Chemical Analysis Report

SE-DIST-2021-08-18-01

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

Event Description: **SMP - Okeechobee Monthly 08/21**
Request ID: **RQ-2021-08-02-79**
Customer: **SE-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant Date Certified: 15-SEP-2021 09:11

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: Taylor Creek @ 70 **Collection Date/Time: 08/17/2021 12:30**

Field ID: G1SE0011 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2269945	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P402997	
		Sulfate	23		mg SO4/L	P403000	
	SM 2120 B-2011	Color (true)	240		PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	123		mg CaCO3/L	P402802	
	SM 2540 C-2011	TDS	304	A	mg/L	P403215	
	SM 2540 D-2011	TSS	6	I A	mg/L	P403194	
	SM 4500 F-C-2011	Fluoride	0.098	I	mg F/L	P402804	
2269946	EPA 350.1 Rev. 2.0	Ammonia-N	0.50		mg N/L	P402877	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P403593	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.68		mg N/L	P402811	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P402766	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P403116	
2269947	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P402650	
2269969	EPA 8270E	Aldrin	0.70	U	ng/L	P402612	
		Alpha-BHC	0.11	U	ng/L	P402612	
		Alpha-Chlordane	0.22	U	ng/L	P402612	
		Beta-BHC	0.11	U	ng/L	P402612	
		Beta-Cyfluthrin**	1.4	U	ng/L	P402612	
		Bifenthrin**	0.54	U	ng/L	P402612	
		Carbophenothion	0.97	U	ng/L	P402612	MS, RPD
		Chlorothalonil	0.54	U	ng/L	P402612	
		Cis-Nonachlor**	0.22	U	ng/L	P402612	
		Cypermethrin	1.6	U	ng/L	P402612	
		Dacthal**	0.16	U	ng/L	P402612	
		DDD-p,p'	0.40	I	ng/L	P402612	
		DDE-p,p'	0.22	U	ng/L	P402612	
		DDT-p,p'	0.34	I	ng/L	P402612	
		Delta-BHC	0.43	U	ng/L	P402612	
		Deltamethrin**	1.4	UJ	ng/L	P402612	RPD
		Dichlobenil**	0.11	U	ng/L	P402612	MS
		Dicofol	1.4	U	ng/L	P402612	
		Dieldrin	0.43	U	ng/L	P402612	
		Endosulfan I	0.43	U	ng/L	P402612	
		Endosulfan II	0.43	U	ng/L	P402612	
		Endosulfan Sulfate	0.32	U	ng/L	P402612	
		Endrin	0.43	U	ng/L	P402612	
		Endrin Aldehyde	0.81	U	ng/L	P402612	MS
		Endrin Ketone	0.43	U	ng/L	P402612	
		Esfenvalerate**	0.81	U	ng/L	P402612	
		Ethalfluralin**	0.16	U	ng/L	P402612	
		Fenpropathrin**	0.27	U	ng/L	P402612	
		Gamma-BHC	0.14	U	ng/L	P402612	

Field ID: G1SE0011 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2269969	EPA 8270E	Gamma-Chlordane	0.25	I	ng/L	P402612	
		Heptachlor	0.22	U	ng/L	P402612	
		Heptachlor Epoxide	0.27	U	ng/L	P402612	
		Hexachlorobenzene	1.1	U	ng/L	P402612	
		Kepone**	5.4	UJ	ng/L	P402612	CCV, RPD
		Lambda-Cyhalothrin**	0.92	I	ng/L	P402612	
		Methoxychlor	0.32	U	ng/L	P402612	
		MGK-264**	0.22	U	ng/L	P402612	
		Mirex	0.76	UJ	ng/L	P402612	LCS
		Permethrin	1.7	U	ng/L	P402612	
		Phenothrin**	0.97	U	ng/L	P402612	RPD
		Piperonyl Butoxide**	0.16	U	ng/L	P402612	
		Prallethrin**	2.2	U	ng/L	P402612	MS, RPD
		Tau-Fluvalinate**	0.27	U	ng/L	P402612	
		Tetramethrin**	0.81	U	ng/L	P402612	MS, RPD
		Trans-Nonachlor**	0.22	U	ng/L	P402612	
		Triclosan Methyl**	0.16	U	ng/L	P402612	
		Trifluralin	0.22	U	ng/L	P402612	
	EPA 8276	Chlordane	5.4	U	ng/L	P402612	
		Toxaphene	32	U	ng/L	P402612	
2269970	EPA 8321B	Acesulfame K	0.18	I	ug/L	P402556	
		2,4-D	0.093		ug/L	P402616	
		2,4,5-T	0.0040	U	ug/L	P402616	
		AMPA	0.31	I	ug/L	P402556	MS
		Acetaminophen	0.0080	U	ug/L	P402616	
		Endothall	0.25	U	ug/L	P402556	
		Acetamiprid	0.0020	U	ug/L	P402616	
		Glufosinate	0.10	U	ug/L	P402556	
		Glyphosate	0.48		ug/L	P402556	
		Afidopyropen	0.0020	U	ug/L	P402616	
		Sucralose	0.45		ug/L	P402556	
		Bentazon	0.0024	I	ug/L	P402616	
		Benzovindiflupyr	0.0020	U	ug/L	P402616	
		Carbamazepine	0.0011	I	ug/L	P402616	
		Clothianidin	0.0020	U	ug/L	P402616	
		Dinotefuran	0.0020	U	ug/L	P402616	
		Diuron	0.0020	U	ug/L	P402616	
		Fenuron	0.016	U	ug/L	P402616	
		Fluridone	8.0E-04	U	ug/L	P402616	
		Imazapyr	0.11		ug/L	P402616	
		Hydrocodone	0.0020	U	ug/L	P402616	
		Ibuprofen	0.020	U	ug/L	P402616	
		Imidacloprid	0.0045	I	ug/L	P402616	
		Linuron	0.0040	U	ug/L	P402616	
		Mandestrobin	0.0020	U	ug/L	P402616	

Field ID: G1SE0011 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2269970	EPA 8321B	MCPP	0.0020	U	ug/L	P402616	
		Naproxen	0.0080	U	ug/L	P402616	
		Primidone	0.0040	U	ug/L	P402616	
		Pyraclostrobin	0.0020	U	ug/L	P402616	
		Thiamethoxam	0.0020	U	ug/L	P402616	
		Tolfenpyrad	0.0020	U	ug/L	P402616	
		Triclopyr	0.0040	U	ug/L	P402616	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Lemkin Creek @ 78 **Collection Date/Time: 08/17/2021 13:40**

