

Chemical Analysis Report

SW-DIST-2022-10-20-01

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

Event Description: **McKay Bay @ Tidal**
Request ID: **RQ-2022-10-03-16**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 08-NOV-2022 10:59

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored 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 group are included in this report: Nutrients.

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: McKay Tidal South of Harbor Cir

Collection Date/Time: 10/19/2022 11:40

Field ID: G5SW0152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2363996	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P421207	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P421458	
	SM 2540 D-2015	TSS	4	I	mg/L	P421405	
	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P421463	
2363997	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P421682	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P421503	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P421715	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P421416	
	SM 5310 B-2011	Organic Carbon	5.6		mg C/L	P421636	
2363998	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P421199	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421207

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421682

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421503

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421715

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421416

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P421199

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

Reference Method: SM 2320 B-2011
Batch ID: P421458

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

Reference Method: SM 2540 D-2015
Batch ID: P421405

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P421463

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: P421636

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421207

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421682

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421503

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421715

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421416

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P421199

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

Reference Method: SM 2320 B-2011
Batch ID: P421458

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P421405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P421463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	94 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P421636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363291	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363997	Kjeldahl Nitrogen	92.7	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364119	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364076	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P421199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364086	O-Phosphate-P	97.2		P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P421463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2364001	Fluoride	99.6	99.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P421636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2363291	Organic Carbon	92.1	93.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P421207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363980	Turbidity	3.43	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P421682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363291	Ammonia-N	0.351	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P421503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363997	Kjeldahl Nitrogen	2.03	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P421715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364119	NO2NO3-N	0.364	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P421416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364076	Total-P	1.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P421199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364086	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P421458

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364001	Total Alkalinity	0.988	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P421463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2364001	Fluoride	0.0	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P421636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2363291	Organic Carbon	1.33	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A115436

Included Lab Sample IDs: 2363996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A115437

Included Lab Sample IDs: 2363998

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.2	97.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A115538

Included Lab Sample IDs: 2363996

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	95.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A115538

Included Lab Sample IDs: 2363996

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A115568

Included Lab Sample IDs: 2363997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A115617

Included Lab Sample IDs: 2363997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A115618

Included Lab Sample IDs: 2363997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.3	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A115637

Included Lab Sample IDs: 2363997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.6	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A115654

Included Lab Sample IDs: 2363997

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	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	
EPA 180.1 Rev. 2.0	Turbidity	99.1				3.43	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	101	101			0.351
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	92.7	95.0			2.03
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	103	104			0.364
EPA 365.1 Rev. 2.0	Total-P	103	103	104			1.40
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	97.2				0.0
SM 2320 B-2011	Total Alkalinity	101				0.988	
SM 2540 D-2015	TSS	93.1					
SM 4500-F- C-2011	Fluoride	98.3	99.6	99.6			0.0
SM 5310 B-2011	Organic Carbon	98.1	92.1	93.5			1.33

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2363996
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2363997
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2363997
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2363997
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2363997
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2363998
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2363996
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2363996
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2363996
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2363997

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	10/20/2022			10/20/2022 14:17	Chandler E Cox	2363996
EPA 350.1 Rev. 2.0	10/20/2022			10/31/2022 12:38	Ping Hua	2363997
EPA 351.2 Rev. 2.0	10/20/2022	10/27/2022 11:24	Alexandra J Mattheus	10/28/2022 12:54	Alexandra J Mattheus	2363997
EPA 353.2 Rev. 2.0	10/20/2022			11/01/2022 09:33	Beverly Y. Sanders	2363997
EPA 365.1 Rev. 2.0	10/20/2022	10/26/2022 15:16	Adam P Silver	10/27/2022 11:59	Simonne.V. Calhoun	2363997
EPA 365.1 Rev. 2.0 dissolved	10/20/2022			10/20/2022 15:37	Elise M. Gillis	2363998
SM 2320 B-2011	10/20/2022			10/26/2022 07:37	Adam P Silver	2363996
SM 2540 D-2015	10/20/2022			10/21/2022 17:06	Yijie Li	2363996
SM 4500-F- C-2011	10/20/2022			10/26/2022 04:45	Adam P Silver	2363996
SM 5310 B-2011	10/20/2022			10/28/2022 01:16	Khloe J Berg	2363997