Annual Report Form
For Individual NPDES Permits For
Municipal Separate Storm Sewer Systems
(RULE 62-624.600(2), F.A.C.)

- This Annual Report Form must be completed and submitted to the Department to satisfy the annual reporting requirements established in Rule 62-621.600, F.A.C.
- Submit this fully completed and signed form and any REQUIRED attachments by email to the NPDES Stormwater Program Administrator or to the MS4 coordinator (http://www.dep.state.fl.us/water/stormwater/npdes/contacts.htm). Files larger than 10MB may be placed on the FTP site at: ftp://ftp.dep.state.fl.us/pub/NPDES_Stormwater/. After uploading files, email the MS4 coordinator or NPDES Program Administrator to notify them the report is ready for downloading; or by mail to the address in the box at right.
- Refer to the Form Instructions for guidance on completing each section.
- **Please print or type information in the appropriate areas below.**

Submit the form and attachments to:
Florida Department of Environmental Protection
Mail Station 3585
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SECTION I. BACKGROUND INFORMATION			
A.	Permittee Name: City of Delray Beach		
B.	Permit Name: Palm Beach County MS4		
C.	Permit Number: FLS000018-004		
D.	Annual Report Year: Year 1 ☒ Year 2 ☐ Year 3 ☐ Year 4 ☐ Year 5 ☐ Other, specify Year:		
E.	Reporting Time Period (month/year): Oct 1 / 2018 through Sep 30 / 2019		
F.	Name of the Responsible Authority: Missie Barletto		
	Title: Asst. Director Public Works		
	Mailing Address: 434 South Swinton Ave		
	City: Delray Beach	Zip Code: 33444	County: Palm Beach
	Telephone Number: (561) 243-4104	Fax Number: 561-243-7060	
	E-mail Address: bartlettom@mydelraybeach.com		
G.	Name of the Designated Stormwater Management Program Contact (if different from Section I.F above): Joseph Williams		
	Title: Stormwater Administrator – City of Delray Beach		
	Department: Public Works		
	Mailing Address: 434 South Swinton Ave		
	City: Delray Beach	Zip Code: 33444	County: Palm Beach
	Telephone Number: (561) 243-7000 ext 4716	Fax Number: 561-243-7060	
	E-mail Address: Williamsj@mydelraybeach .com		

SECTION II. MS4 MAJOR OUTFALL INVENTORY (Not Applicable in Year 1)	
A.	Number of outfalls ADDED to the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☐ Yes ☐ No ☐ Not Applicable)
B.	Number of outfalls REMOVED from the outfall inventory in the current reporting year (insert "0" if none): 0 (Does this number include non-major outfalls? ☐ Yes ☐ No ☐ Not Applicable)
C.	Is the change in the total number of outfalls due to lands annexed or vacated? ☐ Yes ☐ No X Not Applicable

SECTION III. PART V.B. ASSESSMENT PROGRAM	
A.	Provide a brief statement as to the status of water quality monitoring plan implementation. Status may include sampling frequency changes, monitoring location changes, or sampling waiver conditions. *DEP Note: If permittee participates in a collaborative monitoring plan, permittee may refer to a joint response as defined by the interlocal agreement.* Name and date of the approved plan: N/A Status: Group monitoring report is included in the cycle 4, year 2 joint annual report. The monitoring Plan includes quarterly sampling of nutrients, (TP, TN, Chlorophyll-A) along with physical parameters. City of Delray Beach's Assessment Plan was approved on May 15, 2018.
B.	Provide a brief discussion of the monitoring and loading results to date which includes a summary of the water quality monitoring data and / or stormwater pollutant loading changes from the reporting year. *DEP Note: Results must be specific to the permittee's SWMP.* Refer to City of Delray's 2018 Water SWMP Assessment Program Annual Report (2017-2018).
C.	Attach a monitoring data summary as required by the permit. An analysis of the data discussing changes in water quality and/or stormwater pollutant loading from previous reporting years. *DEP Note: Analysis must be specific to the permittee's SWMP.* This is the first year of monitoring.

SECTION IV. FISCAL ANALYSIS	
A.	Total expenditures for the NPDES stormwater management program for the current reporting year: $2,546,617
B.	Total budget for the NPDES stormwater management program for the subsequent reporting year: $4,330,177
C.	Did the current reporting year resources decrease from the previous year? Y ☐ / N ☒ If program resources decreased, provide a discussion of the impacts on the implementation of the SWMP.

SECTION V. MATERIALS TO BE SUBMITTED WITH THIS ANNUAL REPORT FORM

Only the following materials are to be submitted to the Department along with this fully completed and signed Annual Report Form (check the appropriate box to indicate whether the item is attached or is not applicable):

Attached	N/A	Required Attachments	Permit Citation	Attachment Number/Title
☐	☒	Any additional information required to be submitted in this current annual reporting year in accordance with Part III.A of your permit that is not otherwise included in Section VII below.	Part III.A	
☐	☒	An explanation of why the minimum inspection frequency in Table II.A.1.a. was not met, if applicable.	Part II.A.1	
☐	☒	A list of the flood control projects that did not include stormwater treatment and an explanation for each of why it did not (if applicable).	Part III.A.4	
☒	☐	A monitoring data summary as directed in Section III.C above and in accordance with Rule 62-624.600(2)(c), F.A.C.	Part V.B.3	SWMP Assessment Program Annual Report 2017-2018
☐	☒	YEAR 1 ONLY: An inventory of all known major outfalls and a map depicting the location of the major outfalls (hard copy or CD-ROM) in accordance with Rule 62-624.600(2)(a), F.A.C.	Part III.A.1	
☒	☐	YEAR 2: A summary review of codes and regulations to reduce the stormwater impact from development.	Part III.A.2	Code and Land Development Regulations
☐	☒	Year 3 ONLY: The estimates of pollutant loadings and event mean concentrations for each major outfall or each major watershed in accordance with Rule 62-624.600(2)(b), F.A.C.	Part V.A	
☐	☒	YEAR 3: Summary of TMDL Monitoring Results (if applicable).	Part VIII.B.2	
☐	☒	YEAR 3: Bacteria Pollution Control Plan (if applicable).	Part VIII.B.3	
☐	☒	YEAR 4: A follow-up report on plan implementation of changes to codes and regulations to reduce the stormwater impact from development.	Part III.A.2	
☐	☒	YEAR 4: A report on any amendments to the applicable legal authority (if applicable).	Part III.A.7.a	
☐	☒	YEAR 4: Permit re-application information in accordance with Rule 62-624.420(2), F.A.C. • The monitoring plan (with revisions, if applicable). • If the total annual pollutant loadings have not decreased over the past two permit cycles, revisions to the SWMP, as appropriate.	Part V.B.3 Part V.A.3	
☐	☒	YEAR 4: TMDL Supplemental SWMP (if applicable).	Part VIII.B.3	

DO NOT SUBMIT ANY OTHER MATERIALS
(such as records and logs of activities, monitoring raw data, public outreach materials, etc.)

SECTION VI. CERTIFICATION STATEMENT AND SIGNATURE

The Responsible Authority listed in Section I.F above must sign the following certification statement, as per Rule 62-620.305, F.A.C:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name of Responsible Authority (type or print): Missie Barletto

Title: Assistant-Director Public Works

Signature: Missie Barletto Date: 08-14-2019

SECTION VII.	STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE								
A.	B.					C.	D.	E.	F.
Permit Citation/ SWMP Element	Permit Requirement/Quantifiable SWMP Activity					Number of Activities Performed	Documentation / Record	Entity Performing the Activity	Comments
Part III.A.1	Structural Controls and Stormwater Collection Systems Operation								
	Report the current known inventory. Report the number of inspection and maintenance activities conducted for each applicable type of structure included in Table II.A.1.a, and the percentage of the total inventory of each type of structure inspected and maintained. *Note: Delete structures that are not in your MS4's inventory. The permittee may choose its own unit of measurement for each structural control to be consistent with the unit of measurement in the documentation. Unit options include: miles, linear feet, acres, etc.*								
	Type of Structure	**Number of Structures**	**Number of Inspections**	**Percent Inspected**	**Number of Maintenance Activities**	**Percent Maintained**			
	Dry retention systems	18	198	92	18	92	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	Total inventory of drainage areas inspected and maintained by MS4 staff.
	Underdrain filter systems	1480	1470	99	0	0	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	Exfiltration trench / French drains (lf)	1475	1461	99	6	95	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	Grass treatment swales (miles)	27.9	100	100	100	100	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	Total inventory of grass swales inspected and maintained by MS4 staff
	Dry detention systems	18	198	100	198	100	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	Total Inventory of drainage areas inspected

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									and maintained by MS4 staff
	Wet detention systems	2	198	92	18	92	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	Total Inventory of drainage areas inspected and maintained by MS4 staff
	Detention with filtration systems	18	198	92	18	92	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	pump stations	7	84	100	11	100	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	Utility Maintenance performs repairs on pump stations
	Major outfalls	23	23	100	4	100	2018 Master Drainage Plan	Stormwater Maintenance & Administration	
	Weirs or other control structures	11	12	100	3	27	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	pipes / culverts (miles)	2.0	0.5	23	0.16	8.1	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	Inlets / catch basins / grates	1258	1258	100	1258	100	PW SW for NPDES 2016-2017 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	If the minimum inspection frequencies set forth in Table II.A.1.a. were not met, provide as an attachment an explanation of why they were not and a description of the actions that will be taken to ensure that they will be met.	Stormwater outfalls were inspected as part of the stormwater master plan and seawall study completed in December of 2018							

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Part III.A.1 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Enforcing the FAC statutes for stormwater retention requirements for all new development in the MS4 including single family residential				
	Limitations:				
	SWMP revisions implemented to address limitations: Included in comp plan, stormwater runoff from new construction will cause no impacts on adjacent properties				
Part III.A.2	**Areas of New Development and Significant Redevelopment**				
	Report the number of significant development projects, including new and redevelopment, reviewed and approved by the permittee for post-development stormwater considerations.				
	Number of significant development projects reviewed	96	TAC NOT Report	Engineering	
	Number of significant development projects approved	64	TAC NOT Report	Engineering	
	Provide in the Year 2 Annual Report the summary report of the review activity. Provide in the Year 4 Annual Report the follow-up report on plan implementation.				
	Year 2 ONLY: Attach the summary report of the review activity	☒			No modifications recommended in Year 2
	Year 4 ONLY: Attach the follow-up report on plan implementation	☐			
Part III.A.2 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Proactive planning and development review process				
	Limitations: Some aging infrastructure in areas of redevelopment				
	SWMP revisions implemented to address limitations: Studying flood prone areas to address issues				
Part III.A.3	**Roadways**				
	Report on the litter control program, including the frequency of litter collection, an estimate of the total number of road miles cleaned or amount of area covered by the activities, and an estimate of the quantity of litter collected. *Note: If the permittee does not contract activities, delete CONTRACTOR activities.*				
	PERMITTEE Litter Control: Frequency of litter collection	Daily			
	PERMITTEE Litter Control: Estimated amount of area maintained (lf)	200	GIS SWA	Parks and Recreation	Parks handles all litter
	PERMITTEE Litter Control: Estimated amount of litter collected (cy)	4000	GIS SWA	Parks and Recreation	Parks handles all litter
	CONTRACTOR Litter Control: Frequency of litter collection				
	CONTRACTOR Litter Control: Estimated amount of area maintained (lf)				
	CONTRACTOR Litter Control: Estimated amount of litter collected (cy)				
	OPTIONAL: If an Adopt-A-Road or similar program is implemented, report the total number of road miles cleaned and an estimate of the quantity of litter collected. If you do not participate in an Adopt-A-Road program, report “0”.				

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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
	Trash Pick-up Events: Total miles cleaned	1	D. Beardsley	Special Events Coordinator	
	Trash Pick-up Events: Estimated amount of litter collected (cy)	400	D. Beardsley	Special Events Coordinator	
	Adopt-A-Road: Total miles cleaned	1	D. Beardsley	Special Events Coordinator	
	Adopt-A-Road: Estimated amount of litter collected (cy)	70	D. Beardsley	Special Events Coordinator	
	Report on the street sweeping program, including the frequency of the sweeping, total miles swept, an estimate of the quantity of sweepings collected, and the total nitrogen and total phosphorus loadings that were removed by the collection of sweepings. If no street sweeping program is implemented, provide the explanation of why not in column F.				
	Frequency of street sweeping	257	PW SW for NPDES 2017-2018 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	Total miles swept	9903	PW SW for NPDES 2017-2018 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	Estimated quantity of sweeping material collected (cy)	1029	PW SW for NPDES 2017-2018 Monthly Reports & SOPs	Stormwater Maintenance & Administration	
	Total phosphorous loadings removed (pounds)	852	FSA Spreadsheet	Public Works	
	Total nitrogen loadings removed (pounds)	602	FSA Spreadsheet	Public Works	
	Report the equipment yards and maintenances shops that support road maintenance activities, and the number of inspections conducted for each facility.				
	Name of Facility	**Number of Inspections**			
	Public Works Department	12	Daily Log for Wellfield Operating Permit	Fleet Superintendent	

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Part III.A.3 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Proactive Management and Maintenance Program				
	Limitations: Budget constraints, seasonal populations swell				
	SWMP revisions implemented to address limitations: None				
Part III.A.4	**Flood Control Projects**				
	Report the total number of flood control projects that were constructed by the permittee during the reporting period and the number of those projects that did NOT include stormwater treatment. The permittee shall provide a list of the projects where stormwater treatment was not included with an explanation for each of why it was not. Report on any stormwater retrofit planning activities and the associated implementation of retrofitting projects to reduce stormwater pollutant loads from existing drainage systems that do not have treatment BMPs.				
	Flood control projects completed during the reporting period	**0**			
	Stormwater retrofit projects planned/under construction	3	CIP Database	Engineering	
	Stormwater retrofit projects completed	2	CIP Database	Engineering	
	If there were projects that did not include stormwater treatment, provide as an attachment a list of the projects and an explanation for each of why it did not.	☐			
Part III.A.4 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Comprehensive Program				
	Limitations: Coastal Florida variations				
	SWMP revisions implemented to address limitations: Studying flood prone areas to address issues				

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE					
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Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**	**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
Part III.A.5	**Municipal Waste Treatment, Storage, and Disposal Facilities Not Covered by an NPDES Stormwater Permit**				
	Report the applicable facilities and the number of the inspections conducted for each facility.				
	Name of Facility	**Number of Inspections**			
	#1 Roll Off (Transfer Station)	3	Daily Log for Wellfield Operating Permit	Fleet Supervisor	
Part III.A.5 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Solid Program with Proactive Inspections				
	Limitations: No weakness identified				
	SWMP revisions implemented to address limitations: None				
Part III.A.6	**Pesticides, Herbicides, and Fertilizer Application**				
	Report the number of permittee personnel applicators and contracted commercial applicators of pesticides and herbicides who are FDACS certified / licensed. Report the number of permittee personnel who have been trained through the Green Industry BMP Program and the number of contracted commercial applicators of fertilizer who are FDACS certified / licensed.				
	PERSONNEL: FDACS public applicators of pesticides/herbicides	1	Certification	IFAS	
	CONTRACTORS: FDACS commercial applicators of pesticides/ herbicides	1	Certification	IFAS	
	PERSONNEL: Green Industry BMP Program training completed	1	Certification	IFAS	
	CONTRACTORS: FDACS certified / licensed applicators of fertilizer	1	Certification	IFAS	
	Provide a copy of the adopted ordinance with the Year 2 Annual Report. If this provision is not applicable because the permittee is not within the watershed of a nutrient-impaired water body, indicate that in Column F.				
	Year 2 ONLY: Attach copy of adopted Florida-friendly ordinance	☒			Pending
	Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage citizens to reduce their use of pesticides, herbicides and fertilizers including the type and number of activities conducted, the type and number of materials distributed, and the number of Web site visits (if applicable).				
	Public Education and Outreach Program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			
	Brochures/Flyers/Fact sheets distributed	0	0	0	0
	Neighborhood presentations: Number conducted	1	Sharon Club	Sustainability office	
	Neighborhood presentations: Number of participants	80	Sharon Club	Sustainability	

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				office	
	Newspapers & newsletters: Number of articles/notices published	1	Newsletter	Sustainability office	
	Newsletters: Number of newsletters distributed	500	Distribution List	Sustainability office	
	Seminars/Workshops: Number conducted	5	Tree planting & Golf Course tour	Community Greening LLC	
	Seminars/Workshops: Number of participants	600	Sign-In Sheet	Sustainability office	
	Special events: Number conducted	1	4/13-15/18	Utility Dept	Delray Affair
	Special events: Number of participants	250	Sign-In Sheet	Sustainability office	
Part III.A.6 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Comprehensive training for staff and proactive program				
	Limitations: No weakness identified				
	SWMP revisions implemented to address limitations: Codes and Ordinances are planned for review and revision consideration				
Part III.A.7.a	**Illicit Discharges and Improper Disposal — Inspections, Ordinances, and Enforcement Measures**				
	Report amendments in Year 4.				
	Year 4 ONLY: Attach a report on amendments to applicable legal authority	☐			
Part III.A.7.c	**Illicit Discharges and Improper Disposal — Investigation of Suspected Illicit Discharges and/or Improper Disposal**				
	Report on the proactive inspection program, including the number of inspections conducted by the permittee, the number of illicit activities found, and the number and type of enforcement actions taken.				
	Proactive inspections for suspected illicit discharges	655	S:1 Mon Report	IPP prog	
	Illicit discharges found during a proactive inspection	28	S:1 Mon Report	IPP prog	Letter sent
	Report on the reactive investigation program as it relates to responding to reports of suspected illicit discharges, including the number of reports received, the number of investigations conducted, the number of illicit activities found, and the number and type of enforcement actions taken.				
	Reports of suspected illicit discharges received	29	U: word	IPP prog	Letter sent
	Reactive investigations of reports of suspected illicit discharges etc.	29	U: word	IPP prog	Letter sent
	Illicit discharges etc. found during reactive investigation	29	U: word	IPP prog	Letter sent
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.				
	Personnel trained	1	Sign-In Sheet	NPDES Steering Committee	
Part III.A.7.d	**Illicit Discharges and Improper Disposal — Spill Prevention and Response**				
	Report on the spill prevention and response activities, including the number of spills addressed.				
	Hazardous and non-hazardous material spills responded to	1	Email	Maint IPP	6-7-18

