

Chemical Analysis Report

NE-DIST-2021-03-04-02

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

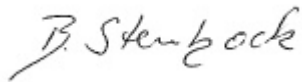
Event Description: **Miramar 2021**
Request ID: **RQ-2021-03-01-40**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

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

Date Certified: 24-MAR-2021 16:08



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: Miramar CR @ Gadsen Rd

Collection Date/Time: 03/03/2021 12:20

Field ID: 20030825

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2228997	EPA 8270E	Aldrin	0.77	U	ng/L	P394537	
		Dieldrin	1.9		ng/L	P394537	
		Alpha-BHC	2.0	U	ng/L	P394537	
		Kepone**	5.6	U	ng/L	P394537	
		Alpha-Chlordane	1.0	U	ng/L	P394537	
		Beta-BHC	8.2	U	ng/L	P394537	
		Beta-Cyfluthrin**	15	U	ng/L	P394537	
		Bifenthrin**	4.1	U	ng/L	P394537	
		Delta-BHC	8.2	U	ng/L	P394537	
		Gamma-BHC	8.2	U	ng/L	P394537	
		Carbophenothion	10	U	ng/L	P394537	
		Chlorothalonil	2.0	U	ng/L	P394537	
		Cis-Nonachlor**	1.0	U	ng/L	P394537	
		Cypermethrin	20	U	ng/L	P394537	
		Dacthal**	1.0	U	ng/L	P394537	
		DDD-p,p'	5.1	U	ng/L	P394537	
		DDE-p,p'	5.1	U	ng/L	P394537	
		DDT-p,p'	6.1	U	ng/L	P394537	
		Deltamethrin**	20	U	ng/L	P394537	
		Dicofol	31	U	ng/L	P394537	
		Endosulfan I	4.1	U	ng/L	P394537	
		Endosulfan II	4.1	U	ng/L	P394537	
		Endosulfan Sulfate	2.0	U	ng/L	P394537	
		Endrin	2.0	U	ng/L	P394537	
		Endrin Aldehyde	2.0	U	ng/L	P394537	
		Endrin Ketone	2.0	U	ng/L	P394537	
		Ethalfuralin**	3.1	U	ng/L	P394537	
		Gamma-Chlordane	1.0	U	ng/L	P394537	
		Dichlobenil**	2.0	U	ng/L	P394537	
		Esfenvalerate**	20	U	ng/L	P394537	
		Fenpropathrin**	10	U	ng/L	P394537	
		Heptachlor	1.5	U	ng/L	P394537	
		Heptachlor Epoxide	2.0	U	ng/L	P394537	
		Hexachlorobenzene	2.0	U	ng/L	P394537	
		Lambda-Cyhalothrin**	15	U	ng/L	P394537	
		Methoxychlor	4.1	U	ng/L	P394537	
		Mirex	2.0	U	ng/L	P394537	
		MGK-264**	3.1	U	ng/L	P394537	
		Permethrin	10	U	ng/L	P394537	
		Phenothrin**	31	UJ	ng/L	P394537	LCS
		Piperonyl Butoxide**	2.8	I	ng/L	P394537	
		Prallethrin**	26	UJ	ng/L	P394537	LCS
		Tau-Fluvalinate**	3.6	U	ng/L	P394537	
		Tetramethrin**	8.2	U	ng/L	P394537	

Field ID: 20030825

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2228997	EPA 8270E	Trans-Nonachlor**	1.0	U	ng/L	P394537	
		Triclosan Methyl**	1.0	U	ng/L	P394537	
		Trifluralin	2.6	U	ng/L	P394537	
2228998	EPA 200.7 Rev. 4.4	Barium	42.1		ug/L	P394489	
		Calcium	41.0		mg/L	P394489	
		Iron	2.97E+03		ug/L	P394489	
		Magnesium	8.65		mg/L	P394489	
		Manganese	91.7		ug/L	P394489	
		Potassium	2.4		mg/L	P394489	
		Sodium	20.1		mg/L	P394489	
		Zinc	20	I	ug/L	P394489	
	EPA 200.8 Rev. 5.4	Aluminum	186		ug/L	P394489	
		Antimony	0.25		ug/L	P394489	
		Arsenic	3.84		ug/L	P394489	
		Beryllium	0.090		ug/L	P394489	
		Boron**	43.5		ug/L	P394489	
		Cadmium	0.022	I	ug/L	P394489	
		Chromium	0.72	I	ug/L	P394489	
		Copper	4.59		ug/L	P394489	
		Lead	3.12		ug/L	P394489	
		Nickel	0.94	I	ug/L	P394489	
	SM 2340B	Selenium	0.20	U	ug/L	P394489	
		Silver	0.010	U	ug/L	P394489	
		Thallium	0.10	U	ug/L	P394489	
		Hardness	138		mg/L	P394489	

Ref. Method and Comment:

