

Chemical Analysis Report

NE-DIST-2023-10-05-01

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

Event Description: **Gainesville 2023**
Request ID: **RQ-2023-09-11-40**
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.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 23-OCT-2023 12:13



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: 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: UPPER LITTLE HATCHET AT AIRPORT FIELD Collection Date/Time: 10/04/2023 10:05

Field ID: G1NE0949

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443095	DEP SOP: NU-094-1	Color (true)	82	A	PCU	P436073	
	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P436066	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P436175	
		Sulfate	9.3		mg SO4/L	P436178	
	SM 2320 B-2011	Total Alkalinity	67		mg CaCO3/L	P436341	
	SM 2540 C-2015	TDS	131		mg/L	P436670	
	SM 2540 D-2015	TSS	2	I	mg/L	P436493	
	SM 4500-F- C-2011	Fluoride	0.097	I	mg F/L	P436346	
2443097	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P436235	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P436275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.092		mg N/L	P436452	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P436216	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P436181	

Ref. Method and Comment:

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

Sample Location: ALACHUA SINK AT END OF BOARDWALK

Collection Date/Time: 10/04/2023 10:45

Field ID: G1NE0953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443096	DEP SOP: NU-094-1	Color (true)	120		PCU	P436073	
	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P436066	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P436175	
		Sulfate	7.8		mg SO4/L	P436178	
	SM 2320 B-2011	Total Alkalinity	36		mg CaCO3/L	P436469	
	SM 2540 C-2015	TDS	118		mg/L	P436670	
	SM 2540 D-2015	TSS	6	I	mg/L	P436493	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P436575	
2443098	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P436236	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P436275	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P436453	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P436216	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P436181	

Ref. Method and Comment:

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

Sample Location: LAKE ALICE OUTLET AT GALE LEMERAND DR Collection Date/Time: 10/04/2023 11:35

Field ID: G3NE0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443142	EPA 8321B	2,4-D	0.051		ug/L	P436051	
		Acesulfame K	0.43		ug/L	P436195	
		2,4,5-T	0.0040	U	ug/L	P436051	
		AMPA	0.51		ug/L	P436195	
		Acetaminophen	0.014	I	ug/L	P436051	
		Acetamiprid	0.0020	U	ug/L	P436051	
		Endothall	0.25	U	ug/L	P436195	
		Glufosinate	0.10	U	ug/L	P436195	
		Glyphosate	2.3		ug/L	P436195	
		Afidopyropen	0.0020	U	ug/L	P436051	
		Bentazon	8.0E-04	U	ug/L	P436051	
		Sucralose	6.9		ug/L	P436195	
		Benzovindiflupyr	0.0020	U	ug/L	P436051	
		Carbamazepine	0.0019	I	ug/L	P436051	
		Clothianidin	0.024		ug/L	P436051	
		Dinotefuran	0.017		ug/L	P436051	
		Diuron	0.018		ug/L	P436051	
		Fenuron	0.032	U	ug/L	P436051	
		Fluridone	8.0E-04	U	ug/L	P436051	
		Imazapyr	0.76		ug/L	P436051	
		Hydrocodone	0.0020	U	ug/L	P436051	
		Ibuprofen	1.1		ug/L	P436051	
		Imidacloprid	0.014		ug/L	P436051	
		Linuron	0.0040	U	ug/L	P436051	
		Mandestrobin	0.0020	U	ug/L	P436051	
		MCPP	0.0020	U	ug/L	P436051	
		Naproxen	0.0080	U	ug/L	P436051	
		Primidone	0.0067	I	ug/L	P436051	
		Pyraclostrobin	0.0020	U	ug/L	P436051	
		Silvex	0.0081	I	ug/L	P436051	
		Thiamethoxam	0.0020	U	ug/L	P436051	
		Tolfenpyrad	0.0020	U	ug/L	P436051	
		Triclopyr	0.0040	U	ug/L	P436051	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: HOGTOWN CREEK UPSTREAM OF HAILE SINK Collection Date/Time: 10/04/2023 12:15