Field ID: G1SE0026 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2269942	EPA 180.1 Rev. 2.0	Turbidity	3.0	A	NTU	P402658	
	EPA 300.0 Rev. 2.1	Chloride	130		mg Cl/L	P402997	
		Sulfate	75		mg SO4/L	P403000	
	SM 2120 B-2011	Color (true)	130		PCU	P402655	
	SM 2320 B-2011	Total Alkalinity	142		mg CaCO3/L	P402802	
	SM 2540 C-2011	TDS	566		mg/L	P403215	
	SM 2540 D-2011	TSS	5	I	mg/L	P403194	
	SM 4500 F-C-2011	Fluoride	0.15		mg F/L	P402804	
2269943	EPA 350.1 Rev. 2.0	Ammonia-N	0.24		mg N/L	P402877	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P403352	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P402811	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P402766	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P403116	
2269944	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.099		mg P/L	P402650	

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

Sample Location: Lettuce Creek @ 710 **Collection Date/Time: 08/17/2021 15:00**

Field ID: G1SE0015 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2269971	EPA 200.7 Rev. 4.4	Barium	15.6		ug/L	P402644	
		Calcium	21.6		mg/L	P402644	
		Iron	1.05E+03		ug/L	P402644	
		Magnesium	4.52		mg/L	P402644	
		Manganese	30.8		ug/L	P402644	
		Potassium	2.7		mg/L	P402644	
		Sodium	19.9		mg/L	P402644	
		Zinc	7.7	I	ug/L	P402644	
	EPA 200.8 Rev. 5.4	Aluminum	376		ug/L	P402644	
		Antimony	0.092	I	ug/L	P402644	
		Arsenic	1.24		ug/L	P402644	
		Beryllium	0.040		ug/L	P402644	
		Boron**	34.4		ug/L	P402644	
		Cadmium	0.020	U	ug/L	P402644	
		Chromium	0.83	I	ug/L	P402644	
		Copper	0.80	I	ug/L	P402644	
		Lead	0.34	I	ug/L	P402644	
		Nickel	0.61	I	ug/L	P402644	
		Selenium	0.20	I	ug/L	P402644	
		Silver	0.010	U	ug/L	P402644	
		Thallium	0.10	U	ug/L	P402644	
	SM 2340B	Hardness	72.7		mg/L	P402644	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402658

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P402644

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: P402644

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: P402997

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403000

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402877

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: P403352

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402811

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402766

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

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

Reference Method: EPA 8270E
Batch ID: P402612

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	0.50	U	ng/L
Chlorothalonil	0.50	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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P402612

Component	Result	Code	Units
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'	0.25	U	ng/L
DDT-p,p'	0.25	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	0.10	U	ng/L
Dichlobenil	0.10	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	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	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
Ethalfluralin	0.15	U	ng/L
Ethalfluralin	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	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P402612

Component	Result	Code	Units
Mirex	0.70	U	ng/L
Mirex	0.70	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: P402612

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P402556

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

Reference Method: EPA 8321B
Batch ID: P402616

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P402616

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

Reference Method: SM 2120 B-2011
Batch ID: P402655

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P402802

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

Reference Method: SM 2540 C-2011
Batch ID: P403215

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P403194

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

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: P403116

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: P402644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	108		P	85 - 115
Calcium	107		P	85 - 115
Iron	109		P	85 - 115
Magnesium	109		P	85 - 115
Manganese	104		P	85 - 115
Potassium	105		P	85 - 115
Sodium	104		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P402644

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	98.3		P	85 - 115
Beryllium	96.2		P	85 - 115
Boron	103		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	97.2		P	85 - 115
Copper	97.2		P	85 - 115
Lead	101		P	85 - 115
Nickel	97.1		P	85 - 115
Selenium	97.3		P	85 - 115
Silver	104		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402997

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403000

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402877

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.0		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402811

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402766

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

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

Reference Method: EPA 8270E
Batch ID: P402612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	46.4	48.6	P/P	20 - 150
Alpha-BHC	94.7	95.4	P/P	50 - 150
Alpha-Chlordane	66.2	67.2	P/P	50 - 150
Beta-BHC	111	108	P/P	50 - 150
Beta-Cyfluthrin	97.7	73.5	P/P	50 - 150
Bifenthrin	78.8	63.2	P/P	40 - 150
Carbophenothion	42.3	39.4	P/P	20 - 150
Chlorothalonil	120	113	P/P	20 - 150
Cis-Nonachlor	64.0	58.2	P/P	50 - 150
Cypermethrin	102	76.5	P/P	50 - 150
Dacthal	93.2	94.0	P/P	50 - 150
DDD-p,p'	71.1	64.3	P/P	50 - 150
DDE-p,p'	73.1	77.3	P/P	50 - 150
DDT-p,p'	68.9	67.6	P/P	50 - 150
Delta-BHC	119	115	P/P	50 - 150
Deltamethrin	111	74.6	P/P	50 - 150
Dichlobenil	73.5	75.2	P/P	40 - 150
Dicofol	64.3	58.0	P/P	50 - 150
Dieldrin	75.8	78.0	P/P	50 - 150
Endosulfan I	75.2	78.6	P/P	50 - 150
Endosulfan II	87.4	73.3	P/P	50 - 150
Endosulfan Sulfate	89.7	83.5	P/P	50 - 150
Endrin	77.2	68.3	P/P	50 - 150
Endrin Aldehyde	64.3	57.7	P/P	50 - 150
Endrin Ketone	92.0	82.3	P/P	50 - 150
Esfenvalerate	107	79.8	P/P	50 - 180
Ethalfluralin	64.6	66.3	P/P	50 - 150
Fenpropathrin	78.3	65.9	P/P	50 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P402612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Gamma-BHC	102	101	P/P	50 - 150
Gamma-Chlordane	64.7	66.4	P/P	50 - 150
Heptachlor	59.7	62.7	P/P	50 - 150
Heptachlor Epoxide	74.4	78.4	P/P	50 - 150
Hexachlorobenzene	63.0	62.6	P/P	50 - 150
Kepone	86.4	56.7	P/P	30 - 180
Lambda-Cyhalothrin	104	81.5	P/P	50 - 200
Methoxychlor	85.6	79.5	P/P	50 - 150
MGK-264	88.5	92.1	P/P	30 - 150
Mirex	49.5	46.1	F/F	50 - 180
Permethrin	99.6	74.4	P/P	50 - 150
Phenothrin	50.2	39.7	P/P	20 - 150
Piperonyl Butoxide	95.8	85.3	P/P	50 - 150
Prallethrin	69.4	76.5	P/P	30 - 150
Tau-Fluvalinate	78.3	58.8	P/P	40 - 150
Tetramethrin	96.5	80.2	P/P	30 - 150
Trans-Nonachlor	62.2	65.8	P/P	50 - 150
Triclosan Methyl	75.3	77.9	P/P	50 - 150
Trifluralin	66.3	66.0	P/P	50 - 150

