	3.60	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P434403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2433693	Aldrin	1.13	Spike	P	0 - 41
2433693	Alpha-BHC	10.2	Spike	P	0 - 25
2433693	Alpha-Chlordane	0.321	Spike	P	0 - 32
2433693	Beta-BHC	0.111	Spike	P	0 - 33
2433693	Beta-Cyfluthrin	35.5	Spike	P	0 - 43
2433693	Bifenthrin	43.3	Spike	P	0 - 52
2433693	Carbophenothion	17.5	Spike	P	0 - 49
2433693	Chlorothalonil	11.5	Spike	P	0 - 82
2433693	Cis-Nonachlor	2.55	Spike	P	0 - 33
2433693	Cypermethrin	38.4	Spike	P	0 - 51
2433693	Dacthal	17.9	Spike	P	0 - 27
2433693	DDD-p,p'	1.58	Spike	P	0 - 39
2433693	DDE-p,p'	0.0594	Spike	P	0 - 31
2433693	DDT-p,p'	17.0	Spike	P	0 - 29
2433693	Delta-BHC	21.9	Spike	P	0 - 35
2433693	Deltamethrin	52.2	Spike	P	0 - 100
2433693	Dichlobenil	4.92	Spike	P	0 - 40
2433693	Dicofol	2.69	Spike	P	0 - 37
2433693	Dieldrin	1.95	Spike	P	0 - 27
2433693	Endosulfan I	20.2	Spike	P	0 - 23
2433693	Endosulfan II	7.55	Spike	P	0 - 34
2433693	Endosulfan Sulfate	1.78	Spike	P	0 - 36
2433693	Endrin	6.06	Spike	P	0 - 45
2433693	Endrin Aldehyde	57.4	Spike	P	0 - 76
2433693	Endrin Ketone	11.3	Spike	P	0 - 43
2433693	Esfenvalerate	21.2	Spike	P	0 - 51
2433693	Ethalfuralin	4.36	Spike	P	0 - 22
2433693	Fenpropathrin	47.3	Spike	P	0 - 49
2433693	Gamma-BHC	2.22	Spike	P	0 - 28
2433693	Gamma-Chlordane	17.7	Spike	P	0 - 40
2433693	Heptachlor	10.5	Spike	P	0 - 29
2433693	Heptachlor Epoxide	1.72	Spike	P	0 - 33
2433693	Hexachlorobenzene	0.145	Spike	P	0 - 36
2433693	Kepone	20.8	Spike	P	0 - 85
2433693	Lambda-Cyhalothrin	31.9	Spike	P	0 - 55
2433693	Methoprene	0.0864	Spike	P	0 - 53
2433693	Methoxychlor	11.2	Spike	P	0 - 50
2433693	MGK-264	6.30	Spike	P	0 - 43
2433693	Mirex	20.8	Spike	P	0 - 40
2433693	Oxychlordane	15.9	Spike	P	0 - 31
2433693	Permethrin	4.39	Spike	P	0 - 50
2433693	Phenothrin	19.5	Spike	P	0 - 58
2433693	Piperonyl Butoxide	34.9	Spike	P	0 - 100
2433693	Prallethrin	10.5	Spike	P	0 - 39
2433693	Tau-Fluvalinate	39.1	Spike	P	0 - 54
2433693	Tetramethrin	7.75	Spike	P	0 - 51
2433693	Trans-Nonachlor	2.45	Spike	P	0 - 39
2433693	Triclosan Methyl	8.80	Spike	P	0 - 31
2433693	Trifluralin	22.8	Spike	F	0 - 22

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P433861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431296	Chlordane	10.2	Spike	P	0 - 28
2431296	Toxaphene	3.84	Spike	P	0 - 27

Reference Method: SM 2320 B-2011
Batch ID: P434025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431365	Total Alkalinity	0.779	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P434488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431220	TDS	2.25	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P434270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2430946	TSS	3.28	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P434032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431365	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P434116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2431368	Organic Carbon	2.11	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2431296

Field Sample ID: G3SW0060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	86.4	P	37 - 129
EPA 8270E	Decachlorobiphenyl	84.7	P	26 - 115
EPA 8270E	Decachlorobiphenyl	93.2	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	59.4	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	48.2	P	29 - 95.0
EPA 8270E	Tetrachloro-m-xylene	66.6	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	62.4	P	28 - 102
EPA 8276	PCNB	104	P	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A121070

Included Lab Sample IDs: 2431275, 2431277

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121074

Included Lab Sample IDs: 2431275, 2431277

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

Reference Method: SM 2320 B-2011

Run ID: A121114

Included Lab Sample IDs: 2431275, 2431277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	94.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121114

Included Lab Sample IDs: 2431275, 2431277

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

Reference Method: SM 5310 B-2011

Run ID: A121148

Included Lab Sample IDs: 2431276, 2431278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.2	97.0	P/P	90 - 110
Organic Carbon	97.0	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121149