Field ID: G1NE0913

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2443120	EPA 8321B	2,4-D	0.0043	I	ug/L	P436051	
		Acesulfame K	0.10	U	ug/L	P436195	
		2,4,5-T	0.0040	U	ug/L	P436051	
		AMPA	0.21	I	ug/L	P436195	
		Acetaminophen	0.0080	U	ug/L	P436051	
		Acetamiprid	0.0020	U	ug/L	P436051	
		Endothall	0.25	U	ug/L	P436195	
		Glufosinate	0.10	U	ug/L	P436195	
		Glyphosate	0.10	U	ug/L	P436195	
		Afidopyropen	0.0020	U	ug/L	P436051	
		Bentazon	0.0061		ug/L	P436051	
		Sucralose	0.19		ug/L	P436195	
		Benzovindiflupyr	0.0020	U	ug/L	P436051	
		Carbamazepine	8.0E-04	U	ug/L	P436051	
		Clothianidin	0.0020	U	ug/L	P436051	
		Dinotefuran	0.0028	I	ug/L	P436051	
		Diuron	0.0020	U	ug/L	P436051	
		Fenuron	0.032	U	ug/L	P436051	
		Fluridone	0.0018	I	ug/L	P436051	
		Imazapyr	0.028		ug/L	P436051	
		Hydrocodone	0.0020	U	ug/L	P436051	
		Ibuprofen	0.11	I	ug/L	P436051	
		Imidacloprid	0.017		ug/L	P436051	
		Linuron	0.0040	U	ug/L	P436051	
		Mandestrobin	0.0020	U	ug/L	P436051	
		MCPP	0.0020	U	ug/L	P436051	
		Naproxen	0.0080	U	ug/L	P436051	
		Primidone	0.0040	U	ug/L	P436051	
		Pyraclostrobin	0.0020	U	ug/L	P436051	
		Silvex	0.0040	U	ug/L	P436051	
		Thiamethoxam	0.0020	U	ug/L	P436051	
		Tolfenpyrad	0.0020	U	ug/L	P436051	
		Triclopyr	0.0040	U	ug/L	P436051	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P436073

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436066

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436175

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436178

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436235

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436236

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436275

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436452

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436453

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P436216

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

Reference Method: EPA 8321B

Batch ID: P436051

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
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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P436195

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

Reference Method: SM 2320 B-2011

Batch ID: P436341

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P436469

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

Reference Method: SM 2540 C-2015
Batch ID: P436670

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P436493

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P436346

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P436575

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P436181

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P436073

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436066

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436175

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436235

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436236

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: P436275

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436452

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436453

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P436216

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

Reference Method: EPA 8321B

Batch ID: P436051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.1		P	40 - 150
2,4,5-T	94.6		P	40 - 150
Acetaminophen	77.3		P	30 - 150
Acetamiprid	83.5		P	40 - 150
Afidopyropen	77.9		P	30 - 150
Bentazon	91.8		P	30 - 150
Benzovindiflupyr	78.7		P	40 - 150
Carbamazepine	76.3		P	40 - 150
Clothianidin	84.6		P	40 - 150
Dinotefuran	90.8		P	40 - 150
Diuron	81.3		P	40 - 150
Fenuron	79.0		P	40 - 150
Fluridone	101		P	40 - 150
Hydrocodone	97.2		P	40 - 150
Ibuprofen	76.6		P	40 - 150
Imazapyr	84.1		P	40 - 150
Imidacloprid	78.2		P	40 - 150
Linuron	85.9		P	40 - 150
Mandestrobin	88.4		P	40 - 150
MCPP	91.8		P	40 - 150
Naproxen	55.2		P	40 - 150
Primidone	82.7		P	40 - 150
Pyraclostrobin	73.2		P	40 - 150
Silvex	77.7		P	40 - 150
Thiamethoxam	90.7		P	40 - 150
Tolfenpyrad	49.8		P	30 - 150
Triclopyr	101		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P436195

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	93.4		P	40 - 150
Endothall	90.0		P	40 - 150
Glufosinate	78.2		P	40 - 150
Glyphosate	73.9		P	40 - 150
Sucralose	91.3		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P436341

