

FLOWERS CHEMICAL LABORATORIES INC.

P.O. Box 150597, Altamonte Springs, FL 32715-0597
571 NW Mercantile Pl, Suite 111, Port St. Lucie, FL 34986
812 SW Harvey Green Dr, Madison, FL 32340
3980 Overseas Hwy, Suite 103, Marathon, FL 33050

Phone: 407-339-5984 E83018 (Main Lab)
Phone: 772-343-8006 E86562 (South Lab)
Phone: 850-973-6878 E82405 (North Lab)
Phone: 305-743-8598 E35834 (Keys Lab)

Florida Keys Aqueduct Authority-WWTP
3375 Overseas Hwy
Marathon, FL 33050

PO #: 15352
Client Project #: Cudjoe Key WWTP -M- SW's
Date Sampled: Dec 15, 2016
Jan 10, 2017; Invoice: 318292

Report Summary

Date Received: Dec 16, 2016

FCL Project Manager: Thomas D. Cross

Laboratory #	Sample Description	Analysis	Chemist	Location	SampleMatrix
318292GW1	CK-3	EPA350.1	PCW	Main Lab	Ground Water
		EPA351.2	VLB	Main Lab	
		EPA353.2	PCW	Main Lab	
		EPA365.1	PCW	Main Lab	
		OrgNit			
318292GW2	CK-2	SM10200 H	TRB	Main Lab	Ground Water
		TotNit			
		EPA350.1	PCW	Main Lab	
		EPA351.2	VLB	Main Lab	
		EPA353.2	PCW	Main Lab	
318292GW3	C-25	EPA365.1	PCW	Main Lab	Ground Water
		OrgNit			
		SM10200 H	TRB	Main Lab	
		TotNit			
		EPA350.1	PCW	Main Lab	
318292WW1	C-24	EPA351.2	VLB	Main Lab	Waste Water
		EPA353.2	PCW	Main Lab	
		EPA365.1	PCW	Main Lab	
		OrgNit			
		SM10200 H	TRB	Main Lab	
		TotNit			

Certificate of Results

Sample integrity was certified prior to analysis. Test results meet all requirements of the NELAC Standards except as noted in the Quality Control Report. Uncertainties for these data are available on request. This report may not be reproduced in part; results relate only to items tested.



Jefferson S. Flowers, Ph.D.
President/Technical Director



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Analysis Report

Lab #: 318292GW1 **Sampled:** 12/15/16 03:15 PM **Desc:** CK-3

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Organic Nitrogen	1.64		0				OrgNit		
Total Nitrogen(as N)	1.64		0				TotNit	17778-88-0	
NO3+NO2(as N)	0.0200 U	mg/L	1.00	0.0200	0.0400	10329457	EPA353.2	I-005	12/26/16
Chlorophyll a	0.360	ug/L	1.00	0.0200	0.150	10329460	SM10200 H	479-61-8	12/23/16
Ammonia (as N)	0.0100 U	mg/L	1.00	0.0100	0.0200	10329525	EPA350.1	7664-41-7	12/27/16
TKN(as N)	1.64	mg/L	1.00	0.200	0.400	10329775	EPA351.2	7727-37-9	12/29/16
Total Phosphorus(as P)	0.00200 U	mg/L	1.00	0.00200	0.00400	10330411	EPA365.1	7723-14-0	01/10/17

Lab #: 318292GW2 **Sampled:** 12/15/16 03:20 PM **Desc:** CK-2

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Organic Nitrogen	0		0				OrgNit		
Total Nitrogen(as N)	0		0				TotNit	17778-88-0	
NO3+NO2(as N)	0.0200 U	mg/L	1.00	0.0200	0.0400	10329457	EPA353.2	I-005	12/26/16
Chlorophyll a	0.560	ug/L	1.00	0.0200	0.150	10329460	SM10200 H	479-61-8	12/23/16
Ammonia (as N)	0.0100 U	mg/L	1.00	0.0100	0.0200	10329525	EPA350.1	7664-41-7	12/27/16
TKN(as N)	0.200 U	mg/L	1.00	0.200	0.400	10329775	EPA351.2	7727-37-9	12/29/16
Total Phosphorus(as P)	0.00200 U	mg/L	1.00	0.00200	0.00400	10330411	EPA365.1	7723-14-0	01/10/17

Lab #: 318292GW3 **Sampled:** 12/15/16 03:55 PM **Desc:** C-25

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Organic Nitrogen	0.222		0				OrgNit		
Total Nitrogen(as N)	0.244		0				TotNit	17778-88-0	
NO3+NO2(as N)	0.0223 I	mg/L	1.00	0.0200	0.0400	10329458	EPA353.2	I-005	12/26/16
Chlorophyll a	0.370	ug/L	1.00	0.0200	0.150	10329460	SM10200 H	479-61-8	12/23/16
Ammonia (as N)	0.0100 U	mg/L	1.00	0.0100	0.0200	10329525	EPA350.1	7664-41-7	12/27/16
TKN(as N)	0.222 I	mg/L	1.00	0.200	0.400	10329775	EPA351.2	7727-37-9	12/29/16
Total Phosphorus(as P)	0.00200 U	mg/L	1.00	0.00200	0.00400	10330411	EPA365.1	7723-14-0	01/10/17



