

Chemical Analysis Report

WQAP-2017-06-07-02

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

Event Description: **RUN 15**
Request ID: **RQ-2017-06-05-39**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
Attn: Judy Ashton

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 03-JUL-2017 15:53

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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 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: GAP CREEK

Collection Date/Time: 06/06/2017 10:05

Field ID: G2SW0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904168	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P326403	
	EPA 300.0 Rev. 2.1	Chloride	42		mg Cl/L	P327031	
		Sulfate	78		mg SO4/L	P327035	
	SM 2120 B	Color (true)	52		PCU	P326390	
	SM 2320 B-97	Total Alkalinity	101		mg CaCO3/L	P326593	
	SM 2540 C-97	TDS	327		mg/L	P326795	
	SM 2540 D-97	TSS	5	I	mg/L	P327024	
	SM 4500 F-C-97	Fluoride	0.37		mg F/L	P326597	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P326409	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P326496	
1904171	EPA 353.2 Rev. 2.0	NO2NO3-N	0.093		mg N/L	P326520	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P326531	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P326561	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.24		mg P/L	P326397	
	dissolved						

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: GAP CREEK

Collection Date/Time: 06/06/2017 10:05

Field ID: G2SW0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904206	EPA 8321B	Sucralose**	0.43		ug/L	P326278	MS, RPD
	USGS O-2060-01	2,4-D	0.049		ug/L	P326401	
		Diuron	0.47		ug/L	P326401	
		Fenuron	0.0040	U	ug/L	P326401	
		Imidacloprid	0.090		ug/L	P326401	MS
		Bentazon	0.0071		ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.011	I	ug/L	P326401	
		MCPD	0.013		ug/L	P326401	
		Carbamazepine**	0.0019		ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	
		Fluridone**	0.097		ug/L	P326401	

Sample Location: WARES FRESH

Collection Date/Time: 06/06/2017 10:40

Field ID: G2SW0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904169	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P326403	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P327031	
		Sulfate	40		mg SO4/L	P327035	
	SM 2120 B	Color (true)	31		PCU	P326390	
	SM 2320 B-97	Total Alkalinity	116		mg CaCO3/L	P326600	

Field ID: G2SW0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904169	SM 2540 C-97	TDS	250	A	mg/L	P326796	
	SM 2540 D-97	TSS	4	IA	mg/L	P327025	
	SM 4500 F-C-97	Fluoride	0.28		mg F/L	P326603	
1904172	EPA 350.1 Rev. 2.0	Ammonia-N	0.071		mg N/L	P326409	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P326496	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P326520	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P326532	
	SM 5310 B-00	Organic Carbon	6.5		mg C/L	P326561	
1904175	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P326397	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: WARES FRESH

Collection Date/Time: 06/06/2017 10:40

Field ID: G2SW0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904207	EPA 8321B	Sucralose**	0.025	I	ug/L	P326509	
	USGS O-2060-01	2,4-D	0.11		ug/L	P326401	
		Diuron	0.016		ug/L	P326401	
		Fenuron	0.0042	I	ug/L	P326401	
		Imidacloprid	0.12		ug/L	P326401	MS
		Bentazon	0.0041		ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0096	I	ug/L	P326401	
		MCP	0.0042	I	ug/L	P326401	
		Carbamazepine**	4.0E-04	U	ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	
		Fluridone**	0.065		ug/L	P326401	

Sample Location: RICE CREEK

Collection Date/Time: 06/06/2017 12:30

Field ID: G2SW0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904170	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P326403	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P327031	
		Sulfate	39		mg SO4/L	P327035	
		Color (true)	100		PCU	P326391	
	SM 2320 B-97	Total Alkalinity	61		mg CaCO3/L	P326601	
	SM 2540 C-97	TDS	209		mg/L	P326796	
	SM 2540 D-97	TSS	3	I	mg/L	P327025	
	SM 4500 F-C-97	Fluoride	0.22		mg F/L	P326605	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P326409	
		Kjeldahl Nitrogen	0.72		mg N/L	P326496	
		NO2NO3-N	0.29		mg N/L	P326520	