Reference Method: EPA 8276
Batch ID: P402612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	83.6	78.7	P/P	56 - 117
Toxaphene	67.9	67.1	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P402556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	88.2		P	40 - 150
AMPA	98.9		P	40 - 160
Endothall	126		P	40 - 150
Glufosinate	96.1		P	40 - 160
Glyphosate	96.4		P	40 - 160
Sucralose	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P402616

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	137		P	30 - 160
2,4,5-T	125		P	30 - 160
Acetaminophen	91.5		P	30 - 160
Acetamiprid	92.4		P	30 - 160
Afidopyropen	70.4		P	30 - 160
Bentazon	107		P	30 - 160
Benzovindiflupyr	97.0		P	30 - 160
Carbamazepine	86.8		P	30 - 160
Clothianidin	97.8		P	30 - 160
Dinotefuran	93.3		P	30 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P402616

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	69.7		P	30 - 160
Fenuron	94.4		P	30 - 160
Fluridone	90.4		P	30 - 160
Hydrocodone	100		P	30 - 160
Ibuprofen	91.9		P	30 - 160
Imazapyr	99.5		P	30 - 160
Imidacloprid	98.3		P	30 - 160
Linuron	70.7		P	30 - 160
Mandestrobin	95.2		P	30 - 160
MCPP	126		P	30 - 160
Naproxen	61.8		P	30 - 160
Primidone	105		P	30 - 160
Pyraclostrobin	84.3		P	30 - 160
Thiamethoxam	107		P	30 - 160
Tolfenpyrad	58.3		P	30 - 160
Triclopyr	129		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P402655

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

Reference Method: SM 2320 B-2011
Batch ID: P402802

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

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P403116

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: P402644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269481	Barium	110	109	P/P	80 - 120
2269481	Calcium	107	109	P/P	80 - 120
2269481	Iron	110	110	P/P	80 - 120
2269481	Magnesium	110	111	P/P	80 - 120
2269481	Manganese	106	106	P/P	80 - 120
2269481	Potassium	105	108	P/P	80 - 120
2269481	Sodium	103		P	80 - 120
2269481	Zinc	107	106	P/P	80 - 120
2269912	Barium	107		P	80 - 120
2269912	Calcium	100		P	80 - 120
2269912	Iron	109		P	80 - 120
2269912	Magnesium	106		P	80 - 120
2269912	Manganese	104		P	80 - 120
2269912	Potassium	105		P	80 - 120
2269912	Sodium	102		P	80 - 120
2269912	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P402644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269481	Aluminum	101	102	P/P	80 - 120
2269481	Antimony	102	105	P/P	80 - 120
2269481	Arsenic	99.2	99.6	P/P	80 - 120
2269481	Beryllium	99.8	99.8	P/P	80 - 120
2269481	Boron	106	106	P/P	80 - 120
2269481	Cadmium	102	103	P/P	80 - 120
2269481	Chromium	98.4	100	P/P	80 - 120
2269481	Copper	97.3	99.0	P/P	80 - 120
2269481	Lead	103	104	P/P	80 - 120
2269481	Nickel	96.9	97.9	P/P	80 - 120
2269481	Selenium	96.7	98.1	P/P	80 - 120
2269481	Silver	103	105	P/P	80 - 120
2269481	Thallium	105	107	P/P	80 - 120
2269912	Aluminum	102		P	80 - 120
2269912	Antimony	104		P	80 - 120
2269912	Arsenic	99.3		P	80 - 120
2269912	Beryllium	95.5		P	80 - 120
2269912	Boron	110		P	80 - 120
2269912	Cadmium	103		P	80 - 120
2269912	Chromium	101		P	80 - 120
2269912	Copper	98.0		P	80 - 120
2269912	Lead	103		P	80 - 120
2269912	Nickel	99.8		P	80 - 120
2269912	Selenium	96.8		P	80 - 120
2269912	Silver	104		P	80 - 120
2269912	Thallium	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402997

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402997

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269888	Chloride	98.3		P	90 - 110
2270130	Chloride	99.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269888	Sulfate	99.0		P	90 - 110
2270130	Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402877

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269927	Ammonia-N	92.6	92.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272419	Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2274284	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269943	NO2NO3-N	96.2	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402766

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270389	Total-P	110	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270008	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P402612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270127	Aldrin	46.0	40.3	P/P	20 - 170
2270127	Alpha-BHC	93.7	87.0	P/P	50 - 170

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P402612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270127	Alpha-Chlordane	73.4	64.2	P/P	50 - 170
2270127	Beta-BHC	122	125	P/P	50 - 170
2270127	Beta-Cyfluthrin	102	81.2	P/P	50 - 170
2270127	Bifenthrin	60.3	49.1	P/P	40 - 170
2270127	Carbophenothion	0.0102	0.882	F/F	20 - 170
2270127	Chlorothalonil	140	129	P/P	20 - 170
2270127	Cis-Nonachlor	67.7	58.5	P/P	50 - 170
2270127	Cypermethrin	74.0	57.5	P/P	50 - 170
2270127	Dacthal	91.3	83.5	P/P	50 - 170
2270127	DDD-p,p'	73.2	68.6	P/P	50 - 170
2270127	DDE-p,p'	73.7	68.9	P/P	50 - 170
2270127	DDT-p,p'	69.6	60.9	P/P	50 - 170
2270127	Delta-BHC	127	124	P/P	50 - 170
2270127	Deltamethrin	98.1	74.8	P/P	50 - 170
2270127	Dichlobenil	32.3	40.5	F/P	40 - 170
2270127	Dicofol	57.3	50.4	P/P	50 - 170
2270127	Dieldrin	79.5	69.4	P/P	50 - 170
2270127	Endosulfan I	82.7	71.0	P/P	50 - 170
2270127	Endosulfan II	68.6	54.4	P/P	50 - 170
2270127	Endosulfan Sulfate	62.4	51.9	P/P	50 - 170
2270127	Endrin	63.1	68.0	P/P	50 - 170
2270127	Endrin Aldehyde	31.5	26.8	F/F	50 - 170
2270127	Endrin Ketone	111	88.3	P/P	50 - 170
2270127	Esfenvalerate	91.4	70.7	P/P	50 - 180
2270127	Ethalfluralin	52.1	55.8	P/P	50 - 170
2270127	Fenpropathrin	62.0	51.3	P/P	50 - 170
2270127	Gamma-BHC	107	111	P/P	50 - 170
2270127	Gamma-Chlordane	71.0	62.5	P/P	50 - 170
2270127	Heptachlor	64.8	52.2	P/P	50 - 170
2270127	Heptachlor Epoxide	81.4	70.7	P/P	50 - 170
2270127	Hexachlorobenzene	62.8	56.3	P/P	50 - 170
2270127	Kepone	68.6	41.9	P/P	30 - 180
2270127	Lambda-Cyhalothrin	86.1	66.3	P/P	50 - 200
2270127	Methoxychlor	91.8	75.4	P/P	50 - 170
2270127	MGK-264	72.8	72.6	P/P	30 - 170
2270127	Mirex	58.1	52.0	P/P	50 - 180
2270127	Permethrin	84.7	75.5	P/P	50 - 170
2270127	Phenothrin	23.4	33.7	P/P	20 - 170
2270127	Piperonyl Butoxide	66.3	61.0	P/P	50 - 170
2270127	Prallethrin	3.54	2.40	F/F	30 - 170
2270127	Tau-Fluvalinate	72.8	54.3	P/P	40 - 170
2270127	Tetramethrin	19.7	9.82	F/F	30 - 170
2270127	Trans-Nonachlor	72.5	61.1	P/P	50 - 170
2270127	Triclosan Methyl	75.8	68.3	P/P	50 - 170
2270127	Trifluralin	68.4	62.0	P/P	50 - 170