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

Sample Location: Miramar at San Jose

Collection Date/Time: 03/03/2021 12:45

Field ID: G2NE1164

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2228990	EPA 180.1 Rev. 2.0	Turbidity	6.0	A	NTU	P394501	
	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P394698	
		Sulfate	45		mg SO4/L	P394700	
	SM 2120 B-2011	Color (true)	34	A	PCU	P394497	
	SM 2320 B-2011	Total Alkalinity	81		mg CaCO3/L	P394733	
	SM 2540 C-2011	TDS	212		mg/L	P394829	
	SM 2540 D-2011	TSS	5	I	mg/L	P394834	
2228991	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P394738	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.073		mg N/L	P394583	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P394721	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.44		mg N/L	P394618	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P394550	
2228992	SM 5310 B-2011	Organic Carbon	9.4		mg C/L	P395016	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P394491	
2228996	EPA 8270E	Aldrin	0.77	U	ng/L	P394537	
		Dieldrin	3.9		ng/L	P394537	
		Alpha-BHC	2.1	U	ng/L	P394537	
		Kepone**	5.7	U	ng/L	P394537	
		Alpha-Chlordane	1.0	U	ng/L	P394537	
		Beta-BHC	8.2	U	ng/L	P394537	
		Beta-Cyfluthrin**	15	U	ng/L	P394537	
		Bifenthrin**	4.1	U	ng/L	P394537	
		Delta-BHC	8.2	U	ng/L	P394537	
		Gamma-BHC	8.2	U	ng/L	P394537	
		Carbophenothion	10	U	ng/L	P394537	
		Chlorothalonil	2.1	U	ng/L	P394537	
		Cis-Nonachlor**	1.0	U	ng/L	P394537	
		Cypermethrin	21	U	ng/L	P394537	
		Dacthal**	1.0	U	ng/L	P394537	
		DDD-p,p'	5.2	U	ng/L	P394537	
		DDE-p,p'	5.2	U	ng/L	P394537	
		DDT-p,p'	6.2	U	ng/L	P394537	
		Deltamethrin**	21	U	ng/L	P394537	
		Dicofol	31	U	ng/L	P394537	
		Endosulfan I	4.1	U	ng/L	P394537	
		Endosulfan II	4.1	U	ng/L	P394537	
		Endosulfan Sulfate	2.1	U	ng/L	P394537	
		Endrin	2.1	U	ng/L	P394537	
		Endrin Aldehyde	2.1	U	ng/L	P394537	
		Endrin Ketone	2.1	U	ng/L	P394537	
		Ethalfuralin**	3.1	U	ng/L	P394537	
		Gamma-Chlordane	1.0	U	ng/L	P394537	
		Dichlobenil**	2.1	U	ng/L	P394537	

Field ID: G2NE1164

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2228996	EPA 8270E	Esfenvalerate**	21	U	ng/L	P394537	
		Fenpropathrin**	10	U	ng/L	P394537	
		Heptachlor	1.5	U	ng/L	P394537	
		Heptachlor Epoxide	2.1	U	ng/L	P394537	
		Hexachlorobenzene	2.1	U	ng/L	P394537	
		Lambda-Cyhalothrin**	15	U	ng/L	P394537	
		Methoxychlor	4.1	U	ng/L	P394537	
		Mirex	2.1	U	ng/L	P394537	
		MGK-264**	3.1	U	ng/L	P394537	
		Permethrin	10	U	ng/L	P394537	
		Phenothrin**	31	UJ	ng/L	P394537	LCS
		Piperonyl Butoxide**	3.5	I	ng/L	P394537	
		Prallethrin**	26	UJ	ng/L	P394537	LCS
		Tau-Fluvalinate**	3.6	U	ng/L	P394537	
		Tetramethrin**	8.2	U	ng/L	P394537	
		Trans-Nonachlor**	1.0	U	ng/L	P394537	
		Triclosan Methyl**	1.0	U	ng/L	P394537	
		Trifluralin	2.6	U	ng/L	P394537	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394501

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394489

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394489

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394698

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394700

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394583

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394721

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394618

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394550

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394491

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

Reference Method: EPA 8270E
Batch ID: P394537

Component	Result	Code	Units
Aldrin	0.75	U	ng/L
Alpha-BHC	2.0	U	ng/L
Alpha-Chlordane	1.0	U	ng/L
Beta-BHC	8.0	U	ng/L
Beta-Cyfluthrin	15	U	ng/L
Bifenthrin	4.0	U	ng/L
Carbophenothion	10	U	ng/L
Chlorothalonil	2.0	U	ng/L
Cis-Nonachlor	1.0	U	ng/L
Cypermethrin	20	U	ng/L
Dacthal	1.0	U	ng/L
DDD-p,p'	5.0	U	ng/L
DDE-p,p'	5.0	U	ng/L
DDT-p,p'	6.0	U	ng/L
Delta-BHC	8.0	U	ng/L
Deltamethrin	20	U	ng/L
Dichlobenil	2.0	U	ng/L
Dicofol	30	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	4.0	U	ng/L
Endosulfan II	4.0	U	ng/L
Endosulfan Sulfate	2.0	U	ng/L
Endrin	2.0	U	ng/L
Endrin Aldehyde	2.0	U	ng/L
Endrin Ketone	2.0	U	ng/L
Esfenvalerate	20	U	ng/L
Ethalfuralin	3.0	U	ng/L
Fenpropathrin	10	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P394537