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				program	
	Report the type of training activities, and the number of permittee personnel and contractors trained (both in-house and outside training) within the reporting year.				
	Personnel trained	1	Refresher 12	NPDES Steering committee	
	Contractors trained	23	Attendance Log	Engineering pre-con meetings	
Part III.A.7.e	**Illicit Discharges and Improper Disposal — Public Reporting**				
	Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the public reporting of suspected illicit discharges and improper disposal of materials, including the type and number of activities conducted, the type and number of materials distributed, and the number of Web site visits (if applicable).				
	Public Education and Outreach Program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			
	Newspapers & newsletters: Number of articles/notices published	1	Year in review	Sustainability office	
	Newsletters: Number of newsletters distributed	500	Distribution List	Sustainability office	
	Radio or television Public Service Announcements (PSAs)	1	PSA Video with kids	Center for special education	Straw ban awareness
	School presentations: Number conducted	1	4-22-18	Sustainability office	Plastic ocean movie
	School presentations: Number of participants	60	ISO Records	Sustainability office	
	Seminars/Workshops: Number conducted	1	ISO Records	Sustainability office	
	Special events: Number conducted	2	Strawless social Plastic not fantastic	Sustainability office	Anti-straw efforts
	Special events: Number of participants	130	pictures	Sustainability office	
Part III.A.7.f	**Illicit Discharges and Improper Disposal — Oils, Toxics, and Household Hazardous Waste Control**				
	Report on the public education and outreach activities that are performed or sponsored by the permittee within the permittee's jurisdiction to encourage the proper use and disposal of oils, toxics, and household hazardous waste, including the type and number of activities conducted, the type and number of materials distributed, the amount of waste collected / recycled / properly disposed, and the number of Web site visits (if applicable).				
	Public Education and Outreach Program	The public outreach and education plan is carried out as a joint effort by the Palm Beach County Co-permittees. Please see the Palm Beach County Joint Annual Report for the public education and outreach information.			
	Brochures/Flyers/Fact sheets distributed	100	Reusable bags with message		

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	Public displays (e.g., kiosks, storyboards, posters, etc.)	1	Earthday pics	Sustainability Office	Recycling swag
	Special events: Number conducted	1	Field Trip Pics	SWA	
	Special events: Number of participants	24	Sign-In Sheet	SWA	
Part III.A.7.g	**Illicit Discharges and Improper Disposal — Limitation of Sanitary Sewer Seepage**				
	Report on the type and number of activities undertaken to reduce or eliminate SSOs and inflow/ infiltration, the number of SSOs or inflow / infiltration incidents found and the number resolved, and the name of the owner of the sanitary sewer system within the permittee's jurisdiction. Report only the SSOs and inflow / infiltration incidents into the MS4.				
	Owner of the sanitary sewer system	City of Delray Beach			
	Activity to reduce/eliminate SSOs and I&I: (description)	8,992 LF sewer lined	Monthly Report	Public Works	
	SSO incidents discovered	5	IPP prog	IPP prog	Notify dep of health
	SSO incidents resolved	5	IPP prog	IPP prog	Notify dep of health
Part III.A.7 Summary	For activities required by Part III.A.7: Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Comprehensive proactive program with dedicated staff				
	Limitations: No weakness identified				
	SWMP Revisions implemented to address limitations: None				
Part III.A.8.a	**Industrial and High-Risk Runoff — Identification of Priorities and Procedures for Inspections**				
	Report on the high-risk facilities inventory, including the type and total number of high risk facilities and the number of facilities newly added each year. Report on the high-risk facilities inspection program, including the number of inspections conducted and the number and type of enforcement actions taken.				

Type of Facility	Number of Facilities	Number of Inspections	Enforcement Actions	5	5	0
Operating municipal landfills	**0**					
Hazardous waste treatment, storage, disposal and recovery (HWTSDR) facilities	1	1	0	IPP prog	Public Works	SWA
EPCRA Title III, Section 313 facilities (TRI)	0	0	0			
Facilities determined as high risk by the permittee	5	5	0	IPP prog	Public Works	DEP permitted facilities

Part III.A.8.b	**Industrial and High-Risk Runoff — Monitoring for High Risk Industries**				
	Report the number of high risk facilities sampled.				

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	High risk facilities sampled	0			
Part III.A.8 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.				
	Strengths: Small number of facilities to monitor				
	Limitations: No weakness identified				
	SWMP revisions implemented to address limitations: None				
Part III.A.9.a	**Construction Site Runoff — Site Planning and Non-Structural and Structural Best Management Practices**				
	Report the number of permittee and private pre-construction site plans reviewed for stormwater, erosion, and sedimentation controls, and the number approved.				
	PERMITTEE SITES: Construction site plans reviewed	18	Monthly Report	PW/Engineering	
	PERMITTEE SITES: Construction site plans approved	18	Monthly Report	PW/Engineering	
	PRIVATE SITES: Construction site plans reviewed	89	Monthly Report	Bldg. Dept.	
	PRIVATE SITES: Construction site plans approved	89	Monthly Report	Bldg. Dept.	
	Report the number of development permit applicants notified of the ERP and CGP, and the number of applicants who confirmed ERP and CGP coverage.				
	Notified of ERP stormwater permit requirements	179	TAC Reviews	Bldg. Dept/ Engineering	
	Confirmed ERP coverage	179	TAC Reviews	Bldg. Dept/ Engineering	
	Notified of CGP stormwater permit requirements	28	NOI-CGP	Bldg. Dept.	
	Confirmed CGP coverage	28	NOI-CGP	Bldg. Dept.	
Part III.A.9.b	**Construction Site Runoff — Inspection and Enforcement**				
	Report on the inspection program for privately-operated and permittee-operated construction sites, including the number of active construction sites during the reporting year, the number of inspections of active construction sites, the percentage of active construction sites inspected, and the number and type of enforcement actions / referrals taken.				
	PERMITTEE SITES: Active construction sites	14	Monthly Report	PW/Engineering	
	PERMITTEE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	483	Monthly Report	PW/Engineering	
	PERMITTEE SITES: Percentage of active construction sites inspected	122	Monthly Report	PW/Engineering	
	PRIVATE SITES: Active construction sites	87	Monthly Report	PW/Engineering	
	PRIVATE SITES: Pre-, During, and Post inspections of active construction sites for E&S and waste control BMPs	4350	Monthly Report	PW/Engineering	
	PRIVATE SITES: Percentage of active construction sites inspected	122	Monthly Report	PW/Engineering	
	Enforcement Action	101	Inspectors	Engineering & Code Enforcement	
Part III.A.9.c	**Construction Site Runoff — Site Operator Training**				
	Report the type of training activities, the number of inspectors, site plan reviewers and site operators trained (both in-house and outside training).				
	DEP	**Annual**			

SECTION VII. STORMWATER MANAGEMENT PROGRAM (SWMP) SUMMARY TABLE						
A.	**B.**		**C.**	**D.**	**E.**	**F.**
Permit Citation/ SWMP Element	**Permit Requirement/Quantifiable SWMP Activity**		**Number of Activities Performed**	**Documentation / Record**	**Entity Performing the Activity**	**Comments**
		Certification	**Training**			
	Permittee construction site inspectors	**1**	3	Certificates	Public Works and Engineering	
	Permittee construction site plan reviewers		5	Refresher	Public Works and Engineering	
	Permittee construction site operators		0	Refresher	Public Works and Engineering	
Part III.A.9 Summary	Provide an evaluation of the Stormwater Management Program according to Part VI.B.2 of the permit.					
	Strengths: Comprehensive proactive program with dedicated review and inspection staff					
	Limitations: No weakness identified					
	SWMP revisions implemented to address limitations: None					

SECTION VIII. CHANGES TO THE STORMWATER MANAGEMENT PROGRAM (SWMP) ACTIVITIES (Not Applicable in Year 4)		
A.	**Permit Citation/ SWMP Element**	**Proposed Changes to the Stormwater Management Program Activities Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change) — REQUIRES DEP APPROVAL PRIOR TO CHANGE IF PROPOSING TO REPLACE OR DELETE AN ACTIVITY.**
	N/A	
B.	**Permit Citation/ SWMP Element**	**Changes to the Stormwater Management Program Activities NOT Established as Specific Requirements Under Part III.A of the Permit (Including the Rationale for the Change)**
	N/A	

SECTION IX. TMDL Status Report

A. YEAR 1 Provide a table summarizing the status of the TMDL process. Include a list of prioritized TMDLs and their monitoring and implementation schedule; and include the Identification number of the outfall prioritized for TMDL monitoring.

WBID Number	Segment/ Waterbody/ Basin	Pollutant of Concern	TMDL DEP / EPA	Percent Reduction (WLA)	Priority Rank	Priority Outfall	Monitoring Summary Due Date	Supplemental SWMP Due Date
WBID 3262A	Lake Ida	TN, TP	☐ / ☒	20%, 45%	1	None	(*Year 3 AR*)	(*Year 4 AR*)
			☐ / ☐					
			☐ / ☐					

B. YEAR 3 and annually thereafter, provide a summary of the estimated load reductions that have occurred for the pollutant(s) of concern being discharged from the MS4 to the TMDL water body during the reporting period and cumulatively since the date the Supplemental SWMP was implemented.

Year 3: Submit a Monitoring data summary or BPCP (if applicable).

Year 4: Submit a Supplemental SWMP (if applicable).

WBID Number	Pollutant of Concern	Monitoring Summary / BPCP Submitted	Supplemental SWMP Submitted	Projected load reductions OR Actual load reductions to date
WBID 3262A	TN, TP		(*Year 4 AR*)	

C. Provide a brief statement as to the status of TMDL implementation according to Part VIII.B of the permit (e.g. status of monitoring to validate WLA):The City of Delray Beach intends to reduce nutrient loads by implementing a fertilizer Ordinance. Refer to this year's SWMP Assessment Program Annual Report (in Appendix B)

City of Delray Beach

NPDES MS4 Discharge Permit

SWMP Assessment Program Annual Report – 2017/2018 (Permit Cycle 4, Year 2)

Prepared: March 2019

Table of Contents

Status of Water Quality Monitoring Plan

As noted in the approved Assessment Plan, the water quality data being used for the assessment is sourced from the Palm Beach County ambient water quality program. This program has been in place for many years, with implementation on-going.

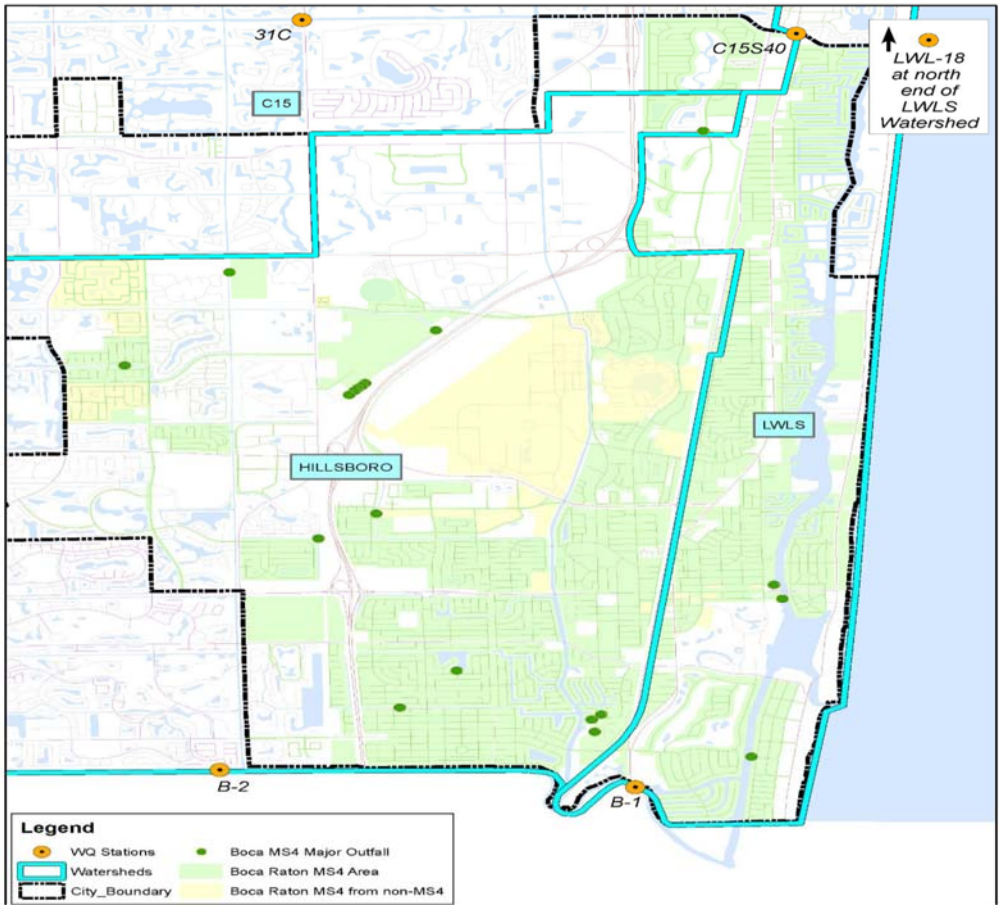
Discussion of Assessment Program Results

Summary of WQ monitoring data

The City of Delray Beach's MS4, and its associated contributing area, lie within two watersheds: C-15 and the Lake Worth Lagoon South (LWLS). The MS4 has twelve major MS4 outfalls to C-15 and eight into the LWLS.

Lake Ida is a contributing sub-watershed in the C-15. The United States Environmental Protection Agency (EPA) has established a Total Maximum Daily Load (TMDL) Allocation for Total Nitrogen and Total Phosphorous for Lake Ida. Delray Beach and Boynton Beach prioritized this TMDL for further evaluation. Water quality monitoring is a joint effort between the two cities. The Lake Ida Assessment Report is included in Appendix B.

The water quality monitoring stations are the 31C and C15S40/31B (C-15 Canal) and the LWL-18 (Intracoastal Waterway).



C-15 Canal

Station 31B in the C-15 Canal is the water quality station closest to the discharge from the City's MS4. The location of Station 31C is upstream of the City's MS4 discharge. The water quality results for the period October 1, 2010 through September 30, 2018, for Sites 31B and 31C, were graphed and are provided in Appendix A. In summary, the water quality trends for Site 31B are as follows:

Parameter	Trend	Comment
Chlorophyll-a	Downward	Site 31B has trended below exceedance level. The Annual Geometric Mean has been below 20 µg/L since 2014.
Conductivity (salinity)	Flat	No exceedance recorded.
Copper, Dissolved	Downward	Measured values below calculated limit.
Hardness	Downward	
Nitrate + Nitrite	Upward	
Nitrogen, Total Kjeldahl	Downward	
Nitrogen, Total	Downward	
Oxygen, Dissolved	Upward	Site 31B has no recorded insufficiency.
pH	Flat, to slightly upward	Trend is nearing upper limit of range.
Phosphorus, Total	Flat, to slightly downward	
Suspended Solids, Total	Downward	
Turbidity	Downward	No exceedance recorded at Site 31B..
Zinc, Dissolved	Flat, to slightly upward	No exceedance recorded at Site 31B.

Lake Worth Lagoon South/Intracoastal Waterway

Site LWL-18 is located in the Intracoastal Waterway (ICWW), south of the discharge from the C-16 Canal in Boynton Beach and represents the southern extents of the ICWW system within Palm Beach County. It is the closest existing ambient water quality station to the City's discharge into the ICWW. The water quality measured at the station may be more reflective of the discharge from the C-16 and C-15 Canals than of the direct discharge from the City. However, it is reflective of the quality of the water into which the City discharges.

The water quality results for the period October 1, 2010 through September 30, 2018, for Site LWL-18 were graphed and are provided in Appendix A. In summary, the water quality trends are as follows:

Parameter	Trend	Comment
Chlorophyll-a	Upward	
Conductivity (salinity)	Flat, to slightly upward	No limit for this parameter in marine waters.
Copper, Dissolved	No current data	Data collection ended in 2012.
Hardness	No data	
Nitrate + Nitrite	Slightly downward	
Nitrogen, Total Kjeldahl	Upward	
Nitrogen, Total	Upward	Annual Geometric Mean has remained below WQ limit.
Oxygen, Dissolved	Downward	Site LWL-18 has no recorded insufficiency.
pH	Upward	Values have exceeded upper limit.
Phosphorus, Total	Upward	
Suspended Solids, Total	Upward	No limit for this parameter in marine waters.
Turbidity	Upward	No exceedance recorded.
Zinc, Dissolved	No current data	Data collection ended in 2012.

Summary of pollutant loading changes

Pollutant loading information will be sourced from the Palm Beach County county-wide pollutant loading effort being conducted during Year 3 of this permit cycle. As that information is not yet available, no summary is provided for this component this year. It will be included in next year's annual report.

One very measurable program, in terms of a loading reduction, is the City's street sweeping program. Over the past 10 years, the City's program has resulted in an average yearly removal of 455 pounds of total nitrogen and 710 pounds of total phosphorus loading to the receiving waters.

Analysis of Data

Changes in WQ from previous reporting year(s)

As the trend graphs indicate, water quality is improving for almost all parameters at station 31B.

Water quality in the Lake Worth Lagoon South appears to be worsening for several parameters, including nutrients.

The current permit programs (SWMP) have been in place since 1997, with only minor changes over the years. At the surface, the 10-year period of record trend graphs do not appear to indicate a clear-cut determination of the benefits of the SWMP. However, from 2010 to 2019, the City experienced an 13.5% increase in population, given that growth, a stable or improving trend in receiving water quality, is suggestive of a positive effective of the SWMP.

Changes in loading estimates from previous year(s)

Reserved. This review/evaluation will be completed when the county-wide pollutant loading estimate is completed and will be included in next year's report.

