FLORIDA PUBLIC SERVICE COMMISSION

IN RE: Application for certificate to provide wastewater service in Charlotte County, by Environmental Utilities, LLC
____/

Docket No.: 20240032-SU

PALM ISLAND ESTATES ASSOCIATION, INC.'S NOTICE OF FILING PRE-FILED TESTIMONY OF ROBERT J. ROBBINS, PH.D.

PALM ISLAND ESTATES ASSOCIATION, INC., gives notice of filing the attached Pre-Filed Testimony of Robert J. Robbins, Ph.D.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing was served and filed this 1st day of November 2024 to:

Dean Mead
420 S. Orange Avenue
Suite 700
Orlando, FL 32801

Linda Cotherman
P.O. Box 881
Placida, FL 33946

Caroline Dike, Esq.
Major Thompson, Esq.
Office of General Counsel
Florida Public Service Commission
2540 Shumard Oak Blvd.
Tallahassee, FL 32399-0850

Robert Volpe, Esq.
Holtzman Vogel PLLC
119 S. Monroe Street
Suite 500
Tallahassee, FL 32301

KELSKY LAW, P.A.
Counsel for Palm Island Estates Association, Inc.
150 S. Pine Island Road
Suite 300
Plantation, FL 33324
954.449.1400
bradkelsky@kelskylaw.com

BY: /s/ Brad E. Kelsky
BRAD E. KELSKY
FBN: 0059307

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

IN RE: Application for certificate to provide wastewater service in Charlotte County, by Environmental Utilities, LLC
_______________________________________/

DOCKET NO. 20240032-SU

DIRECT TESTIMONY

OF

ROBERT J. ROBBINS, Ph.D.

on behalf of

Palm Island Estates Association, Inc.

Q. Please state your name, profession and address.

A. My name is Robert J. Robbins, Ph.D. I am providing opinions on water quality affecting the proposed service area and analysis of submitted data on the topic, and my address is 8235 Parkside Drive, Englewood, FL 32442.

Q. State briefly your educational background and experience.

A. I have a Bachelor of Science degree in Marine Science and Biology from the University of Miami, a Master of Science in Marine Biology and Fisheries degree from the University of Miami, and a Doctor of Philosophy degree in Marine Biology and Fisheries from the University of Miami. I have extensive, direct and practical knowledge of salinity fluctuations on coastal ecosystems, marine biometrics, environmental impacts of mangrove, beach, and estuary ecosystems, and reviewing and editing peer-reviewed scientific journal articles.

Q. Have you previously appeared and presented testimony before any regulatory bodies?

A. No.

Q. What is the purpose of your direct testimony?

A. The purpose of my direct testimony is to provide analysis rejecting the concept of converting septic to sewer in the proposed service area along with providing an analysis concerning the flawed Sewer Master Plan and other submissions regarding same.

Q. Are you sponsoring any exhibits?

A. Yes, I am sponsoring two exhibits. Exhibit RR-1 is my Notes and Comments on LaPointe's "Science Supports a Septic-to-Sewer Conversion on the Barrier Islands of Charlotte County, Florida." Exhibit RR-2 is my Curriculum Vitae.

Q. Do these exhibits set forth your opinions with respect to the Environmental Utilities' application.

A. Yes.

Q. Were these Exhibits prepared by you?

A. Yes, they were.

Q. Does that conclude your direct testimony?

A. Yes, it does.

Science Does Not Support a Septic-to-Sewer Conversion on the Barrier Islands of Charlotte County, Florida

Notes and Comments on
Lapointe's "Science Supports a Septic-to-Sewer Conversion on the Barrier Islands of Charlotte County, Florida" by Robert J. Robbins, PhD

The Lapointe report offers speculative assertions about Charlotte County's barrier islands, devoid of any empirical data. Notably, the report admits on page 9 that no samples or measurements were taken from these islands, even in prior studies by Florida Atlantic University-Harbor Branch Oceanographic Institute. Therefore, there is an absence of data from the barrier islands that could validate or substantiate the hypothesis that septic systems in that area are significantly impacting macroalgal growth and water quality within the greater Charlotte Harbor region, Florida. Data and observation are the building blocks of scientific inquiry. They provide the evidence needed to draw reliable and verifiable conclusions. Without a single observation or data point from the subject area to substantiate the claim, the title 'Science Supports a Septic-to-Sewer Conversion on the Barrier Islands of Charlotte County, Florida' is both misleading and erroneous.

Since no data collection or monitoring is available from the barrier islands, Lapointe's report relies upon a directed, non-peer-reviewed 2016 "study" ("Lapointe 2016"), contracted by Charlotte County to justify its 2017 Sewer Master Plan ("SMP") and the SMP itself to offer merely speculative claims about the barrier islands (a hypothesis at best). This hypothesis lacks direct evidence from the islands themselves.

The SMP was created by a consulting firm hired by the Charlotte County Utilities Department with a singular agenda: to justify septic-to-sewer conversion (SMP, Page 1-1). The SMP simply ignores other pollution sources and follows a pattern of confirmation bias as it implicates septic systems as the only cause of declining water quality in Charlotte County (SMP, Page 1-4).

In addition to Lapointe 2016, the SMP relies on a previous report commissioned by the Utilities Department itself, which likewise is not peer-reviewed and is demonstrably manipulated. This original report, the 2013 "East & West Spring Lake Wastewater Pilot Program Water Quality Review Within East & West Spring Lake," was produced by Tetra Tech, a "subconsultant to a consultant" without a single named responsible author. The study begins by establishing 50 monitoring wells randomly distributed throughout the entire study area. EPA methods were used to measure nitrogen levels and on Page 25 the subconsultant acknowledges a finding of no significant impact: **"Of the 50+ samples taken during each sample period, it is noted that the majority of the wells demonstrated little to no significant impact at the time of sampling."** In fact, most of the nitrogen concentrations were so low that they were below the limit of detection. Appendix 1 employs frequency histogram plots to illustrate the unremarkable characteristics of the monitoring well observations.

In this 2013 study, the initial random sampling, a cornerstone of scientific research, yielded inconvenient results, a demonstration that septic conversion was not necessary. This was apparently an outcome unacceptable to the Utilities Department which had hired the consultants to report that septic systems caused elevated nitrogen concentrations in groundwater.

At this point the Utilities Department inserted itself into the nearly completed study by establishing new, “strategic” monitoring wells (page 42). Abandoning the scientific practice of random sampling, the Utilities Department and subconsultant cherry-picked locations based on septic system complaints reported to the Health Department, specifically targeting documented failures. Predictably, sampled only one time on April 18, 2013, these "strategic" sites, placed right next to failing septic systems, revealed the highest nitrogen levels of the entire study (page 42). The subconsultant concludes, without support, on Page 55 that all septic systems need to be replaced with a centralized sewer system. The cherry-picked sampling methods violate the core principles of statistical analysis. In other words, it is misleading to draw conclusions about a general population by intentionally monitoring rare or extreme cases (outliers). It's like trying to understand the weather by only studying hurricanes. You'll get a skewed picture.

Three years later, the Utilities Department commissioned yet another study, Lapointe (2016). Unlike the early design of the 2013 East & West Spring Lake Study, Lapointe (2016) made no effort to randomly sample representative locations across the study area. Out of 50+ available monitoring wells previously sampled in East & West Spring Lake, Lapointe simply “cherry picked” what appears to have been the “worst of the worst” locations. Lapointe provides geographic coordinates for the three locations, and all correspond to locations of prior Department of Health septic failure cases (Appendix 2). Scientifically, such a non-random approach prohibits drawing inferences about septic systems throughout the broader study area, yet Lapointe does so regardless.

The Lapointe (2016) observations of nitrogen, phosphate, and sucralose concentrations and only simple stable nitrogen isotope analysis without any reference to stable oxygen isotopes ($\delta^{18}O$) cannot definitively exclude other potential sources of nitrogen such as pet waste, fertilizer, treated wastewater (reclaim water) and untreated wastewater, e.g. from leaking sewer mains.[1]

Lapointe's 2016 analysis work for the County also suffers from egregious misuse of statistical methods in his review of the 2013 East & West Spring Lake dataset. Lapointe’s resulting claims are not only unsubstantiated but also demonstrably illogical. On page 16 Lapointe claims “Fecal coliform levels were high in groundwater samples and many samples approach the surface water quality criteria (400 cfu/100 mL), indicating that groundwater is a likely source of contamination to adjacent surface waters.” However, as shown in the East & West Spring Lake dataset, 97% of all monitoring well samples had fecal coliform levels below the limit of detection (below 10 cfu/100 mL). A small fraction (1.7%) of the samples, numbering only 3 out of 176, showed fecal coliform levels exceeding the 400 cfu/100 mL limit (98% of all observed values were less than 400 cfu/100 mL). The significant difference between these outliers and all other samples is evident in the Appendix 1 frequency histogram. Lapointe's conclusion is a statistical misrepresentation. By

[1] Zhang, Yan, Peng Shi, Jinxi Song, and Qi Li. 2019. "Application of Nitrogen and Oxygen Isotopes for Source and Fate Identification of Nitrate Pollution in Surface Water: A Review" *Applied Sciences* 9, no. 1: 18. https://doi.org/10.3390/app9010018

focusing on a small minority of outlier data points, while ignoring the vast majority of samples with undetectable levels, Lapointe distorts the true picture of groundwater quality.

Lapointe's (2016) reliance on data from three demonstrably compromised groundwater monitoring wells, all documented as recent, egregious septic system failures by the Department of Health (Appendix 2), is a fundamental flaw. These locations were intentionally chosen to exaggerate this very issue, rendering their data entirely unsuitable for drawing broader conclusions about septic systems within the study area. Lapointe strategically fails to mention that the 'reconnaissance' wells were not random samples. Beginning with the 2013 study, the Utilities Department deliberately added monitoring wells at sites with a history of septic failures, potentially manipulating the data to support a predetermined conclusion (See footnote 3 and page 53 in Tetra Tech 2013).

The Charlotte County SMP is flawed throughout. The overriding flaw of the SMP is that it assumes that the only source of nitrogen pollution is from septic system contributions. The SMP considers no alternative pathways to reduce nitrogen, such as advanced wastewater treatment ("AWT"). In fact, AWT is not mentioned even one time in the county's 376-page SMP. A major flawed component is the "Impact Score" index used to prioritize time-certain phases for the plan's implementation. This is because the index used scoring factors that were based on assumptions that are known to be wrong. For example, the "Years" factor wrongly equated the age of septic systems to the year that a house was originally constructed with the highest value equal to or greater than 41 years. In reality, septic systems are replaced after a reasonable life span. The property appraiser data only indicates the original house construction and does not consider the replacement of a septic system. Accurate septic system age could have been obtained from the Department of Health databases, but the consultant (Jones Edmunds) failed to pull this septic system age data and wrongly equated septic systems age to the age of the property. This oversight alone results in an Impact Score that is meaningless at best but misleading at worst. In 2024, the Board of County Commissioners has acknowledged these flaws and has questioned certain underlying aspects of the SMP and the priority scoring index (See discussion in Board of Charlotte County Commissioners meeting video from July 16, 2024)[2]. The SMP is currently being revised. Lapointe cites the SMP and suggests that some septic systems on the barrier island date back to 1920 (see Page 11). Determining the age of septic systems based on property appraiser records is unreliable.

Lapointe estimates that the proposal will remove 34,425 lbs. (17.2 tons) of nitrogen annually based on 1,468 "accounts." However, the proposal indicates that there are only 964 existing connections which would equate to only 22,606 lbs. (11.3 tons) of nitrogen annually (9.38 lbs. N/person/year x 2.5 persons). These estimates do not account for any denitrification that may be occurring which makes them "worst case" estimates. It is incorrect to assume that merely connecting to a municipal wastewater system will remove these quantities of nitrogen from the local area because the legacy Charlotte County wastewater treatment facilities have not upgraded to advanced wastewater treatment ("AWT"). The treatment facilities are not designed to remove nitrogen and

[2] Comment by Chairman Commissioner William Truex "There is one more thing that I would like to ask, and that is that we get data from the Department of Health as to the systems out there and their age.", July 16, 2024, Utilities Quarterly Update video archive at 2:49.

phosphorus, and substantial quantities of both nutrients are then returned to the coastal environment via reclaimed water. Charlotte County Utilities frequently reports reclaimed water nitrogen concentrations that exceed 30 mg/L. Based on reported reclaimed water users, there are four golf courses located adjacent to Lemon Bay and Coral Creek that are each capable of dispersing 16.4 to 22.5 tons of nitrogen annually (see Current West County Reclaimed Water Users map attached). The environmental benefit argument falls apart when the 11.3 tons nitrogen removal is compared to the amount of nitrogen being discharged back to the coastal system through reclaimed water. By circumventing the existing nitrogen removal by properly maintained onsite treatment systems, connecting to a non-advanced treatment municipal wastewater system increases the total amount of nitrogen introduced into coastal surface waters. Charlotte County is years away from having even one advanced wastewater capable facility.