Component	Result	Code	Units
Gamma-BHC	8.0	U	ng/L
Gamma-Chlordane	1.0	U	ng/L
Heptachlor	1.5	U	ng/L
Heptachlor Epoxide	2.0	U	ng/L
Hexachlorobenzene	2.0	U	ng/L
Kepone	5.5	U	ng/L
Lambda-Cyhalothrin	15	U	ng/L
Methoxychlor	4.0	U	ng/L
MGK-264	3.0	U	ng/L
Mirex	2.0	U	ng/L
Permethrin	10	U	ng/L
Phenothrin	30	U	ng/L
Piperonyl Butoxide	1.5	U	ng/L
Prallethrin	25	U	ng/L
Tau-Fluvalinate	3.5	U	ng/L
Tetramethrin	8.0	U	ng/L
Trans-Nonachlor	1.0	U	ng/L
Triclosan Methyl	1.0	U	ng/L
Trifluralin	2.5	U	ng/L

Reference Method: SM 2120 B-2011

Batch ID: P394497

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P394733

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

Reference Method: SM 2540 C-2011

Batch ID: P394829

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P394834

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P394738

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P395016

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	106		P	85 - 115
Iron	102		P	85 - 115
Magnesium	101		P	85 - 115
Manganese	101		P	85 - 115
Potassium	100		P	85 - 115
Sodium	104		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	102		P	85 - 115
Beryllium	94.9		P	85 - 115
Boron	105		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	100		P	85 - 115
Copper	100		P	85 - 115
Lead	109		P	85 - 115
Nickel	99.2		P	85 - 115
Selenium	101		P	85 - 115
Silver	110		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394698

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394700

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394583

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394721

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394618

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394550

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394491

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

Reference Method: EPA 8270E

Batch ID: P394537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	21.8	21.5	P/P	20 - 110
Alpha-BHC	85.2	88.0	P/P	58 - 130
Alpha-Chlordane	88.1	85.9	P/P	61 - 105
Beta-BHC	99.9	98.5	P/P	53 - 164
Beta-Cyfluthrin	60.6	58.4	P/P	40 - 140
Bifenthrin	75.2	75.7	P/P	44 - 122
Carbophenothion	61.7	62.6	P/P	20 - 161
Chlorothalonil	50.1	65.6	P/P	20 - 201
Cis-Nonachlor	93.2	90.3	P/P	60 - 110
Cypermethrin	72.9	67.7	P/P	43 - 131
Dacthal	95.2	93.4	P/P	76 - 108
DDD-p,p'	93.4	90.3	P/P	68 - 118
DDE-p,p'	83.6	83.3	P/P	56 - 107
DDT-p,p'	86.8	86.5	P/P	55 - 122
Delta-BHC	98.2	99.7	P/P	60 - 181
Deltamethrin	77.8	75.2	P/P	51 - 139
Dichlobenil	63.4	65.6	P/P	20 - 106
Dicofol	104	104	P/P	56 - 130
Dieldrin	81.8	76.9	P/P	58 - 112
Endosulfan I	90.6	92.5	P/P	68 - 115
Endosulfan II	103	104	P/P	69 - 133
Endosulfan Sulfate	87.1	86.3	P/P	65 - 126
Endrin	89.0	85.4	P/P	66 - 118
Endrin Aldehyde	100	95.0	P/P	60 - 132
Endrin Ketone	93.9	90.2	P/P	68 - 121
Esfenvalerate	69.5	62.5	P/P	42 - 116
Ethalfuralin	80.8	81.1	P/P	50 - 118
Fenpropathrin	89.1	88.5	P/P	55 - 132
Gamma-BHC	96.5	97.5	P/P	65 - 147
Gamma-Chlordane	82.8	80.9	P/P	56 - 103
Heptachlor	72.5	72.6	P/P	47 - 95.0
Heptachlor Epoxide	91.2	89.0	P/P	67 - 107
Hexachlorobenzene	75.1	76.4	P/P	45 - 99.0
Kepone	104	107	P/P	28 - 128

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P394537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lambda-Cyhalothrin	67.5	64.9	P/P	41 - 135
Methoxychlor	91.5	90.7	P/P	61 - 138
MGK-264	23.3	21.2	P/P	20 - 109
Mirex	69.9	69.1	P/P	36 - 92.0
Permethrin	72.6	70.2	P/P	45 - 111
Phenothrin	21.4	20.1	F/F	22 - 88.0
Piperonyl Butoxide	89.9	80.9	P/P	67 - 120
Prallethrin	18.9	18.5	F/F	28 - 92.0
Tau-Fluvalinate	71.3	67.7	P/P	38 - 145
Tetramethrin	40.6	33.6	P/P	29 - 150
Trans-Nonachlor	87.8	86.9	P/P	54 - 105
Triclosan Methyl	102	100	P/P	76 - 115
Trifluralin	81.0	81.6	P/P	53 - 111

Reference Method: SM 2120 B-2011

Batch ID: P394497

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

Reference Method: SM 2320 B-2011

Batch ID: P394733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P394738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	90 - 106