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	92 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P436469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.5		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P436670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.8		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P436493

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

Reference Method: SM 4500-F- C-2011
Batch ID: P436346

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

Reference Method: SM 4500-F- C-2011
Batch ID: P436575

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P436181

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442971	Chloride	106		P	90 - 110
2443095	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442971	Sulfate	98.1		P	90 - 110
2443095	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436235

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442996	Ammonia-N	100	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443136	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443055	Kjeldahl Nitrogen	97.7	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442973	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443166	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436216

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443151	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P436051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442904	2,4-D	97.0	100	P/P	40 - 150
2442904	2,4,5-T	94.2	100	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P436051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442904	Acetaminophen	72.3	73.1	P/P	30 - 150
2442904	Afidopyropen	74.9	84.8	P/P	30 - 150
2442904	Carbamazepine	61.7	66.8	P/P	40 - 150
2442904	Clothianidin	75.9	80.9	P/P	40 - 150
2442904	Dinotefuran	79.1	91.4	P/P	40 - 150
2442904	Diuron	63.3	66.3	P/P	40 - 150
2442904	Fenuron	55.8	60.2	P/P	40 - 150
2442904	Fluridone	79.6	80.7	P/P	40 - 150
2442904	Hydrocodone	76.3	81.4	P/P	40 - 150
2442904	Ibuprofen	54.7	58.3	P/P	40 - 150
2442904	Imazapyr	84.5	86.1	P/P	40 - 150
2442904	Imidacloprid	110	117	P/P	40 - 150
2442904	Linuron	80.4	71.0	P/P	40 - 150
2442904	Mandestrobin	92.7	97.7	P/P	40 - 150
2442904	MCPP	89.2	98.2	P/P	40 - 150
2442904	Naproxen	75.8	71.0	P/P	40 - 150
2442904	Primidone	75.2	79.1	P/P	40 - 150
2442904	Pyraclostrobin	68.6	94.6	P/P	40 - 150
2442904	Silvex	103	100	P/P	40 - 150
2442904	Thiamethoxam	88.5	90.8	P/P	40 - 150
2442904	Tolfenpyrad	54.2	66.8	P/P	30 - 150
2442904	Triclopyr	97.1	101	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P436195

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443120	Acesulfame K	130	137	P/P	40 - 150
2443120	AMPA	84.8	82.8	P/P	40 - 150
2443120	Endothall	98.1	94.5	P/P	40 - 150
2443120	Glufosinate	78.9	77.4	P/P	40 - 150
2443120	Glyphosate	102	118	P/P	40 - 150
2443120	Sucralose	107	96.5	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P436346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442900	Fluoride	101	98.7	P/P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P436575

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2444069	Fluoride	102	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P436181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442901	Organic Carbon	98.5		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P436073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443095	Color (true)	0.0681	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P436066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442907	Turbidity	1.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442971	Chloride	0.120	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442971	Sulfate	0.0364	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436235

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442996	Ammonia-N	1.31	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443136	Ammonia-N	1.58	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443055	Kjeldahl Nitrogen	7.38	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442973	NO2NO3-N	0.491	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443166	NO2NO3-N	0.475	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436216