The barrier islands situated between Lemon Bay and the Gulf of Mexico are geographically distinct from Charlotte Harbor. While Charlotte Harbor experiences substantial water quality challenges, the surface waters encircling the barrier islands exhibit markedly different characteristics, including elevated salinity and robust mixing and circulation. Given these disparities, it is erroneous and unjustified to compare or equate the potential impacts of septic systems on the barrier islands to those observed within the Charlotte Harbor watershed.

The report also overlooks the fact that Charlotte County and the Englewood Water District operate legacy secondary wastewater treatment plants that are not equipped to effectively remove nitrogen, phosphorus, pharmaceuticals, steroid hormones, and personal care products from wastewater. Given the substantial daily discharge of millions of gallons of treated effluent from these municipal facilities via “purple pipe” reclaimed water distribution, attributing the presence of these substances in surface waters solely to septic sources is unwarranted. Moreover, the lack of water sampling or monitoring well data from the barrier islands prevents any definitive scientific conclusions about the presence of these contaminants in groundwater or surface waters. Yet, the author implies such a presence without any empirical evidence.

Along with the absence of any empirical water quality data from the barrier islands, the author correctly describes the seagrass beds in Lemon Bay and Charlotte Harbor as having experienced die-offs (low seagrass density). However, the author then describes the seagrass beds adjacent to the barrier islands in Gasparilla Sound as “some of the densest seagrass beds in the area.” The author draws the conclusion that these apparently healthy seagrass beds are responding to “nutrient subsidies” and suggests that this condition will be followed by “die-off from excess nutrients, eutrophication, algal blooms, and low-light stress.” This assertion regarding the 'healthy' seagrass beds adjacent to Gasparilla Sound is premature. The conclusion that these seagrass beds are thriving due to 'nutrient subsidies' and are therefore at risk of imminent die-off from eutrophication is speculative and lacks substantial supporting evidence. Such a prediction, based solely on the current state of the seagrass beds, is akin to inferring an impending avalanche from the mere presence of a mountain peak.

By substituting rigorous, peer-reviewed research with manipulated, non-peer-reviewed Charlotte County Utility data and consultants’ reports, unsubstantiated photos, and completely avoiding any form of on-site investigation, Lapointe's conclusions are not only unreliable but also misleading.

The proposed septic-to-sewer project for the barrier islands is misaligned with recent decisions and sentiments of Charlotte County, the intended recipient of the wastewater. This disparity is evident in the recent indefinite postponement of the Cape Haze septic-to-sewer project, a project with the highest priority ranking.

Two key factors influenced the July 16, 2024, decision to postpone the Cape Haze project:

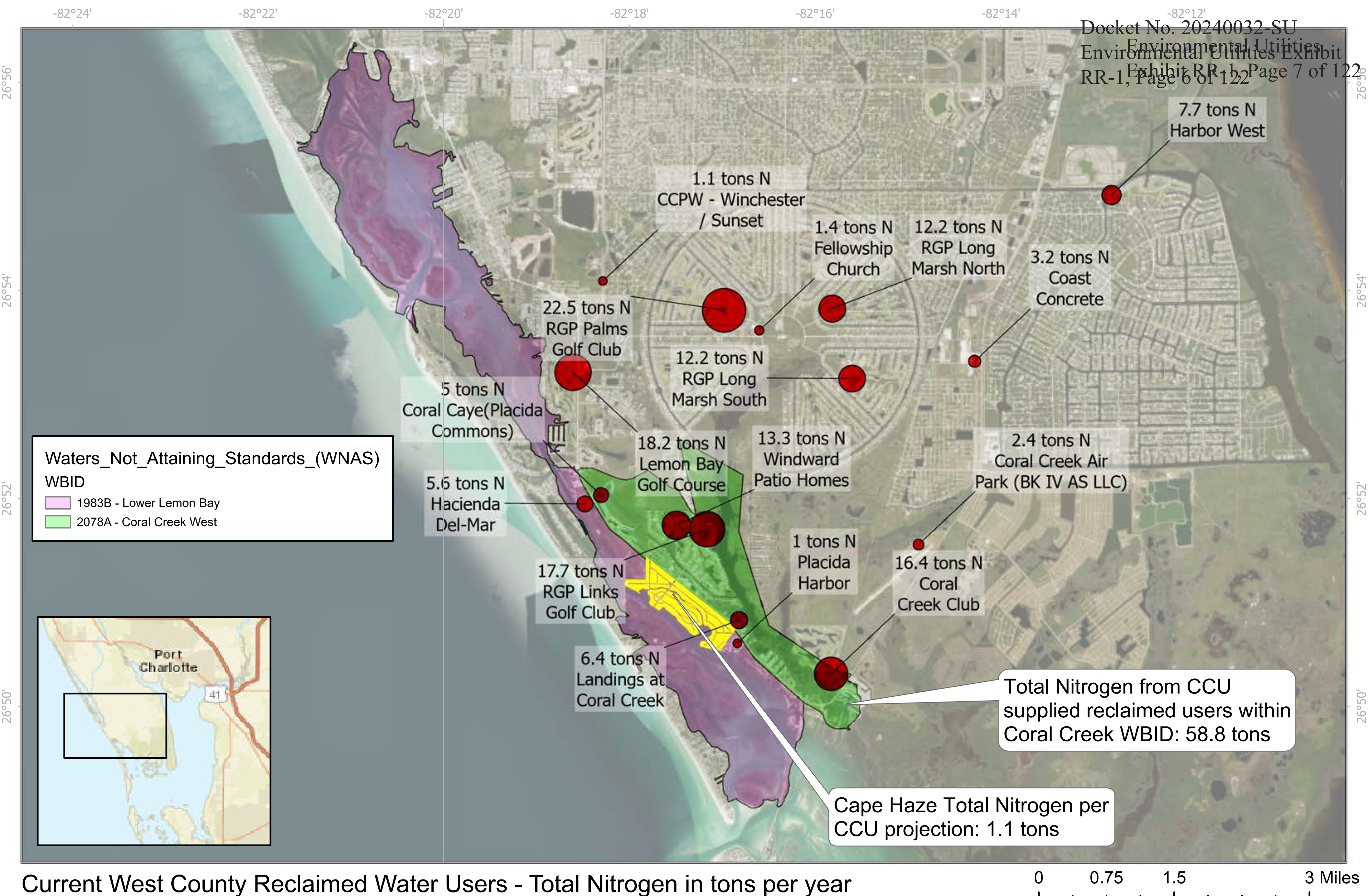
Increased Costs: The project's projected costs for residents exceeded the "affordable" requirement set by the county's Sewer Master Plan (SMP).[3]

Lack of Empirical Evidence: The board of county commissioners expressed concern about the absence of sampling data to justify the project's priority.

To address these concerns, Charlotte County has contracted Western Michigan University to develop a groundwater monitoring program for the Cape Haze area. This decision, coupled with the county's growing skepticism towards projects lacking empirical evidence, casts doubt on the future support for the proposed barrier islands project. Without concrete data demonstrating the need for this project, it is unlikely to gain the same level of enthusiasm as it might have in the past when the County issued a resolution noting that the proposal was "not inconsistent" with the SMP.

In summary, a sound scientific hypothesis must undergo rigorous testing and validation through observation and data collection. The proposed septic-to-sewer project for the barrier islands, however, is primarily based on an untested hypothesis. Leaping to conclusions and advocating for a project solely based on an unverified hypothesis is not a scientifically sound approach. Claiming that science supports this proposal is misleading the community into potentially funding a solution to a problem that may not exist. No governing body or commission, at any level, can absolve itself of the responsibility to make informed decisions. A hypothesis does not inform. Relying on mere hypotheses, absent of data and evidence, is a fundamental breach of this duty. Science does not support a septic-to-sewer conversion on the barrier islands of Charlotte County, Florida.

[3] Creating an **affordable**, reliable, and efficient wastewater collection and treatment system is key to sustainable population growth, economic development, and the health of the County's natural resources and landscape. Page 1-1, Charlotte County Sewer Master Plan (2017)



Current West County Reclaimed Water Users - Total Nitrogen in tons per year

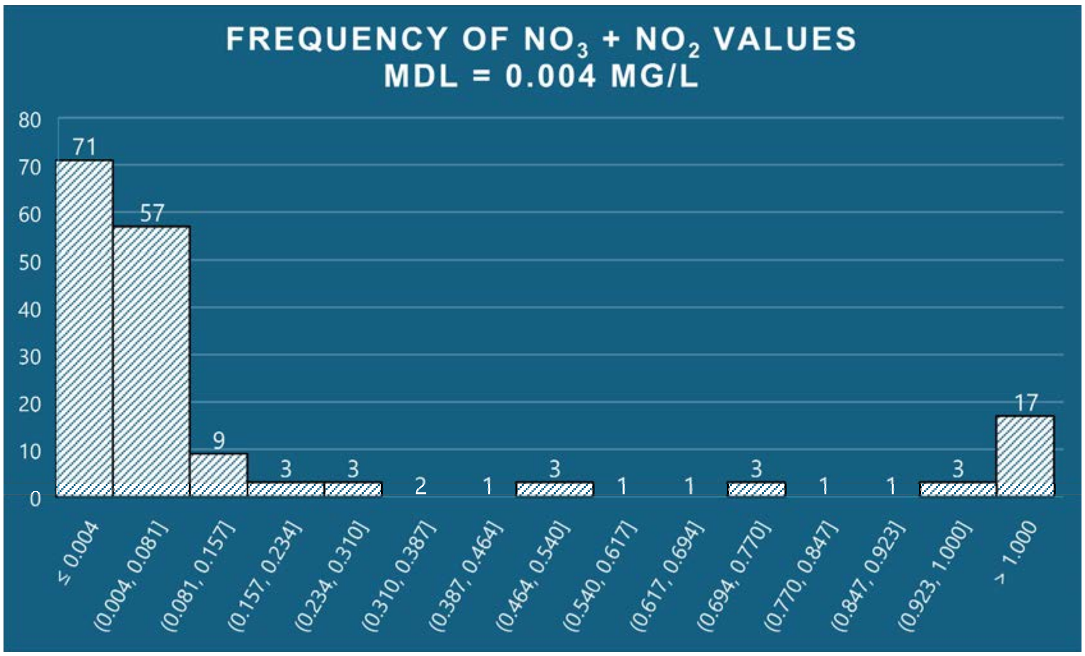
Current West County Reclaimed Water Users Agreement amounts from Table 7-3, page 7-8 in Charlotte County Utilities Department, 2022 Annual Report, Jones Edmunds & Associates, Inc., Project No.: 03405-029-06, March 2023

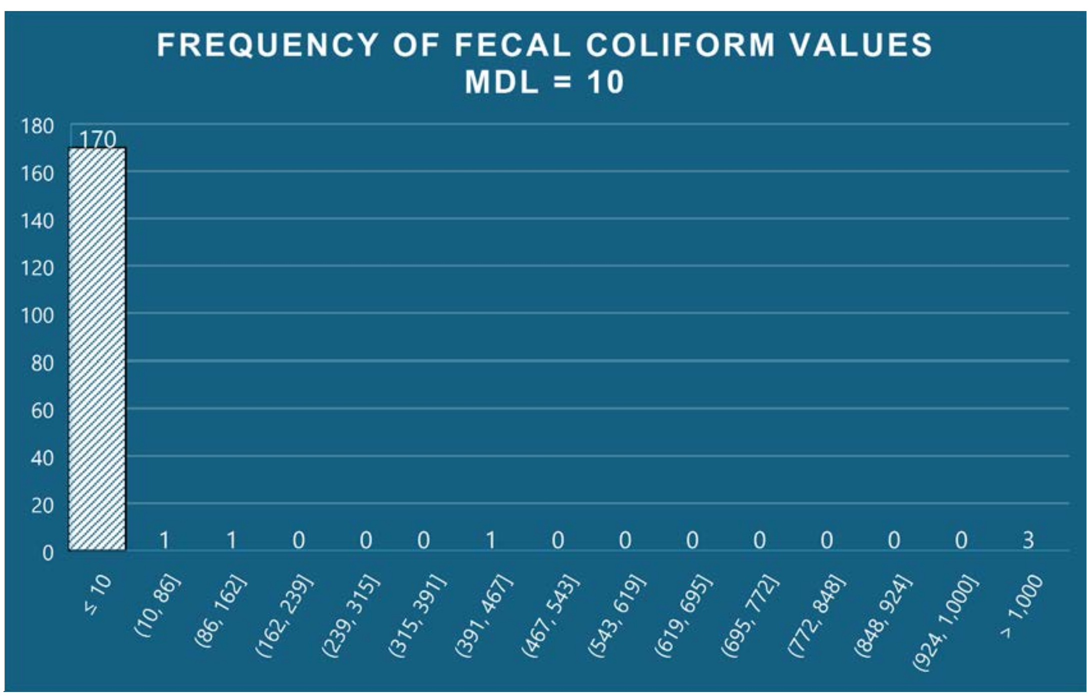
Total Nitrogen concentration of 34.9 mg/L in DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A, Charlotte County Utilities Department, PERMIT NUMBER: FLA014098, FACILITY: Charlotte County Utilities - Rotonda WRF, DESCRIPTION: Public Access Reclaimed Water System, MONITORING PERIOD: From: 6/01/2023 To: 6/30/2023, Signed Daniel Atkisson, July 13, 2023.