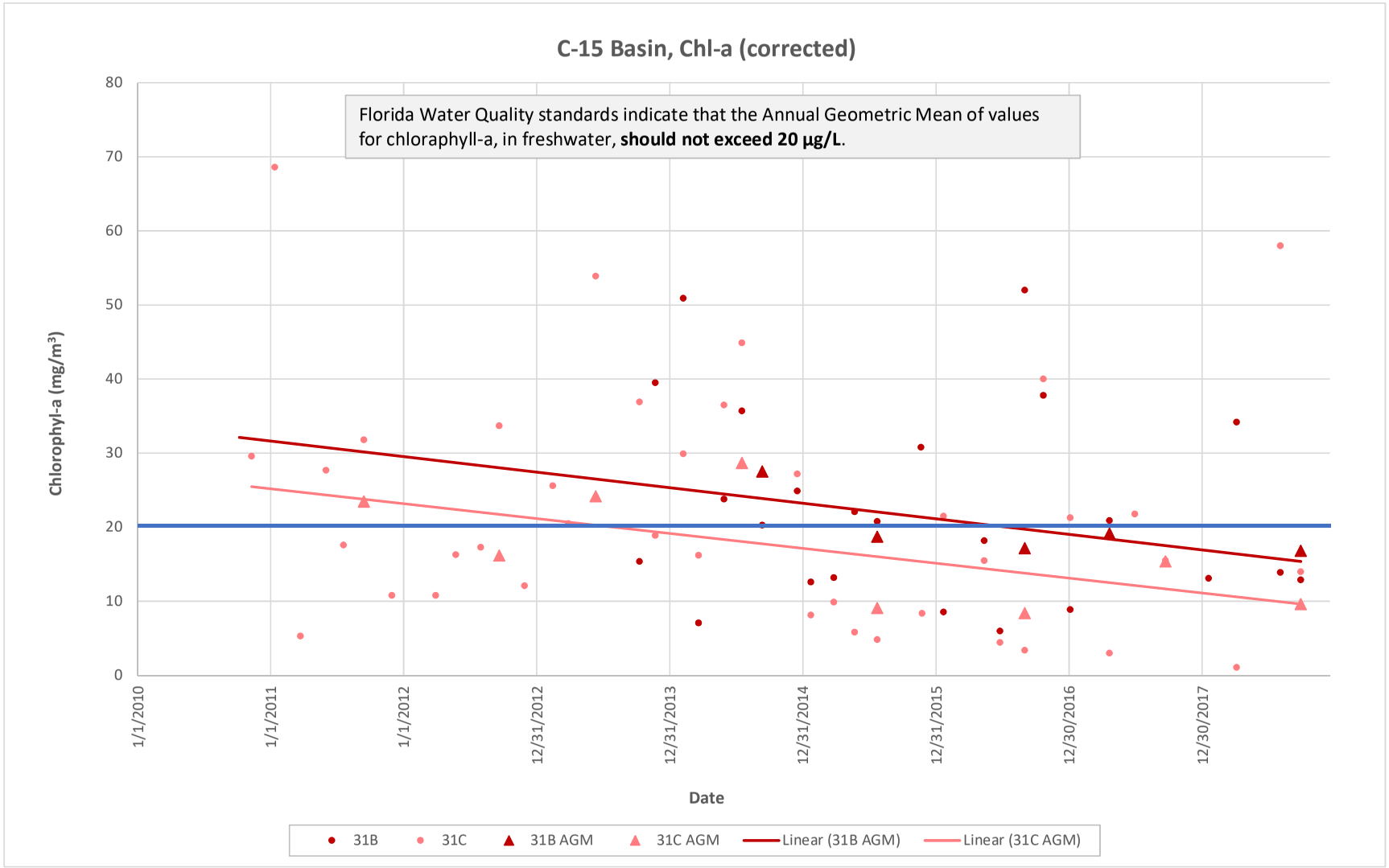
Identification of areas within MS4 that should be targeted for additional programs

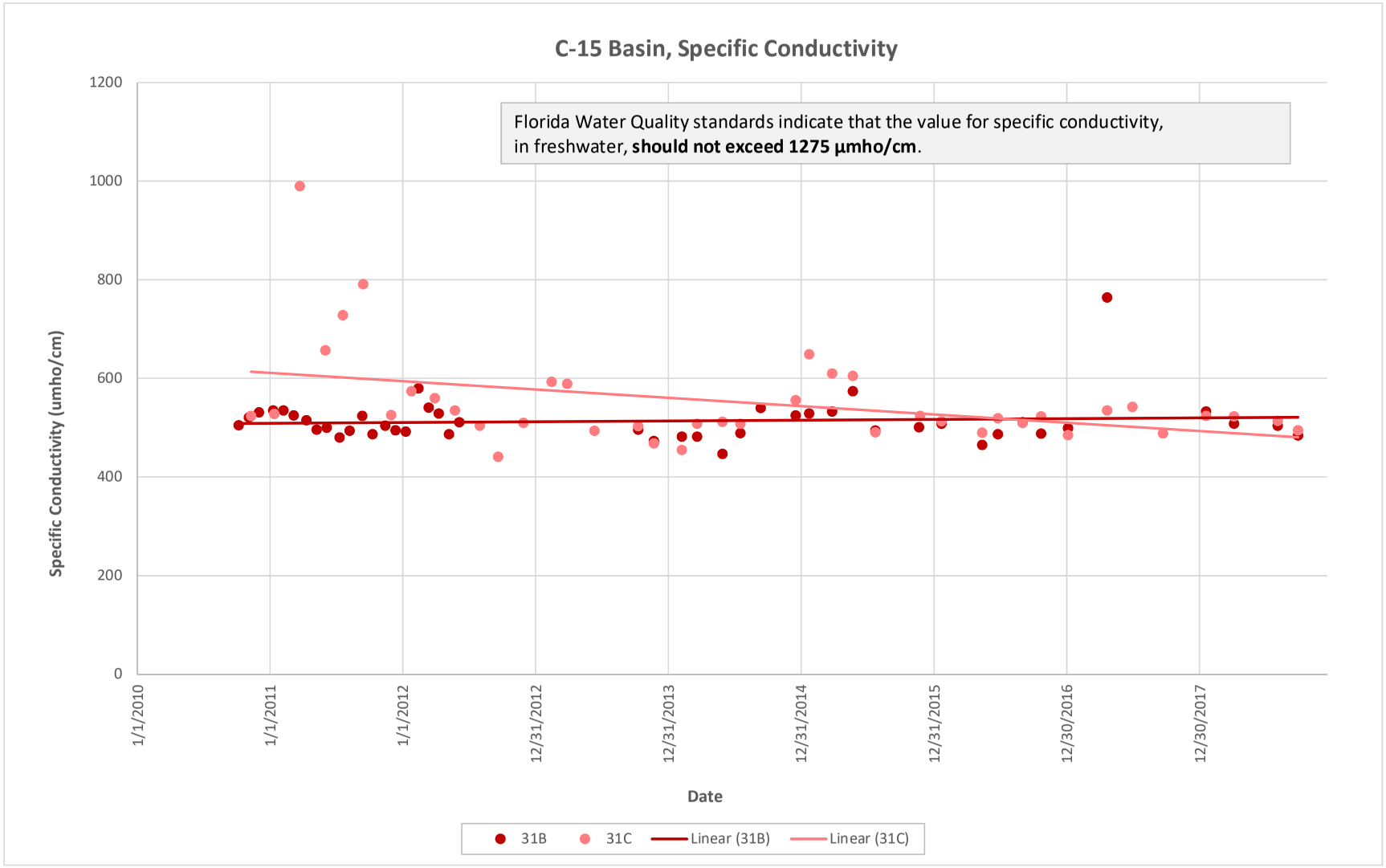
At this time, the only area within the City being targeted for additional programs is the area discharging into Lake Ida. Programs being evaluated are included in Appendix B .