Reference Method: EPA 8276
Batch ID: P402612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2270340	Chlordane	90.7	82.1	P/P	47 - 128
2270340	Toxaphene	72.9	69.9	P/P	11 - 163

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P402556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269820	Acesulfame K	81.1	65.2	P/P	40 - 150
2269820	AMPA	55.8	39.5	P/F	40 - 160
2269820	Endothall	69.7	64.1	P/P	40 - 150
2269820	Glufosinate	158	143	P/P	40 - 160
2269820	Sucralose	114	110	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P402616

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269820	2,4,5-T	92.5	86.2	P/P	30 - 160
2269820	Acetaminophen	93.9	95.3	P/P	30 - 160
2269820	Acetamiprid	45.4	35.7	P/P	30 - 160
2269820	Afidopyropen	64.2	51.9	P/P	30 - 160
2269820	Benzovindiflupyr	82.1	76.6	P/P	30 - 160
2269820	Carbamazepine	46.0	44.6	P/P	30 - 160
2269820	Clothianidin	55.3	58.4	P/P	30 - 160
2269820	Dinotefuran	67.6	71.4	P/P	30 - 160
2269820	Diuron	30.9	30.1	P/P	30 - 160
2269820	Fenuron	32.6	33.7	P/P	30 - 160
2269820	Fluridone	67.1	67.9	P/P	30 - 160
2269820	Hydrocodone	56.1	60.2	P/P	30 - 160
2269820	Ibuprofen	69.1	59.6	P/P	30 - 160
2269820	Imidacloprid	91.5	86.2	P/P	30 - 160
2269820	Linuron	52.7	52.0	P/P	30 - 160
2269820	Mandestrobin	80.6	81.1	P/P	30 - 160
2269820	MCPP	81.2	81.8	P/P	30 - 160
2269820	Naproxen	76.4	63.5	P/P	30 - 160
2269820	Primidone	58.5	62.6	P/P	30 - 160
2269820	Pyraclostrobin	71.6	75.1	P/P	30 - 160
2269820	Thiamethoxam	70.9	73.0	P/P	30 - 160
2269820	Tolfenpyrad	50.5	51.9	P/P	30 - 160
2269820	Triclopyr	94.3	92.6	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269861	Fluoride	99.8	99.8	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2269862	Organic Carbon	96.4	96.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P402658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269942	Turbidity	7.71	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P402644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269481	Barium	0.228	Spike	P	0 - 20
2269481	Calcium	1.14	Spike	P	0 - 20
2269481	Iron	0.616	Spike	P	0 - 20
2269481	Magnesium	1.02	Spike	P	0 - 20
2269481	Manganese	0.0902	Spike	P	0 - 20
2269481	Potassium	1.79	Spike	P	0 - 20
2269481	Sodium	1.15	Spike	P	0 - 20
2269481	Zinc	0.492	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P402644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269481	Aluminum	0.889	Spike	P	0 - 20
2269481	Antimony	2.64	Spike	P	0 - 20
2269481	Arsenic	0.369	Spike	P	0 - 20
2269481	Beryllium	0.000884	Spike	P	0 - 20
2269481	Boron	0.0757	Spike	P	0 - 20
2269481	Cadmium	1.54	Spike	P	0 - 20
2269481	Chromium	2.08	Spike	P	0 - 20
2269481	Copper	1.73	Spike	P	0 - 20
2269481	Lead	1.08	Spike	P	0 - 20
2269481	Nickel	0.989	Spike	P	0 - 20
2269481	Selenium	1.40	Spike	P	0 - 20
2269481	Silver	2.46	Spike	P	0 - 20
2269481	Thallium	1.80	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	Chloride	0.571	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P403000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270130	Sulfate	0.707	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269927	Ammonia-N	0.156	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272419	Kjeldahl Nitrogen	1.87	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2274284	Kjeldahl Nitrogen	0.700	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269943	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402766