Robert J. Robbins, Ph.D.
rrobbins@rsmas.miami.edu
r.robbins@miami.edu
(305) 494-0392

Appendix 1

Data observations from the 2013 “East & West Spring Lake” Report. The majority of observations are below detectable limits (MDL). No data-driven decision maker would reasonably advocate for a large-scale shift from septic systems to sewers.





Appendix 2.1

Lapointe site MW-66:

Latitude: 26.98893, Longitude: -82.12009

Address: 655 Spring Lake Blvd NW, Port Charlotte, Florida, 33952

MW-66 was an open case in February 2012 described as a septic tank that was “rotted through” and “sewage is heavily ponded over the tank and out to the drain field.” A hole in the wall of the septic tank was observed as far back as 2010 and the system had to be pumped out monthly. The property was in foreclosure. The system wasn’t replaced until August 2012.

FLORIDA DEPARTMENT OF HEALTH

Rick Scott
Governor

H. Frank Farmer, Jr., M.D., Ph.D., F.A.C.P.
State Surgeon General

This picture taken on Date: 2/8/2012 at Time: 1:33 PM, by Leslie Beauchamp

Location: 655 Spring Lake Blvd Charlotte County Reference Number: 08-99-194468

Comments: This picture was taken of the septic tank in the back yard Right side when facing house from street. Sewage is heavily ponded over the tank and out to the drainfield. This is a close up view of the sewage ponded over the drainfield just past the tank. A strong odor of sewage is present.

Signature: Leslie L Beauchamp Date: 2/8/2012

02/07/2012

Leslie Beauchamp (BeauchampLL)

NUISANCE COMPLAINT

08-99-194468

Charlotte County Environmental Health

Complaint Information

Name: Florida First Escrow COmpany Tr
Location: 655 Spring Lake Boulevard
City St Zip Port Charlotte FL 33952
Directions: US 41 to W Tarpon (right) to Spring Lake Blvd follow around to address on the left

Owner Information

Owner: Owner Name Fields Blank
Address:
City St Zip
Phone: ()

Occupant Information

Occupant: Florida First Escrow COmpany Tr
Address: 655 Spring Lake Boulevard
City, St Zip Port Charlotte FL 33952
Phone:

Nature of Complaint **Recorded By:** Leslie Beauchamp (BeauchampLL)

failing septic sewage on the ground

Complainant Information

Complainant: CCU
Address:
City, St Zip:
Phone: (941) 743-4300

LEGAL NOTICE Yes

Date Notified: ______________

SITE INSPECTION TELEPHONE

VALID INVALID ABATED 08/06/2012

REFERRED TO ______________

DATE	CONDITIONS FOUND	
02/08/2012	I arrived at 1:33 pm. The septic tank in the back yard Right side when facing house from street. Sewage is heavily ponded over the tank and out to the drainfield. Email from Mark Gibson prior indicates the tank is rotted thru. A strong odor of sewage is present. Spoke with tenant. System backs up - she calls the landlard and they send Gibson to pump the tank about every month.	BeauchampLL
02/24/2012	Arrived on site at 1:20pm, sewage is ponding on ground above septic tank, no actions have been taken to correct the problem, picture taken. Recieved signed proof of delivery of Notice to abate, send first citation FedEx:8720 7970 0276 and advance complaint to 3/1/2012	WilsonSE
03/02/2012	Arrived onsite at 12:30pm, septic tank has large hole in lid, ground is still wet and smells of sewage. Talked with Leah Gibson, they where just out there on 2/28/12 and pumped the septic tank. Advance complaint to 3/12/12.	WilsonSE
03/12/2012	Arrived onsite at 12:08pm, septic tank has large hole in lid, ground is still wet and smells of sewage. Picture taken, send second citation FedEx: 8720 7970 0471 and advance complaint to 4/9/12.	WilsonSE
04/09/2012	Arrived onsite at 11:30am, septic tank has large hole in lid, sewage is ponding on the ground, picture taken. Send third citation FedEx: 8720 7970 0769 and advance complaint to 4/26/12.	WilsonSE
05/01/2012	Arrived onsite at 12:45pm, sewage is still ponding on ground above septic tank, picture taken. Third citation has been signed for send copy of complaint file to Lawyers for final order fedex: 8720 7970 1375, advance complaint to 6/6/12.	WilsonSE
06/12/2012	Follow-up investigation of a failing septic system 6/12/12 at 2:35 PM resulted in the following observations: 1. The septic tank continues to have a hole in the top, sewage was not spilling on the ground during the investigation, the area was damp, photo. 2. The tenant would not answer the door. 3. The file contents have been sent to the DOH Attorney in Ft Myers previously in early May. File to Leslie.FC	Ciurcafa
07/19/2012	Repair permit has been issued, 12-340RP, and faxed to Honc. septic for repair. Advance complaint to 8/7/12. SW	WilsonSE

Appendix 2.2

Lapointe site MW-67:

Latitude: 26.98835, Longitude: -82.11244

Address: Adjacent to 650 Skylark Lane, Port Charlotte, Florida, 33952

MW-67 was an open case in April 2013 described as a septic tank that was “open” and “exposing sewage to the ground surface.” The tank was caved in by May 2013. The nuisance was corrected until October 11, 2013.

Mission:
To protect, promote & improve the health of all people in Florida through integrated state, county & community efforts.

Florida HEALTH
Charlotte County

Rick Scott
Governor

John H. Armstrong, MD, FACS
State Surgeon General & Secretary

Vision: To be the **Healthiest State** in the Nation

This picture taken on Date: 4/30/2013 at Time: 2:04 PM
Location: 650 Skylark Ln, Port Charlotte, Fl 33952 Charlotte County Reference Number: 08-99-208894

Comments: Picture shows the septic tank with lid caving in exposing sewage to the ground surface.

Picture taken by Robert Feldman Environmental Specialist
Signature: [signature] Date: 4/30/13

Florida Department of Health in Charlotte County
Environmental Health
18500 Murdock Circle, Bldg B Suite 203 · Port Charlotte, FL 33948
PHONE 941/743-1266 · FAX 941/743-1533
www.CharlotteCHD.com

www.FloridasHealth.com
TWITTER:HealthyFLA
FACEBOOK:FLDepartmentofHealth
YOUTUBE: fldoh

Robert Feldman (FeldmanBM)

NUISANCE COMPLAINT

08-99-208894

Charlotte County Environmental Health

04/29/2013

Complaint Information

Name: Bailey, Bonita
Location: 650 Skylark Lane
City St Zip: Port Charlotte FL 33952
Directions:

Owner Information

Owner: Bailey, Bonita
Address: 101 W Northtown Road, Unit 36
City St Zip: Kirksville MO 63501
Phone: ()

Occupant Information

Occupant: Vacant
Address:
City, St Zip:
Phone:

Nature of Complaint   Recorded By: Avon Bennett (BennettAL1)

Septic tank lid caving in. Can see inside tank.

Complainant Information

Complainant: Anonymous
Address:
City, St Zip:
Phone: ()

Date Notified: ______

SITE INSPECTION   TELEPHONE

VALID   INVALID   ABATED 10/11/2013

LEGAL NOTICE Yes

REFERRED TO ______

DATE	CONDITIONS FOUND	
04/30/2013	4/30/2013 At 2:00 PM I went to site, no one at home or may be vacant. Went into backyard, observed the open hole of the septic tank lid caved in. The open septic tank is exposing sewage to the ground surface and the complaint is valid as the conditions are in violation of Ch386,FS and CH64E-6, FAC. I took photos of the tank, staked and taped off the area and placed wood boards over the opening. I took a picture of staked tank. I left a hanger for any occupant to contact our office. Prepare a Notice to Abate for owner. Recheck May 8, 2013. rf	FeldmanBM
05/06/2013	5/6/2013 mailed Fedex NTA to owner today. Recheck May 8, 2013. rf	FeldmanBM
05/08/2013	5/8/13 LB recd call from Ms Bailey who refused the Fedex but wanted to know what we were sending her. It was explained to her what she needed to do and a list of contractors was emailed to her.	FeldmanBM
05/08/2013	5/8/2013 went to site, took photo, conditions the same. The septic tank is caving in and it is now staked off and covered with boards. The Fedex is in route with the NTA. Recheck May 14, 2013. rf	FeldmanBM
05/09/2013	5/9/13 LB emailed the NTA and pictures to Ms Bailey. rf	FeldmanBM
05/14/2013	5/14/13 recd email from owner that she is awaiting info from Martin Septic and has a call in to Stans Septic. rf	FeldmanBM
05/16/2013	5/16/2013 went to site, took photo, conditions the same, tank caved in, taped off and covered with boards. Recheck May 27, 2013. rf	FeldmanBM
05/24/2013	5/24/2013 an application for a repair permit was submitted this date. Several applications in front of this one. See 13-350 RP. A site evaluation will be next visit. rf	FeldmanBM
06/07/2013	6/7/2013 Site evaluation done by Phil today. Application submitted by Stans Septic. Recheck June 18, 2013 rf	FeldmanBM
06/18/2013	6/18/13 went to site with Marco. Took photo of staked out tank. The repair permit was issued on 6/14/13. Awaiting Stans Septic to install new tank and call for inspection. Recheck July 5, 2013. rf	FeldmanBM
07/05/2013	7/5/13 went to site, took photo. Tank area taped off with boards over the hole. A repair permit has been issued. Will contact Stans Septic on monday for his construction date to start work. Recheck July 15, 2013. rf	FeldmanBM
07/17/2013	7/17/2013 Went to site, adjusted the caution tape, took photo, conditions the same, no repairs made. I contacted the contractor for his start date, no word back today. I will prepare a citation for the owner. Recheck July 30, 2013. rf	FeldmanBM

Appendix 2.3

Lapointe site MW-68:

Latitude: 26.98893, Longitude: -82.12009

Address: 342 Reading Street, Port Charlotte, Florida, 33952

MW-68 was a nuisance case between May 20, 2010 and May 30, 2012, described as "sewage was pooling over septic tank...[drain field] is apparently not accepting effluent" (See photo attached). The property was in foreclosure.

FLORIDA DEPARTMENT OF
HEALTH

Charlie Crist
Governor

Ana M. Viamonte Ros, M.D., M.P.H.
State Surgeon General

This picture taken on Date: 6/29/2010 at Time: 11:10 am, by: Michelle Masi

Location: 342 Reading St.

Charlotte County reference Number: 08-99-171541

Comments: Condition has not changed; sewage is pooling over tank.

Signature [signature] Date: 6/29/10

Charlotte County Health Department
18500 Murdock Circle, Room 203 • Port Charlotte, FL 33948
(941) 743-1266 • Fax (941) 743-1533

Michelle Masi (MasiMD)

NUISANCE COMPLAINT

08-99-171541

Charlotte County Environmental Health

05/25/2010

Complaint Information

Name: Saintril, Elizer
Location: 342 Reading Street
City St Zip : Port Charlotte FL 33952
Directions:

Owner Information

Owner: Saintril, Elizer
Address: 342 Reading Street
City St Zip: Port Charlotte FL 33952
Phone: 0

Occupant Information

Occupant: Occupant Name Fields Blank
Address:
City, St Zip
Phone:

Nature of Complaint **Recorded By:** Michelle Masi (MasiMD)

Tank has hole in lid. Sewage on is on the ground. Open nuisance complaint.

Complainant Information

Complainant: Complainant Name Fields Blank
Address:
City, St Zip:
Phone: 0

LEGAL NOTICE Yes

Date Notified: ____________

SITE INSPECTION TELEPHONE

VALID INVALID ABATED ____________

REFERRED TO ____________

DATE	CONDITIONS FOUND	
05/20/2010	Recieved tank failure notice after pumpout by Martin Septic on 4/28/10. A verification inspection was needed, as previous pumpout conflicted with these findings. During inspection, sewage was pooling over septic tank. THere is a hole in the tank lid & DF is apparently not accepting effluent. Issue notice to abate.	MasiMD
05/28/2010	Sewage on ground. Sewage is pooling on top of septic tank; leaking out from around hole in the lid. Send notice to abate sanitary nuisance. Pictures taken. Advance to 6/11/10.	MasiMD
06/02/2010	Spoke with Mr. Saintril he came into the office this afternoon. I gave him information on the SHIP program and the USDA program. Explained he needs to have the septic system replaced and that these agencies may be able to help him with the cost.	BeauchampLL
06/08/2010	Sewage is still on the ground, and strong sewage odor is still pressent. Appears new soil was added in an attempt to retain the leak. However, soil is very moist and this is not a permant solution. It appears the drainfield will need to be replaced, and the tank will at least need a new lid. Picture taken. Advance to (6/25).	MasiMD
06/16/2010	Mr. Saintril came in this afternoon. He has a proposal from Martin Septic for about $5,000. He states he cannot afford this and does not qualify for the programs I told him about. He wants us to do something about it. I explained it is his home, his resposiblility and if he did not qualify for any of these programs he would need to figure out what to do and keep the tank pumped so no sewage was on the ground until repairs could be made. He told me to jus take him to court.	BeauchampLL
06/29/2010	Site condition has not improved; sewage is pooling over septic tank and strong odor is present. Received a proposal from Martin septic, however owner has not signed a contract according to Jessica at Martin Septic. Pictures taken. Sent first citation cert. mail 7108 2133 3937 3337 1541 Advance 10 days to 7/9/10. -Michelle Masi	WilsonSE
07/08/2010	Sewage still on the ground over septic tank. Pictures taken No repair permit has been issued. Sent second citation Advance to 7/23/10.	WilsonSE

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MEMORANDUM

Date: June 27, 2013

To: Honorable Charlotte County Board of County Commissioners
Ray Sandrock, County Administrator

From: Terri Couture, Utilities Director

Subject: The East & West Spring Lake Wastewater Pilot Program
Water Quality Review Within East & West Spring Lake

Dear Honorable Commissioners and Ray,

Tetra Tech, Sub Consultant to Banks Engineering, Consultant to Charlotte County, on behalf of the East/West Spring Lake Wastewater Pilot Program, has completed their review of water quality conditions within the East & West Spring Lake area and is submitting the attached report, which has been reviewed by Banks Engineering and Charlotte County Utilities staff. This report will be presented by Tetra Tech on July 1, 2013 during the Special Public Hearing of the Charlotte County Board of County Commissioners.