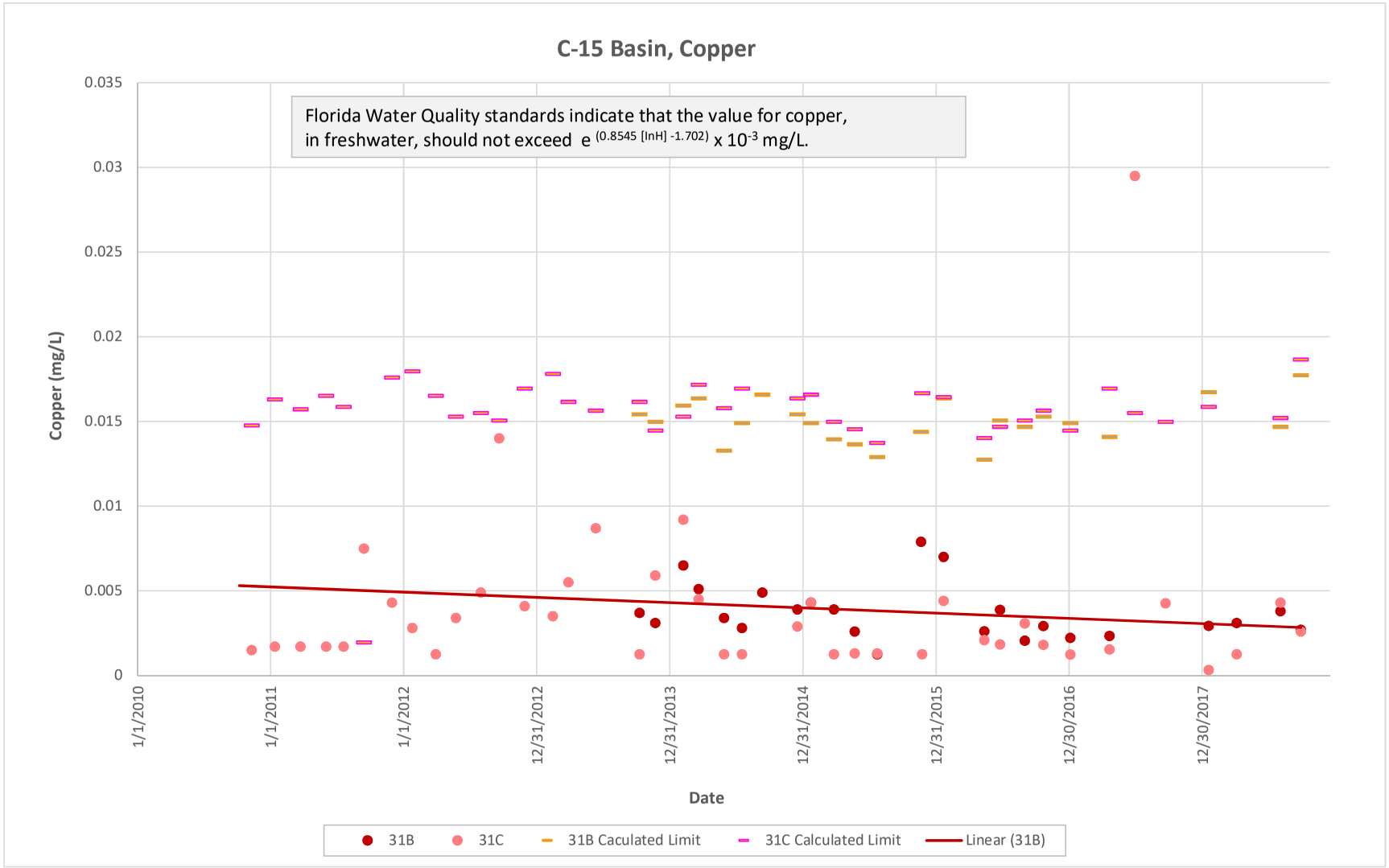
Appendix A

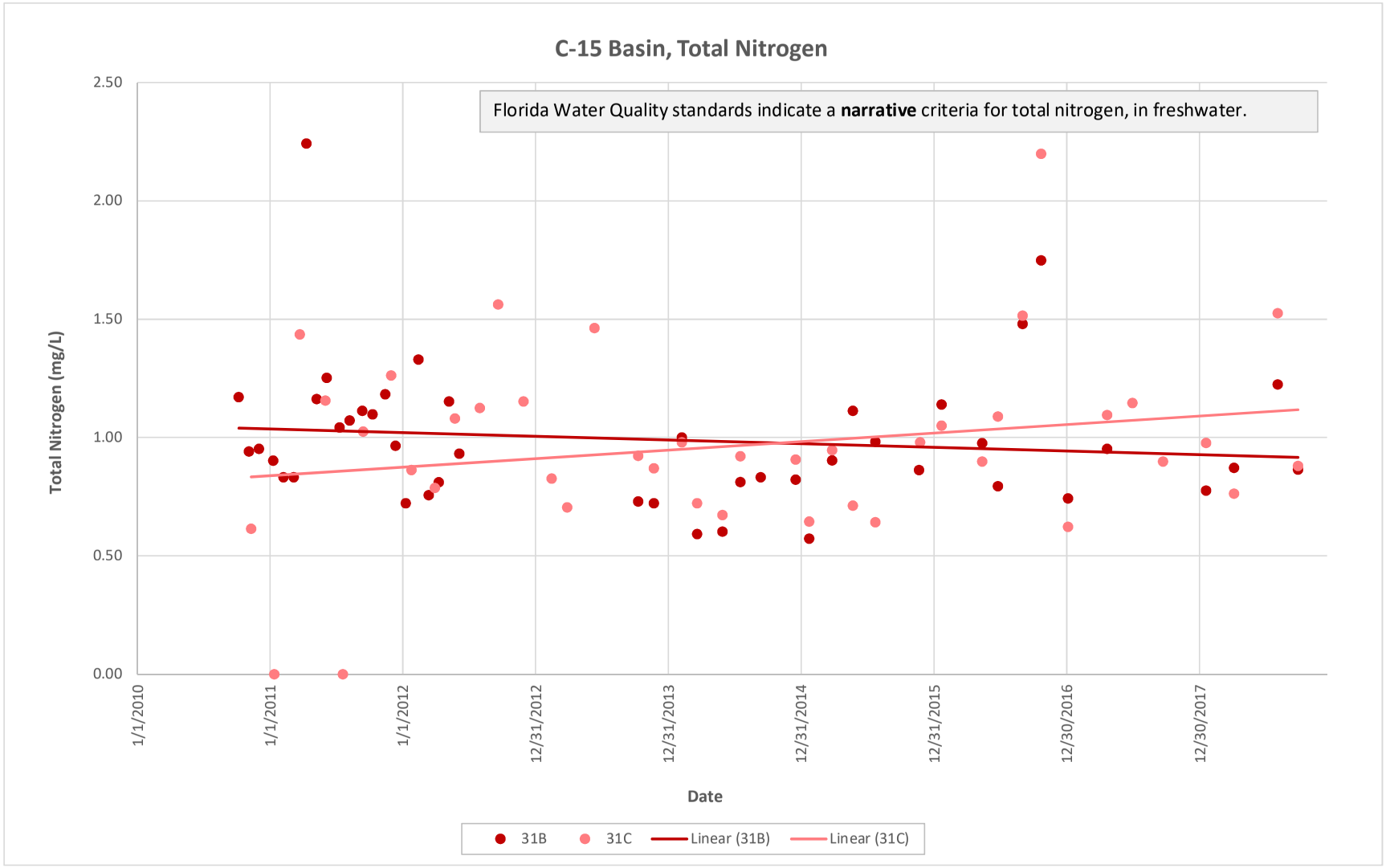
C-15 and Lake Worth Lagoon South

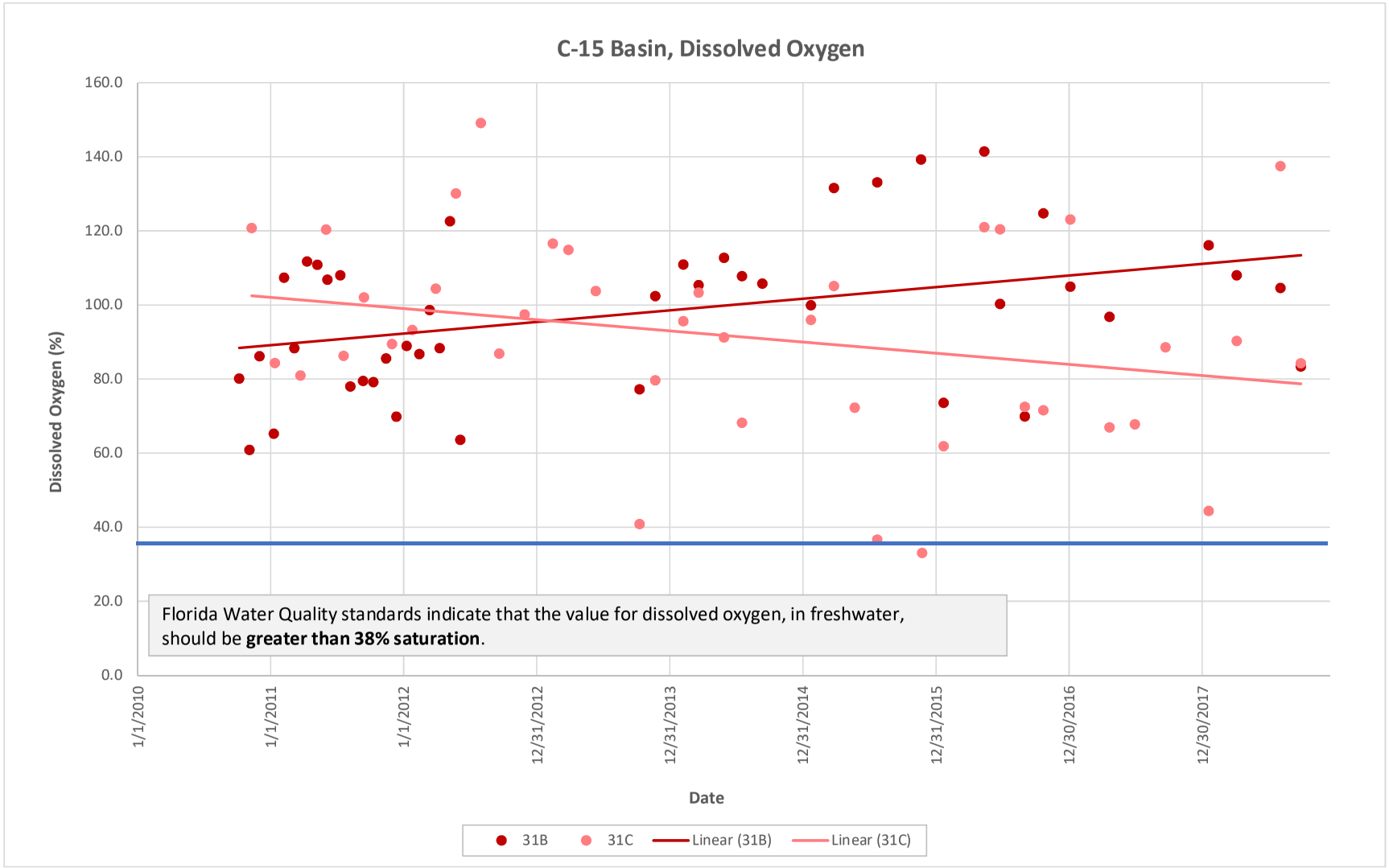
Water Quality Trend Graphs

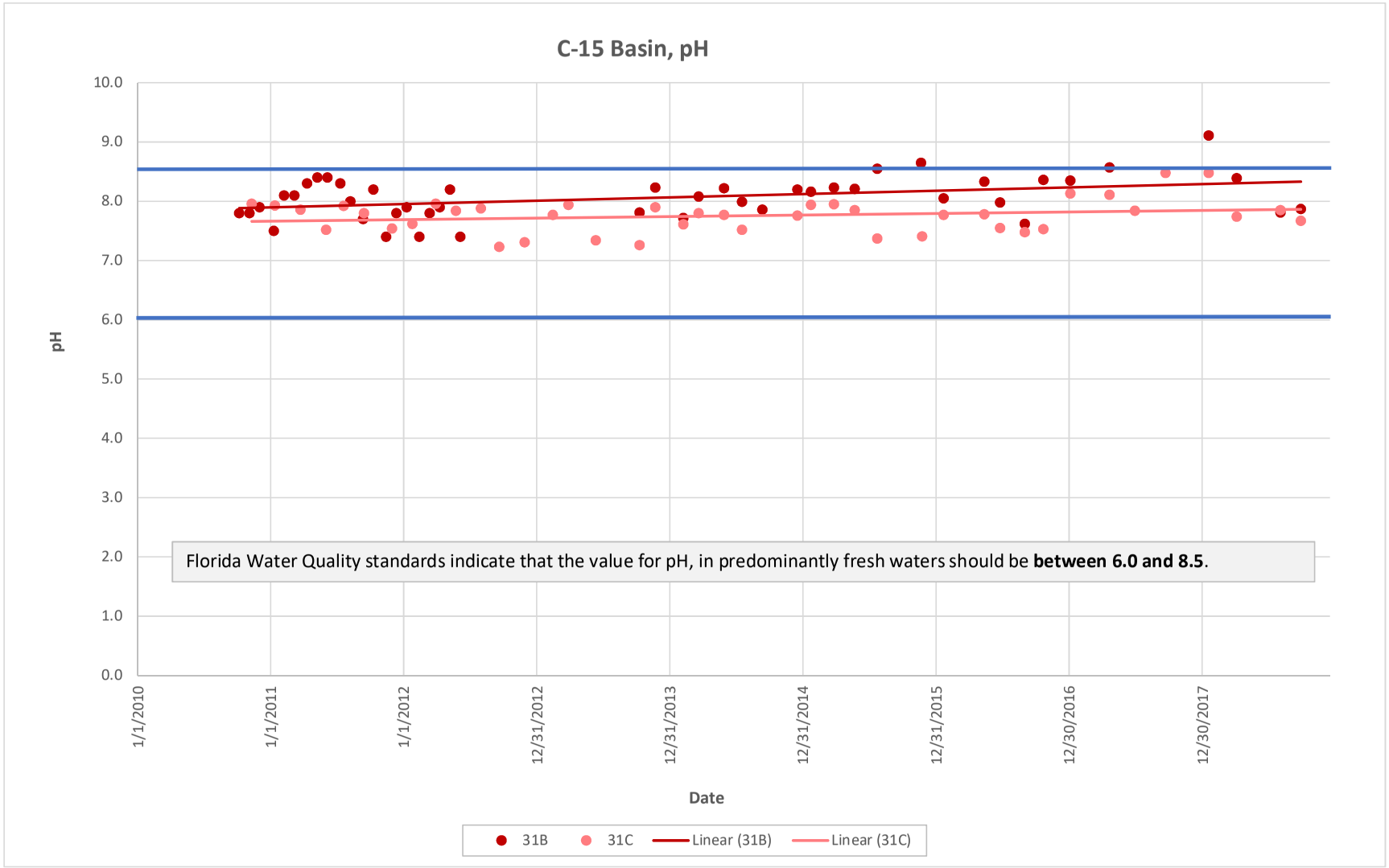

C-15 Basin, Chl-a (corrected)
Florida Water Quality standards indicate that the Annual Geometric Mean of values for chloraphyll-a, in freshwater, should not exceed 20 µg/L.
Chlorophyl-a (mg/m³)
80
70
60
50
40
30
20
10
0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
31B
31C
31B AGM
31C AGM
Linear (31B AGM)
Linear (31C AGM)

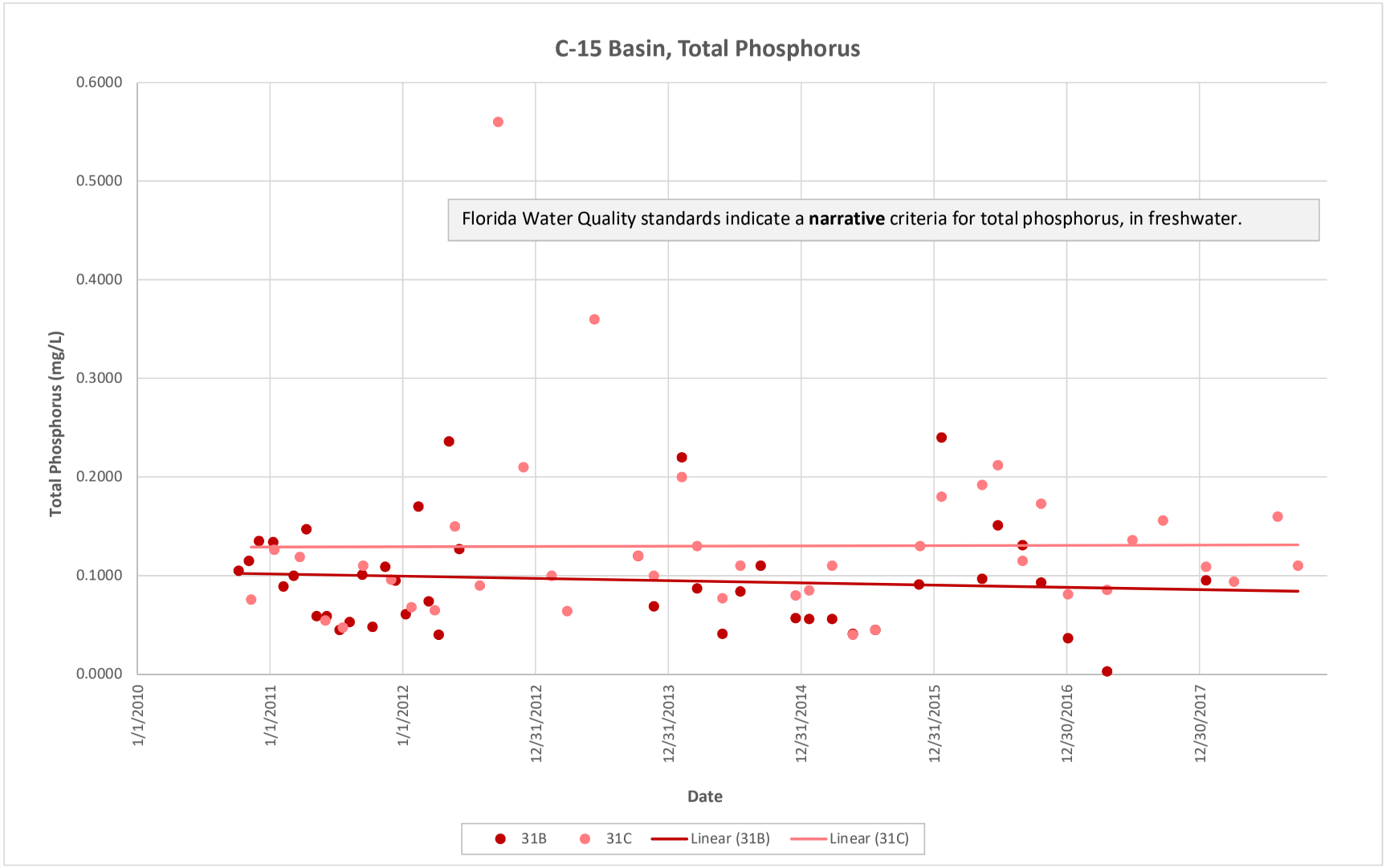

C-15 Basin, Specific Conductivity
Florida Water Quality standards indicate that the value for specific conductivity, in freshwater, **should not exceed 1275 µmho/cm**.
Specific Conductivity (umho/cm)
1200
1000
800
600
400
200
0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
31B
31C
Linear (31B)
Linear (31C)

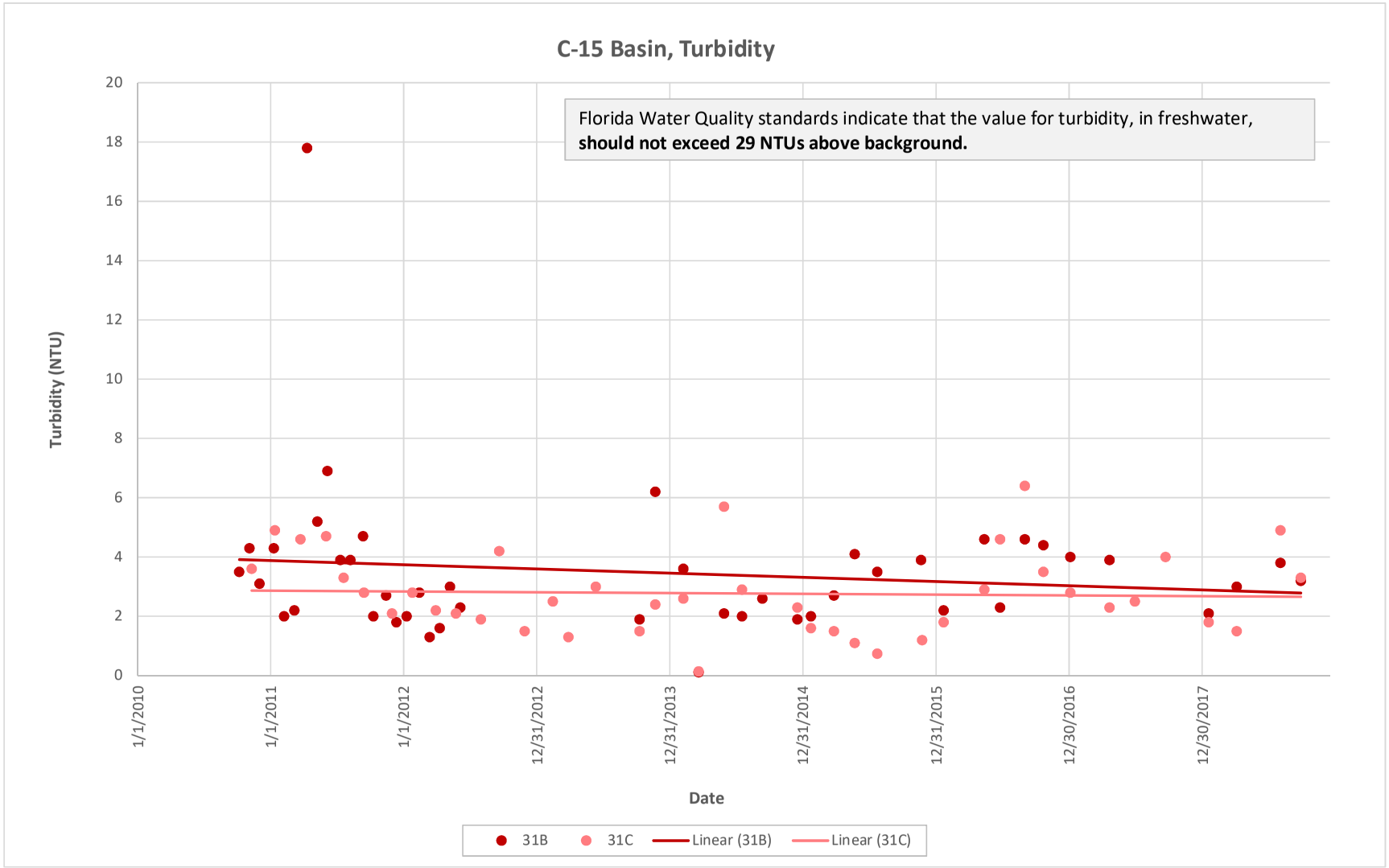

C-15 Basin, Copper
Florida Water Quality standards indicate that the value for copper, in freshwater, should not exceed e (0.8545 [lnH] -1.702) x 10-3 mg/L.
Copper (mg/L)
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
31B
31C
31B Caculated Limit
31C Calculated Limit
Linear (31B)

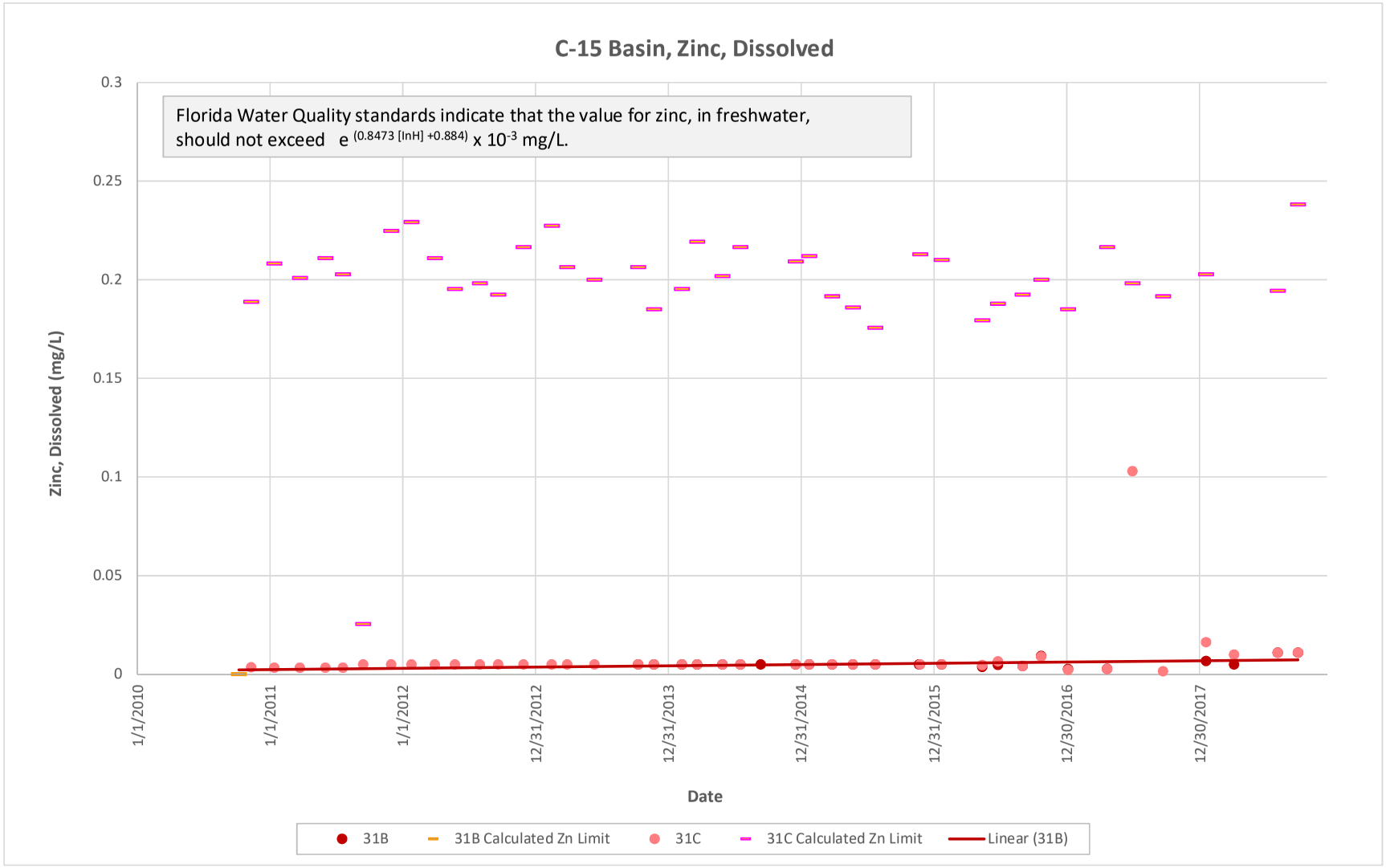

C-15 Basin, Total Nitrogen
Florida Water Quality standards indicate a **narrative** criteria for total nitrogen, in freshwater.
Total Nitrogen (mg/L)
2.50
2.00
1.50
1.00
0.50
0.00
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
31B
31C
Linear (31B)
Linear (31C)

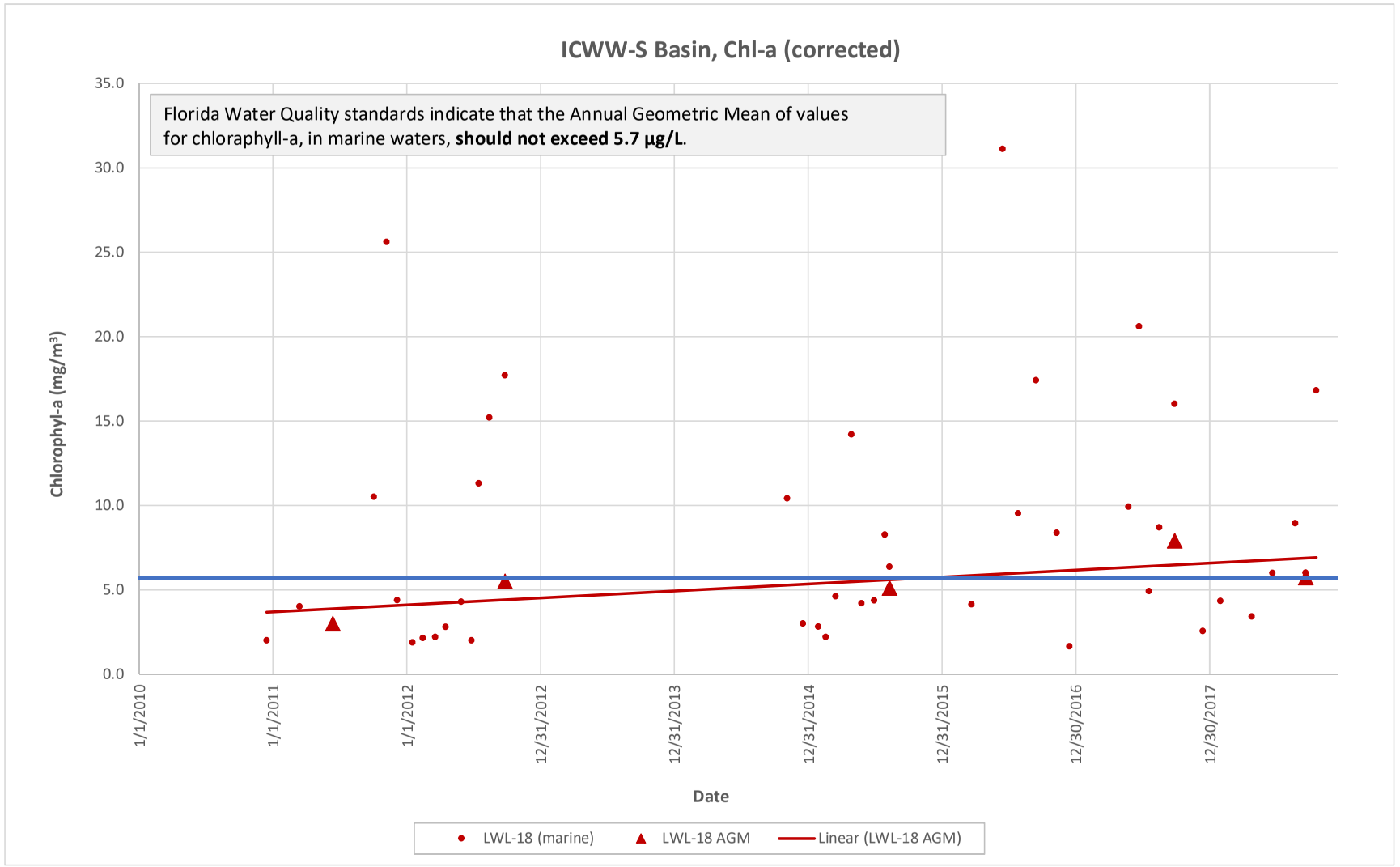

C-15 Basin, Dissolved Oxygen
Dissolved Oxygen (%)
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
Florida Water Quality standards indicate that the value for dissolved oxygen, in freshwater, should be **greater than 38% saturation**.
31B
31C
Linear (31B)
Linear (31C)