Reference Method: SM 5310 B-2011

Batch ID: P395016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P394489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228876	Barium	107	105	P/P	80 - 120
2228876	Calcium	107		P	80 - 120
2228876	Iron	107	106	P/P	80 - 120
2228876	Magnesium	103		P	80 - 120
2228876	Manganese	104	103	P/P	80 - 120
2228876	Potassium	104	103	P/P	80 - 120
2228876	Sodium	105		P	80 - 120
2228876	Zinc	106	103	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228876	Aluminum	100	103	P/P	80 - 120
2228876	Antimony	103	105	P/P	80 - 120
2228876	Arsenic	102	103	P/P	80 - 120
2228876	Beryllium	93.7	96.4	P/P	80 - 120
2228876	Boron	104	109	P/P	80 - 120
2228876	Cadmium	103	107	P/P	80 - 120
2228876	Chromium	101	104	P/P	80 - 120
2228876	Copper	99.2	101	P/P	80 - 120
2228876	Lead	110	112	P/P	80 - 120
2228876	Nickel	99.0	101	P/P	80 - 120
2228876	Selenium	99.1	100	P/P	80 - 120
2228876	Silver	110	110	P/P	80 - 120
2228876	Thallium	107	111	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228774	Chloride	99.7		P	90 - 110
2228990	Chloride	92.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228774	Sulfate	96.3		P	90 - 110
2228990	Sulfate	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228939	Ammonia-N	95.2	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394618

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228939	NO2NO3-N	99.6	99.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228939	Total-P	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228941	O-Phosphate-P	100	99.4	P/P	90 - 110

Reference Method: EPA 8270E

Batch ID: P394537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229185	Alpha-BHC	91.5	87.2	P/P	53 - 147
2229185	Alpha-Chlordane	89.3	88.2	P/P	56 - 107
2229185	Beta-BHC	101	98.8	P/P	43 - 182
2229185	Beta-Cyfluthrin	78.7	75.8	P/P	42 - 157
2229185	Bifenthrin	94.2	93.3	P/P	52 - 124
2229185	Carbophenothion	94.1	92.5	P/P	40 - 172
2229185	Chlorothalonil	23.5	28.4	P/P	10 - 265
2229185	Cis-Nonachlor	95.9	94.1	P/P	55 - 112
2229185	Cypermethrin	83.7	85.0	P/P	46 - 144
2229185	Dacthal	89.3	87.8	P/P	72 - 110
2229185	DDD-p,p'	94.8	93.2	P/P	58 - 123
2229185	DDE-p,p'	87.9	88.6	P/P	52 - 106
2229185	DDT-p,p'	89.3	90.3	P/P	50 - 127
2229185	Delta-BHC	105	101	P/P	56 - 222
2229185	Deltamethrin	89.4	90.6	P/P	47 - 152
2229185	Dichlobenil	85.9	84.1	P/P	22 - 99.0
2229185	Dicofol	97.6	103	P/P	38 - 145
2229185	Endosulfan I	94.7	90.8	P/P	64 - 124
2229185	Endosulfan II	103	92.0	P/P	52 - 159
2229185	Endosulfan Sulfate	86.8	80.4	P/P	62 - 136
2229185	Endrin	83.8	87.6	P/P	57 - 126
2229185	Endrin Aldehyde	75.2	68.8	P/P	41 - 128
2229185	Endrin Ketone	88.5	87.0	P/P	67 - 129
2229185	Esfenvalerate	85.3	73.1	P/P	50 - 120
2229185	Ethalfuralin	83.9	83.6	P/P	41 - 125
2229185	Fenpropathrin	130	124	P/P	40 - 202
2229185	Gamma-BHC	90.7	89.9	P/P	58 - 180
2229185	Gamma-Chlordane	86.6	85.6	P/P	54 - 103
2229185	Heptachlor	74.8	74.9	P/P	46 - 94.0
2229185	Heptachlor Epoxide	88.3	87.3	P/P	62 - 111
2229185	Hexachlorobenzene	78.7	78.7	P/P	42 - 95.0
2229185	Lambda-Cyhalothrin	82.7	81.3	P/P	37 - 162
2229185	Methoxychlor	88.5	88.9	P/P	52 - 143
2229185	MGK-264	49.4	46.1	P/P	37 - 102
2229185	Mirex	80.4	79.7	P/P	43 - 91.0
2229185	Permethrin	86.5	87.1	P/P	48 - 113
2229185	Phenothrin	55.8	58.4	P/P	30 - 104
2229185	Piperonyl Butoxide	94.5	94.1	P/P	67 - 127
2229185	Prallethrin	46.6	45.7	P/P	28 - 102
2229185	Tau-Fluvalinate	86.4	85.6	P/P	46 - 174

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P394537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229185	Tetramethrin	54.3	42.3	P/P	28 - 176
2229185	Trans-Nonachlor	91.4	90.1	P/P	51 - 103
2229185	Triclosan Methyl	98.5	98.0	P/P	67 - 116
2229185	Trifluralin	83.1	84.6	P/P	47 - 118
2229469	Aldrin	26.1	28.0	P/P	22 - 127
2229469	Dieldrin	64.3	59.7	P/P	52 - 123
2229469	Kepone	72.9	79.4	P/P	18 - 138

Reference Method: SM 4500 F-C-2011

Batch ID: P394738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229519	Fluoride	98.5	96.8	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P395016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2228991	Organic Carbon	96.0	94.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P394501

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228990	Turbidity	2.35	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P394489

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228876	Barium	1.83	Spike	P	0 - 20
2228876	Calcium	0.181	Spike	P	0 - 20
2228876	Iron	0.369	Spike	P	0 - 20
2228876	Magnesium	0.0912	Spike	P	0 - 20
2228876	Manganese	0.432	Spike	P	0 - 20
2228876	Potassium	0.463	Spike	P	0 - 20
2228876	Sodium	0.349	Spike	P	0 - 20
2228876	Zinc	2.15	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P394489