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270389	Total-P	2.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270008	O-Phosphate-P	0.0986	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P402612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270127	Aldrin	13.2	Spike	P	0 - 30
2270127	Alpha-BHC	7.39	Spike	P	0 - 30
2270127	Alpha-Chlordane	13.5	Spike	P	0 - 30
2270127	Beta-BHC	2.46	Spike	P	0 - 30
2270127	Beta-Cyfluthrin	22.3	Spike	P	0 - 30
2270127	Bifenthrin	20.5	Spike	P	0 - 30
2270127	Carbophenothion	195	Spike	F	0 - 30
2270127	Chlorothalonil	8.08	Spike	P	0 - 50
2270127	Cis-Nonachlor	14.6	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P402612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270127	Cypermethrin	25.0	Spike	P	0 - 30
2270127	Dacthal	8.89	Spike	P	0 - 30
2270127	DDD-p,p'	6.51	Spike	P	0 - 30
2270127	DDE-p,p'	6.84	Spike	P	0 - 30
2270127	DDT-p,p'	13.4	Spike	P	0 - 30
2270127	Delta-BHC	2.46	Spike	P	0 - 30
2270127	Deltamethrin	27.0	Spike	P	0 - 30
2270127	Dichlobenil	22.6	Spike	P	0 - 30
2270127	Dicofol	12.7	Spike	P	0 - 30
2270127	Dieldrin	13.5	Spike	P	0 - 30
2270127	Endosulfan I	15.1	Spike	P	0 - 30
2270127	Endosulfan II	23.2	Spike	P	0 - 30
2270127	Endosulfan Sulfate	18.4	Spike	P	0 - 30
2270127	Endrin	7.57	Spike	P	0 - 30
2270127	Endrin Aldehyde	15.9	Spike	P	0 - 30
2270127	Endrin Ketone	23.0	Spike	P	0 - 30
2270127	Esfenvalerate	25.5	Spike	P	0 - 30
2270127	Ethalfluralin	6.76	Spike	P	0 - 30
2270127	Fenpropathrin	18.7	Spike	P	0 - 30
2270127	Gamma-BHC	4.45	Spike	P	0 - 30
2270127	Gamma-Chlordane	12.8	Spike	P	0 - 30
2270127	Heptachlor	21.6	Spike	P	0 - 30
2270127	Heptachlor Epoxide	14.1	Spike	P	0 - 30
2270127	Hexachlorobenzene	10.9	Spike	P	0 - 30
2270127	Kepone	48.4	Spike	F	0 - 30
2270127	Lambda-Cyhalothrin	26.0	Spike	P	0 - 30
2270127	Methoxychlor	19.6	Spike	P	0 - 30
2270127	MGK-264	0.252	Spike	P	0 - 30
2270127	Mirex	11.1	Spike	P	0 - 30
2270127	Permethrin	11.6	Spike	P	0 - 30
2270127	Phenothrin	36.1	Spike	F	0 - 30
2270127	Piperonyl Butoxide	8.36	Spike	P	0 - 30
2270127	Prallethrin	38.5	Spike	F	0 - 30
2270127	Tau-Fluvalinate	29.2	Spike	P	0 - 30
2270127	Tetramethrin	66.8	Spike	F	0 - 30
2270127	Trans-Nonachlor	17.0	Spike	P	0 - 30
2270127	Triclosan Methyl	10.3	Spike	P	0 - 30
2270127	Trifluralin	9.81	Spike	P	0 - 30
LFB	Aldrin	4.69	LCS	P	0 - 30
LFB	Alpha-BHC	0.750	LCS	P	0 - 30
LFB	Alpha-Chlordane	1.39	LCS	P	0 - 30
LFB	Beta-BHC	2.65	LCS	P	0 - 30
LFB	Beta-Cyfluthrin	28.3	LCS	P	0 - 30
LFB	Bifenthrin	22.0	LCS	P	0 - 30
LFB	Carbophenothion	6.99	LCS	P	0 - 30
LFB	Chlorothalonil	5.84	LCS	P	0 - 50
LFB	Cis-Nonachlor	9.50	LCS	P	0 - 30
LFB	Cypermethrin	28.6	LCS	P	0 - 30
LFB	Dacthal	0.872	LCS	P	0 - 30
LFB	DDD-p,p'	10.1	LCS	P	0 - 30
LFB	DDE-p,p'	5.53	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P402612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	DDT-p,p'	1.92	LCS	P	0 - 30
LFB	Delta-BHC	2.92	LCS	P	0 - 30
LFB	Deltamethrin	39.1	LCS	F	0 - 30
LFB	Dichlobenil	2.35	LCS	P	0 - 30
LFB	Dicofol	10.2	LCS	P	0 - 30
LFB	Dieldrin	2.76	LCS	P	0 - 30
LFB	Endosulfan I	4.49	LCS	P	0 - 30
LFB	Endosulfan II	17.6	LCS	P	0 - 30
LFB	Endosulfan Sulfate	7.14	LCS	P	0 - 30
LFB	Endrin	12.2	LCS	P	0 - 30
LFB	Endrin Aldehyde	10.8	LCS	P	0 - 30
LFB	Endrin Ketone	11.2	LCS	P	0 - 30
LFB	Esfenvalerate	29.3	LCS	P	0 - 30
LFB	Ethalfluralin	2.57	LCS	P	0 - 30
LFB	Fenpropathrin	17.3	LCS	P	0 - 30
LFB	Gamma-BHC	0.976	LCS	P	0 - 30
LFB	Gamma-Chlordane	2.65	LCS	P	0 - 30
LFB	Heptachlor	4.97	LCS	P	0 - 30
LFB	Heptachlor Epoxide	5.30	LCS	P	0 - 30
LFB	Hexachlorobenzene	0.742	LCS	P	0 - 30
LFB	Kepone	41.6	LCS	F	0 - 30
LFB	Lambda-Cyhalothrin	24.3	LCS	P	0 - 30
LFB	Methoxychlor	7.39	LCS	P	0 - 30
LFB	MGK-264	3.90	LCS	P	0 - 30
LFB	Mirex	6.95	LCS	P	0 - 30
LFB	Permethrin	29.1	LCS	P	0 - 30
LFB	Phenothrin	23.4	LCS	P	0 - 30
LFB	Piperonyl Butoxide	11.6	LCS	P	0 - 30
LFB	Prallethrin	9.69	LCS	P	0 - 30
LFB	Tau-Fluvalinate	28.4	LCS	P	0 - 30
LFB	Tetramethrin	18.4	LCS	P	0 - 30
LFB	Trans-Nonachlor	5.65	LCS	P	0 - 30
LFB	Triclosan Methyl	3.43	LCS	P	0 - 30
LFB	Trifluralin	0.400	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P402612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2270340	Chlordane	9.86	Spike	P	0 - 30
2270340	Toxaphene	4.18	Spike	P	0 - 30
LFB	Chlordane	6.04	LCS	P	0 - 30
LFB	Toxaphene	1.19	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P402556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269820	Acesulfame K	21.6	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P402556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269820	AMPA	18.8	Spike	P	0 - 30
2269820	Endothall	8.35	Spike	P	0 - 30
2269820	Glufosinate	9.49	Spike	P	0 - 30
2269820	Glyphosate	0.454	Spike	P	0 - 30
2269820	Sucralose	3.85	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P402616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269820	2,4-D	0.694	Spike	P	0 - 30
2269820	2,4,5-T	7.06	Spike	P	0 - 30
2269820	Acetaminophen	1.51	Spike	P	0 - 30
2269820	Acetamiprid	23.8	Spike	P	0 - 30
2269820	Afidopyropen	21.2	Spike	P	0 - 30
2269820	Bentazon	5.64	Spike	P	0 - 30
2269820	Benzovindiflupyr	6.94	Spike	P	0 - 30
2269820	Carbamazepine	3.01	Spike	P	0 - 30
2269820	Clothianidin	5.62	Spike	P	0 - 30
2269820	Dinotefuran	5.36	Spike	P	0 - 30
2269820	Diuron	2.66	Spike	P	0 - 30
2269820	Fenuron	3.31	Spike	P	0 - 30
2269820	Fluridone	1.27	Spike	P	0 - 30
2269820	Hydrocodone	7.00	Spike	P	0 - 30
2269820	Ibuprofen	14.7	Spike	P	0 - 30
2269820	Imazapyr	0.332	Spike	P	0 - 30
2269820	Imidacloprid	5.67	Spike	P	0 - 30
2269820	Linuron	1.35	Spike	P	0 - 30
2269820	Mandestrobin	0.654	Spike	P	0 - 30
2269820	MCPP	0.741	Spike	P	0 - 30
2269820	Naproxen	18.5	Spike	P	0 - 30
2269820	Primidone	6.75	Spike	P	0 - 30
2269820	Pyraclostrobin	4.76	Spike	P	0 - 30
2269820	Thiamethoxam	2.97	Spike	P	0 - 30
2269820	Tolfenpyrad	2.67	Spike	P	0 - 30
2269820	Triclopyr	1.82	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P402655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269996	Color (true)	0.227	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P402802