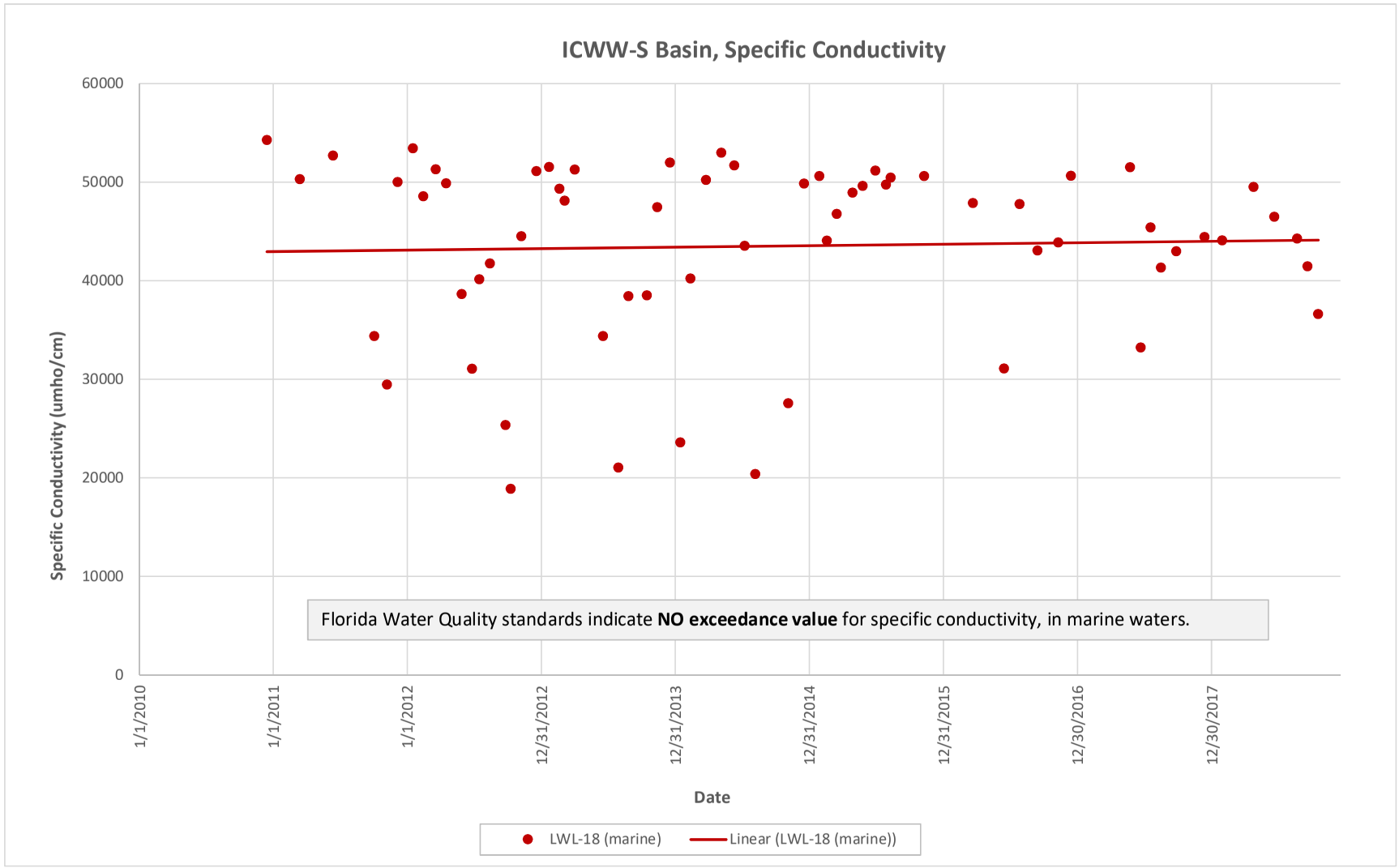

C-15 Basin, pH
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
pH
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
Florida Water Quality standards indicate that the value for pH, in predominantly fresh waters should be **between 6.0 and 8.5**.
31B
31C
Linear (31B)
Linear (31C)

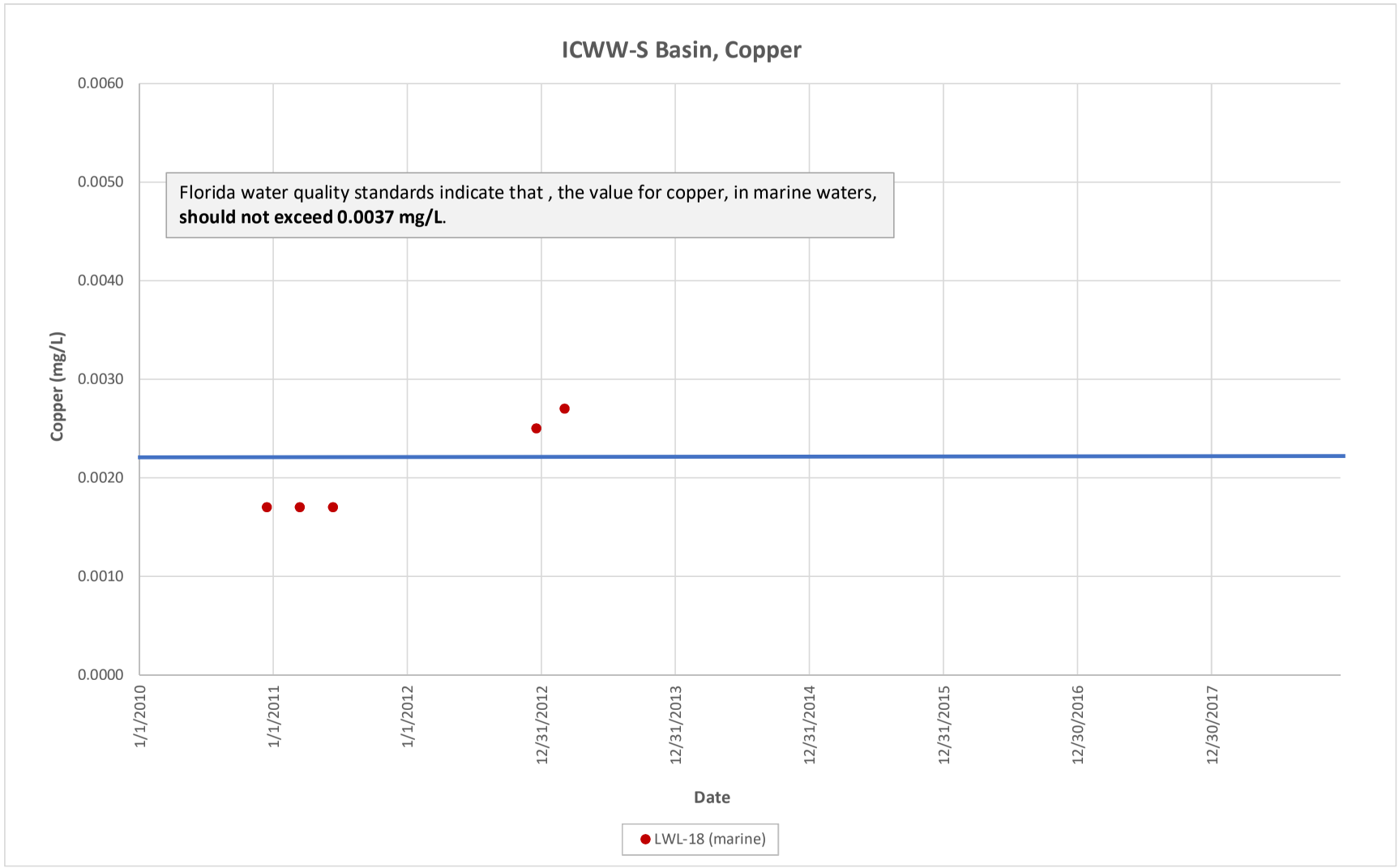

C-15 Basin, Total Phosphorus
Florida Water Quality standards indicate a **narrative** criteria for total phosphorus, in freshwater.
Total Phosphorus (mg/L)
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
31B
31C
Linear (31B)
Linear (31C)

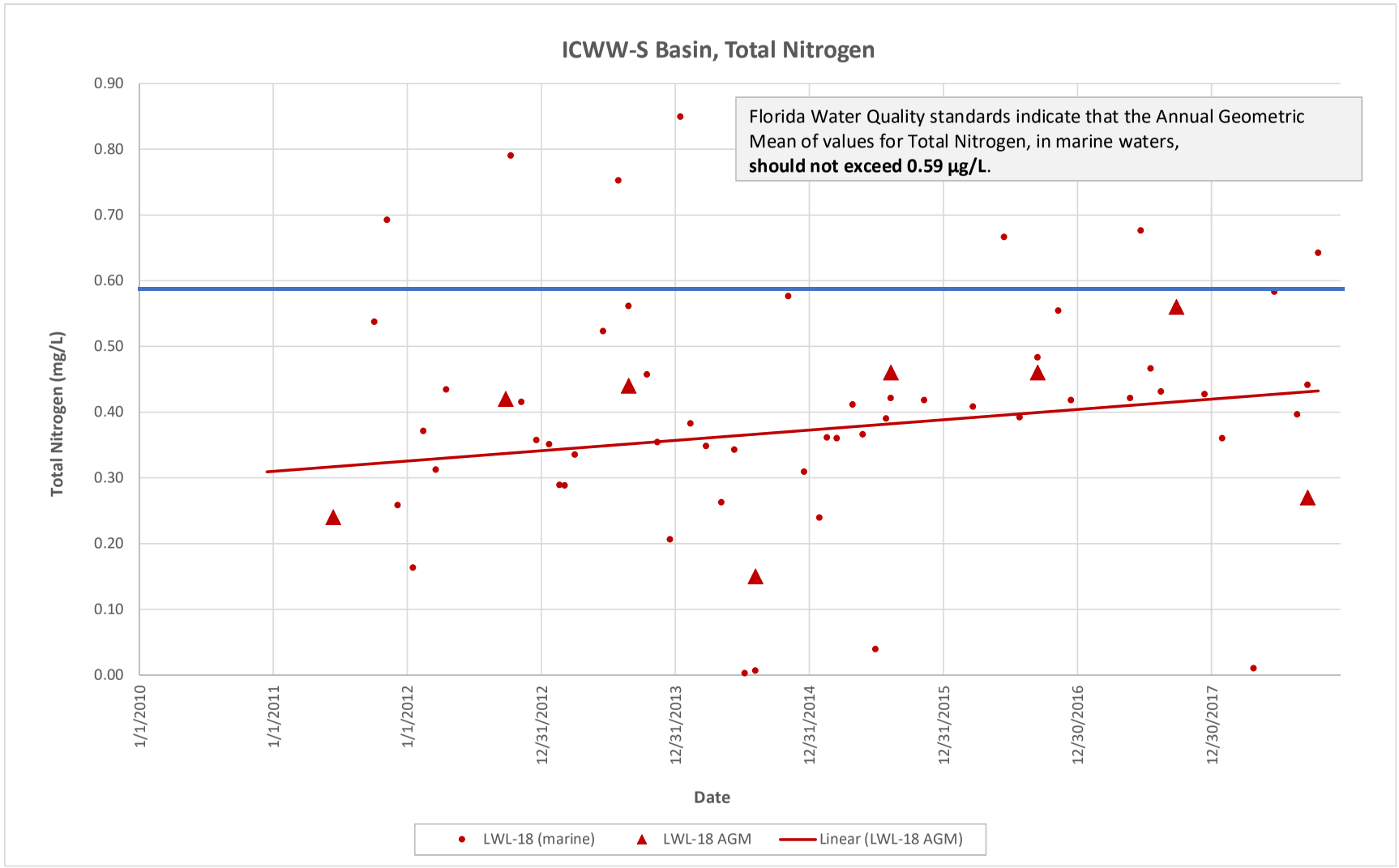

C-15 Basin, Turbidity
Florida Water Quality standards indicate that the value for turbidity, in freshwater, should not exceed 29 NTUs above background.
Turbidity (NTU)
20
18
16
14
12
10
8
6
4
2
0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
31B
31C
Linear (31B)
Linear (31C)

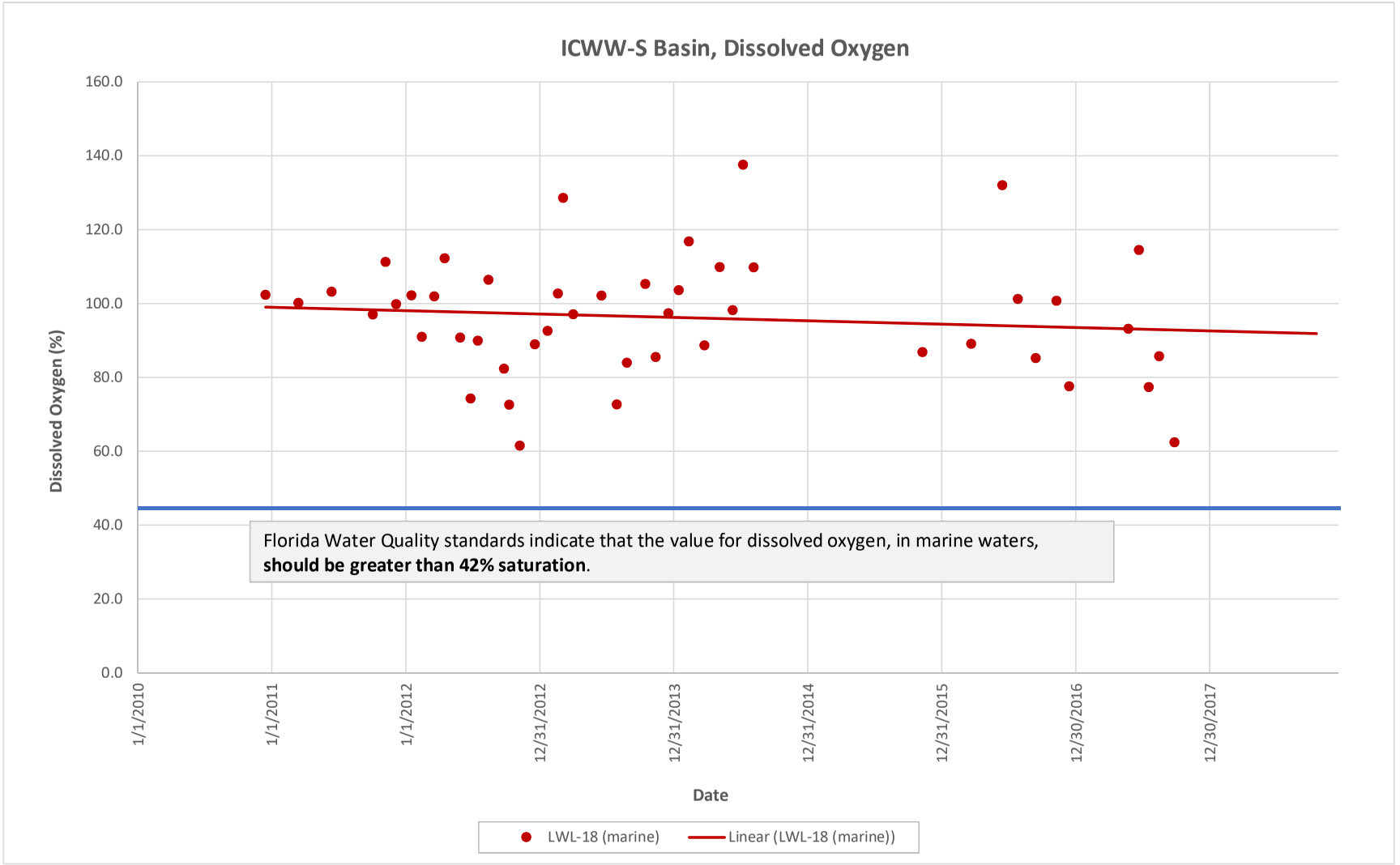

C-15 Basin, Zinc, Dissolved
Florida Water Quality standards indicate that the value for zinc, in freshwater, should not exceed e (0.8473 [lnH] +0.884) x 10-3 mg/L.
Zinc, Dissolved (mg/L)
0.3
0.25
0.2
0.15
0.1
0.05
0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
31B
31B Calculated Zn Limit
31C
31C Calculated Zn Limit
Linear (31B)