Additionally, the report will be posted shortly to the County's website under the following link:
http://www.charlottecountyfl.com/CCU/Projects/SpringLakeWW/

Thank you very much.

UTILITIES
Administration | Business Services | Engineering Services | Operations
25550 Harbor View Road, Suite 1 | Port Charlotte, FL 33980-2503
Phone: 941.764.4300 | Fax: 941.764.4315

THE EAST & WEST SPRING LAKE WASTEWATER PILOT PROGRAM

Charlotte County, Florida

Water Quality Review Within East & West Spring Lake

June 2013
TT Project # 200-67850-11001

TETRA TECH

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EAST & WEST SPRING LAKE WATER QUALITY CONSIDERATIONS

1.0 PURPOSE

The purpose of this report is to provide a summary of water quality data collected within the East & West Spring Lake area of Charlotte County. In addition, this report provides a summary of relative studies performed within the area. Data for this report preparation has been collected and tested from both groundwater wells and canals for nitrogen, phosphorous and fecal coliform. As will be displayed within this document, nutrient levels within the East & West Spring Lake area are not only above regulatory standards for surface water, but indicated a correlation with onsite sewage treatment and disposal systems (OSTDS) within the area. This correlation is demonstrated through nutrient levels within the East & West Spring Lake area being higher than levels within other portions of Charlotte Harbor and through the comparison of nutrient levels within different seasonal conditions.

1.1 BACKGROUND

In the early to mid-1990's, Charlotte County initiated a centralized wastewater service expansion program that was proposed to provide wastewater collection and transmission for both new residences as well as existing residences which utilize onsite sewage treatment and disposal systems (OSTDS). The program proceeded through design, however, prior to implementation, the program, was halted. In June of 2009, the Charlotte County Utilities (CCU) made a presentation to the Charlotte County Board of County Commissioners (BCC) which provided an overview for initiation of a similar centralized wastewater service expansion program. At that time, the BCC recommended that a Preliminary Engineering Report (PER) be prepared to evaluate alternative systems and related costs for installation. For this effort, Area 1 (Figure 1) was selected as the initial area to be evaluated due to the number of existing OSTDS's currently in use in the area, and given Area 1's proximity to the Charlotte Harbor estuary and tributary water bodies. In addition, this area is part of the Alligator Bay drainage basin, which was specifically required by the Florida Department of Environmental Protection (FDEP) to be included in a "phased sewer expansion" (see Manchester Locks below).

Following completion of the PER and subsequent presentation to the BCC, the BCC ultimately requested that CCU proceed with a pilot study area, consisting of a portion of Area 1, East &

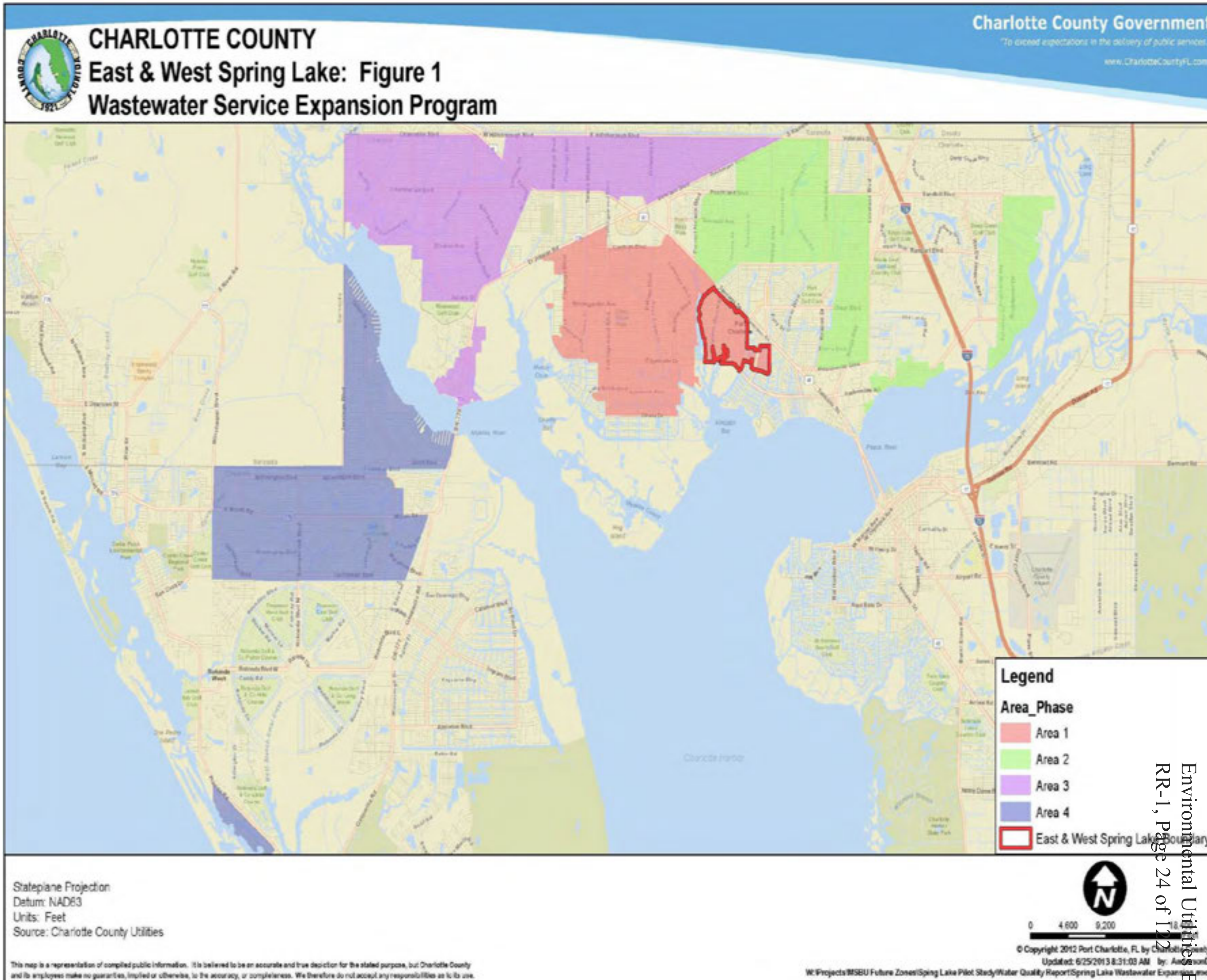


Figure 1 courtesy of Charlotte County Utilities

West Spring Lake. In 2010, CCU selected Banks Engineering to assist with alternative evaluations, preliminary design and opinion of cost development for implementation of a centralized wastewater system for the East & West Spring Lake area. In general, the East & west Spring Lake area lies east of Spring Lake, southwest of US No. 41, north of Edgewater Drive and west of Elkcam Waterway (Figure 2). As part of this process, the BCC asked that the water quality within the pilot area be analyzed and reported on. The analysis performed along with a summary of the findings, is the focus of this report.

1.2 REGULATIORY REQUIREMENTS

1.2.1 OSTDS Regulations

Chapter 62E-6 of the Florida Administrative Code (F.A.C.) provides regulatory requirements for OSTDS's in Florida. This rule sets the sizing requirement for the septic tank and drainfield; outlines acceptable soil permeability and types; OSTDS siting requirements; separation requirements (from wells, property boundaries, water table, surface water, etc.) and related parameters. Of particular importance, the current rule has increased requirements over past rules, as it related to sizing, setbacks and separation from the water table. For instance, the current rule requires that the drainfield be set such that the bottom of the drainfield is a minimum of 24-inches above the seasonal high water table. In comparison, the rule(s) in effect while the majority of the OSTDS's were constructed within the East & West Spring Lake area either required no separation (prior to 1962) or 12-inches of separation from the water table (from 1962 until 1983). As the majority of the systems were installed prior to 1983, it is likely that the majority of these systems do not meet current standards. Similarly, the setback from a surface water body is currently set at 75-feet. (Please note the Charlotte County has a more stringent requirement of 150-feet from tidal water bodies as would apply to the East & West Spring Lake area, Ordinance 3-7-56.) This rule has also been in effect since 1983. Prior to 1983, the separation was either not regulated (prior to 1962), or was 50-feet or less (25-feet from 1962 to 1972 and 50-feet from 1972 to 1983). Other changes to regulations have focused on the size requirement of the septic tank as well as the size of the drainfield. Sizes have been adjusted over the years to provide for longer residence/treatment time in the septic tank portion and to provide more surface area for more efficient nutrient removal (with less potential for overloading) in the drainfield. The actual changes to the regulations associated with sizing are too numerous to summarize, having been modified over 15 times since 1921.

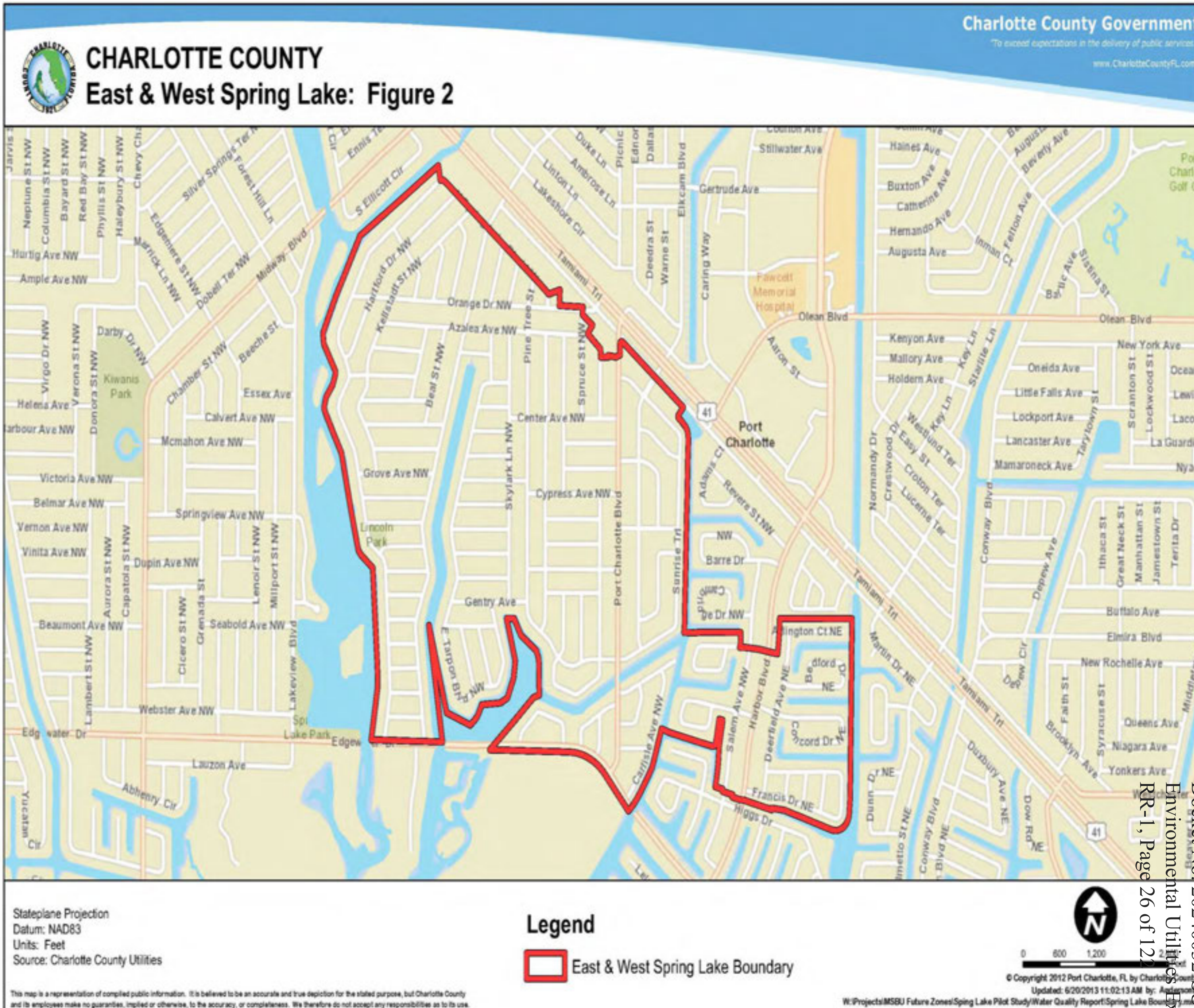


Figure 2 courtesy of Charlotte County Utilities

1.2.2 Nutrient Reduction Regulations

Passed in 1972, the Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. The Environmental Protection Agency (EPA) continually develops new regulations associated with the CWA, the most recent of which is the Numeric Nutrient Criteria (NNC) rule which was developed by the EPA and incorporated as part of the Florida Administrative Code (F.A.C.) under Rule 62-302.531 and 62-302.532 for implementation by the Florida Department of Environmental Protection (FDEP). The intent of NNC rule is to ensure that "in no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna".