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228876	Aluminum	2.07	Spike	P	0 - 20
2228876	Antimony	1.66	Spike	P	0 - 20
2228876	Arsenic	0.590	Spike	P	0 - 20
2228876	Beryllium	2.72	Spike	P	0 - 20
2228876	Boron	4.30	Spike	P	0 - 20
2228876	Cadmium	3.31	Spike	P	0 - 20
2228876	Chromium	2.31	Spike	P	0 - 20
2228876	Copper	1.54	Spike	P	0 - 20
2228876	Lead	2.07	Spike	P	0 - 20
2228876	Nickel	1.73	Spike	P	0 - 20
2228876	Selenium	1.30	Spike	P	0 - 20
2228876	Silver	0.638	Spike	P	0 - 20
2228876	Thallium	3.43	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394698

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228774	Chloride	0.911	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394700

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228774	Sulfate	0.456	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394583

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228939	Ammonia-N	2.88	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P394721

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228954	Kjeldahl Nitrogen	2.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394618

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228939	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394550

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228939	Total-P	0.132	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394491

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228941	O-Phosphate-P	0.901	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P394537

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229185	Alpha-BHC	4.81	Spike	P	0 - 30
2229185	Alpha-Chlordane	1.29	Spike	P	0 - 30
2229185	Beta-BHC	1.98	Spike	P	0 - 30
2229185	Beta-Cyfluthrin	3.70	Spike	P	0 - 30
2229185	Bifenthrin	0.910	Spike	P	0 - 30
2229185	Carbophenothion	1.70	Spike	P	0 - 30
2229185	Chlorothalonil	19.2	Spike	P	0 - 30
2229185	Cis-Nonachlor	1.93	Spike	P	0 - 30
2229185	Cypermethrin	1.61	Spike	P	0 - 30
2229185	Dacthal	1.73	Spike	P	0 - 30
2229185	DDD-p,p'	1.66	Spike	P	0 - 30
2229185	DDE-p,p'	0.873	Spike	P	0 - 30
2229185	DDT-p,p'	1.07	Spike	P	0 - 30
2229185	Delta-BHC	3.50	Spike	P	0 - 30
2229185	Deltamethrin	1.38	Spike	P	0 - 30
2229185	Dichlobenil	2.13	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P394537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229185	Dicofol	4.99	Spike	P	0 - 30
2229185	Endosulfan I	4.21	Spike	P	0 - 30
2229185	Endosulfan II	11.3	Spike	P	0 - 30
2229185	Endosulfan Sulfate	7.74	Spike	P	0 - 30
2229185	Endrin	4.41	Spike	P	0 - 30
2229185	Endrin Aldehyde	8.90	Spike	P	0 - 30
2229185	Endrin Ketone	1.72	Spike	P	0 - 30
2229185	Esfenvalerate	15.4	Spike	P	0 - 30
2229185	Ethalfuralin	0.416	Spike	P	0 - 30
2229185	Fenpropathrin	4.87	Spike	P	0 - 30
2229185	Gamma-BHC	0.877	Spike	P	0 - 30
2229185	Gamma-Chlordane	1.17	Spike	P	0 - 30
2229185	Heptachlor	0.224	Spike	P	0 - 30
2229185	Heptachlor Epoxide	1.11	Spike	P	0 - 30
2229185	Hexachlorobenzene	0.0371	Spike	P	0 - 30
2229185	Lambda-Cyhalothrin	1.74	Spike	P	0 - 30
2229185	Methoxychlor	0.442	Spike	P	0 - 30
2229185	MGK-264	6.87	Spike	P	0 - 30
2229185	Mirex	0.856	Spike	P	0 - 30
2229185	Permethrin	0.654	Spike	P	0 - 30
2229185	Phenothrin	4.56	Spike	P	0 - 30
2229185	Piperonyl Butoxide	0.393	Spike	P	0 - 30
2229185	Prallethrin	1.90	Spike	P	0 - 30
2229185	Tau-Fluvalinate	0.894	Spike	P	0 - 30
2229185	Tetramethrin	24.7	Spike	P	0 - 30
2229185	Trans-Nonachlor	1.44	Spike	P	0 - 30
2229185	Triclosan Methyl	0.583	Spike	P	0 - 30
2229185	Trifluralin	1.81	Spike	P	0 - 30
2229469	Aldrin	7.04	Spike	P	0 - 30
2229469	Dieldrin	6.24	Spike	P	0 - 30
2229469	Kepone	8.61	Spike	P	0 - 30
LFB	Aldrin	1.68	LCS	P	0 - 30
LFB	Alpha-BHC	3.20	LCS	P	0 - 30
LFB	Alpha-Chlordane	2.60	LCS	P	0 - 30
LFB	Beta-BHC	1.45	LCS	P	0 - 30
LFB	Beta-Cyfluthrin	3.61	LCS	P	0 - 30
LFB	Bifenthrin	0.663	LCS	P	0 - 30
LFB	Carbophenothion	1.48	LCS	P	0 - 30
LFB	Chlorothalonil	26.7	LCS	P	0 - 30
LFB	Cis-Nonachlor	3.25	LCS	P	0 - 30
LFB	Cypermethrin	7.39	LCS	P	0 - 30
LFB	Dacthal	1.93	LCS	P	0 - 30
LFB	DDD-p,p'	3.45	LCS	P	0 - 30
LFB	DDE-p,p'	0.329	LCS	P	0 - 30
LFB	DDT-p,p'	0.235	LCS	P	0 - 30
LFB	Delta-BHC	1.44	LCS	P	0 - 30
LFB	Deltamethrin	3.42	LCS	P	0 - 30
LFB	Dichlobenil	3.44	LCS	P	0 - 30
LFB	Dicofol	0.325	LCS	P	0 - 30
LFB	Dieldrin	6.13	LCS	P	0 - 30
LFB	Endosulfan I	2.08	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P394537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Endosulfan II	1.39	LCS	P	0 - 30
LFB	Endosulfan Sulfate	0.974	LCS	P	0 - 30
LFB	Endrin	4.11	LCS	P	0 - 30
LFB	Endrin Aldehyde	5.48	LCS	P	0 - 30
LFB	Endrin Ketone	3.99	LCS	P	0 - 30
LFB	Esfenvalerate	10.6	LCS	P	0 - 30
LFB	Ethalfuralin	0.344	LCS	P	0 - 30
LFB	Fenpropathrin	0.676	LCS	P	0 - 30
LFB	Gamma-BHC	1.07	LCS	P	0 - 30
LFB	Gamma-Chlordane	2.26	LCS	P	0 - 30
LFB	Heptachlor	0.0971	LCS	P	0 - 30
LFB	Heptachlor Epoxide	2.50	LCS	P	0 - 30
LFB	Hexachlorobenzene	1.72	LCS	P	0 - 30
LFB	Kepone	2.40	LCS	P	0 - 30
LFB	Lambda-Cyhalothrin	3.96	LCS	P	0 - 30
LFB	Methoxychlor	0.919	LCS	P	0 - 30
LFB	MGK-264	9.67	LCS	P	0 - 30
LFB	Mirex	1.11	LCS	P	0 - 30
LFB	Permethrin	3.31	LCS	P	0 - 30
LFB	Phenothrin	6.64	LCS	P	0 - 30
LFB	Piperonyl Butoxide	10.5	LCS	P	0 - 30
LFB	Prallethrin	2.03	LCS	P	0 - 30
LFB	Tau-Fluvalinate	5.18	LCS	P	0 - 30
LFB	Tetramethrin	19.0	LCS	P	0 - 30
LFB	Trans-Nonachlor	1.04	LCS	P	0 - 30
LFB	Triclosan Methyl	2.05	LCS	P	0 - 30
LFB	Trifluralin	0.815	LCS	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P394497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228990	Color (true)	3.29	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P394733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229519	Total Alkalinity	0.827	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P394829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228947	TDS	1.73	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P394738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229519	Fluoride	0.946	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P395016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2228991	Organic Carbon	1.02	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2228996
Field Sample ID: G2NE1164