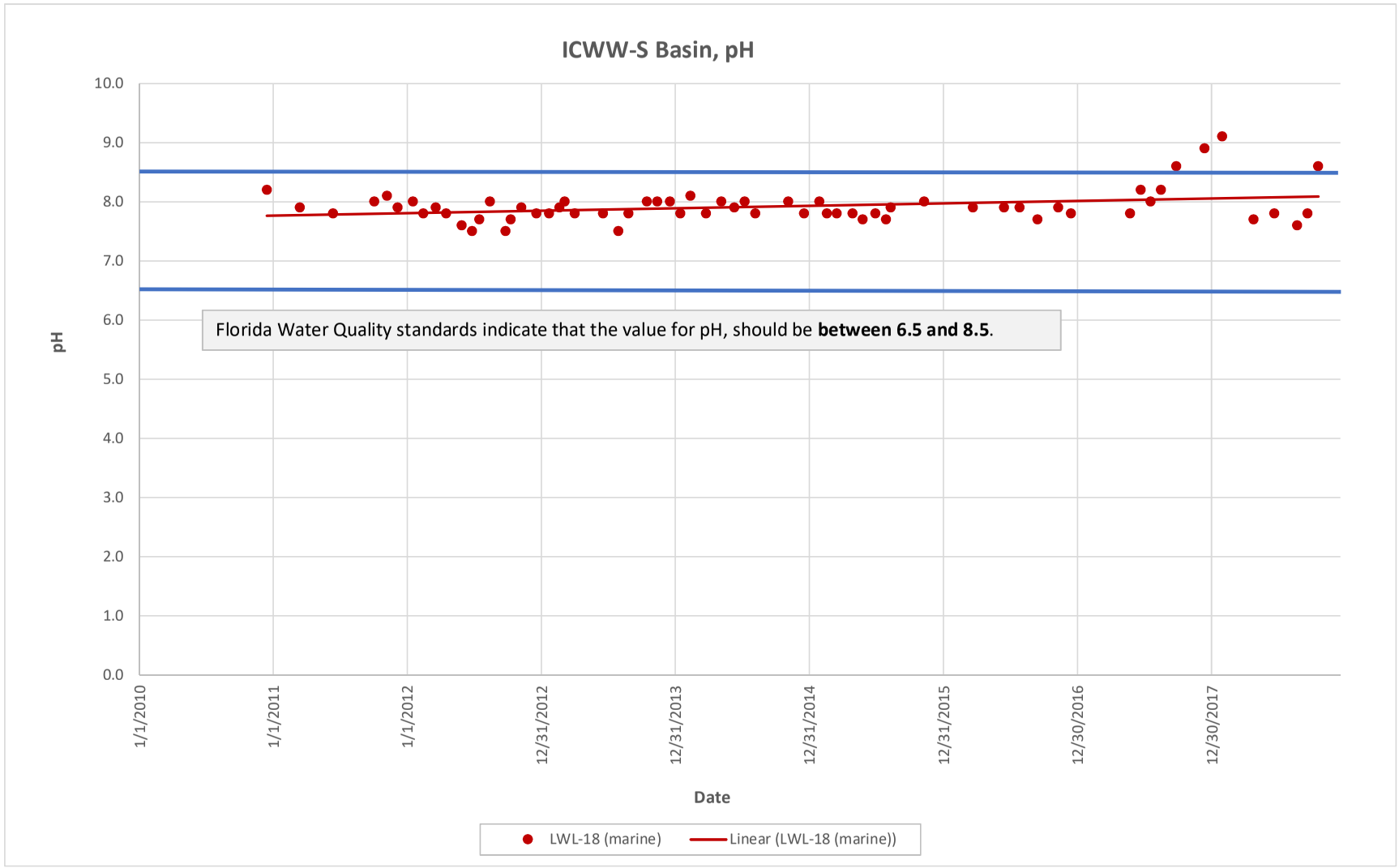

ICWW-S Basin, Chl-a (corrected)
Florida Water Quality standards indicate that the Annual Geometric Mean of values for chloraphyll-a, in marine waters, **should not exceed 5.7 µg/L**.
Chlorophyl-a (mg/m³)
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)
LWL-18 AGM
Linear (LWL-18 AGM)

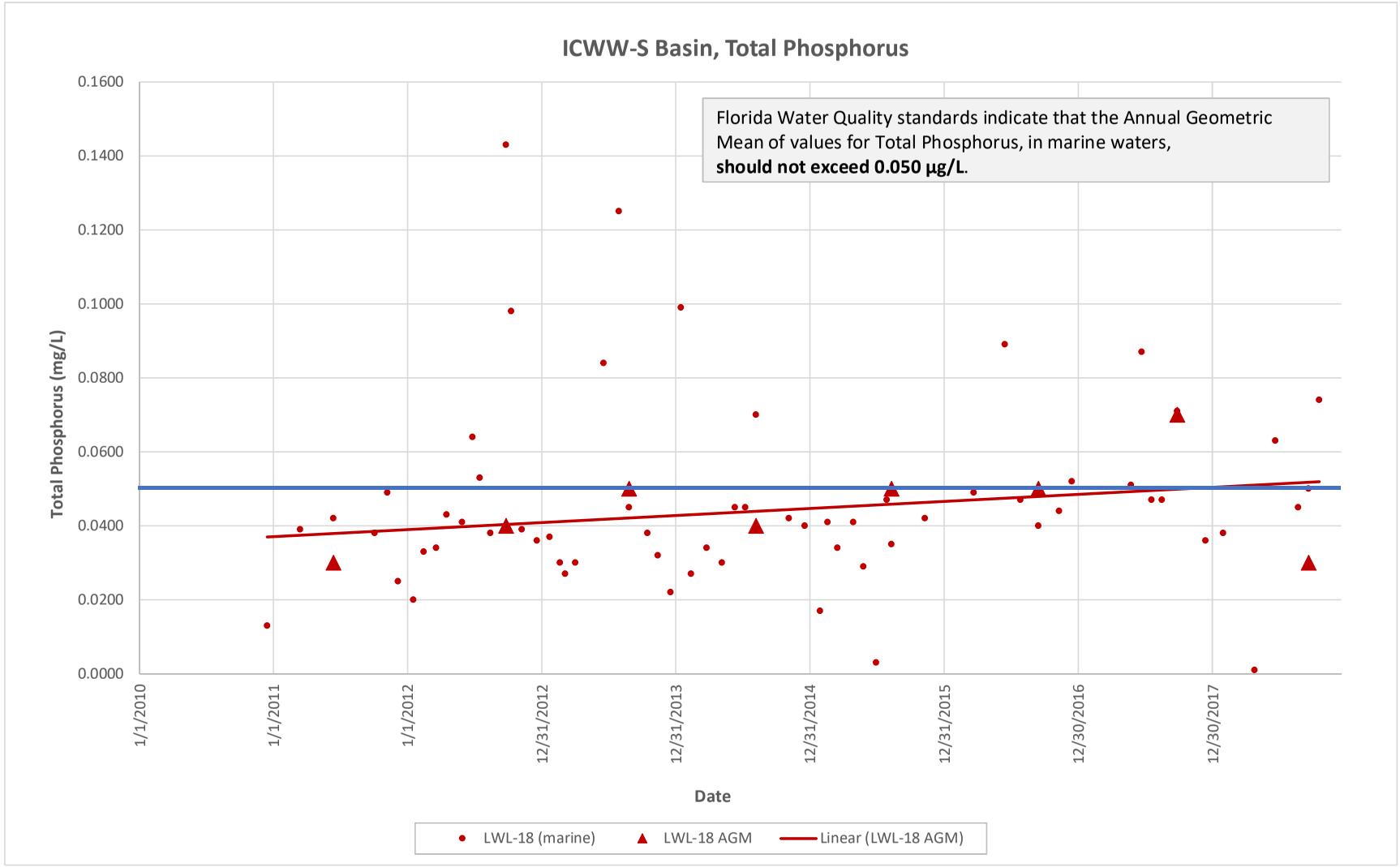

ICWW-S Basin, Specific Conductivity
Specific Conductivity (umho/cm)
60000
50000
40000
30000
20000
10000
0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
Florida Water Quality standards indicate **NO exceedance value** for specific conductivity, in marine waters.
LWL-18 (marine)
Linear (LWL-18 (marine))

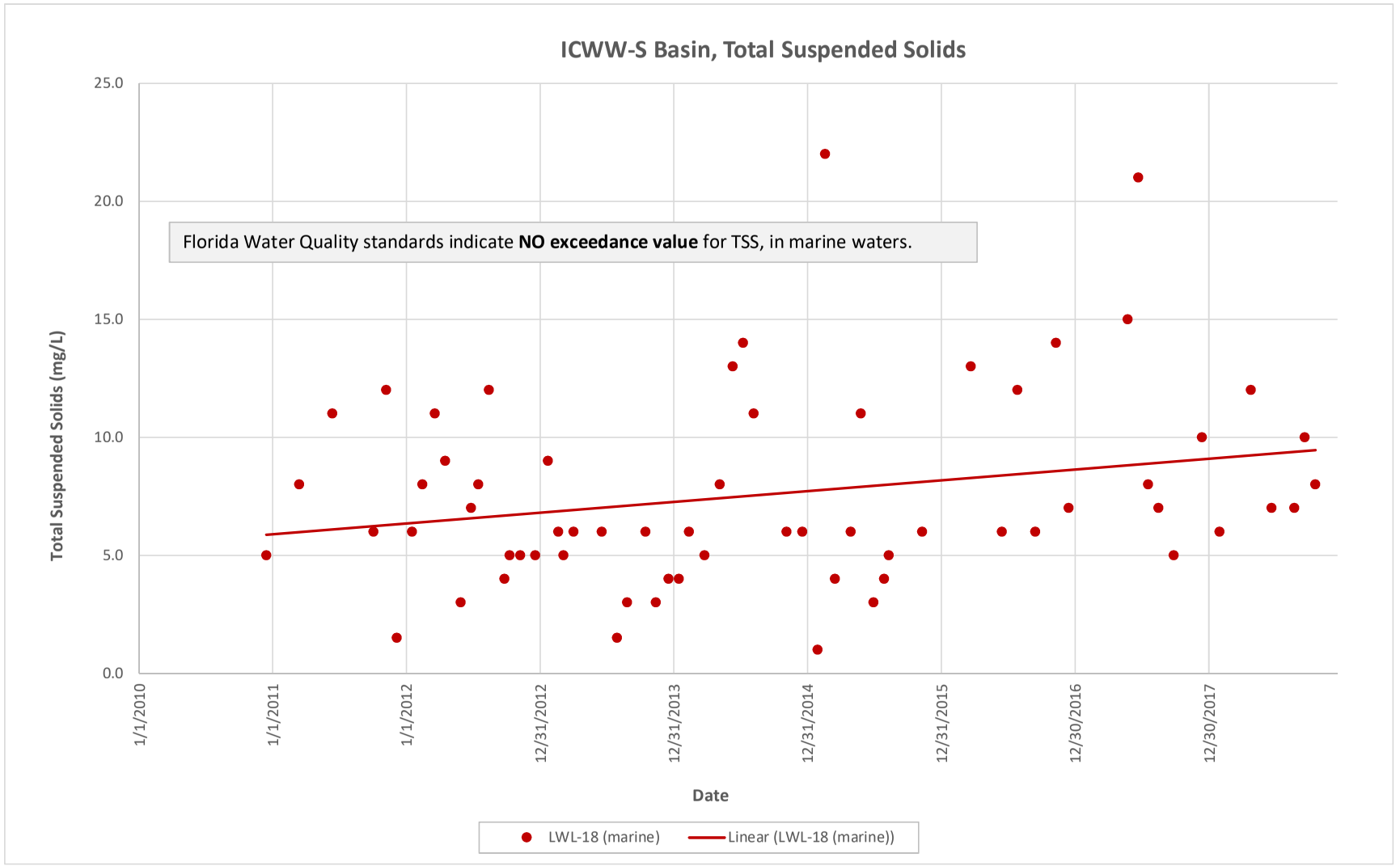

ICWW-S Basin, Copper
Florida water quality standards indicate that , the value for copper, in marine waters, should not exceed 0.0037 mg/L.
Copper (mg/L)
0.0060
0.0050
0.0040
0.0030
0.0020
0.0010
0.0000
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)

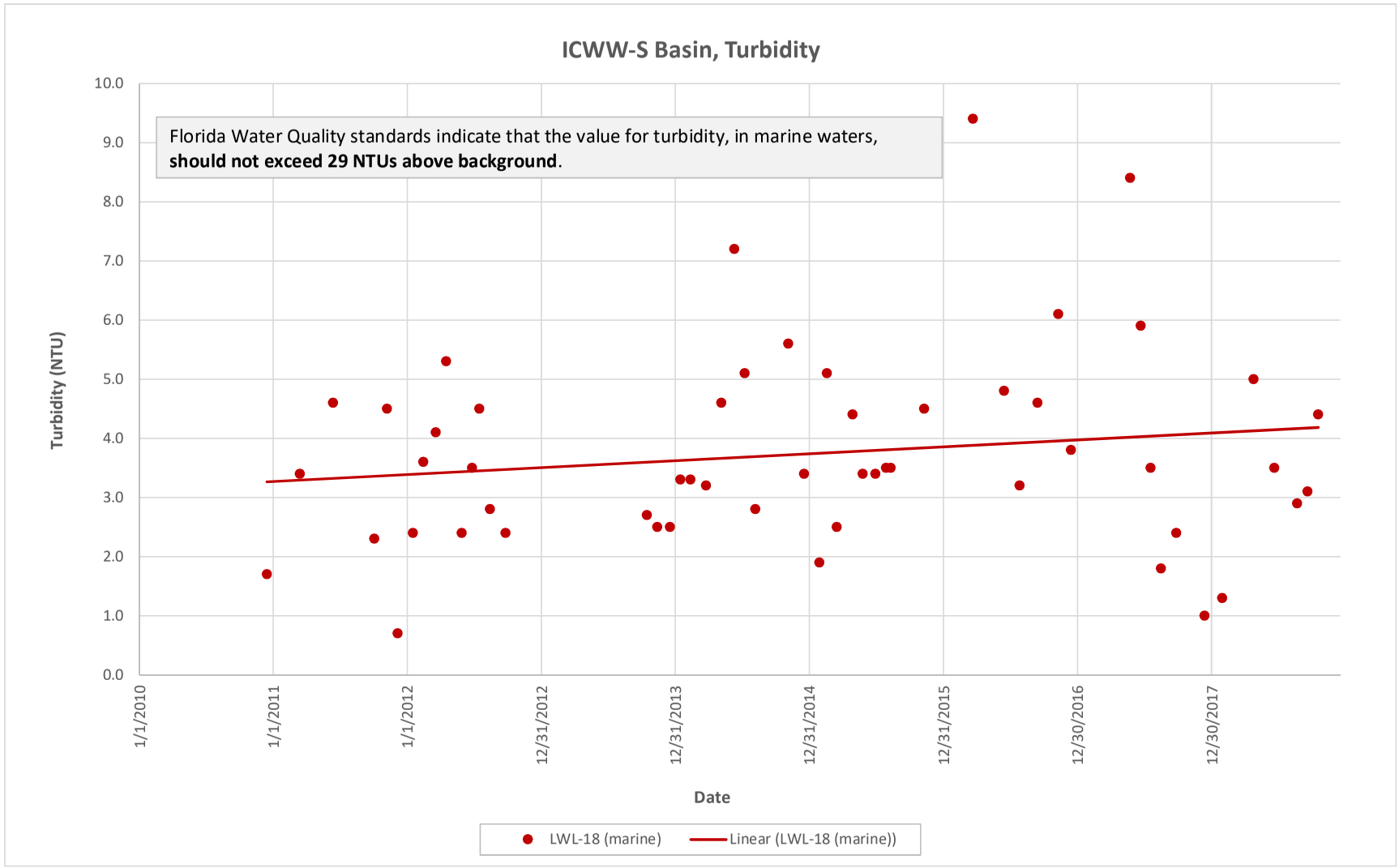

ICWW-S Basin, Total Nitrogen
Florida Water Quality standards indicate that the Annual Geometric Mean of values for Total Nitrogen, in marine waters, should not exceed 0.59 µg/L.
Total Nitrogen (mg/L)
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)
LWL-18 AGM
Linear (LWL-18 AGM)

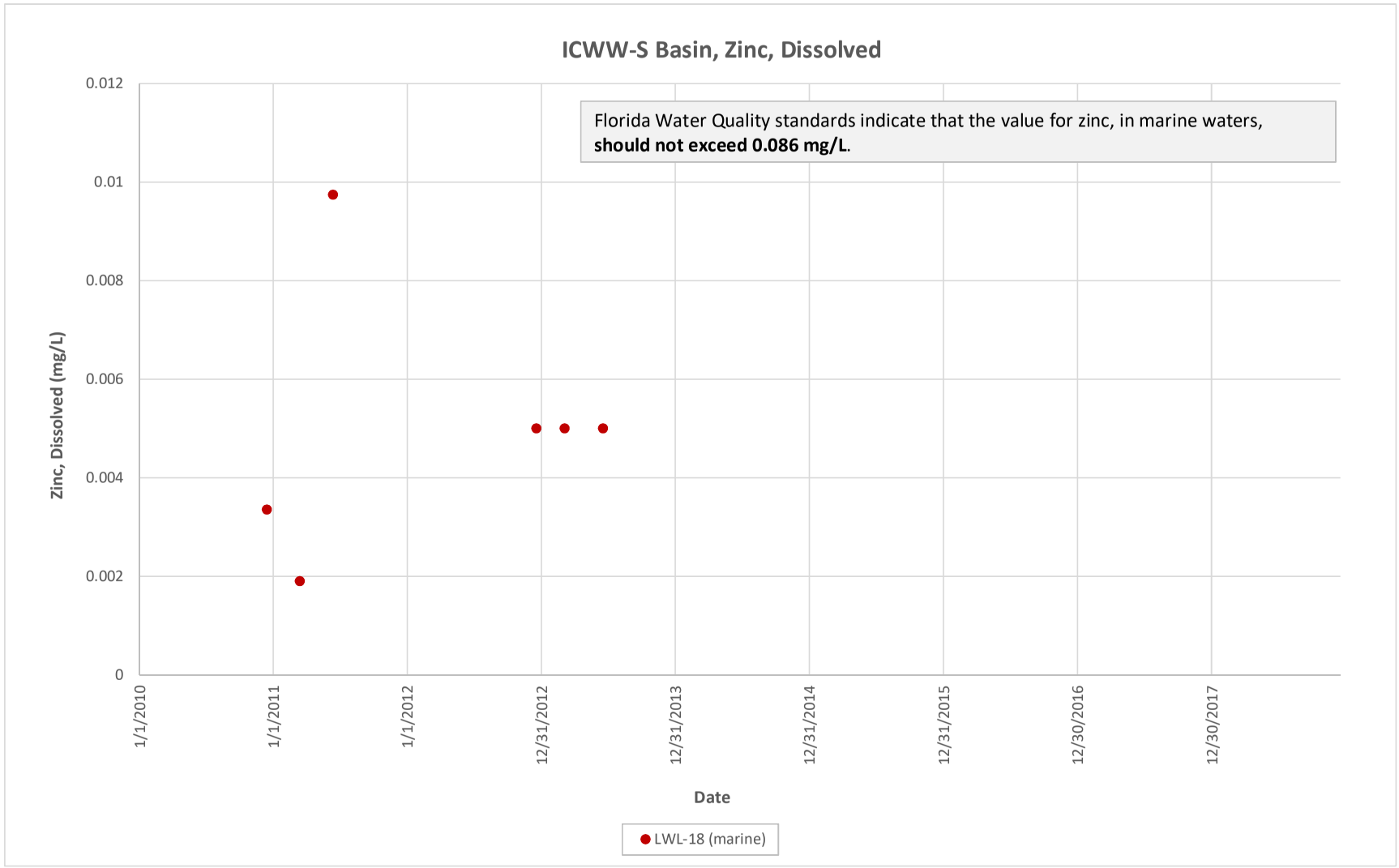

ICWW-S Basin, Dissolved Oxygen
Dissolved Oxygen (%)
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
Florida Water Quality standards indicate that the value for dissolved oxygen, in marine waters, **should be greater than 42% saturation**.
LWL-18 (marine)
Linear (LWL-18 (marine))