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443151	Total-P	0.116	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P436051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442904	2,4-D	3.12	Spike	P	0 - 30
2442904	2,4,5-T	6.11	Spike	P	0 - 30
2442904	Acetaminophen	1.11	Spike	P	0 - 30
2442904	Acetamiprid	4.12	Spike	P	0 - 30
2442904	Afidopyropen	12.5	Spike	P	0 - 30
2442904	Bentazon	11.9	Spike	P	0 - 30
2442904	Benzovindiflupyr	17.6	Spike	P	0 - 30
2442904	Carbamazepine	7.88	Spike	P	0 - 30
2442904	Clothianidin	6.10	Spike	P	0 - 30
2442904	Dinotefuran	7.96	Spike	P	0 - 30
2442904	Diuron	3.68	Spike	P	0 - 30
2442904	Fenuron	7.67	Spike	P	0 - 30
2442904	Fluridone	1.42	Spike	P	0 - 30
2442904	Hydrocodone	6.42	Spike	P	0 - 30
2442904	Ibuprofen	6.42	Spike	P	0 - 30
2442904	Imazapyr	1.88	Spike	P	0 - 30
2442904	Imidacloprid	4.83	Spike	P	0 - 30
2442904	Linuron	12.5	Spike	P	0 - 30
2442904	Mandestrobin	5.25	Spike	P	0 - 30
2442904	MCPP	9.62	Spike	P	0 - 30
2442904	Naproxen	6.49	Spike	P	0 - 30
2442904	Primidone	5.05	Spike	P	0 - 30
2442904	Pyraclostrobin	17.4	Spike	P	0 - 30
2442904	Silvex	2.89	Spike	P	0 - 30
2442904	Thiamethoxam	2.32	Spike	P	0 - 30
2442904	Tolfenpyrad	20.8	Spike	P	0 - 30
2442904	Triclopyr	4.32	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P436195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443120	Acesulfame K	5.11	Spike	P	0 - 30
2443120	AMPA	2.10	Spike	P	0 - 30
2443120	Endothall	3.74	Spike	P	0 - 30
2443120	Glufosinate	1.83	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P436195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443120	Glyphosate	14.9	Spike	P	0 - 30
2443120	Sucralose	9.69	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P436341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442900	Total Alkalinity	1.91	Sample	P	0 - 3.9

Reference Method: SM 2320 B-2011
Batch ID: P436469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2444291	Total Alkalinity	0.490	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P436670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442426	TDS	7.73	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P436346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442900	Fluoride	0.967	Spike	P	0 - 1.9

Reference Method: SM 4500-F- C-2011
Batch ID: P436575

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2444069	Fluoride	0.513	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P436181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442901	Organic Carbon	0.324	Sample	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2443120
Field Sample ID: G1NE0913

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	109	P	30 - 160
EPA 8321B	Acetaminophen-d4	71.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.2	P	30 - 160
EPA 8321B	Diuron-d6	48.7	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	135	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.5	P	30 - 160
EPA 8321B	Primidone-d5	64.8	P	30 - 160
EPA 8321B	Sucralose-d6	95.4	P	30 - 160

Lab Sample ID: 2443142
Field Sample ID: G3NE0010

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	109	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.9	P	30 - 160
EPA 8321B	Diuron-d6	46.0	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.0	P	30 - 160
EPA 8321B	Primidone-d5	81.0	P	30 - 160
EPA 8321B	Sucralose-d6	88.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121948

Included Lab Sample IDs: 2443095, 2443096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	99.8	P/P	90 - 110
Chloride	99.2	102	P/P	90 - 110
Sulfate	100	103	P/P	90 - 110
Sulfate	103	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121984

Included Lab Sample IDs: 2443095, 2443096

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

Reference Method: DEP SOP: NU-094-1

Run ID: A121985

Included Lab Sample IDs: 2443095, 2443096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.9	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122023

Included Lab Sample IDs: 2443097, 2443098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.1	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122033

Included Lab Sample IDs: 2443097, 2443098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.5	P/P	90 - 110
Ammonia-N	99.5	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122046

Included Lab Sample IDs: 2443098

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

Reference Method: EPA 8321B

Run ID: A122058

Included Lab Sample IDs: 2443120, 2443142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	106	116	P/P	60 - 160
Sucralose	102	103	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A122059

Included Lab Sample IDs: 2443120, 2443142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	98.2	P/P	60 - 160
Endothall	86.6	83.0	P/P	60 - 160
Glufosinate	77.5	88.7	P/P	60 - 160
Glyphosate	87.0	87.3	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A122062

Included Lab Sample IDs: 2443142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	94.4	96.6	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A122063