Rule 62-302.532 outlines requirements for Estuary-Specific Numeric Interpretations of Narrative Nutrient Criteria. This rule provides estuary specific numeric interpretations for total phosphorous, total nitrogen, and chlorophyll *a*. The rule as implemented will require entities who release surface water into State and Federal inland water bodies and estuaries to meet predetermined water quality levels for these nutrients. Although the implementation phase has not been set, the values for total nitrogen, total phosphorous and chlorophyll *a* have.

The East and West Spring Lake area falls within Charlotte Harbor, Tidal Peace (4.j) as shown on the map in Figure 3. Any release of nutrients must fall within the parameters set for this area. Levels set for numeric nutrients for this area are as follows:

Region	Total Phosphorous	Total Nitrogen	Chlorophyll *a*
4. Charlotte Harbor Proper	0.19 mg/L	0.67 mg/L	6.1 µg/L

It should be noted that the values in the table above represent the annual arithmetic mean values for nutrients and annual arithmetic means for chlorophyll *a*, not to be exceeded more than once in a three year period. These values were determined after detailed analysis of specific water bodies over many years of monitoring and reporting utilizing data collection from numerous agencies to ensure that accurate an impartial data was used. Nutrient data from

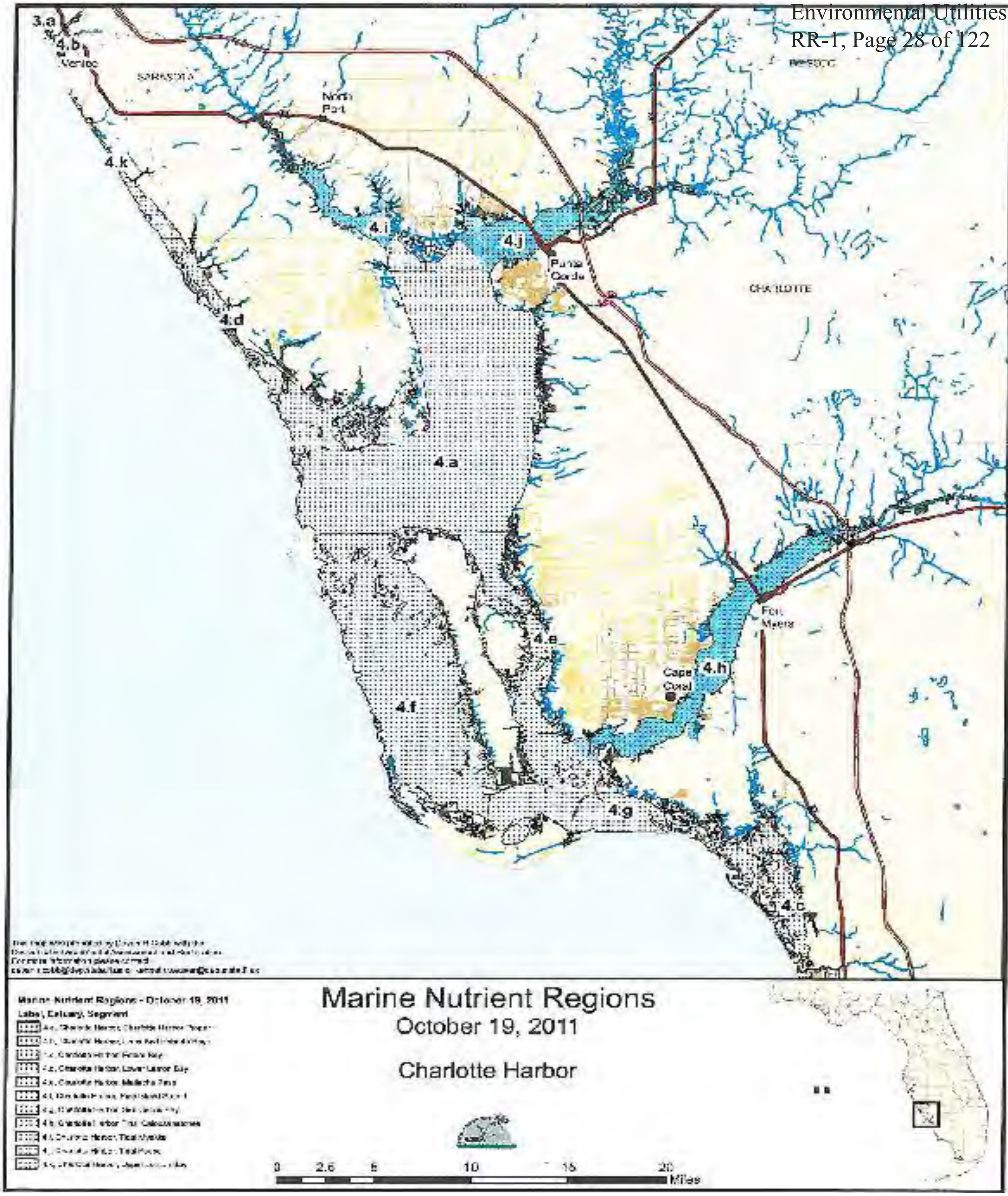


Figure 3 – Marine Nutrient Regions (courtesy FDEP)

benchmark sites were queried from Florida STORET, FDEP's Status and Trend dataset, and site verifications datasets.

Another important item to note is that the numeric criteria defined for Charlotte Harbor Proper (and all other regions) are considered to be arithmetic means, not instantaneous "point" readings. This is primarily due to the fact that elevated nutrient levels are not acutely toxic in the aquatic environment; instead, their effects are chronic and cumulative over time and become acutely toxic when oxygen levels drop as a by-product of eutrophication resulting from excess nutrients in the waters. Nutrient concentrations are typically variable over time and exhibit a log-normal distribution in the aquatic environment. Therefore, instantaneous criteria are not generally considered practical or appropriate for nutrients, and are better expressed as an average over a longer period of time.

According to a 2009 report prepared by the FDEP, Charlotte Harbor Proper's annual average of Chlorophyll *a* was 13.2 µg/L in 2003 and 14.93 µg/L in 2006. Both of these values exceed double the numeric criteria defined in the NNC rule. According to the same 2009 report, the median value of total nitrogen was 0.729 mg/L (based on 354 observations) and the median value of total phosphorus was 0.185 mg/L (based on 302 observations).

Region	Median Total Phosphorous	Median Total Nitrogen	Annual Average Chlorophyll *a*
4. Charlotte Harbor Proper	0.185 mg/L	0.729 mg/L	13.2 / 14.93 µg/L

This median value of total nitrogen exceeds the numeric criteria defined in the NNC rule by .059 mg/L and the median value of total phosphorus meets the numeric criteria defined in the NNC rule by a narrow difference of only 0.005 mg/L. Based on this report, the primary nutrient impairment of Charlotte Harbor Proper appears to be Chlorophyll *a* by an overwhelming margin. Also it should be noted that the same report identified non-nutrient impairments of Charlotte Harbor Proper, primarily mercury; however these impairments are not related to the NNC rule and are therefore not discussed in this section.

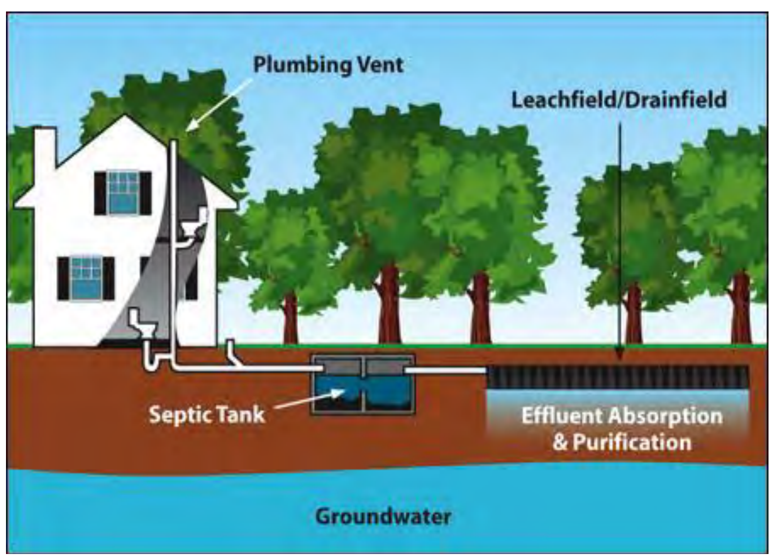
1.2.3 Manchester Lock Permit

In the mid-70's, the Army Corps of Engineers (ACOE) placed permit conditions on certain sections of the Manchester Basin area, limiting the number of septic systems that would be allowed before a centralized sewer system would be required to be installed. In 2007, Charlotte County sought and was granted approval by both the Florida Department of Environmental Protection (FDEP) and ACOE to remove the Manchester Locks. As a condition of the FDEP permit (file 08-0210682-001, issued June 2007), and as Alligator Bay (located within the Manchester Basin) is the receiving waters for the Manchester Waterway and most other residential canals in Port Charlotte, the FDEP required the following to be performed:

- "A phased sewer expansion – include in the Charlotte County Sewer Expansion Plan those portions of the Alligator Bay drainage basin that have been shown to contribute to declining water quality (pre-1983 septic tanks)."

This condition has been made a requirement of the Manchester Lock removal, which was accepted through approval, along with the permit conditions by the BCC in 2007. The Alligator Bay drainage basin includes the East and West Spring Lake area. Due to its residential density, this area was selected as the initial point of focus. Alligator Bay Drainage Basin and the proximity of East & West Spring Lake within the Drainage Basin is displayed in Figure 4.

1.3 DESCRIPTION OF OSTDS



Onsite Sewage Treatment and Disposal Systems (OSTDS) typically consist of a septic tank followed by a soil absorption field (drainfield). Septic tanks are watertight treatment units which are buried below ground and located outside of the residence. The majority of the septic tanks installed in Southwest Florida are constructed of concrete, although