ICWW-S Basin, pH
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
pH
Florida Water Quality standards indicate that the value for pH, should be **between 6.5 and 8.5**.
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)
Linear (LWL-18 (marine))


ICWW-S Basin, Total Phosphorus
Florida Water Quality standards indicate that the Annual Geometric Mean of values for Total Phosphorus, in marine waters, should not exceed 0.050 µg/L.
Total Phosphorus (mg/L)
0.1600
0.1400
0.1200
0.1000
0.0800
0.0600
0.0400
0.0200
0.0000
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)
LWL-18 AGM
Linear (LWL-18 AGM)


ICWW-S Basin, Total Suspended Solids
Florida Water Quality standards indicate **NO exceedance value** for TSS, in marine waters.
Total Suspended Solids (mg/L)
25.0
20.0
15.0
10.0
5.0
0.0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)
Linear (LWL-18 (marine))


ICWW-S Basin, Turbidity
Florida Water Quality standards indicate that the value for turbidity, in marine waters, should not exceed 29 NTUs above background.
Turbidity (NTU)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)
Linear (LWL-18 (marine))


ICWW-S Basin, Zinc, Dissolved
Florida Water Quality standards indicate that the value for zinc, in marine waters, should not exceed 0.086 mg/L.
Zinc, Dissolved (mg/L)
0.012
0.01
0.008
0.006
0.004
0.002
0
1/1/2010
1/1/2011
1/1/2012
12/31/2012
12/31/2013
12/31/2014
12/31/2015
12/30/2016
12/30/2017
Date
LWL-18 (marine)

Appendix B

City of Delray Beach

Lake Ida Water Quality Report

Cycle 4, Year 2

1. City of Delray Beach MS4 Assessment Program

1.1. Introduction

The Municipal Separate Storm Sewer System (MS4) National Pollutant Discharge Elimination System (NPDES) permit is part of a federal program designed to reduce stormwater pollutant discharges to receiving waters of the United States. In 1987, the United States Environmental Protection Agency (EPA) was required under Section 402 (p) of the Clean Water Act to develop the NPDES. In 1997, the first 5-year permit (No. FLS000018) was issued by EPA to Palm Beach County's permittees, the City of Delray Beach is one of the joint permittee of this permit under an Interlocal Agreements with Northern Palm Beach County Improvement District. In 2001, the Florida Department of Environmental Protection (Department) received delegation from EPA for the MS4 Programs. In November 2002, the Cycle 2 MS4 Permit was issued by the Department. The Cycle 3 permit was issued on March 2, 2011 and the Cycle 4 Permit was issued on September 8, 2016. This report is to document the assessment results under this permit.

1.2. Goals

The fundamental goal of the City with respect the NPDES MS4 permit is to reduce the nutrient loadings to the receiving water bodies to the maximum extent reasonable possible. To this end this report discusses the water quality monitoring program and trends of the ambient water quality that the City's MS4 discharges to, so the overall effectiveness of their Stormwater Management Program can be evaluated. Also discussed is the pollutant loading model, used to estimate loads that may flow to these waters, and reduction programs used to mitigate the impacts of excess nutrients. Discussion of current data available, trends observed and conclusions that can be drawing from this data are summarized at the end of this report.

2. Florida Department of Environmental Protection's Impaired Waters

2.1. Water Quality Monitoring

Florida Department of Environmental Protection (FDEP) conducts a state wide water quality monitoring programs. The data used for this monitoring includes both theirs and others. The primary purpose of this programs is to assess Florida's rivers, lakes, springs and estuaries to determine whether they meet publicly adopted water quality standards. Because of limited resources, the state has been divided into areas "Basins Groups". A basin group is assessed once every five years, The City of Delray Beach is in Group 3 and its last assessment was concluded in 2016.

The goal of FDEP's assessment is to update the comprehensive listing system, within each Basin Group and Water Boundary Identifications (WBIDs). By reviewing the water quality data for a WBID in comparison to the chapters 62-302, 62-303, 62-303.720, and 62-303.390 of the F.A.C, impaired WBIDs are added to or removed from lists. Five outcomes can result typically from the cycle review. A WBID stays in its current status listed or unlisted, it can be added to or delisted from the Comprehensive Study List, or added to or delisted from Impaired Waters. WBIDs can be delisted if a previously identified impairment cannot be verified or a Total Maximum Daily Load (TMDL) has been adopted. A TMDL represents the maximum

amount of pollutant loading that can be discharged to a water body and have its designated uses still be met. Once a TMDL is developed, watershed stakeholders and FDEP staff develop a Basin Management Action Plan (BMAP). The BMAP specifies the activities, schedule, and funding sources that will be undertaken to restore the water body.

2.2. Cycle 3 Verified List of Impairments

Currently the City of Delray Beach shares a WBIDs on the impaired waters list with the City of Boynton Beach, Lake Ida (WBID 3262A) for nutrients. The listed WBID includes impairments for: Total Phosphorus, Total Nitrogen and Chlorophyll-a. The next step in the FDEP process is to rank the impairment for adopting a TMDL for the WBID. Based on the listed Stormwater impairments the primary pollutant of concern is phosphorous.

2.3. Total Maximum Daily Loads Program

Currently the City of Delray Beach's only waterbody that it discharges to or within its boundary is Lake Ida. FDEP has a listing for site-specific TMDL priorities through 2022 and has not created a TDML for this site.

3. Water Quality Monitoring Program

This is document is intended to outline the Targeted Water Quality Monitoring Plan to satisfy Palm Beach County's NPDES permit FLS 000018-004 requirements due to Lake Ida's listing as a receiving water body with Total Maximum Daily Load (TMDL) exceedances. Lake Ida receives stormwater discharges from four (4) MS4 systems and several other watersheds within unincorporated Palm Beach County.

A targeted water quality monitoring plan is being proposed instead of storm event monitoring plan in order to establish ambient water quality conditions in Lake Ida. It should be noted that the four (4) MS4s discharge into Lake Ida directly, the City of Boynton Beach, the City of Delray Beach, Palm Beach County in the East, and FDOT in the west. Of these 4 MS4's, the contributions from Boynton Beach and Delray Beach make up only 10.1% of the total contributing watersheds discharging into the Lake (See attached Sub watershed I). The majority of stormwater water received by this lake comes from private development permitted by South Florida Water Management District into the Lake Worth Drainage District's (LWDDs) drainage network.

The Specific elements required for a Targeted Water Quality Monitoring Plan are as follows:

1. **Current Estimates of Annual Nutrient Loadings to Lake Ida** will be obtained through the hydrologic modeling efforts of NOAA. (Activity 1.3 of the NOAA scope)

2. **Identifying major sources of the nutrients discharging into Lake Ida.** The sources are a combination of urban and agricultural stormwater containing phosphorus and nitrogen from fertilizers along with legacy nutrients from agricultural uses dating back to the early part of the 20th century. This will be fully developed under the NOAA effort (Activity 2.1 of the NOAA scope).

3. **Determining the change in health of Lake Ida over time** will involve an evaluation of the existing data available. There are eight years of data available in the Impaired Waters Rule (IWR) database that will be analyzed to determine the level health of Lake Ida. Evaluating the nutrient levels including the number of exceedances, the length of those exceedances, the type of exceedances, a comparison of nutrient levels in similar lakes in south Florida will assist in determining the condition of Lake Ida and impact of the TMDL exceedances to the Lake.

   A literature search may find biological studies on this Lake or other similar lakes in the region to establish a baseline for habitat and a relationship between nutrient levels and the health of shallow lakes in South Florida.

4. **Monitoring at the prioritized outfall:** MS4 Monitoring Strategies - Outfall vs Targeted (ambient) monitoring.

   Part V of the most recent version of the MS4 permit for Palm Beach County (FLS000018004) calls for the creation of an assessment program to determine the overall effectiveness of the SWMP. This Assessment Program needs to include a water quality monitoring program intended to identify where local sources of urban stormwater is adversely affecting surface water resources. This program allows the permittee to design an appropriate plan as long as they can demonstrate the program can assess changes in the SWMP.

   Part VIII of the same permit also requires a monitoring plan strictly for TMDL waterbodies. The permit prescribed sampling calls the collection of seven (7) storm event flow weighted composites at the priority outfall of concern OR a targeted monitoring program of the receiving waters and at the priority outfalls.

   Outfall monitoring is relatively more costly, inefficient and highly uncertain. It is inherently difficult to develop representative loads from different storm events and different antecedent conditions. There is a very distinct difference between stormwater outfall monitoring and regular point sources where flows are relatively constant. Targeted monitoring is more holistic approach as the purpose of stormwater management is designed to protect the entire receiving waterbody.

   The proposed plan will be to perform Targeted (ambient) Water Quality Monitoring in Lake Ida. The Pinellas County Water Quality Ruling allows water quality of a receiving water body to be defined through targeted water quality sampling to establish ambient water quality. In fairness to the 2 MS4s that currently are responsible for executing the monitoring plan, only 16.2% of the water into the Lake comes from the four (4) existing MS4s and more specifically, the contributions from Boynton Beach and Delray Beach make up only 10.1%. The monitoring plan will include sampling locations where LWDD's E-4 canal enters Lake Ida from the north and from the south along with LWDD's L-30 lateral entering at the Middle West side of the Lakes Eden and Ida. A description of the water quality monitoring plan will be described in section #**6.**

5. **Monitoring within Lake Ida shall include biological and sediment monitoring if appropriate to the pollutant of concern**.

Monitoring shall take place in Years 2-3 of the permit cycle starting in the next fiscal year, FY2018. The permittee will evaluate the appropriateness of biological monitoring based on findings in a literature search under section #3. The biological monitoring may include Lake Vegetation Index analysis to help in establish the condition of the Lake.

While biological monitoring may be helpful to determine the current health and condition of Lake Ida, sediment sampling does not seem appropriate due to the high level of uncertainties involved in sediment movement (vertical and horizontal) in shallow lakes. This lake averages 10 feet depth with a maximum depth of 20 feet, in addition to three (3) large secondary canals entering this 133 acres lake at the north and south ends, as well as in the middle. There is considerable disturbance of the lake bed during storm events. The uncertainty involving the sediment transport would likely leave more questions than answers. Though the legacy nutrients left in the sediments from early years of agricultural discharges from the LWDD canal network, established in 1915, has undoubtedly impacted the current nutrient levels in the Lake's sediments.

6. **Monitoring Plan Description** includes: the monitoring locations, methods of monitoring at each location, monitoring frequency, and a narrative detailing the monitoring plan's ability to evaluate changes in stormwater pollutant loadings and water body health over time.

A) The Monitoring Locations are depicted on Exhibit 1. (attached)

B) Methods of Monitoring will be **Grab Samples.**

C) Monitoring Frequency will be **Quarterly.**

D) Monitoring Parameters will include: **TP, TN, Chlorophyll A** and physical parameters such as **temperature, pH, conductivity** and **dissolved oxygen** (DO).

The sample collection will be performed by a certified laboratory with the State of Florida and will be collected by licensed technician using approved procedures including collection technique and proper chain of custody.

FIGURE 1 :

Exhibit 1

Targeted Water Quality Monitoring Locations for Lake Ida

Monitoring Locations City Of Delray Beach X

Monitoring Locations City of Boynton Beach X

3.1. Water Quality Monitoring Results

The City of Delray Beach has one year of monitoring data and relies on the groups monitoring program for data. The historical data on the group's website and can be found at:

http://www.pbco-npdes.org/WaterQualityMonitoring/WaterQualityData_PeriodOfRecord.zip

Parameters are monitored typically month for marine environments or bi-monthly for freshwater. Parameters of primary interest to FDEP and the City are phosphorus, and nitrogen. Chlorophyll A can be an indicator of nutrient enrichment and was also included. Table 3 below helps provide a summary of the limits. To aid in the review of the data and trends the criteria has been placed on the graph with a red line and labeled. Where needed additional commentary with regards to the criteria has been provided on the graphs as well.

TABLE 3 SOUTH FLORIDA REGION WATER QUALITY CRITERIA

Applicable Class III - Freshwater Lakes Water Quality Criteria C-16 (22 and 24)		
PARAMETER	**UNITS**	**CRITERIA**
Chlorophyll-a (corrected)	ug/L	≤ 20 AGM
Nitrogen, Total	mg/L	1.27 to 2.23 AGM
Phosphorus, Total	mg/L	0.05 to 0.16 AGM
Notes: (1) For Freshwater Lakes the Total Nitrogen and Total Phosphorus Minimum Value applies if Chlorophyll-a is > 20 ug/l, Maximum also applies of Chlorophyll-a is ≤20 ug/l. (2) AMG - Annual Geometric Mean		

Lake Ida Monitoring

2019 #1 sample location		Date	Time	TP	TN	Chlor A
1	SW-1-DB-Southern Point	4/18/2018	10:05	0.078	0.841	7.1
2	SW-2-DB-Southeast	4/18/2018	10:05	0.088	1.17	8.4
3	SW-3-DB-Mid Lake Inlet	4/18/2018	10:05	0.0877	0.476	12.9
4	SW-4-BB-West	4/18/2018	10:05	0.081	1.02	15.5
5	SW-5-BB-NorthEast Point	4/18/2018	10:05	0.0658	0.946	11.1

2019 #2 sample location		Date	Time	TP	TN	Chlor A
1	SW-1-DB-Southern Point	6/12/2018	9:05	0.121	0.949	41.8
2	SW-2-DB-Southeast	6/12/2018	9:05	0.124	1.05	45.8
3	SW-3-DB-Mid Lake Inlet	6/12/2018	9:05	0.0799	0.98	4.8
4	SW-4-BB-West	6/12/2018	9:05	0.108	0.324	28
5	SW-5-BB-NorthEast Point	6/12/2018	9:05	0.0992	0.922	19.1

2019 #3

sample location		Date	Time	TP	TN	Chlor A
1	SW-1-DB-Southern Point	9/13/2018	15:46	0.11	0.641	4
2	SW-2-DB-Southeast	9/13/2018	15:46	0.12	0.88	24.4
3	SW-3-DB-Mid Lake Inlet	9/13/2018	15:46	0.155	0.613	13.3
4	SW-4-BB-West	9/13/2018	15:46	0.133	0.781	13.7
5	SW-5-BB-NorthEast Point	9/13/2018	15:46	0.125	0.749	ND

2019 #4

sample location		Date	Time	TP	TN	Chlor A
1	SW-1-DB-Southern Point	12/12/2018	10:25	0.0471	0.962	ND
2	SW-2-DB-Southeast	12/12/2018	10:25	0.0615	1.06	ND
3	SW-3-DB-Mid Lake Inlet	12/12/2018	10:25	0.0708	1.16	ND
4	SW-4-BB-West	12/12/2018	10:25	0.0689	0.875	9.3
5	SW-5-BB-NorthEast Point	12/12/2018	10:25	0.0499	0.959	ND

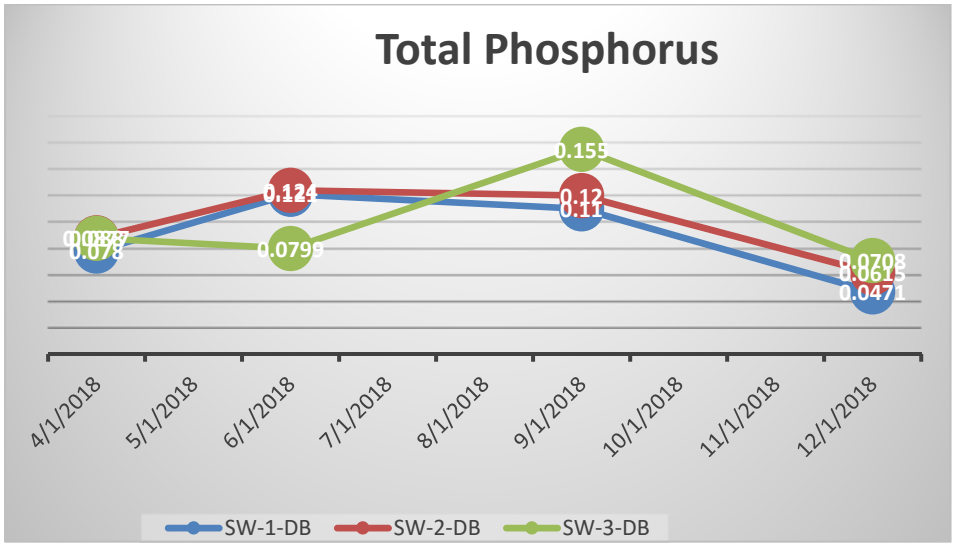
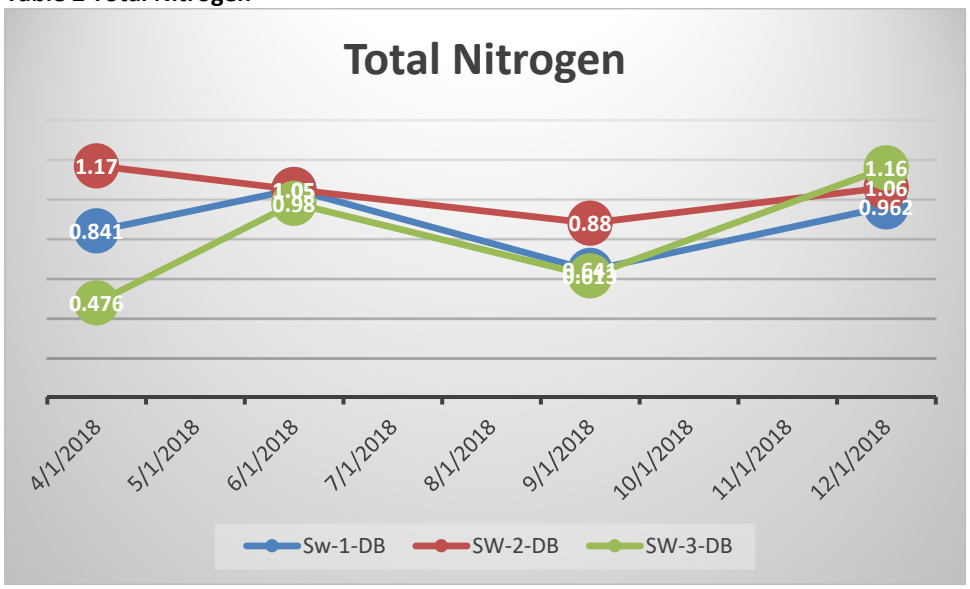