Included Lab Sample IDs: 2431278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	99.6	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A121163

Included Lab Sample IDs: 2431296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	105		P	80 - 120
PCB-1260	102		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276

Run ID: A121168

Included Lab Sample IDs: 2431296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	97.7		P	80 - 120
Toxaphene	98.9		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121176

Included Lab Sample IDs: 2431276, 2431278

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121182

Included Lab Sample IDs: 2431275, 2431277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.0	99.1	P/P	90 - 110
Sulfate	97.2	98.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A121191

Included Lab Sample IDs: 2431297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Iron	104	101	P/P	90 - 110
Magnesium	104	102	P/P	90 - 110
Potassium	102	99.7	P/P	90 - 110
Sodium	104	103	P/P	90 - 110
Strontium	104	104	P/P	90 - 110
Tin	98.7	102	P/P	90 - 110
Titanium	97.7	99.5	P/P	90 - 110
Vanadium	98.5	101	P/P	90 - 110
Zinc	100	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121218

Included Lab Sample IDs: 2431297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.2	102	P/P	90 - 110
Antimony	94.8	93.9	P/P	90 - 110
Arsenic	98.7	100	P/P	90 - 110
Barium	98.6	98.6	P/P	90 - 110
Beryllium	98.3	100	P/P	90 - 110
Cadmium	97.8	95.8	P/P	90 - 110
Chromium	98.5	99.0	P/P	90 - 110
Cobalt	97.6	97.4	P/P	90 - 110
Copper	100	104	P/P	90 - 110
Lead	94.3	93.3	P/P	90 - 110
Manganese	100	102	P/P	90 - 110
Molybdenum	96.1	95.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121218

Included Lab Sample IDs: 2431297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	98.0	98.7	P/P	90 - 110
Selenium	97.8	100	P/P	90 - 110
Silver	95.1	94.5	P/P	90 - 110
Thallium	97.3	96.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121239

Included Lab Sample IDs: 2431297

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	96.6	92.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121257

Included Lab Sample IDs: 2431276, 2431278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.4	P/P	90 - 110
Ammonia-N	98.9	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121368

Included Lab Sample IDs: 2431276

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.6	106	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A121372

Included Lab Sample IDs: 2431296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	103		P	80 - 120
Alpha-BHC	100		P	80 - 120
Alpha-Chlordane	112		P	80 - 120
Beta-BHC	106		P	80 - 120
Beta-Cyfluthrin	101		P	80 - 120
Bifenthrin	109		P	80 - 120
Carbophenothion	104		P	80 - 120
Chlorothalonil	110		P	80 - 120
Cis-Nonachlor	107		P	80 - 120
Cypermethrin	111		P	80 - 120
Dacthal	104		P	80 - 120
DDD-p,p'	109		P	80 - 120
DDE-p,p'	107		P	80 - 120
DDT-p,p'	98.3		P	80 - 120
Delta-BHC	106		P	80 - 120
Deltamethrin	105		P	80 - 120
Dichlobenil	110		P	80 - 120
Dicofol	98.9		P	80 - 120
Dieldrin	107		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A121372
Included Lab Sample IDs: 2431296

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endosulfan I	109		P	80 - 120
Endosulfan II	104		P	80 - 120
Endosulfan Sulfate	99.3		P	80 - 120
Endrin	105		P	80 - 120
Endrin Aldehyde	108		P	80 - 120
Endrin Ketone	99.0		P	80 - 120
Esfenvalerate	109		P	80 - 120
Ethalfuralin	104		P	80 - 120
Fenpropathrin	107		P	80 - 120
Gamma-BHC	121*		F	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	95.1		P	80 - 120
Heptachlor Epoxide	105		P	80 - 120
Hexachlorobenzene	106		P	80 - 120
Kepone	62.9*		F	80 - 120
Lambda-Cyhalothrin	115		P	80 - 120
Methoprene	109		P	80 - 120
Methoxychlor	98.8		P	80 - 120
MGK-264	109		P	80 - 120
Mirex	109		P	80 - 120
Oxychlordane	109		P	80 - 120
Permethrin	109		P	80 - 120
Phenothrin	110		P	80 - 120
Piperonyl Butoxide	114		P	80 - 120
Prallethrin	105		P	80 - 120
Tau-Fluvalinate	109		P	80 - 120
Tetramethrin	110		P	80 - 120
Trans-Nonachlor	109		P	80 - 120
Triclosan Methyl	105		P	80 - 120
Trifluralin	102		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A121381
Included Lab Sample IDs: 2431276, 2431278