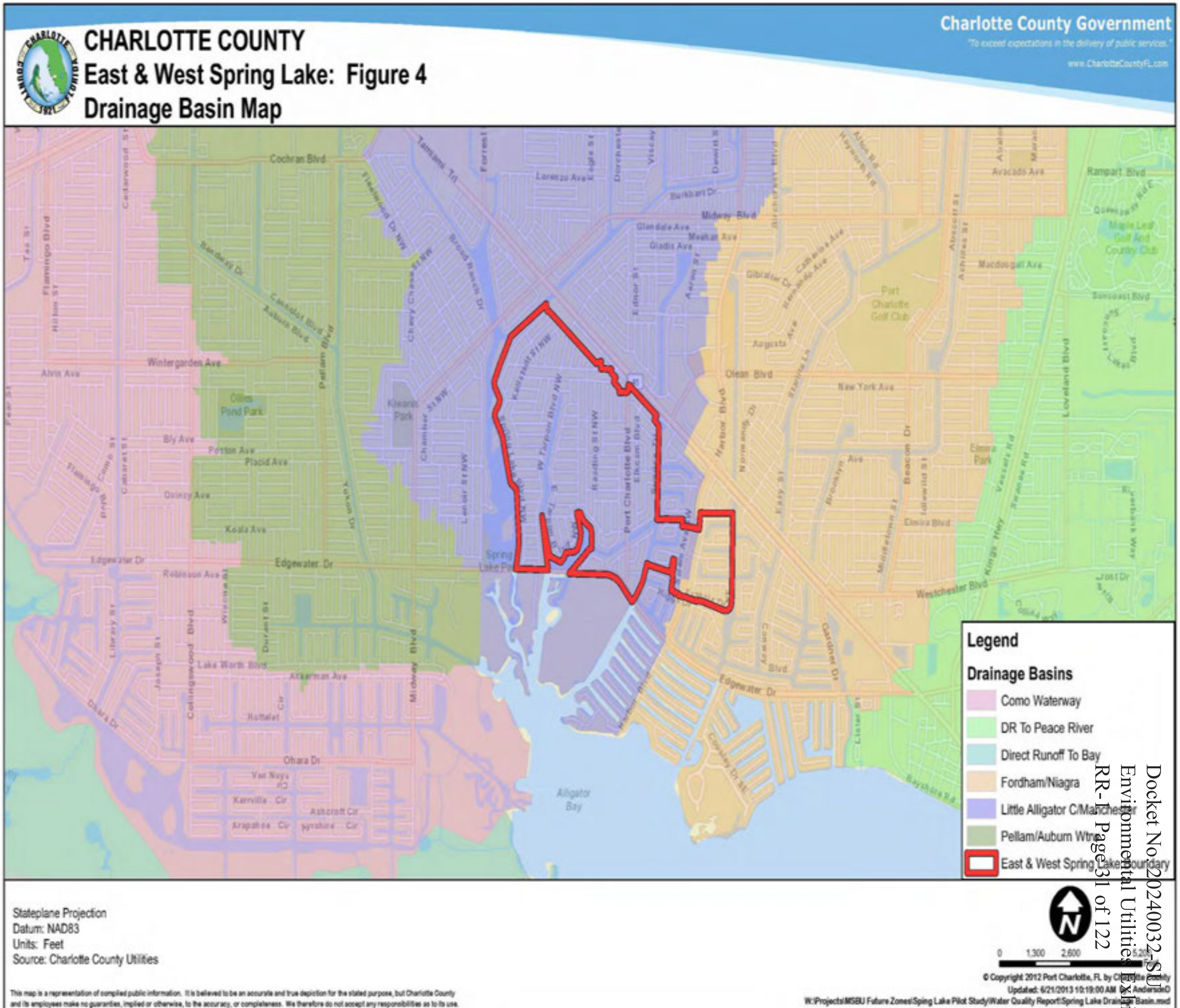
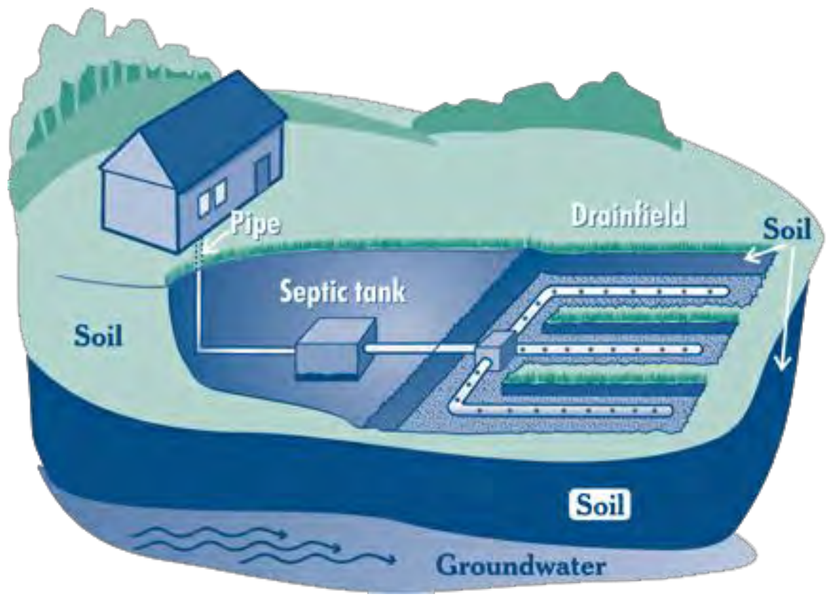


Figure 4 courtesy of Charlotte County Utilities

fiberglass units have also been installed in some areas. Wastewater from the home enters the treatment unit by gravity. Treatment provided by the septic tank is limited to digestion of organic matter, and settling of solids to the bottom of the tank. Over time, solids accumulated will buildup and eventually, require removal and offsite disposal by a professional. As the wastewater flows into the septic tank, the volume in the tank increases; the organic matter is biologically digested; and remaining solids settle to the tank bottom. As the level in the tank rises, the partially clarified effluent reaches a point where it overflows into a pipe and into the second portion of the process, the drainfield. The image above displays a typical OSTDS, complete with septic tank and drainfield.



Effluent from the septic tank enters the drainfield, or the disposal portion of the OSTDS process. The partially treated wastewater is discharged to the drainfield through a series of pipes which allow for an even distribution into the absorption area below.

The effectiveness of the drainfield is dependent on the soil profile characteristics, the soil depth above the water table, the slope of the drainfield and the application area. Of particular note are the soil types and separation from the groundwater table. Porous, sandy soils and soils with positively charged particles (such as aluminum, iron and manganese oxides) have demonstrated to be more effective in removal of phosphorous than clayey or organic soils. The reason is that the positive charge of the soil binds to the negative charge of the phosphorous, retaining a portion of the phosphorous in the soil (adsorption). With proper soil conditions, approximately 85-95 percent of phosphorous can be removed from the effluent. That being said, soils can become oversaturated with phosphorous and create plumes which grow as more phosphorous is accumulated in the soil. Depending on the separation from the groundwater, it is just a matter of time before the plume reaches the groundwater, which is a more critical reason for groundwater separation. Unlike phosphorous, nitrogen is not as effectively removed by the soils, with a removal efficiency of approximately 10-40 percent. The reason is that nitrogen derived from septic systems is converted to nitrate by the process of nitrification. The nitrate is in an aerobic condition and does not interact with the soil components, and therefore, can travel through unsaturated soil to groundwater. Similar to phosphorous, the removal efficiency of fecal coliform can also be effective, with removal efficiency near 100-percent, given the proper soil conditions and separation from the groundwater.

Key factors in the removal efficiency as mentioned include the soil conditions and the separation from the groundwater. The less separation from the water table, the more likely negative constituents are to enter the water table prior to being filtered out by the soils. Similarly, if unfavorable soils exist below (or within) the drainfield, the more likely these constituents will enter the groundwater as well. An example of a poor soil type is a clayey material, which has a very low porosity and limited filter capability. Instead, clayey material allows water from above to simply transport directly into the water table. For that reason, clay is considered unsatisfactory according to current regulations.

Initial use of OSTDS's was in rural areas where centralized systems were not available. As development continued with denser housing in unsewered areas, the number of OSTDS's increased as well. In areas where soils are suitable, OSTDS's provide an adequate means of treatment and effluent disposal. However, it has been estimated the only 32% of the total land area in the United States has soils suitable for onsite systems (EPA Design Manual – Onsite Wastewater Treatment and Disposal Systems).

1.3.1 OSTDS Evaluation in East/West Spring Lake

The East & West Spring Lake area is zoned RSF 3.5, which allows a residential density of 3.5 units per acre, with a minimum lot area of 10,000 square feet (sf) and minimum width of 80 feet. Within the East & West Spring Lake area, approximately 80-percent of the lots have been built on. The age of the residential structures in the study area ranges from 4 years to approximately 60 years, with homes being constructed from the mid-1950's to the mid-2000's. Based on construction information provided by the County, it appears that the majority of the residential structures were constructed in the 1970's. Figure 5 displays the distribution of lot development by age, with the majority of the construction shown to be between 1971 & 1980 (in green). The

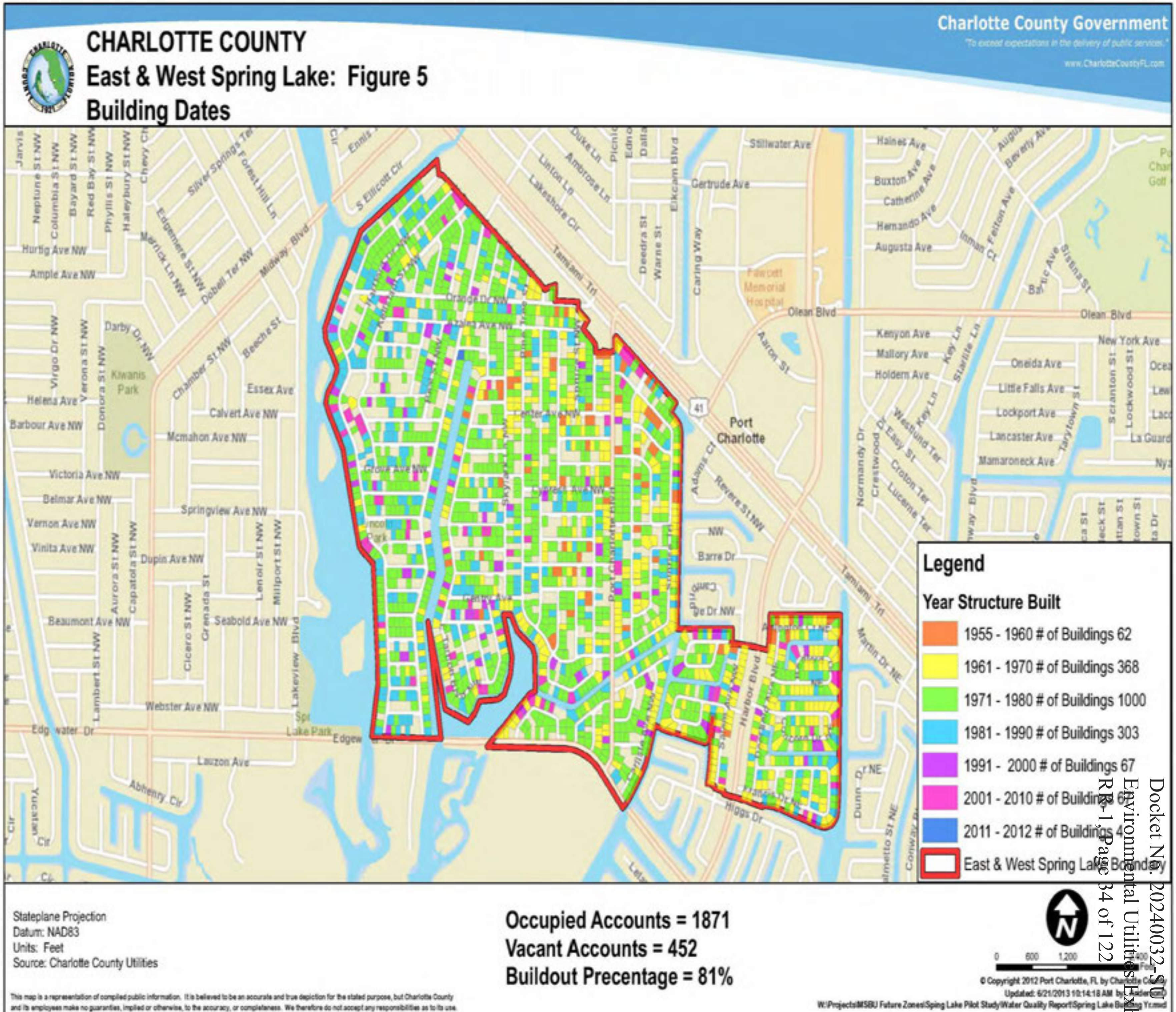


Figure 5 courtesy of Charlotte County Utilities

data is also shown graphically below in Charts 1, 2 and 3. It is noted that the data in Figure 5 was provided by Charlotte County Utilities (CCU) and was based on construction information. Data in the charts was obtained from the Charlotte County Health Department (CCHD) through records retained for OSTDS construction and may vary slightly from the data provided by the County. As shown, there are 1,708 recorded OSTDS's in the East & West Spring Lake area. Of these, 1286, or 75.3-percent, are at least 30-years old (i.e. installed prior to the 1983 rule change for drainfield/water table separation).

The age of the structures within the East & West Spring Lake area is important for two (2) reasons. First, 1983 was a critical year in the history of rule development for OSTDS systems as it resulted in the increased separation between the bottom of the drainfield and the seasonal