Field ID: G2SW0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904173	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P326532	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P326561	
1904176	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.19		mg P/L	P326397	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: RICE CREEK

Collection Date/Time: 06/06/2017 12:30

Field ID: G2SW0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904208	EPA 8321B	Sucralose**	1.2		ug/L	P326509	
	USGS O-2060-01	2,4-D	0.039		ug/L	P326401	
		Diuron	0.048		ug/L	P326401	
		Fenuron	0.087		ug/L	P326401	
		Imidacloprid	0.015		ug/L	P326401	MS
		Bentazon	0.039		ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0080	U	ug/L	P326401	
		MCP	0.0020	U	ug/L	P326401	
		Carbamazepine**	0.010		ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.030		ug/L	P326401	
		Fluridone**	0.0032		ug/L	P326401	

Sample Location: LIL MANATEE RVR

Collection Date/Time: 06/06/2017 09:15

Field ID: G2SW0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1904209	EPA 8321B	Sucralose**	0.010	U	ug/L	P326509	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P326401	
		Diuron	0.0062		ug/L	P326401	
		Fenuron	0.0040	U	ug/L	P326401	
		Imidacloprid	0.048		ug/L	P326401	MS
		Bentazon	0.0026	I	ug/L	P326401	
		Linuron	0.0040	U	ug/L	P326401	
		Acetaminophen**	0.0080	U	ug/L	P326401	
		MCP	0.0020	U	ug/L	P326401	
		Carbamazepine**	4.0E-04	U	ug/L	P326401	
		Triclopyr**	0.0040	U	ug/L	P326401	
		Primidone**	0.0040	U	ug/L	P326401	
		Fluridone**	4.0E-04	U	ug/L	P326401	

**Quality Assurance Report
 Method Blank Results**

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326403

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327031

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327035

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326409

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326496

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326520

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326531

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326532

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326397

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P326278

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P326509

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P326390

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P326391

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P326593

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

Reference Method: SM 2320 B-97
Batch ID: P326600

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

Reference Method: SM 2320 B-97
Batch ID: P326601

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

Reference Method: SM 2540 C-97
Batch ID: P326795

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P326796

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P327024

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P327025

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P326597

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P326603

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P326605

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P326561

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

Reference Method: USGS O-2060-01
Batch ID: P326401

Component	Result	Code	Units
2,4-D	8.0E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327031

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327035

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326409

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326496

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326520

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326532

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326397

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

Reference Method: EPA 8321B
Batch ID: P326278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	88.2		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P326509

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	77.2		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P326593

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P326600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P326601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P326597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P326603

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P326605

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P326561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.9		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P326401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.0		P	40 - 140
Acetaminophen	50.0		P	40 - 140
Bentazon	78.6		P	40 - 140
Carbamazepine	139		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P326401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	139		P	40 - 140
Fenuron	115		P	40 - 140
Fluridone	138		P	40 - 140
Imidacloprid	120		P	40 - 160
Linuron	124		P	40 - 140
MCPP	98.2		P	40 - 140
Primidone	132		P	40 - 140
Triclopyr	103		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327031

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904262	Chloride	103		P	90 - 110
1904265	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904262	Sulfate	100		P	90 - 110
1904265	Sulfate	103		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904171	Kjeldahl Nitrogen	98.1	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904139	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904084	Total-P	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904173	Total-P	103	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P326397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904133	O-Phosphate-P	97.0	95.9	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P326278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903830	Sucralose	32.1	148	F/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P326509

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904523	Sucralose	76.5	76.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P326597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903965	Fluoride	97.4	97.9	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P326603

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904349	Fluoride	100	101	P/P	91 - 105