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	67.6	P	40 - 123
EPA 8270E	Decachlorobiphenyl	61.5	P	47 - 111
EPA 8270E	Tetrachloro-m-xylene	45.8	P	31 - 100
EPA 8270E	Tetrachloro-m-xylene	47.4	P	33 - 102

Lab Sample ID: 2228997
Field Sample ID: 20030825

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	104	P	40 - 123
EPA 8270E	Decachlorobiphenyl	90.6	P	47 - 111
EPA 8270E	Tetrachloro-m-xylene	67.9	P	31 - 100
EPA 8270E	Tetrachloro-m-xylene	69.0	P	33 - 102

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103892

Included Lab Sample IDs: 2228992

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	98.0	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103893

Included Lab Sample IDs: 2228990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103894

Included Lab Sample IDs: 2228990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103921

Included Lab Sample IDs: 2228991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	98.4	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103926

Included Lab Sample IDs: 2228998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	106	104	P/P	90 - 110
Calcium	103	103	P/P	90 - 110
Iron	102	104	P/P	90 - 110
Magnesium	101	103	P/P	90 - 110
Manganese	101	100	P/P	90 - 110
Potassium	98.4	102	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	105	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103943

Included Lab Sample IDs: 2228991

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: A103946

Included Lab Sample IDs: 2228991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103974

Included Lab Sample IDs: 2228990

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	100	P/P	90 - 110
Sulfate	99.3	99.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103989

Included Lab Sample IDs: 2228990

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

Reference Method: SM 4500 F-C-2011

Run ID: A103989

Included Lab Sample IDs: 2228990

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

Reference Method: EPA 8270E

Run ID: A103998

Included Lab Sample IDs: 2228996, 2228997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	99.3		P	80 - 120
Dieldrin	98.9		P	80 - 120
Kepone	102		P	80 - 120

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104011

Included Lab Sample IDs: 2228991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104075

Included Lab Sample IDs: 2228998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	102	P/P	90 - 110
Antimony	97.8	97.3	P/P	90 - 110
Arsenic	100	99.0	P/P	90 - 110
Beryllium	98.5	97.6	P/P	90 - 110
Boron	104	108	P/P	90 - 110
Cadmium	99.8	99.8	P/P	90 - 110
Chromium	100	99.7	P/P	90 - 110
Copper	99.9	98.1	P/P	90 - 110
Lead	110	109	P/P	90 - 110
Nickel	99.9	99.3	P/P	90 - 110
Selenium	101	99.3	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A104080

Included Lab Sample IDs: 2228991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.5	94.7	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A104169