Table 1 Total Phosphorus

Table 2 Total Nitrogen



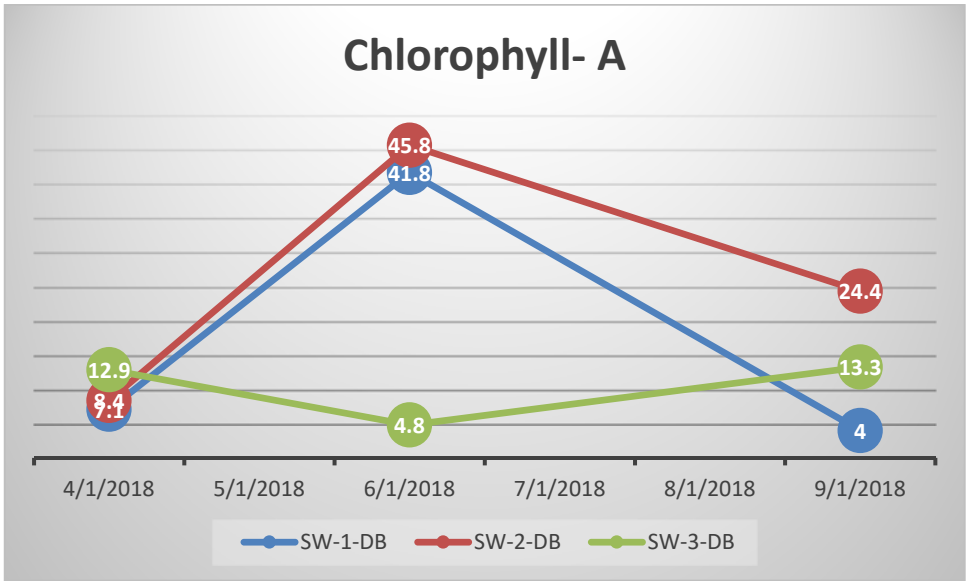


Table 3 Chlorophyll -A

Trend

The green line represents local runoff (see Figure 1/Exhibit 1) vs the blue and red lines representing inflows from Lake Worth Drainage District's (LWDD) canals E-4 and L-30. Except on one occasion the local sample point is at or below the parameters measured at LWDD's inflow points to Lake Ida. See Tables 1, 2 and 3 above.

Loading.

Flow data into and out of Lake Ida is needed to calculate loading and those values are not currently available.

Reductions Based on Stormwater Management Programs

The premise of the MS4 permit program is that the SWMP will reduce pollution loadings. BMP's reduce the amount of pollutant loading to a system by reducing the volume of discharge or the pollutant being carried by the discharge. BMPs can be very sophisticated or simple such as innovative cyclonic separator devices or grassed swales. The City of Delray Beach uses both structural and non-structural best management practices. For the pollutant load estimations completed in 2012, the BMPs and removal efficiencies that were selected are provided in Table 6.

TABLE 6 : BMPS AND PERCENT REMOVAL EFFICIENCIES

Parameter	Wet Detention	Grassed Swales	Dry Retention	Baffle Boxes	Wet Detention &	Exfiltration Trenches
Total Phosphorous	52	30	90	25	93	55
Total Nitrogen	30	20	90	15	92	50

Non-structural BMPs, such as the adoption of New Land Development Codes, Florida Friendly Landscape/Fertilizer Ordinances, Street Sweeping, and Public Outreach, are not accounted for even though they may have significant impacts. Other efforts have been undertaken to quantify the effects of these practices and have been reported in previous reports.

The City of Delray Beach is moving forward this year with a City Commission approval of the Florida Friendly Fertilizer Ordinance to reduce the nutrient load from the City into Lake Ida. It must be kept in mind that most of the flow that passes through Lake Ida comes from private residential and golf course developments west of Lake Ida.

Conclusions

Generally, the water quality monitoring results are encouraging. Nutrient trends are stabilized. Based on these facts the City should continue to monitor the ambient water quality for changes in trends, but no current recommended changes are needed. It is notable that in February 2015, The City of Delray Beach is adopted extensive revision to the land development code aimed at managing urbanization and stormwater management and impacts. The SWMP programs (street sweeping and litter collection) has reduced nutrient loadings of TN and TP. Continuation of or expansion of the City's street sweeping program will assist in meeting any future planned TMDL.

Codes and Land Development Regulations

City of Delray Beach

As required by the NPDES permit, the City of Delray Beach conducted an inter-departmental review of current local codes and land development regulations. As directed, the review focused on potential areas of change within the code that would promote:

- reduction in impervious surfaces,
- reduction in flow and volume of stormwater,
- increase in natural hydrology, and
- adherence to the principles of the Florida Yards and Neighborhoods program in new landscaping.

This report provides a summation of the current codes and land development regulations pertaining to stormwater and makes recommendations for potential changes that will encourage low impact development strategies in areas of new development and significant redevelopment.

General authority to effectively and efficiently develop and implement the stormwater management system within the City has been established within Title 5, Section 56 of the Code of Ordinances.

> The scope and purposes of this Chapter are:
>
> (A) To provide for effective management and financing of a stormwater management system within the City (the "system");
> (B) To provide a mechanism for mitigating the damaging effects of uncontrolled and unplanned stormwater runoff from both a water quality and water quantity standpoint;
> (C) To improve the public health, safety and welfare by providing for the safe and efficient capture and conveyance of stormwater runoff and the correction of stormwater problems;
> (D) To authorize the establishment and implementation of a master plan for stormwater drainage including design, coordination, construction, management, operation, maintenance, inspection and enforcement;
> (E) To establish a reasonable stormwater management assessment based on each property's estimated contribution of stormwater runoff to the system and the benefit derived from the use of the facilities of the system;
> (F) To encourage and facilitate urban water resources management techniques, including but not limited to the retention-detention of stormwater runoff, minimization of the need to construct storm sewers, and the enhancement of the environment; and
> (G) To provide for the issuance of bonds to finance additions, extensions and improvements to the system.

Performance Standards:

As a basis for determining consistency with Comprehensive Plan policy or a principle of good planning practice, Section 3.2 of the LDR's establishes these objectives. In particular Section 3.2.4(D) requires certification of proper mitigation provisions for any developments proposed within a flood prone area.

Base District Development Standards:

The City of Delray Beach requires minimum open space and maximum lot coverage ratios for land use and development activities as an integral part of the Land Development Regulations. The following standards are provided in Section 4.3.4 of the LDR's as a guide to determination and regulation of area, size, bulk, height, and other physical aspects of development. The basis for measurement or calculation of those standards, are set forth in the tables below.

DEVELOPMENT STANDARDS MATRIX - RESIDENTIAL ZONING DISTRICTS
(This matrix is to be interpreted and applied pursuant to Section 4.3.4)

		MINIMUM LOT SIZE (sq. ft.)	LOT WIDTH I/C (ft.)	LOT DEPTH (ft.)	LOT FRONTAGE I/C (ft.)	MINIMUM FLOOR AREA (sq. ft.)	MAXIMUM LOT COVERAGE	MINIMUM OPEN SPACE REQUIRE-MENT	SETBACKS				DENSITY	HEIGHT(4) (ft.)	MINIMUM DEVELOPMENT AREA
									FRONT 1&2/3 (7) (ft.)	SIDE STREET 1&2/3 (7) (ft.)	SIDE INTERIOR 1&2/3 (7) (ft.)	REAR (ft.)			
Agriculture	**AG**	10 AC. (2)	100	110	100	1,500			35	25	15	25		35	
Rural Residential	**RR**	3 ACRES				2,200				17	12	12		35	
Single Family	**R-1-AAA**	12,500	100	110	100	2,200			35	17	12	12		35	
	R-1-AAAB	12,500	100	110	100	1,500			35	17	12	12	N/A	35	
	R-1-AA	9,500	75/95	100	75/95	1,500	N/A		30	15	10	10		35	N/A
	R-1-AAB	9,000	90	100	90	1,500			25	20	8 1/2	25		35	
	R-1-A	7,500	60/80	100	60/80	1,000			25	15	7 1/2	10		35	
	R-1-AB	7,500	60/80	100	60/80	1,500			25	15	7 1/2	10		35	
Low -	**RL (5)**														
Medium Density	**Multi-family**	8,000	60	100	60	(1)	40%	(3)	25	25	15	25	3-6	35	
	Duplex								25	25	15	15	UNITS/		
	Zero Lot Line	4,800		80					25	25	15	25	ACRE		
Medium -	**RM (5)**														
Medium High Density	**Multi-family**	8,000	60	100	60	(1)	40%		25/30 (6)	25/30 (6)	15/30 (6)	25 (6)	6-12	35	
	Duplex											15	UNITS/		
	Zero Lot Line	4,800		80								25	ACRE		
Planned Residential	**PRD**												PER LAND		
Multifamily Component		N/A	N/A	N/A	N/A	(1)	40%		25/30	25/30	15/25	25	USE MAP OR	35	5 ACRES
Single Family Component	**Conventional**	7,500	60/80	100	60/80	1,200			25	15	7 1/2	10	NUMERICAL	35	
	Zero Lot Line	4,500	40/60	80	40/60	1,000	N/A		20		0/15		SUFFIX		
Mobile Home Park	**Park**	2 ACRES	120	N/A	N/A	N/A			25	15	7 1/2	10	N/A	35	2 ACRES
	Sites	3,200	N/A						5	5	5	5			

I/C = Interior Lot/Corner Lot

SUBNOTES:
(1) = Minimum Floor Area for Duplexes and Multifamily Dwelling Units:

Duplexes	1000	sq. ft.*
Efficiency	400	sq. ft.
One Bedroom	600	sq. ft.
Two Bedroom	900	sq. ft.
Three Bedroom	1250	sq. ft.
Four Bedroom	1500	sq. ft.

* Represents absolute minimum size. Must also comply with minimums for corresponding number of bedrooms.

(2) = See Section 4.4.1(F) for exceptions.
(3) = A minimum of 25% non-vehicular open space shall be provided. Interior and perimeter landscaping may be applied toward meeting this requirement.
(4) = See Paragraph 4.3.4(J)(2) for single family detached structures in residentially zoned districts.
(5) = The provisions for the R-1-A District shall apply for single family dwellings.
(6) = Refer to individual district regulations "Development Standards" section for special setbacks in the Southwest Neighborhood Overlay District, Carver Estates Overlay District and Infill Workforce Housing Area. **[Amd. Ord. 24-07 8/21/07]; [Amd. Ord. 7-05 2/15/05]**
(7) = 1&2/3 = 1st & 2nd Story / 3rd Story. The setback for the 3rd story shall only be applied to those portions of the building which are 3 stories in height, not the entire building. **[Amd. Ord. 29-06 5/16/06]**

[Amd. Ord. 42-97 10/7/97]; [Amd. Ord. 16-93 2/9/97]

DEVELOPMENT STANDARDS MATRIX - NONRESIDENTIAL ZONING DISTRICTS
(This matrix is to be interpreted and applied pursuant to Section 4.3.4)

		MINIMUM				MAXIMUM	MINIMUM	SETBACKS							
		LOT SIZE (sq. ft.)	LOT WIDTH (ft.)	LOT DEPTH (ft.)	LOT FRONTAGE (ft.)	LOT COVERAGE	FLOOR AREA (sq. ft.)	PERIMETER (ft.)	FRONT (ft.)	SIDE STREET (ft.)	SIDE INTERIOR (ft.)	REAR (ft.)	HEIGHT (ft.)	MINIMUM DEVELOPMENT AREA	OTHER
General Commercial	**GC**	0	0	0	0	(3)	N/A	N/A	10 (5)	10 (5)	(2) (5)	10 (5)	48	N/A	
Automobile Commercial	**AC**	10,000/(1)	50/(1)	100/(1)	50/(1)	(3)	N/A	(1)	15 (5)	15	(2)	10	48	(1)	Refer to special requirements for auto sales
Neighborhood Commercial	**NC**	1 ACRE	100	200	100	40% (3)	4,000	N/A	40	30	30	10 (4)	48	1 ACRE	Maximum site area of two (2) acres
Planned Commercial	**PC**	10,000	50	100	50	(3)	6,000	N/A	10	10	0	10	48	N/A	Refer to Section 4.4.12(F)(2) restrictions on floor area
Central Business District	**CBD**	0	0	0	0	(1)	N/A	N/A	(1)	(1)	(1)	(1)	48	N/A	
Central Business District-Rail Corridor	**CBD-RC**	0	0	0	0	(1)	N/A	N/A	(1)	(1)	(1)	(1)	48	N/A	
Resort-Tourism	**RT**	1 ACRE	100	100	100	60% (3)	N/A	15	N/A	N/A	N/A	N/A	48	N/A	
Planned Office Center	**POC**	1 ACRE	N/A	N/A	N/A	60% (3)	4,000	(1)	30	30	10	10	48	3 ACRES	
Professional/Office	**POD**	0	0	0	0	40% (3)	N/A	N/A	25	25	0/(2)	10	48	N/A	
Residential Office	**RO**	8,000	80	100	80	40% (3)	N/A	N/A	25	15	7 1/2	10	35	N/A	
Planned Commerce Center	**PCC**	See Section 4.4.18											48	10 ACRES	
Mixed Industrial/Commercial	**MIC**	0	0	0	0	50% (3)	N/A	N/A	25	25	10	10	48	N/A	
Industrial	**I**	20,000	100	200	100	50% (3)	N/A	(1)	30	30	10	10	48	(1)	
Light Industrial	**LI**	20,000	0	0	100	50%(3)	N/A	N/A	10	10	5	10	48	1 ACRE	
O.S.S. Historic Arts	**OSSHAD**	8,000	80	100	80	40% (3)	(1)	N/A	25 (1)	15 (1)	7 1/2 (1)	10 (1)	35	N/A	Refer to Section 4.4.24 for special areas and additional regulations
Community Facilities	**CF**	0	0	0	0	(3)	N/A	10	N/A	N/A	N/A	N/A	48	N/A	Refer to Section 4.4.21(H) for additional setback & open space requirements
Open Space	**OS**	See Section 4.4.22													
Open Space and Recreation	**OSR**	See Section 4.4.27													
Conservation	**CD**	See Section 4.4.23													
Special Activities District	**SAD**	0	0	0	0	(1) (3)	N/A	15	(1)	(1)	(1)	(1)	48	(1)	
Mixed Residential/Office/Commercial	**MROC**	0	N/A	N/A	N/A	75% (3)	4,000	(1)	(1)	(1)	(1)	(1)	85	3 ACRES (6)	Refer to Section 4.4.29 for additional regulations

NOTES:

(1) = Refer to individual district regulations.

(2) = When there is no dedicated access to the rear of any structure a 10' side yard setback shall be provided.

(3) = In addition to lot coverage restrictions, a minimum of 25% non-vehicular open space shall be provided. Interior and perimeter landscaping may be applied toward meeting this requirement.

(4) = Minimum rear yard setback is ten feet (10') and then one additional foot for each foot in building height above ten feet (10').

(5) = Refer to individual district regulations "Development Standards" section for special setbacks in the North Federal Corridor.

(6) = Waivers to this minimum size may be granted during the Master Plan approval process

Flood Damage Control Districts:

The City of Delray Beach has established special Overlay and Environmental Management Districts to regulate land uses and to minimize and/or mitigate potential adverse impacts stemming from such development. Contained within Section 4.5.3 of the LDR's, it is the purpose of this Overlay Zone District to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas that may be especially prone to or vulnerable to flooding issues.

Landscape Regulations:

With recent revisions completed as of February 2012, Delray Beach has now amended and adopted landscaping regulations that adhere to the principles of the Florida Yards and Neighborhoods program. The focused revisions, found in Section 4.6.16 of the LDR's, were constructed and produced with the intention of providing for: the conservation of potable and non-potable water; the implementation of Florida-friendly landscaping principles, proper tree selection adjacent to or within utilities to mitigate damages which may be caused by trees; encouraging the creation or preservation of open space; maintaining permeable land areas essential to surface water management and aquifer recharge; encouraging the preservation of existing plant communities; encouraging the planting of site specific, native and drought tolerant plant materials; establishing guidelines for the installation and maintenance of landscape materials and irrigation systems; reducing air, noise, heat and chemical pollution through

the biological filtering capacities of trees; reducing the temperature of the microclimate through the process of evapotranspiration; and promoting energy conservation through the creation of shade.

Design Standards and Requirements:

The standards contained within Section 6.1 of the regulations provided for the necessary minimum obligations and specifications pertaining to infrastructure development whether it is publically or privately maintained. In particular the design standards and requirements pertaining to roadways and requisite drainage systems are addressed within this section.

Changes to the Florida Building Code in 2010 have prompted local governments to assess and revise existing floodplain management regulations. To ensure consistency with the National Flood Insurance Program, Delray Beach has begun to exam its current code and regulations. The model Floodplain Management Ordinance and Model Local Code Amendments For Communities with Inland and Coastal High Hazard Areas are being utilized as guidance documents to identify inconsistencies and coordinate the re-development of the local program.