Reference Method: SM 4500 F-C-97
 Batch ID: P326605

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1904305	Fluoride	98.2	98.8	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P326561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903968	Organic Carbon	99.4		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P326401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903831	2,4-D	90.0	95.8	P/P	40 - 140
1903831	Acetaminophen	109	108	P/P	40 - 140
1903831	Bentazon	41.6	42.8	P/P	40 - 140
1903831	Carbamazepine	114	121	P/P	40 - 140
1903831	Diuron	102	105	P/P	40 - 140
1903831	Fenuron	80.0	78.0	P/P	40 - 140
1903831	Fluridone	100	103	P/P	40 - 140
1903831	Imidacloprid	205	204	F/F	40 - 160
1903831	Linuron	116	112	P/P	40 - 140
1903831	MCPP	73.2	76.0	P/P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P326401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1903831	Primidone	120	128	P/P	40 - 140
1903831	Triclopyr	76.0	74.8	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P326403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904110	Turbidity	1.51	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904262	Chloride	1.47	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P327035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904262	Sulfate	1.23	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P326409

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904053	Ammonia-N	2.23	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P326496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904171	Kjeldahl Nitrogen	0.0362	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P326520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904139	NO2NO3-N	0.855	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904084	Total-P	0.438	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P326532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904173	Total-P	2.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P326397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904133	O-Phosphate-P	1.14	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P326278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903830	Sucralose	64.8	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P326509

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904523	Sucralose	0.193	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P326390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904082	Color (true)	1.86	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P326391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904220	Color (true)	4.44	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P326593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903965	Total Alkalinity	0.722	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P326600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904349	Total Alkalinity	0.993	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P326601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904305	Total Alkalinity	1.00	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P326795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904052	TDS	1.89	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P326796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904169	TDS	5.60	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P327024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904052	TSS	6.19	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P326597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903965	Fluoride	0.495	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P326603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904349	Fluoride	0.520	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P326605

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1904305	Fluoride	0.500	Spike	P	0 - 3.0

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P326561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903968	Organic Carbon	3.10	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P326401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1903831	2,4-D	5.05	Spike	P	0 - 30
1903831	Acetaminophen	0.369	Spike	P	0 - 30
1903831	Bentazon	1.77	Spike	P	0 - 30
1903831	Carbamazepine	5.01	Spike	P	0 - 30
1903831	Diuron	2.25	Spike	P	0 - 30
1903831	Fenuron	2.53	Spike	P	0 - 30
1903831	Fluridone	2.35	Spike	P	0 - 30
1903831	Imidacloprid	0.471	Spike	P	0 - 30
1903831	Linuron	4.21	Spike	P	0 - 30
1903831	MCPP	3.75	Spike	P	0 - 30
1903831	Primidone	6.79	Spike	P	0 - 30
1903831	Triclopyr	1.59	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1904206
Field Sample ID: G2SW0030

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	150	P	40 - 160
USGS O-2060-01	2,4-D-d3	94.6	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	126	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	92.6	P	30 - 160
USGS O-2060-01	Diuron-d6	76.9	P	30 - 160
USGS O-2060-01	Primidone-d5	113	P	30 - 150

Lab Sample ID: 1904207
Field Sample ID: G2SW0031

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	96.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	87.1	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	124	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	103	P	30 - 160
USGS O-2060-01	Diuron-d6	72.8	P	30 - 160
USGS O-2060-01	Primidone-d5	133	P	30 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1904208
Field Sample ID: G2SW0033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	80.8	P	40 - 160
USGS O-2060-01	2,4-D-d3	96.3	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	119	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	87.1	P	30 - 160
USGS O-2060-01	Diuron-d6	66.7	P	30 - 160
USGS O-2060-01	Primidone-d5	108	P	30 - 150