Included Lab Sample IDs: 2443120, 2443142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.3	106	P/P	50 - 150
2,4,5-T	105	97.5	P/P	50 - 150
Acetaminophen	110	111	P/P	60 - 160
Acetamiprid	109	109	P/P	50 - 150
Afidopyropen	110	120	P/P	50 - 150
Bentazon	134	137	P/P	50 - 160
Benzovindiflupyr	108	127	P/P	50 - 150
Carbamazepine	104	101	P/P	60 - 150
Clothianidin	101	100	P/P	60 - 150
Dinotefuran	109	108	P/P	50 - 150
Diuron	117	113	P/P	60 - 160
Fenuron	106	106	P/P	60 - 150
Fluridone	128	154	P/P	60 - 160
Hydrocodone	124	120	P/P	60 - 150
Ibuprofen	91.4	129	P/P	50 - 160
Imazapyr	99.3	101	P/P	50 - 150
Imidacloprid	96.6	97.2	P/P	60 - 150
Linuron	102	141	P/P	60 - 150
Mandestrobin	120	125	P/P	50 - 150
MCPP	109	104	P/P	50 - 150
Naproxen	107	67.2	P/P	50 - 160
Primidone	98.1	94.7	P/P	60 - 150
Pyraclostrobin	111	105	P/P	60 - 150
Silvex	111	109	P/P	50 - 150
Thiamethoxam	106	108	P/P	50 - 150
Tolfenpyrad	115	105	P/P	60 - 150
Triclopyr	102	96.5	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122074

Included Lab Sample IDs: 2443097

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A122077

Included Lab Sample IDs: 2443095

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	96.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122077

Included Lab Sample IDs: 2443095

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122118

Included Lab Sample IDs: 2443097, 2443098

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122130

Included Lab Sample IDs: 2443097, 2443098

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

Reference Method: SM 2320 B-2011

Run ID: A122131

Included Lab Sample IDs: 2443096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.3	98.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122184

Included Lab Sample IDs: 2443096

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

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	101				0.0681	
EPA 180.1 Rev. 2.0	Turbidity	105				1.49	
EPA 300.0 Rev. 2.1	Chloride	102	106	106		0.120	
	Sulfate	96.3	98.1	104		0.0364	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	98.0			1.31
	Ammonia-N	99.4	100	102			1.58
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	97.7	106			7.38
EPA 353.2 Rev. 2.0	NO2NO3-N	101	102	102			0.491
	NO2NO3-N	101	101	102			0.475
EPA 365.1 Rev. 2.0	Total-P	101	104	104			0.116
EPA 8321B	2,4-D	89.1	97.0	100			3.12
	2,4,5-T	94.6	94.2	100			6.11
	Acesulfame K	106	130	137			5.11
	Acetaminophen	77.3	72.3	73.1			1.11
	Acetamiprid	83.5					4.12
	Afidopyropen	77.9	74.9	84.8			12.5
	AMPA	93.4	84.8	82.8			2.10
	Bentazon	91.8					11.9
	Benzovindiflupyr	78.7					17.6
	Carbamazepine	76.3	61.7	66.8			7.88
	Clothianidin	84.6	75.9	80.9			6.10
	Dinotefuran	90.8	79.1	91.4			7.96
	Diuron	81.3	63.3	66.3			3.68
	Endothall	90.0	98.1	94.5			3.74
	Fenuron	79.0	55.8	60.2			7.67
	Fluridone	101	79.6	80.7			1.42
	Glufosinate	78.2	78.9	77.4			1.83
	Glyphosate	73.9	102	118			14.9
	Hydrocodone	97.2	76.3	81.4			6.42
	Ibuprofen	76.6	54.7	58.3			6.42
	Imazapyr	84.1	84.5	86.1			1.88
	Imidacloprid	78.2	110	117			4.83
	Linuron	85.9	80.4	71.0			12.5
	Mandestrobin	88.4	92.7	97.7			5.25
	MCPPP	91.8	89.2	98.2			9.62
	Naproxen	55.2	75.8	71.0			6.49
	Primidone	82.7	75.2	79.1			5.05
	Pyraclostrobin	73.2	68.6	94.6			17.4
	Silvex	77.7	103	100			2.89
	Sucralose	91.3	107	96.5			9.69
	Thiamethoxam	90.7	88.5	90.8			2.32
	Tolfenpyrad	49.8	54.2	66.8			20.8
	Triclopyr	101	97.1	101			4.32
SM 2320 B-2011	Total Alkalinity	98.4				1.91	
	Total Alkalinity	97.5				0.490	
SM 2540 C-2015	TDS	94.8				7.73	
SM 2540 D-2015	TSS	102					
SM 4500-F- C-2011	Fluoride	100	101	98.7			0.967
	Fluoride	98.5	102	101			0.513
SM 5310 B-2011	Organic Carbon	97.9	98.5			0.324	