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	99.6				2.28	
EPA 180.1 Rev. 2.0	Turbidity	99.4				10.7	
EPA 200.7 Rev. 4.4	Calcium	103	111				7.86
	Iron	105	97.5	107			8.47
	Magnesium	104					8.42
	Potassium	104					8.36
	Sodium	105					0.421
	Strontium	104	95.1	106			7.84
	Tin	103	95.2	108			12.4
	Titanium	102	102	108			5.20
	Vanadium	104	103	108			5.10
	Zinc	106	105	109			3.04
EPA 200.8 Rev. 5.4	Aluminum	97.1	97.2	99.2			1.86
	Antimony	96.8	99.1	98.8			0.307
	Arsenic	97.5	106	105			0.547
	Barium	99.6	103	102			0.701
	Beryllium	93.3	107	98.8			7.88
	Boron	98.0					3.52
	Cadmium	95.6	96.4	93.8			2.77
	Chromium	96.5	102	101			1.48
	Cobalt	96.3	96.3	94.8			1.59
	Copper	98.3	109	106			2.57
	Lead	93.8	96.6	95.9			0.777
	Manganese	98.1	106	103			1.65
	Molybdenum	95.6	101	101			0.605
	Nickel	97.0	96.8	95.3			1.60
	Selenium	100	111	108			3.16
	Silver	108	104	104			0.279
	Thallium	98.2	99.8	101			1.11
EPA 300.0 Rev. 2.1	Chloride	98.5	101	102		0.114	
	Sulfate	95.9	97.8	98.3		0.550	
EPA 350.1 Rev. 2.0	Ammonia-N	94.8	99.8	102			1.55
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.9	109	107			1.20
	Kjeldahl Nitrogen	99.5	95.3	97.2			1.70
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.6	101			0.962
EPA 365.1 Rev. 2.0	Total-P	102	97.3	95.6			1.70
EPA 8270E	Aldrin	42.0	40.0	40.4			1.13
	Alpha-BHC	78.9	72.9	80.7			10.2
	Alpha-Chlordane	63.3	69.6	69.8			0.321
	Beta-BHC	67.7	90.0	89.9			0.111
	Beta-Cyfluthrin	61.5	37.3	53.4			35.5
	Bifenthrin	52.6	30.4	47.2			43.3
	Carbophenothion	42.5	51.4	43.1			17.5
	Chlorothalonil	59.1	77.8	87.3			11.5
	Cis-Nonachlor	61.2	60.2	61.8			2.55
	Cypermethrin	81.8	37.9	55.9			38.4
	Dacthal	77.4	70.3	58.8			17.9
	DDD-p,p'	61.4	52.3	53.2			1.58
	DDE-p,p'	58.9	52.6	52.6			0.0594
	DDT-p,p'	50.5	45.5	53.9			17.0
	Delta-BHC	78.4	87.6	109			21.9
	Deltamethrin	81.1	32.5	55.5			52.2
	Dichlobenil	55.7	63.1	66.3			4.92
	Dicofol	52.5	54.2	55.7			2.69

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Dieldrin	60.2	52.9	54.4			1.95
	Endosulfan I	62.1	69.7	56.9			20.2
	Endosulfan II	65.3	70.8	76.3			7.55
	Endosulfan Sulfate	76.3	60.9	59.8			1.78
	Endrin	65.1	50.3	47.4			6.06
	Endrin Aldehyde	7.56	54.8	30.4			57.4
	Endrin Ketone	104	65.3	58.3			11.3
	Esfenvalerate	72.2	81.5	101			21.2
	Ethalfuralin	57.2	57.0	59.5			4.36
	Fenpropathrin	69.7	40.0	64.8			47.3
	Gamma-BHC	114	89.8	87.8			2.22
	Gamma-Chlordane	64.1	64.6	54.1			17.7
	Heptachlor	65.1	46.7	42.0			10.5
	Heptachlor Epoxide	62.2	78.3	79.7			1.72
	Hexachlorobenzene	39.4	52.1	52.0			0.145
	Kepone	67.2	76.9	62.4			20.8
	Lambda-Cyhalothrin	63.0	37.4	51.6			31.9
	Methoprene	52.6	66.0	66.0			0.0864
	Methoxychlor	62.7	58.1	65.0			11.2
	MGK-264	81.5	96.2	102			6.30
	Mirex	52.0	34.7	42.8			20.8
	Oxychlordane	60.8	64.6	55.1			15.9
	PCB-1016	64.9	75.7	81.2			6.98
	PCB-1260	62.8	63.4	65.8			3.60
	Permethrin	65.5	49.3	51.6			4.39
	Phenothrin	50.9	32.9	40.1			19.5
	Piperonyl Butoxide	95.2	60.4	85.9			34.9
	Prallethrin	67.7	76.8	69.1			10.5
	Tau-Fluvalinate	69.5	33.9	50.4			39.1
	Tetramethrin	76.5	70.6	76.3			7.75
	Trans-Nonachlor	66.1	66.0	64.4			2.45
	Triclosan Methyl	59.3	58.8	53.8			8.80
	Trifluralin	53.2	51.3	64.5			22.8
EPA 8276	Chlordane	83.7	62.2	68.9			10.2
	Toxaphene	85.4	73.3	76.2			3.84
SM 2320 B-2011	Total Alkalinity	96.6				0.779	
SM 2540 C-2015	TDS	101				2.25	
SM 2540 D-2015	TSS	100				3.28	
SM 4500-F- C-2011	Fluoride	98.6	99.3	100			0.480
SM 5310 B-2011	Organic Carbon	97.4	90.2	92.8			2.11