Lab Sample ID: 1904209
Field Sample ID: G2SW0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	106	P	40 - 160
USGS O-2060-01	2,4-D-d3	99.6	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	122	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	112	P	30 - 160
USGS O-2060-01	Diuron-d6	96.9	P	30 - 160
USGS O-2060-01	Primidone-d5	112	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A76929
Included Lab Sample IDs: 1904168, 1904169, 1904170

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	105	P/P	85 - 115
Color (true)	87.4	104	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A76930
Included Lab Sample IDs: 1904174, 1904175, 1904176

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A76931
Included Lab Sample IDs: 1904168, 1904169, 1904170

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A76933
Included Lab Sample IDs: 1904171, 1904172, 1904173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	101	P/P	90 - 110
Ammonia-N	99.5	99.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A76951

Included Lab Sample IDs: 1904206, 1904207, 1904208, 1904209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	115	P/P	50 - 150
Acetaminophen	107	108	P/P	60 - 150
Bentazon	120	122	P/P	50 - 150
Carbamazepine	115	112	P/P	60 - 150
Diuron	118	116	P/P	60 - 150
Fenuron	98.8	100	P/P	60 - 150
Fluridone	136	132	P/P	60 - 160
Imidacloprid	109	110	P/P	60 - 150
Linuron	116	112	P/P	60 - 150
MCPP	101	96.4	P/P	50 - 150
Primidone	106	114	P/P	60 - 150
Triclopyr	100	102	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76981

Included Lab Sample IDs: 1904171, 1904172, 1904173

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

Reference Method: SM 5310 B-00

Run ID: A76997

Included Lab Sample IDs: 1904171, 1904172, 1904173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.9	92.4	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77001

Included Lab Sample IDs: 1904168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A77001

Included Lab Sample IDs: 1904168

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77003

Included Lab Sample IDs: 1904169, 1904170

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A77003

Included Lab Sample IDs: 1904169, 1904170

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.0	P/P	90 - 110
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77007

Included Lab Sample IDs: 1904171, 1904172, 1904173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	106	P/P	90 - 110
Total-P	106	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77042

Included Lab Sample IDs: 1904171, 1904172, 1904173

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.7	99.2	P/P	90 - 110
Kjeldahl Nitrogen	99.9	96.4	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77076

Included Lab Sample IDs: 1904168, 1904169, 1904170

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	105	P/P	90 - 110
Chloride	105	100	P/P	90 - 110
Sulfate	107	102	P/P	90 - 110
Sulfate	109	107	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A77276

Included Lab Sample IDs: 1904206, 1904207, 1904208, 1904209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	116	78.9	P/P	60 - 160
Sucralose	78.8	112	P/P	60 - 160
Sucralose	78.9	152	P/P	60 - 160

* 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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity				1.51	
EPA 300.0 Rev. 2.1	Chloride	103	103	104	1.47	
	Sulfate	103	100	103	1.23	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 350.1 Rev. 2.0	Ammonia-N	96.6				2.23
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	98.1	98.1		0.0362
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	103		0.855
EPA 365.1 Rev. 2.0	Total-P	95.0	101	101		0.438
	Total-P	97.3	103	100		2.08
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	97.0	95.9		1.14
EPA 8321B	Sucralose	88.2	32.1	148		64.8
	Sucralose	77.2	76.5	76.4		0.193
SM 2120 B	Color (true)				1.86	
	Color (true)				4.44	
SM 2320 B-97	Total Alkalinity	103			0.722	
	Total Alkalinity	103			0.993	
	Total Alkalinity	104			1.00	
SM 2540 C-97	TDS				1.89	
	TDS				5.60	
SM 2540 D-97	TSS				6.19	
SM 4500 F-C-97	Fluoride	98.2	97.4	97.9		0.495
	Fluoride	96.9	100	101		0.520
	Fluoride	97.9	98.2	98.8		0.500
SM 5310 B-00	Organic Carbon	92.9	99.4			3.10
USGS O-2060-01	2,4-D	94.0	90.0	95.8		5.05
	Acetaminophen	50.0	109	108		0.369
	Bentazon	78.6	41.6	42.8		1.77
	Carbamazepine	139	114	121		5.01
	Diuron	139	102	105		2.25
	Fenuron	115	80.0	78.0		2.53
	Fluridone	138	100	103		2.35
	Imidacloprid	120	205	204		0.471
	Linuron	124	116	112		4.21
	MCP	98.2	73.2	76.0		3.75
	Primidone	132	120	128		6.79
	Triclopyr	103	76.0	74.8		1.59