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269861	Total Alkalinity	1.22	Sample	P	0 - 5.2

Quality Assurance Report
Precision

Reference Method: SM 2540 C-2011
Batch ID: P403215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269945	TDS	9.56	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P402804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269861	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P403116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2269862	Organic Carbon	0.114	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2269969
Field Sample ID: G1SE0011

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	75.1	P	35 - 120
EPA 8270E	Tetrachloro-m-xylene	65.9	P	30 - 110
EPA 8276	Decachlorobiphenyl	79.9	P	29 - 92.0
EPA 8276	PCNB	77.8	P	43 - 134

Lab Sample ID: 2269970
Field Sample ID: G1SE0011

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	84.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	51.1	P	30 - 160
EPA 8321B	Diuron-d6	35.6	P	30 - 160
EPA 8321B	Endothall-d6	98.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	59.1	P	30 - 160
EPA 8321B	Primidone-d5	64.2	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A107319
Included Lab Sample IDs: 2269944, 2269947

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.7	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A107322
Included Lab Sample IDs: 2269942, 2269945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 115
Color (true)	104	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A107323
Included Lab Sample IDs: 2269942, 2269945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	101	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A107353
Included Lab Sample IDs: 2269970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	95.3	99.0	P/P	60 - 160
Glufosinate	93.3	102	P/P	60 - 160
Glyphosate	91.8	98.3	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A107373
Included Lab Sample IDs: 2269971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	100	P/P	90 - 110
Antimony	100	101	P/P	90 - 110
Arsenic	96.3	94.1	P/P	90 - 110
Beryllium	92.8	92.0	P/P	90 - 110
Boron	108	107	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	96.3	94.7	P/P	90 - 110
Copper	94.5	92.0	P/P	90 - 110
Lead	98.9	98.6	P/P	90 - 110
Nickel	94.3	91.3	P/P	90 - 110
Selenium	99.1	97.5	P/P	90 - 110
Silver	97.8	97.9	P/P	90 - 110
Thallium	102	100	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A107377
Included Lab Sample IDs: 2269970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.5	80.0	P/P	60 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A107377
Included Lab Sample IDs: 2269970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endothall	136	122	P/P	60 - 160
Sucralose	100	102	P/P	60 - 160

Reference Method: SM 2320 B-2011
Run ID: A107380
Included Lab Sample IDs: 2269942, 2269945

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

Reference Method: SM 4500 F-C-2011
Run ID: A107380
Included Lab Sample IDs: 2269942, 2269945

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A107385
Included Lab Sample IDs: 2269943, 2269946

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

Reference Method: EPA 8270E
Run ID: A107412
Included Lab Sample IDs: 2269969

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	97.9		P	80 - 120
Alpha-BHC	101		P	80 - 120
Alpha-Chlordane	105		P	80 - 120
Beta-BHC	102		P	80 - 120
Beta-Cyfluthrin	94.0		P	80 - 120
Bifenthrin	98.7		P	80 - 120
Carbophenothion	88.5		P	80 - 120
Chlorothalonil	98.9		P	80 - 120
Cis-Nonachlor	89.1		P	80 - 120
Cypermethrin	96.2		P	80 - 120
Dacthal	101		P	80 - 120
DDD-p,p'	90.8		P	80 - 120
DDE-p,p'	102		P	80 - 120
DDT-p,p'	101		P	80 - 120
Delta-BHC	102		P	80 - 120
Deltamethrin	92.1		P	80 - 120
Dichlobenil	87.8		P	80 - 120
Dicofol	81.5		P	80 - 120
Dieldrin	101		P	80 - 120
Endosulfan I	100		P	80 - 120
Endosulfan II	89.6		P	80 - 120
Endosulfan Sulfate	85.4		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270E
Run ID: A107412
Included Lab Sample IDs: 2269969

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endrin	94.3		P	80 - 120
Endrin Aldehyde	85.6		P	80 - 120
Endrin Ketone	89.2		P	80 - 120
Esfenvalerate	99.8		P	80 - 120
Ethalfluralin	100		P	80 - 120
Fenpropathrin	90.7		P	80 - 120
Gamma-BHC	111		P	80 - 120
Gamma-Chlordane	106		P	80 - 120
Heptachlor	104		P	80 - 120
Heptachlor Epoxide	104		P	80 - 120
Hexachlorobenzene	98.1		P	80 - 120
Kepone	69.7*		F	80 - 120
Lambda-Cyhalothrin	94.2		P	80 - 120
Methoxychlor	99.8		P	80 - 120
MGK-264	103		P	80 - 120
Mirex	93.9		P	80 - 120
Permethrin	92.9		P	80 - 120
Phenothrin	92.3		P	80 - 120
Piperonyl Butoxide	92.0		P	80 - 120
Prallethrin	95.0		P	80 - 120
Tau-Fluvalinate	93.7		P	80 - 120
Tetramethrin	103		P	80 - 120
Trans-Nonachlor	98.4		P	80 - 120
Triclosan Methyl	101		P	80 - 120
Trifluralin	99.6		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A107416
Included Lab Sample IDs: 2269971

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	100	P/P	90 - 110
Calcium	97.8	100	P/P	90 - 110
Iron	97.9	101	P/P	90 - 110
Magnesium	96.7	100	P/P	90 - 110
Manganese	100	98.8	P/P	90 - 110
Potassium	99.0	102	P/P	90 - 110
Sodium	98.0	101	P/P	90 - 110
Zinc	98.0	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A107428
Included Lab Sample IDs: 2269943, 2269946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.3	98.5	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A107435
Included Lab Sample IDs: 2269943, 2269946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.6	105	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A107449
Included Lab Sample IDs: 2269942, 2269945

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.2	98.9	P/P	90 - 110
Sulfate	99.3	99.2	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A107453
Included Lab Sample IDs: 2269970