Included Lab Sample IDs: 2228996, 2228997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alpha-BHC	98.4		P	80 - 120
Alpha-Chlordane	97.3		P	80 - 120
Beta-BHC	94.6		P	80 - 120
Beta-Cyfluthrin	96.8		P	80 - 120
Bifenthrin	97.9		P	80 - 120
Carbophenothion	94.1		P	80 - 120
Chlorothalonil	103		P	80 - 120
Cis-Nonachlor	98.1		P	80 - 120
Cypermethrin	94.6		P	80 - 120
Dacthal	98.1		P	80 - 120
DDD-p,p'	103		P	80 - 120
DDE-p,p'	101		P	80 - 120
DDT-p,p'	101		P	80 - 120
Delta-BHC	96.2		P	80 - 120
Deltamethrin	98.7		P	80 - 120
Dichlobenil	108		P	80 - 120
Dicofol	98.3		P	80 - 120
Endosulfan I	98.6		P	80 - 120
Endosulfan II	93.1		P	80 - 120
Endosulfan Sulfate	100		P	80 - 120
Endrin	92.1		P	80 - 120
Endrin Aldehyde	98.8		P	80 - 120
Endrin Ketone	96.9		P	80 - 120
Esfenvalerate	92.2		P	80 - 120
Ethalfuralin	98.6		P	80 - 120
Fenpropathrin	102		P	80 - 120
Gamma-BHC	101		P	80 - 120
Gamma-Chlordane	98.2		P	80 - 120
Heptachlor	95.7		P	80 - 120
Heptachlor Epoxide	99.0		P	80 - 120
Hexachlorobenzene	98.8		P	80 - 120
Lambda-Cyhalothrin	95.9		P	80 - 120
Methoxychlor	101		P	80 - 120
MGK-264	97.1		P	80 - 120
Mirex	99.4		P	80 - 120
Permethrin	90.8		P	80 - 120
Phenothrin	91.4		P	80 - 120
Piperonyl Butoxide	99.1		P	80 - 120
Prallethrin	93.8		P	80 - 120
Tau-Fluvalinate	99.4		P	80 - 120
Tetramethrin	95.4		P	80 - 120
Trans-Nonachlor	98.4		P	80 - 120
Triclosan Methyl	100		P	80 - 120
Trifluralin	95.9		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
EPA 180.1 Rev. 2.0	Turbidity						2.35	
EPA 200.7 Rev. 4.4	Barium	102		107	105			1.83
	Calcium	106		107				0.181
	Iron	102		107	106			0.369
	Magnesium	101		103				0.0912
	Manganese	101		104	103			0.432
	Potassium	100		104	103			0.463
	Sodium	104		105				0.349
	Zinc	101		106	103			2.15
EPA 200.8 Rev. 5.4	Aluminum	102		100	103			2.07
	Antimony	103		103	105			1.66
	Arsenic	102		102	103			0.590
	Beryllium	94.9		93.7	96.4			2.72
	Boron	105		104	109			4.30
	Cadmium	101		103	107			3.31
	Chromium	100		101	104			2.31
	Copper	100		99.2	101			1.54
	Lead	109		110	112			2.07
	Nickel	99.2		99.0	101			1.73
	Selenium	101		99.1	100			1.30
	Silver	110		110	110			0.638
	Thallium	104		107	111			3.43
EPA 300.0 Rev. 2.1	Chloride	101		99.7	92.4		0.911	
	Sulfate	98.8		96.3	98.6		0.456	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4		95.2	98.4			2.88
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104						2.21
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100		99.6	99.6			0.0
EPA 365.1 Rev. 2.0	Total-P	105		108	108			0.132
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7		100	99.4			0.901
EPA 8270E	Aldrin	21.8	21.5	26.1	28.0	1.68		7.04
	Alpha-BHC	85.2	88.0	91.5	87.2	3.20		4.81
	Alpha-Chlordane	88.1	85.9	89.3	88.2	2.60		1.29
	Beta-BHC	99.9	98.5	101	98.8	1.45		1.98
	Beta-Cyfluthrin	60.6	58.4	78.7	75.8	3.61		3.70
	Bifenthrin	75.2	75.7	94.2	93.3	0.663		0.910
	Carbophenothion	61.7	62.6	94.1	92.5	1.48		1.70
	Chlorothalonil	50.1	65.6	23.5	28.4	26.7		19.2
	Cis-Nonachlor	93.2	90.3	95.9	94.1	3.25		1.93
	Cypermethrin	72.9	67.7	83.7	85.0	7.39		1.61
	Dacthal	95.2	93.4	89.3	87.8	1.93		1.73
	DDD-p,p'	93.4	90.3	94.8	93.2	3.45		1.66
	DDE-p,p'	83.6	83.3	87.9	88.6	0.329		0.873
	DDT-p,p'	86.8	86.5	89.3	90.3	0.235		1.07
	Delta-BHC	98.2	99.7	105	101	1.44		3.50
	Deltamethrin	77.8	75.2	89.4	90.6	3.42		1.38
	Dichlobenil	63.4	65.6	85.9	84.1	3.44		2.13
	Dicofol	104	104	97.6	103	0.325		4.99
	Dieldrin	81.8	76.9	64.3	59.7	6.13		6.24
	Endosulfan I	90.6	92.5	94.7	90.8	2.08		4.21
	Endosulfan II	103	104	103	92.0	1.39		11.3
	Endosulfan Sulfate	87.1	86.3	86.8	80.4	0.974		7.74
	Endrin	89.0	85.4	83.8	87.6	4.11		4.41
	Endrin Aldehyde	100	95.0	75.2	68.8	5.48		8.90
	Endrin Ketone	93.9	90.2	88.5	87.0	3.99		1.72