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2431275, 2431277
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2431275, 2431277
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2431297
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2431297
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2431275, 2431277
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2431275, 2431277
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2431276, 2431278

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2431276, 2431278
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2431276, 2431278
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2431276, 2431278
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2431296
EPA 8270E	PCBs in water matrices by GC/MS/MS	2431296
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2431296
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2431275, 2431277
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2431297
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2431275, 2431277
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2431275, 2431277
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2431275, 2431277
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2431276, 2431278

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	08/16/2023			08/16/2023 14:47	Alexis Price	2431277
	08/16/2023			08/16/2023 15:09	Alexis Price	2431275
EPA 180.1 Rev. 2.0	08/16/2023			08/16/2023 15:08	Khloe J Berg	2431275
	08/16/2023			08/16/2023 15:09	Khloe J Berg	2431277
EPA 200.7 Rev. 4.4	08/16/2023	08/21/2023 12:45	George D Taylor	08/22/2023 19:04	McKinley C Carter	2431297
	08/16/2023	08/21/2023 12:45	George D Taylor	08/22/2023 19:12	McKinley C Carter	2431297
EPA 200.8 Rev. 5.4	08/16/2023	08/21/2023 12:45	George D Taylor	08/23/2023 23:50	Emily M Philpot	2431297
	08/16/2023	08/21/2023 12:45	George D Taylor	08/24/2023 00:28	Emily M Philpot	2431297
	08/16/2023	08/21/2023 12:45	George D Taylor	08/24/2023 19:14	Emily M Philpot	2431297
EPA 300.0 Rev. 2.1	08/16/2023			08/23/2023 18:07	James L Waggeberby	2431275
	08/16/2023			08/23/2023 18:22	James L Waggeberby	2431277
EPA 350.1 Rev. 2.0	08/16/2023			08/25/2023 12:42	Khloe J Berg	2431276
	08/16/2023			08/25/2023 14:07	Khloe J Berg	2431278
EPA 351.2 Rev. 2.0	08/16/2023	08/18/2023 12:57	Simonne.V. Calhoun	08/21/2023 12:06	Samantha L Bates	2431278
	08/16/2023	09/01/2023 13:37	Simonne.V. Calhoun	09/06/2023 10:31	Samantha L Bates	2431276
EPA 353.2 Rev. 2.0	08/16/2023			09/06/2023 12:06	Anna M. Plaviak	2431276
	08/16/2023			09/06/2023 12:10	Anna M. Plaviak	2431278
EPA 365.1 Rev. 2.0	08/16/2023	08/17/2023 14:21	Adam P Silver	08/22/2023 12:11	James L Waggeberby	2431276
	08/16/2023	08/17/2023 14:21	Adam P Silver	08/22/2023 12:15	James L Waggeberby	2431278
EPA 8270E	08/16/2023	08/17/2023 08:30	Rasheda Ghaffari	08/21/2023 23:13	Julie Wi	2431296
	08/16/2023	08/29/2023 08:00	Fe-Val Siddell	09/06/2023 00:05	Vandana T. Nagar	2431296
EPA 8276	08/16/2023	08/17/2023 08:30	Rasheda Ghaffari	08/22/2023 06:40	Arthur Maknenko	2431296
SM 2320 B-2011	08/16/2023			08/18/2023 05:43	Dale L. Simmons	2431275
	08/16/2023			08/18/2023 05:57	Dale L. Simmons	2431277
SM 2340 B-2011	08/16/2023			08/22/2023 19:12	McKinley C Carter	2431297
SM 2540 C-2015	08/16/2023			08/18/2023 16:04	Yijie Li	2431275, 2431277
SM 2540 D-2015	08/16/2023			08/18/2023 16:04	Yijie Li	2431275, 2431277
SM 4500-F- C-2011	08/16/2023			08/18/2023 03:07	Dale L. Simmons	2431275
	08/16/2023			08/18/2023 03:47	Dale L. Simmons	2431277
SM 5310 B-2011	08/16/2023			08/19/2023 08:52	Elise M. Gillis	2431276
	08/16/2023			08/19/2023 09:45	Elise M. Gillis	2431278