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	121	117	P/P	50 - 150
2,4,5-T	103	112	P/P	50 - 150
Acetaminophen	109	116	P/P	60 - 160
Acetamiprid	102	106	P/P	50 - 150
Afidopyropen	103	114	P/P	50 - 150
Bentazon	130	122	P/P	50 - 160
Benzovindiflupyr	120	119	P/P	50 - 160
Carbamazepine	107	110	P/P	60 - 150
Clothianidin	113	103	P/P	60 - 150
Dinotefuran	100	101	P/P	50 - 150
Diuron	115	116	P/P	60 - 160
Fenuron	107	107	P/P	60 - 150
Fluridone	112	113	P/P	60 - 160
Hydrocodone	103	112	P/P	60 - 150
Ibuprofen	101	123	P/P	50 - 160
Imazapyr	100	107	P/P	50 - 160
Imidacloprid	105	101	P/P	60 - 150
Linuron	109	113	P/P	60 - 150
Mandestrobin	115	119	P/P	50 - 150
MCPP	109	107	P/P	50 - 150
Naproxen	97.6	82.1	P/P	50 - 160
Primidone	109	107	P/P	60 - 150
Pyraclostrobin	105	103	P/P	60 - 150
Thiamethoxam	106	108	P/P	50 - 150
Tolfenpyrad	109	103	P/P	60 - 150
Triclopyr	118	112	P/P	50 - 150

Reference Method: EPA 8276
Run ID: A107479
Included Lab Sample IDs: 2269969

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	97.4		P	80 - 120
Toxaphene	109		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-2011
Run ID: A107529
Included Lab Sample IDs: 2269943, 2269946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A107660
Included Lab Sample IDs: 2269943

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A107756
Included Lab Sample IDs: 2269946

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	97.7	P/P	90 - 110

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision		
							LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							7.71	
EPA 200.7 Rev. 4.4	Barium	108		110	109	107			0.228
	Calcium	107		107	109	100			1.14
	Iron	109		110	110	109			0.616
	Magnesium	109		110	111	106			1.02
	Manganese	104		106	106	104			0.0902
	Potassium	105		105	108	105			1.79
	Sodium	104		103	102				1.15
	Zinc	104		107	106	106			0.492
EPA 200.8 Rev. 5.4	Aluminum	100		102	102	101			0.889
	Antimony	102		102	105	104			2.64
	Arsenic	98.3		99.2	99.6	99.3			0.369
	Beryllium	96.2		99.8	99.8	95.5			0.0008
	Boron	103		106	106	110			0.0757
	Cadmium	101		102	103	103			1.54
	Chromium	97.2		98.4	100	101			2.08
	Copper	97.2		97.3	99.0	98.0			1.73
	Lead	101		103	104	103			1.08
	Nickel	97.1		96.9	97.9	99.8			0.989
	Selenium	97.3		96.7	98.1	96.8			1.40
	Silver	104		103	105	104			2.46
	Thallium	103		105	107	108			1.80
EPA 300.0 Rev. 2.1	Chloride	100		99.2	98.3			0.571	
	Sulfate	100		99.2	99.0			0.707	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2		92.6	92.8				0.156
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.0		101	105				1.87
	Kjeldahl Nitrogen	101		102	101				0.700
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0		96.2	96.6				0.482
EPA 365.1 Rev. 2.0	Total-P	107		110	107				2.58
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9		101	102				0.0986
EPA 8270E	Aldrin	46.4	48.6	40.3	46.0		4.69		13.2
	Alpha-BHC	94.7	95.4	87.0	93.7		0.750		7.39
	Alpha-Chlordane	66.2	67.2	64.2	73.4		1.39		13.5
	Beta-BHC	111	108	125	122		2.65		2.46
	Beta-Cyfluthrin	97.7	73.5	102	81.2		28.3		22.3
	Bifenthrin	78.8	63.2	49.1	60.3		22.0		20.5
	Carbophenothion	42.3	39.4	0.882	0.0102		6.99		195
	Chlorothalonil	120	113	129	140		5.84		8.08
	Cis-Nonachlor	64.0	58.2	58.5	67.7		9.50		14.6
	Cypermethrin	102	76.5	57.5	74.0		28.6		25.0
	Dacthal	93.2	94.0	83.5	91.3		0.872		8.89
	DDD-p,p'	71.1	64.3	68.6	73.2		10.1		6.51
	DDE-p,p'	73.1	77.3	68.9	73.7		5.53		6.84
	DDT-p,p'	68.9	67.6	60.9	69.6		1.92		13.4
	Delta-BHC	119	115	124	127		2.92		2.46
	Deltamethrin	111	74.6	74.8	98.1		39.1		27.0
	Dichlobenil	73.5	75.2	40.5	32.3		2.35		22.6
	Dicofol	64.3	58.0	50.4	57.3		10.2		12.7
	Dieldrin	75.8	78.0	69.4	79.5		2.76		13.5
	Endosulfan I	75.2	78.6	71.0	82.7		4.49		15.1
	Endosulfan II	87.4	73.3	54.4	68.6		17.6		23.2
	Endosulfan Sulfate	89.7	83.5	51.9	62.4		7.14		18.4
	Endrin	77.2	68.3	68.0	63.1		12.2		7.57
	Endrin Aldehyde	64.3	57.7	26.8	31.5		10.8		15.9