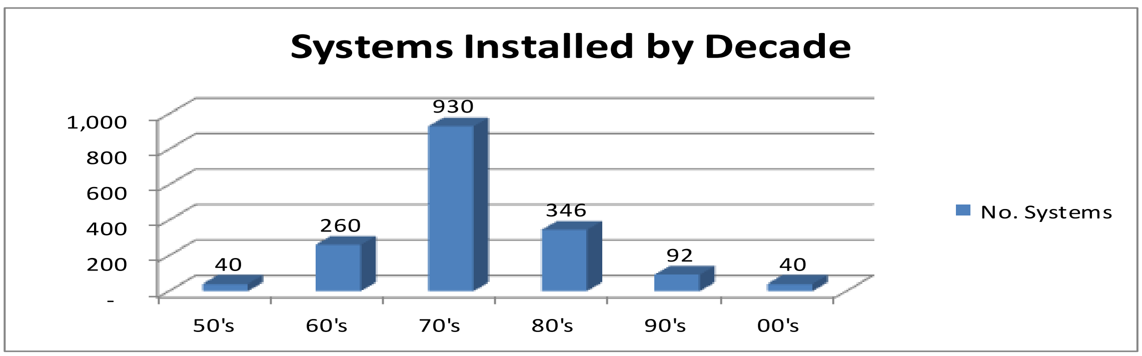


Chart 1

Systems Installed by Decade in East/West Spring Lake Area

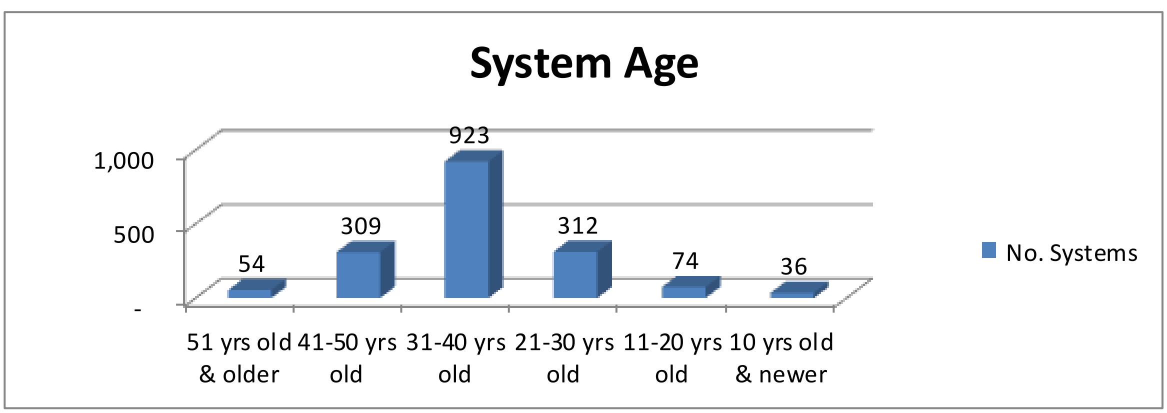


Chart 2

Age of Systems in East/West Spring Lake Area

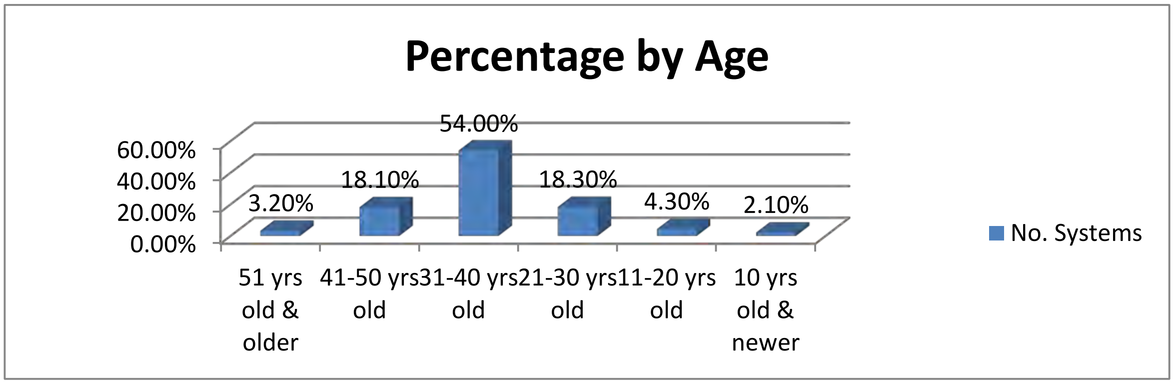


Chart 3

Percentage by Age in East/West Spring Lake Area

high water table elevation from 12-inches minimum to 24-inches minimum. Given the high water table and proximity to Charlotte Harbor, this is extremely important as the increased separation provide more attenuation of effluent in the soils and therefore more potential for nutrient uptake prior to reaching the groundwater table. The second important factor is that the OSTDS's have a life expectancy before septic tank and pipes begin to deteriorate and likely require repair or replacement. The life expectancy of the OSTDS is dependent on several variables, including but not limited to age and related exposure to harsh wastewater conditions; the loading of wastewater (number of residents, use of garbage disposal); proximity to trees which can result in root intrusion; existing native soil types and conditions below the drainfield and related factors. In addition, short term versus long term use can also impact the life expectancy. Those systems which have been dormant for an extended period of time can have issues with regenerating the biological treatment process. As each system is different, it is difficult to state a certain life expectancy or to state that each system will have the same life expectancy. Industry data suggests the structural life expectancy of a typical septic tank is on the order of 12-20 years (Maryland Task Force, 1999).

1.3.1.a. Drainfield Water Table Separation Review

As mentioned above, the current regulations require a minimum separation of 24-inches from the bottom of the drainfield to the seasonal high water table. In addition, 62E-6, F.A.C. limits the maximum depth from ground surface to the bottom of a drainfield as 30 inches, with a minimum cover of 6-inches. Therefore, the seasonal high water table should be 42-inches (3.5-feet) below ground surface for a typical installation in order to meet the current regulatory requirements.

Utilizing water table data collected over the past year, it is likely that the majority of the residences in the East & West Spring Lake area do not meet this requirement. Water table elevations were taken in June, September, November and January from 50 locations throughout East & West Spring Lake. The water table elevations were taken at the same locations where groundwater samples were collected (refer to Section 1.4, below). Based on the data collected, the seasonal high water table average was approximately 2.1 feet below land surface (BLS). This seasonal high average occurred in both the June and September sampling. The averages for November and January were 3.1 feet BLS and 3.9 feet BLS, respectively. In fact, in June and September when the seasonal high water table was observed, many of the existing drainfield are estimated to be located partially within the water table. Only during January is the water table greater than 3.5 feet BLS. Provided below in Table 1 are the average water levels per sampling period along with percentages of levels which were under the 3.5 feet BLS threshold for compliance with current regulations.

Table 1 – Water Table Data – East & West Spring Lake

Parameter	June	September	November	January
Average Water Level (BLS)	2.1 ft	2.1 ft	3.1 ft	3.9 ft
Number of samples < 3.5 ft BLS	39	35	29	16
Percentage < 3.5ft BLS	80%	80%	64%	42%

During the wet season, 80-percent of the water table readings were within 3.5 feet BLS. In addition, in reviewing each individual well, 42 of 50 wells (84-percent) showed the water table being within 3.5 feet of ground surface at some point during the year (Figure 6). It is noted that 2012 from which the majority of the samples were taken was a below average rainfall year, and it is estimated that during a normal rainfall year, the water table would be even higher.

As the East & West Spring Lake area is relatively flat, the ground elevation is estimated to be similar to that of the top of drainfield, which would further indicate that the majority of the drainfields and potentially over 80-percent in this area do not meet the current regulatory standards. This finding is consistent with the data provided above on the system age.

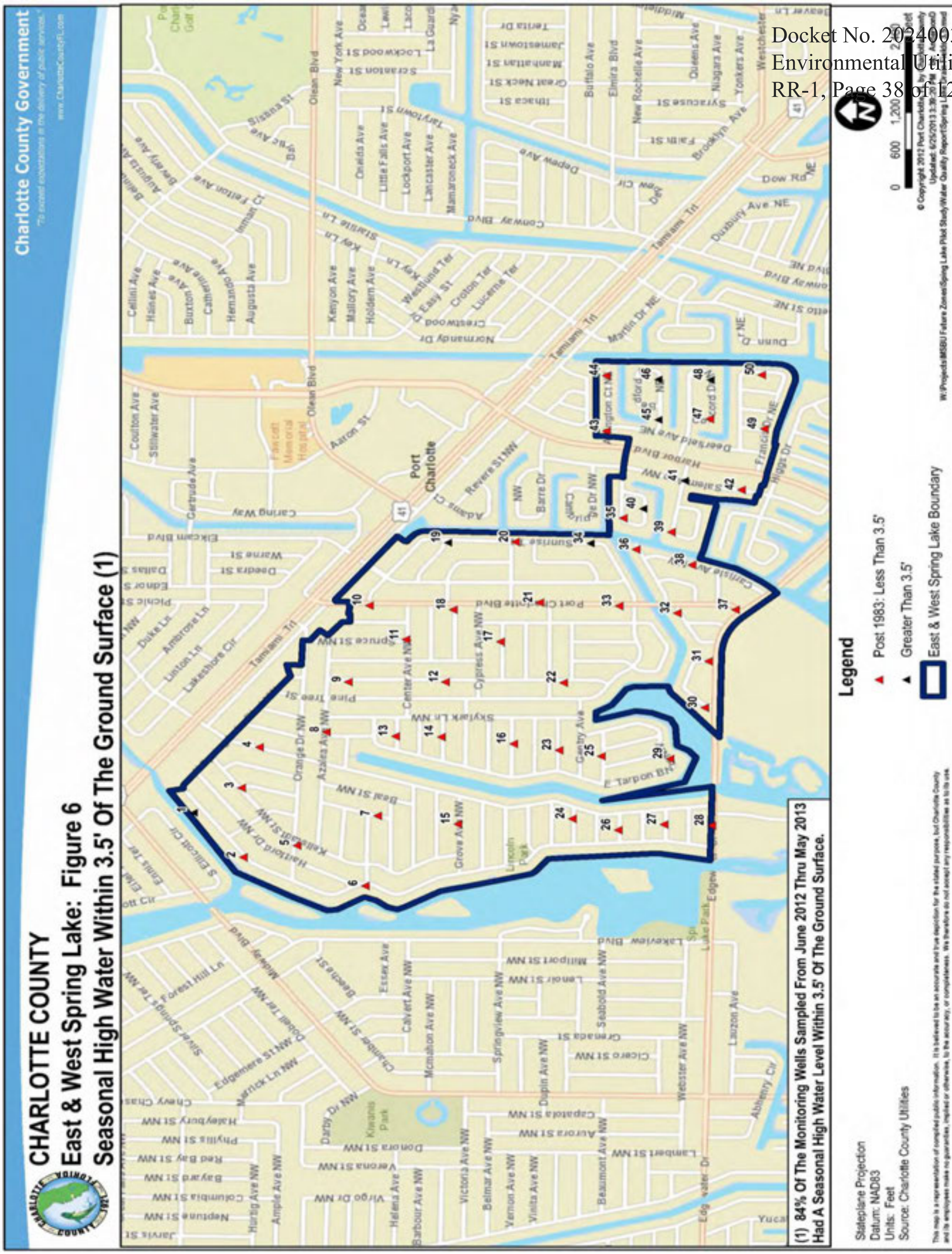


Figure 6 courtesy of Charlotte County Utilities

To take the water table a step further, the regulatory requirements prior to 1983 required 12-inches of separation from the water table. Using the same criteria for cover and depth to the bottom of the drainfield, pre 1983 requirements would result in a minimum allowable depth to the water table of 2.5 feet. As mentioned, the seasonal high water table (as displayed in June and September) was 2.1 feet, or less than this required separation. In comparing the number of readings that were within 2.5 feet, for the highest water table periods (June and September), both June and September had 27 readings (over 55-percent) in which the water table was within 2.5 feet of ground surface. In review of the individual wells, 36 of the 50 wells (72-percent) recorded readings within 2.5-feet BLS at some point during the year (Figure 7). This means that potentially, over 70-percent of the existing drainfields not only do not meet the current regulations in existing since 1983, but potentially do not meet the pre-1983 requirements either.

1.3.1.b East & West Spring Lake Repair OSTDS Repair Review

Specifically for the East & West Spring Lake area, repair data was obtained from the CCHD (Banks, March 2013). Data collected indicated 382 permitted repairs within the study area, of which, the majority of the repairs did not indicate the type, nature, or severity of the repair. From the data, it can be observed the current age of systems repaired as well as the systems repaired as a percentage of the number of systems installed during that era. Of the 382 permitted repairs, all but seven (7) were for systems that were 20-years in age, or older at the time of repair, which is consistent with the Maryland Task Force reference above. In addition, of the 1,286 systems installed prior to 1983, 333 or 25.9% have been repaired. Based on this information and considering the age, the number/percentage of repairs already made, it has been estimated that over the next ten (10) years, approximately 300 additional systems will likely need repair. This information is solely based on the data provided and the age of systems that have been repaired to date. It is noted that one positive step that County has made towards reducing the repairs was the adoption of ordinance 2007-061. This ordinance requires septic systems to be inspected and pumped out every five years in an effort to ensure that the onsite system is adequately maintained. A benefit of the ordinance is that it results in inspections by professionals in the OSTDS field who can determine if a failure has occurred, or even if a minor repair is required. Of these 382 repairs, over 250 were made after the ordinance was adopted in 2007. The positive side to that is the ability to have professionals recognize a repair need and work towards the corrective measures. The negative side, however, is the likelihood that