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Esfenvalerate	69.5	62.5	85.3	73.1	10.6	15.4
	Ethalfuralin	80.8	81.1	83.9	83.6	0.344	0.416
	Fenpropathrin	89.1	88.5	130	124	0.676	4.87
	Gamma-BHC	96.5	97.5	90.7	89.9	1.07	0.877
	Gamma-Chlordane	82.8	80.9	86.6	85.6	2.26	1.17
	Heptachlor	72.5	72.6	74.8	74.9	0.0971	0.224
	Heptachlor Epoxide	91.2	89.0	88.3	87.3	2.50	1.11
	Hexachlorobenzene	75.1	76.4	78.7	78.7	1.72	0.0371
	Kepone	104	107	72.9	79.4	2.40	8.61
	Lambda-Cyhalothrin	67.5	64.9	82.7	81.3	3.96	1.74
	Methoxychlor	91.5	90.7	88.5	88.9	0.919	0.442
	MGK-264	23.3	21.2	49.4	46.1	9.67	6.87
	Mirex	69.9	69.1	80.4	79.7	1.11	0.856
	Permethrin	72.6	70.2	86.5	87.1	3.31	0.654
	Phenothrin	21.4	20.1	55.8	58.4	6.64	4.56
	Piperonyl Butoxide	89.9	80.9	94.5	94.1	10.5	0.393
	Prallethrin	18.9	18.5	46.6	45.7	2.03	1.90
	Tau-Fluvalinate	71.3	67.7	86.4	85.6	5.18	0.894
	Tetramethrin	40.6	33.6	54.3	42.3	19.0	24.7
	Trans-Nonachlor	87.8	86.9	91.4	90.1	1.04	1.44
	Triclosan Methyl	102	100	98.5	98.0	2.05	0.583
	Trifluralin	81.0	81.6	83.1	84.6	0.815	1.81
SM 2120 B-2011	Color (true)	101				3.29	
SM 2320 B-2011	Total Alkalinity	99.3				0.827	
SM 2540 C-2011	TDS					1.73	
SM 4500 F-C-2011	Fluoride	99.6		98.5	96.8		0.946
SM 5310 B-2011	Organic Carbon	94.3		96.0	94.6		1.02

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2228990
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2228998
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2228998
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2228990
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2228990
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2228991
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2228991
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2228991
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2228991
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2228992
EPA 8270E	Dieldrin (ultra low level) in water matrices by GC/MS/MS	2228996, 2228997
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS-SIM	2228996, 2228997
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2228990
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2228990
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2228998
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2228990
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2228990
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2228990
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2228991

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	03/04/2021			03/04/2021 16:10	Yen Ta	2228990
EPA 200.7 Rev. 4.4	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/05/2021 15:50	Betina Topolski	2228998
EPA 200.8 Rev. 5.4	03/04/2021	03/04/2021 16:20	Elliott D. Healy	03/15/2021 18:06	McKinley C Carter	2228998
EPA 300.0 Rev. 2.1	03/04/2021			03/08/2021 19:49	Lipi Saha	2228990
EPA 350.1 Rev. 2.0	03/04/2021			03/05/2021 17:18	Ping Hua	2228991
EPA 351.2 Rev. 2.0	03/04/2021	03/10/2021 12:23	Benjamin T. Nordmann	03/11/2021 13:42	Virginia P. Brown	2228991
EPA 353.2 Rev. 2.0	03/04/2021			03/08/2021 10:46	Beverly Y. Sanders	2228991
EPA 365.1 Rev. 2.0	03/04/2021	03/05/2021 13:30	Lipi Saha	03/08/2021 13:00	Shengyu Ding	2228991
EPA 365.1 Rev. 2.0 dissolved	03/04/2021			03/04/2021 14:57	Blanca Fach	2228992
EPA 8270E	03/04/2021	03/08/2021 08:00	Rasheda Ghaffari	03/09/2021 21:07	Arthur Maknenko	2228996
	03/04/2021	03/08/2021 08:00	Rasheda Ghaffari	03/09/2021 21:28	Arthur Maknenko	2228997
	03/04/2021	03/08/2021 08:00	Rasheda Ghaffari	03/18/2021 21:31	Michael Poppell	2228996
	03/04/2021	03/08/2021 08:00	Rasheda Ghaffari	03/18/2021 22:03	Michael Poppell	2228997
SM 2120 B-2011	03/04/2021			03/04/2021 16:05	Benjamin T. Nordmann	2228990
SM 2320 B-2011	03/04/2021			03/09/2021 23:16	Dale L. Simmons	2228990
SM 2340B	03/04/2021			03/05/2021 15:50	Betina Topolski	2228998
SM 2540 C-2011	03/04/2021			03/08/2021 14:25	Yijie Li	2228990
SM 2540 D-2011	03/04/2021			03/08/2021 14:25	Yijie Li	2228990
SM 4500 F-C-2011	03/04/2021			03/09/2021 23:16	Dale L. Simmons	2228990
SM 5310 B-2011	03/04/2021			03/15/2021 22:25	Madeline Gruver	2228991