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Lab #: 318292WW1 Sampled: 12/15/16 03:05 PM Desc: C-24

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Organic Nitrogen	0.629		0				OrgNit		
Total Nitrogen(as N)	0.745		0				TotNit	17778-88-0	
NO3+NO2(as N)	0.0544	mg/L	1.00	0.0200	0.0400	10329458	EPA353.2	I-005	12/26/16
Chlorophyll a	0.130 l	ug/L	1.00	0.0200	0.150	10329460	SM10200 H	479-61-8	12/23/16
Ammonia (as N)	0.0616	mg/L	1.00	0.0100	0.0200	10329525	EPA350.1	7664-41-7	12/27/16
TKN(as N)	0.691	mg/L	1.00	0.200	0.400	10329775	EPA351.2	7727-37-9	12/29/16
Total Phosphorus(as P)	0.00200 U	mg/L	1.00	0.00200	0.00400	10330411	EPA365.1	7723-14-0	01/10/17



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Quality Report

Quality Control Batch: 10329458		Analyst: PCW						
Blank	Result	Units						
NO3+NO2(as N)	0.0200U	mg/L						
Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim			
NO3+NO2(as N)	1.97	mg/L	2.00	98.50	85.00-115.00			
Matrix Spike	Result	Units	Spike	%REC	%REC Lim	Sample		
NO3+NO2(as N)	4.26	mg/L	4.00	101.62	85.00-115.00	0.195		
Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
NO3+NO2(as N)	4.25	mg/L	4.00	101.37	85.00-115.00	0.195	0.24	20.00
Quality Control Batch: 10329460		Analyst: TRB						
Blank	Result	Units						
Chlorophyll a	0.0200U	ug/L						
Quality Control Batch: 10329525		Analyst: PCW						
Blank	Result	Units						
Ammonia (as N)	0.0100U	mg/L						
Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim			
Ammonia (as N)	0.490	mg/L	0.500	98.00	85.00-115.00			
Matrix Spike	Result	Units	Spike	%REC	%REC Lim	Sample		
Ammonia (as N)	1.24	mg/L	1.00	134.70	85.00-115.00	-0.107		



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Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
Ammonia (as N)	1.23	mg/L	1.00	133.70	85.00-115.00	-0.107	0.81	20.00

Quality Control Batch: 10329775

Analyst: VLB

Blank	Result	Units
TKN(as N)	0.200U	mg/L

Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim
TKN(as N)	3.22	mg/L	3.00	107.30	80.00-120.00

Matrix Spike	Result	Units	Spike	%REC	%REC Lim	Sample
TKN(as N)	3.22	mg/L	3.00	84.28	80.00-120.00	0.691

Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
TKN(as N)	3.14	mg/L	3.00	81.79	80.00-120.00	0.691	2.35	20.00

Quality Control Batch: 10330411

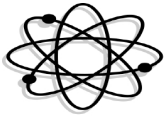
Analyst: PCW

Blank	Result	Units
Total Phosphorus(as P)	0.00200U	mg/L

Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim
Total Phosphorus(as P)	0.481	mg/L	0.500	96.20	85.00-115.00

Matrix Spike	Result	Units	Spike	%REC	%REC Lim	Sample
Total Phosphorus(as P)	0.145	mg/L	0.200	72.50	85.00-115.00	0.00200U

Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
Total Phosphorus(as P)	0.147	mg/L	0.200	73.50	85.00-115.00	0.00200U	1.37	20.00



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Narrative Report

Sample Handling

Sample handling and holding time criteria were met for all samples. Samples collected by FCL. No unusual events occurred during analysis. Results are reported on a wet weight basis.

Quality Control

Enclosed analyses met method or FCL criteria, unless otherwise denoted on the sample results. Applied data qualifiers are defined below.

Attachments

Chain of Custody
Field Data

Qualifier

Meaning

U	Compound was analyzed for but not detected.
J	Estimated value; one or more QC components associated with this data value exceed current QC limits.
Q	Sample held beyond the accepted holding time.
L	Off-scale high; reported concentration exceeds the highest standard.
V	Analyte was detected in both the sample and the associated method blank.
W	The dissolved oxygen blank was above 0.2 mg/L but less than the MDL.
Z	Too numerous to count colonies on plate.
A	Absent
P	Present
T	Value reported is less than the statistical method detection limit. Reported for informational purposes only.
M	Value reported is greater than the statistical method detection limit, but less than the reported MDL.
G	The greatest of the dilutions performed did not yield sufficient oxygen depletion for valid data.
S	The least of the dilutions performed did not yield sufficient oxygen residual for valid data.
O	Result is greater than (over) the specified value.
I	Reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
B	Results based upon colony plate count outside ideal range.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.