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270E	Endrin Ketone	92.0	82.3	111	88.3	11.2		23.0
	Esfenvalerate	107	79.8	70.7	91.4	29.3		25.5
	Ethalfluralin	64.6	66.3	55.8	52.1	2.57		6.76
	Fenpropathrin	78.3	65.9	51.3	62.0	17.3		18.7
	Gamma-BHC	102	101	111	107	0.976		4.45
	Gamma-Chlordane	64.7	66.4	62.5	71.0	2.65		12.8
	Heptachlor	59.7	62.7	52.2	64.8	4.97		21.6
	Heptachlor Epoxide	74.4	78.4	70.7	81.4	5.30		14.1
	Hexachlorobenzene	63.0	62.6	56.3	62.8	0.742		10.9
	Kepone	86.4	56.7	41.9	68.6	41.6		48.4
	Lambda-Cyhalothrin	104	81.5	66.3	86.1	24.3		26.0
	Methoxychlor	85.6	79.5	75.4	91.8	7.39		19.6
	MGK-264	88.5	92.1	72.6	72.8	3.90		0.252
	Mirex	49.5	46.1	52.0	58.1	6.95		11.1
	Permethrin	99.6	74.4	84.7	75.5	29.1		11.6
	Phenothrin	50.2	39.7	23.4	33.7	23.4		36.1
	Piperonyl Butoxide	95.8	85.3	66.3	61.0	11.6		8.36
	Prallethrin	69.4	76.5	3.54	2.40	9.69		38.5
	Tau-Fluvalinate	78.3	58.8	72.8	54.3	28.4		29.2
	Tetramethrin	96.5	80.2	19.7	9.82	18.4		66.8
	Trans-Nonachlor	62.2	65.8	72.5	61.1	5.65		17.0
	Triclosan Methyl	75.3	77.9	75.8	68.3	3.43		10.3
	Trifluralin	66.3	66.0	68.4	62.0	0.400		9.81
EPA 8276	Chlordane	83.6	78.7	90.7	82.1	6.04		9.86
	Toxaphene	67.9	67.1	72.9	69.9	1.19		4.18
EPA 8321B	2,4-D	137						0.694
	2,4,5-T	125		92.5	86.2			7.06
	Acesulfame K	88.2		81.1	65.2			21.6
	Acetaminophen	91.5		93.9	95.3			1.51
	Acetamiprid	92.4		45.4	35.7			23.8
	Afidopyropen	70.4		64.2	51.9			21.2
	AMPA	98.9		55.8	39.5			18.8
	Bentazon	107						5.64
	Benzovindiflupyr	97.0		82.1	76.6			6.94
	Carbamazepine	86.8		46.0	44.6			3.01
	Clothianidin	97.8		55.3	58.4			5.62
	Dinotefuran	93.3		67.6	71.4			5.36
	Diuron	69.7		30.9	30.1			2.66
	Endothall	126		69.7	64.1			8.35
	Fenuron	94.4		32.6	33.7			3.31
	Fluridone	90.4		67.1	67.9			1.27
	Glufosinate	96.1		158	143			9.49
	Glyphosate	96.4						0.454
	Hydrocodone	100		56.1	60.2			7.00
	Ibuprofen	91.9		69.1	59.6			14.7
	Imazapyr	99.5						0.332
	Imidacloprid	98.3		91.5	86.2			5.67
	Linuron	70.7		52.7	52.0			1.35
	Mandestrobin	95.2		80.6	81.1			0.654
	MCPP	126		81.2	81.8			0.741
	Naproxen	61.8		76.4	63.5			18.5
	Primidone	105		58.5	62.6			6.75
	Pyraclostrobin	84.3		71.6	75.1			4.76
	Sucralose	105		114	110			3.85

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Thiamethoxam	107	70.9	73.0			2.97
	Tolfenpyrad	58.3	50.5	51.9			2.67
	Triclopyr	129	94.3	92.6			1.82
SM 2120 B-2011	Color (true)	103				0.227	
SM 2320 B-2011	Total Alkalinity	102				1.22	
SM 2540 C-2011	TDS					9.56	
SM 4500 F-C-2011	Fluoride	98.5	99.8	99.8			0.0
SM 5310 B-2011	Organic Carbon	94.3	96.4	96.6			0.114

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2269942, 2269945
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2269971
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2269971
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2269942, 2269945
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2269942, 2269945
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2269943, 2269946
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2269943, 2269946
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2269943, 2269946
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2269943, 2269946
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2269944, 2269947
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2269969
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2269969
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2269970
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2269942, 2269945
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2269942, 2269945
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2269971
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2269942, 2269945
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2269942, 2269945
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2269942, 2269945
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2269943, 2269946

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	08/18/2021			08/18/2021 15:34	Sarah A Nixon	2269942, 2269945
EPA 200.7 Rev. 4.4	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/24/2021 02:19	Josef B Mick	2269971
EPA 200.8 Rev. 5.4	08/18/2021	08/18/2021 15:35	Elliott D. Healy	08/20/2021 16:31	Alexander Thompson	2269971
EPA 300.0 Rev. 2.1	08/18/2021			08/25/2021 21:49	Lipi Saha	2269942
	08/18/2021			08/25/2021 22:02	Lipi Saha	2269945
EPA 350.1 Rev. 2.0	08/18/2021			08/24/2021 12:26	Roberta Tatti	2269943
	08/18/2021			08/24/2021 12:27	Roberta Tatti	2269946
EPA 351.2 Rev. 2.0	08/18/2021	09/03/2021 17:03	Benjamin T. Nordmann	09/07/2021 09:36	Alexandra J Mattheus	2269943
	08/18/2021	09/10/2021 13:45	Benjamin T. Nordmann	09/13/2021 11:54	Alexandra J Mattheus	2269946
EPA 353.2 Rev. 2.0	08/18/2021			08/23/2021 09:42	Beverly Y. Sanders	2269943
	08/18/2021			08/23/2021 09:49	Beverly Y. Sanders	2269946
EPA 365.1 Rev. 2.0	08/18/2021	08/20/2021 15:10	Simonne.V. Calhoun	08/23/2021 16:31	Shengyu Ding	2269943
	08/18/2021	08/20/2021 15:10	Simonne.V. Calhoun	08/23/2021 16:32	Shengyu Ding	2269946
EPA 365.1 Rev. 2.0 dissolved	08/18/2021			08/18/2021 15:26	James L Waggerby	2269944
	08/18/2021			08/18/2021 15:27	James L Waggerby	2269947
EPA 8270E	08/18/2021	08/20/2021 08:00	Fe-Val Siddell	08/24/2021 01:28	Arthur Maknenko	2269969
EPA 8276	08/18/2021	08/20/2021 08:00	Fe-Val Siddell	08/25/2021 05:35	Michael Poppell	2269969
EPA 8321B	08/18/2021	08/18/2021 14:00	Hoor Shaik	08/25/2021 16:23	Juyoung Kim	2269970
	08/18/2021	08/19/2021 09:00	Juyoung Kim	08/19/2021 13:03	Juyoung Kim	2269970
	08/18/2021	08/19/2021 09:00	Juyoung Kim	08/20/2021 14:38	Pramila Ghimire	2269970
SM 2120 B-2011	08/18/2021			08/18/2021 16:17	Sarah A Nixon	2269942
	08/18/2021			08/18/2021 16:29	Sarah A Nixon	2269945
SM 2320 B-2011	08/18/2021			08/19/2021 20:06	Dale L. Simmons	2269942
	08/18/2021			08/19/2021 20:22	Dale L. Simmons	2269945
SM 2340B	08/18/2021			08/24/2021 02:19	Josef B Mick	2269971
SM 2540 C-2011	08/18/2021			08/23/2021 15:36	Yijie Li	2269942, 2269945
SM 2540 D-2011	08/18/2021			08/23/2021 15:36	Yijie Li	2269942, 2269945
SM 4500 F-C-2011	08/18/2021			08/19/2021 20:06	Dale L. Simmons	2269942
	08/18/2021			08/19/2021 20:22	Dale L. Simmons	2269945
SM 5310 B-2011	08/18/2021			08/28/2021 01:35	Madeline Gruver	2269943
	08/18/2021			08/28/2021 01:49	Madeline Gruver	2269946