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1904168, 1904169, 1904170
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1904168, 1904169, 1904170
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1904168, 1904169, 1904170
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1904171, 1904172, 1904173
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1904171, 1904172, 1904173
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1904171, 1904172, 1904173
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1904171, 1904172, 1904173
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1904174, 1904175, 1904176
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1904206, 1904207, 1904208, 1904209
SM 2120 B / E31780	True Color measured at 450 nm	1904168, 1904169, 1904170
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1904168, 1904169, 1904170

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1904168, 1904169, 1904170
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1904168, 1904169, 1904170
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1904168, 1904169, 1904170
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1904171, 1904172, 1904173
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1904206, 1904207, 1904208, 1904209
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1904206, 1904207, 1904208, 1904209

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	06/07/2017			06/07/2017 16:15	Sima Feizi	1904168, 1904169, 1904170
EPA 300.0 Rev. 2.1	06/07/2017			06/16/2017	Julia Storbeck	1904168, 1904169, 1904170
EPA 350.1 Rev. 2.0	06/07/2017			06/07/2017	Julie Michelle Frank	1904171, 1904172, 1904173
EPA 351.2 Rev. 2.0	06/07/2017	06/09/2017	Adrian Shelby	06/13/2017	Joseph Suarez	1904171, 1904172, 1904173
EPA 353.2 Rev. 2.0	06/07/2017			06/09/2017	Beverly Y. Sanders	1904171, 1904172, 1904173
EPA 365.1 Rev. 2.0	06/07/2017	06/09/2017	Vijayalakshmi Reddy	06/12/2017	Lipi Saha	1904171, 1904172, 1904173
EPA 365.1 Rev. 2.0 dissolved	06/07/2017			06/07/2017 15:26	Virginia P. Brown	1904174
	06/07/2017			06/07/2017 15:27	Virginia P. Brown	1904175
	06/07/2017			06/07/2017 15:28	Virginia P. Brown	1904176
EPA 8321B	06/07/2017	06/15/2017	Mohammad Ghaffari	06/21/2017	Mohammad Ghaffari	1904206, 1904207, 1904208, 1904209
SM 2120 B	06/07/2017			06/07/2017 15:06	Tanya Welborn	1904168
	06/07/2017			06/07/2017 15:07	Tanya Welborn	1904169
	06/07/2017			06/07/2017 15:10	Tanya Welborn	1904170
SM 2320 B-97	06/07/2017			06/09/2017	Dale L. Simmons	1904168, 1904169
	06/07/2017			06/10/2017	Dale L. Simmons	1904170
SM 2540 C-97	06/07/2017			06/09/2017	Yijie Li	1904168, 1904169, 1904170
SM 2540 D-97	06/07/2017			06/09/2017	Yijie Li	1904168, 1904169, 1904170
SM 4500 F-C-97	06/07/2017			06/09/2017	Dale L. Simmons	1904168, 1904169
	06/07/2017			06/10/2017	Dale L. Simmons	1904170
SM 5310 B-00	06/07/2017			06/09/2017	Christopher Armour	1904171, 1904172, 1904173
USGS O-2060-01	06/07/2017	06/08/2017	Hoor Shaik	06/09/2017	Mohammad Ghaffari	1904206, 1904207, 1904208, 1904209
	06/07/2017	06/08/2017	Hoor Shaik	06/16/2017	Juyoung Kim	1904206