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2443095, 2443096
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2443095, 2443096
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2443095, 2443096
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2443095, 2443096
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2443097, 2443098
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2443097, 2443098
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2443097, 2443098
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2443097, 2443098
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2443120, 2443142
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2443095, 2443096
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2443095, 2443096
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2443095, 2443096
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2443095, 2443096
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2443097, 2443098

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	10/05/2023			10/05/2023 16:05	Alexis Price	2443095, 2443096
EPA 180.1 Rev. 2.0	10/05/2023			10/05/2023 15:01	Khloe J Berg	2443095
	10/05/2023			10/05/2023 15:02	Khloe J Berg	2443096
EPA 300.0 Rev. 2.1	10/05/2023			10/07/2023 07:47	James L Waggeberby	2443095
	10/05/2023			10/07/2023 12:34	James L Waggeberby	2443096
EPA 350.1 Rev. 2.0	10/05/2023			10/09/2023 13:29	Khloe J Berg	2443097
	10/05/2023			10/09/2023 13:45	Khloe J Berg	2443098
EPA 351.2 Rev. 2.0	10/05/2023	10/11/2023 12:38	Ping Hua	10/12/2023 13:34	Ping Hua	2443097
	10/05/2023	10/11/2023 12:38	Ping Hua	10/12/2023 13:36	Ping Hua	2443098
EPA 353.2 Rev. 2.0	10/05/2023			10/12/2023 12:48	Anna M. Plaviak	2443097
	10/05/2023			10/12/2023 13:01	Anna M. Plaviak	2443098
EPA 365.1 Rev. 2.0	10/05/2023	10/09/2023 17:34	Adam P Silver	10/10/2023 12:34	James L Waggeberby	2443098
	10/05/2023	10/09/2023 17:34	Adam P Silver	10/11/2023 11:14	James L Waggeberby	2443097
EPA 8321B	10/05/2023	10/06/2023 13:00	Hoor Shaik	10/10/2023 00:21	Juyoung Kim	2443120
	10/05/2023	10/06/2023 13:00	Hoor Shaik	10/10/2023 00:39	Juyoung Kim	2443142
	10/05/2023	10/06/2023 13:00	Hoor Shaik	10/10/2023 17:17	Juyoung Kim	2443142
	10/05/2023	10/10/2023 06:00	Hana Lee	10/10/2023 10:29	Tae K Lee	2443120
	10/05/2023	10/10/2023 06:00	Hana Lee	10/10/2023 10:43	Tae K Lee	2443142
	10/05/2023	10/10/2023 06:00	Hana Lee	10/10/2023 20:57	Tae K Lee	2443120
	10/05/2023	10/10/2023 06:00	Hana Lee	10/10/2023 21:10	Tae K Lee	2443142
SM 2320 B-2011	10/05/2023			10/07/2023 01:33	Adam P Silver	2443095
	10/05/2023			10/12/2023 20:28	Chandler E Cox	2443096
SM 2540 C-2015	10/05/2023			10/09/2023 15:48	Yijie Li	2443095, 2443096
SM 2540 D-2015	10/05/2023			10/09/2023 15:48	Yijie Li	2443095, 2443096
SM 4500-F- C-2011	10/05/2023			10/07/2023 01:33	Adam P Silver	2443095
	10/05/2023			10/16/2023 15:26	Adam P Silver	2443096
SM 5310 B-2011	10/05/2023			10/07/2023 07:09	Khloe J Berg	2443097
	10/05/2023			10/07/2023 07:24	Khloe J Berg	2443098