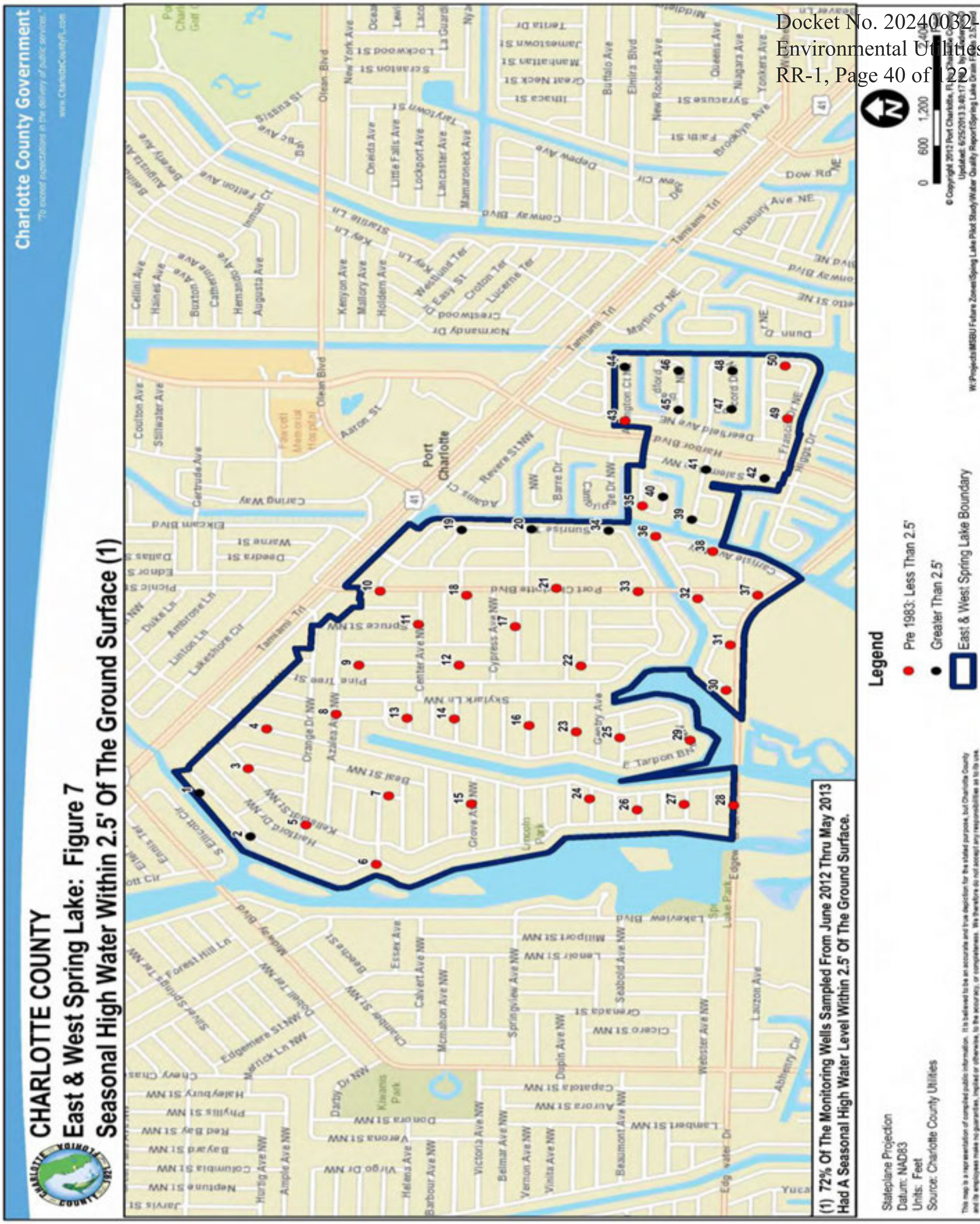
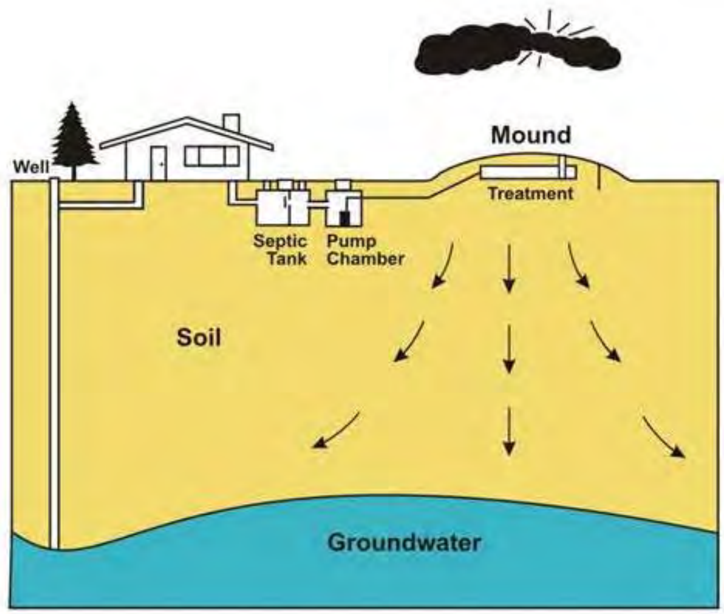


Figure 7 courtesy of Charlotte County Utilities

these 250+ failures occurred in the timeframe of the inspections is low, which means, many of the repair needs could have gone on for years without notice, or outright neglect.

As over 75-percent of the existing OSTDS's within East & West Spring Lake were installed prior to 1983, it is likely that none or very few at most, would meet current regulatory requirements for separation from the groundwater, as demonstrated above. This is important not only for the nutrient removal assistance, but also from a repair or replacement standpoint moving forward. At such point that repairs are required to the drainfield, it is likely that the current system would have to be replaced with a mounded system, in order to meet the 24-inch separation requirement from the seasonal high water table. A mounded system as displayed to the right, requires a mechanical means to lift the effluent from the septic tank to the drainfield. Because the mounded system is elevated, gravity flow to the drainfield is no longer feasible, and therefore requires a second chamber which utilizes a float and pump system to transfer the effluent to the higher drainfield. Not only does the mounded OSTDS add costs to a traditional replacement (with the addition of pump chamber, electrical costs and additional fill for the drainfield) the mounded system are unsightly, with a mound sitting out of place as a small hill in the front, side or year yard.



1.4 SAMPLING AND TESTING PROCEDURES

To complete the water quality evaluation, fifty (50) piezometers were initially set to a depth of approximately 8 to 10-feet below land surface (BLS) at random locations within the East & West Spring Lake area. The goal was to install the wells within easily accessible locations, approximately equidistant from one another. To select the random locations, the East & West Spring Lake area was set on a grid and the well locations were then generated utilizing that grid. Final locations were adjusted to assure wells were located in rights-of-ways or easements. In addition to the fifty (50) monitoring wells, twenty one (21) canal locations (consisting of upstream and downstream sample points) were established for gathering surface water quality information. During the sampling process, which began in June 2012 and has continued through the time of this report preparation, twelve (12) additional groundwater well locations were recommended within the study area. The location of the sixty two (62) total groundwater wells and the twenty one (21) canal sample locations are displayed in Figure 8.

1.4.1 Well Installation

The CCU installer used a hand auger along with a split spoon sampler to install the groundwater sample wells. The split spoon sampler was first used to install a pilot hole and to assist in collecting soil samples. Undisturbed soil samples were taken for future evaluation at 1-foot intervals using the split spoon sampler. A 3-inch hand auger was then used to complete the bore. Once the bore was complete to the required depth (into the water table), the installer used 1.5” schedule 40 PVC well point tips for the perforated section of the well, and installed perforated pipe to a foot from top of ground. Clean well graded sand was applied around the exterior of the PVC well pipe (to 1-foot below-grade) to stabilize the pipe once installed. The top 1-foot was stabilized using soil that came from the excavated hole to help “seal” the surface. Once the wells were set, they were pumped to purge the wells of contaminants and to remove any lose material (soils, etc.).

1.4.2 Sampling

Well sampling has been performed by Benchmark, contracted by CCU. Sampling procedures have been in accordance with FDEP’s standard operating procedures (SOP), in particular, DEP-SOP-001/01 FS 2200 Groundwater Sampling. A summary of the sampling procedures is provided below.

A peristaltic hose pump is used to perform the sampling. At each well, the sample collector cuts tubing to install down the monitoring wells and connect to the suction side of the pump. Similarly, tubing is cut and installed into the discharge side of the pump. Next, the pump is used to purge the well, utilizing the procedures outlined in FS 2000. Following purging, the peristaltic pump is then utilized to collect a representative groundwater sample. Sample procedures are also outlined in FS 2000. Samples are collected in bottles, labeled and delivered to the CCU’s

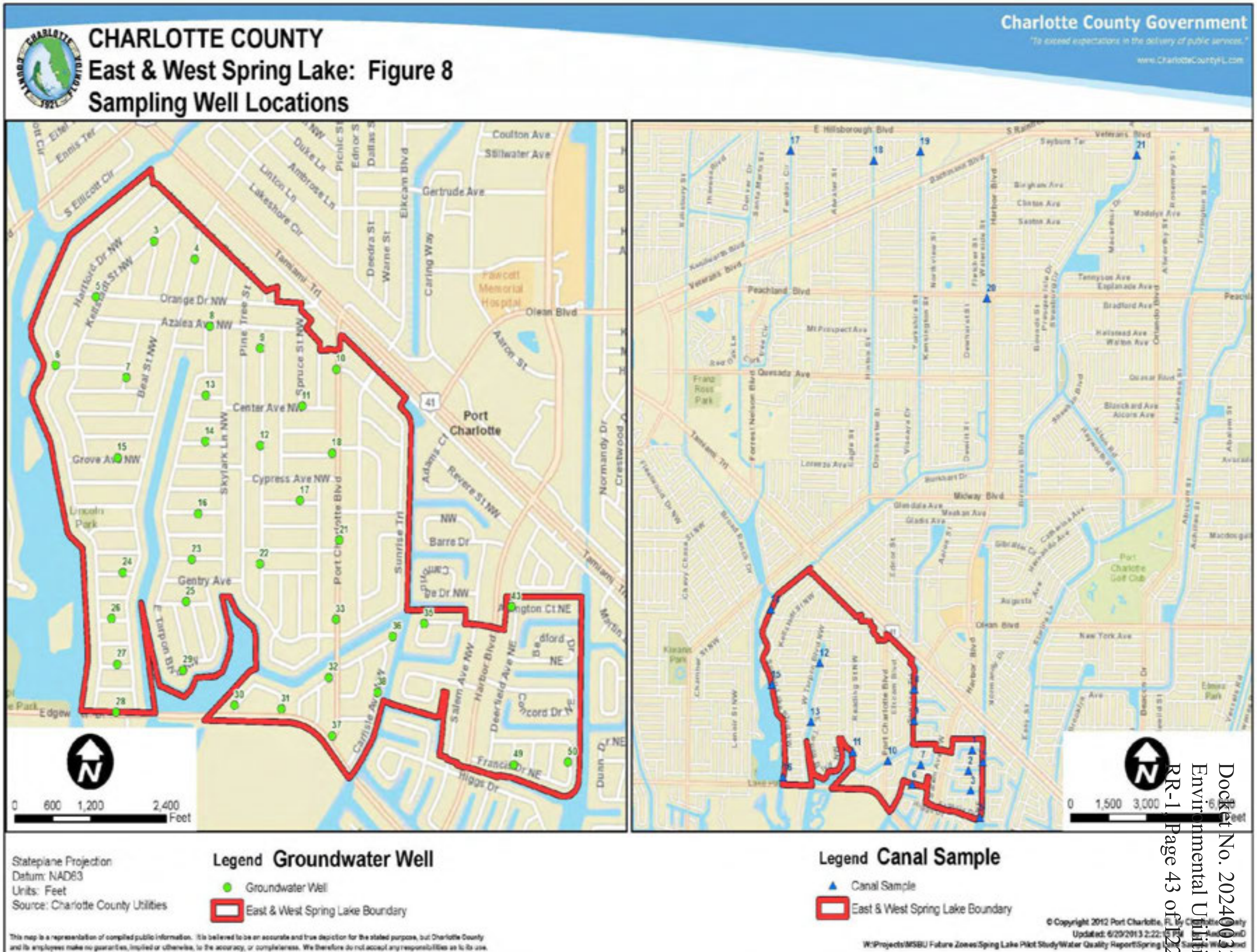


Figure 8 courtesy of Charlotte County Utilities

laboratory located at the East Port Water Reclamation Facility for testing. Water levels measurements are taken at the same time that samples are taken using a sounding probe.

1.4.3 Testing

Once the samples are gathered and labeled, they are delivered to CCU's laboratory, located at the East Port Water Reclamation Facility. The East Port Laboratory (ID #E54436) is certified by the Florida Department of Health Bureau of Laboratories Water as a Basic Environmental Laboratory.

Samples have been tested for nitrogen (N) (Nitrate (NO_3) and Nitrite (NO_2) as well as for combined Nitrate + Nitrite (NO_{3} + NO_2)), phosphorous (P) and fecal coliform. Although other parameters could be tested, these were selected based on potential connectivity to OSTDS's and the fact that these parameters are more common environmental concerns for water quality. In addition, and as mentioned above, the septic tank portion of the OSTDS is recognized as being inefficient in removal of each of these parameters, and instead rely upon the drainfield and soils below the drainfield and separation from the water table.

1.4.4 Nitrogen Characterization

As the OSTDS is inefficient in removing nitrogen, it is a concern for groundwater and surface water pollution. The potential for entering groundwater and surface water is increased depending on the soil conditions and separation of the drainfield to the water table. The U.S. Environmental Protection Agency (EPA) (1992) has estimated that approximately 11.2 grams of total nitrogen is released per individual as wastewater, each day. Sources include toilets, baths, sinks and appliances (Toor et al 2011). This loading results in nitrogen concentrations in excess of 60 milligrams per liter (mg/L) based on previous studies performed in Florida. In comparison, the drinking water standard for total nitrogen is 10 mg/L. With an estimated removal efficiency of 10-40-percent within the OSTDS process, it is difficult to achieve removal to the point of compliance with drinking water standards. In addition to concerns with impact to drinking water, nitrate, nitrogen-enriched groundwater can contribute to eutrophication, which is a process that increases algae growth and can lead to inhibited aquatic life due to excess oxygen demand.

1.4.5 Phosphorous Characterization

As mentioned above, the septic tank portion of the OSTDS is limited in its ability to remove phosphorous, with limited amounts removed and primarily occurring in settling of solids into the bottom of the tank. With proper soils within the drainfield and soils below and beyond the drainfield (and with proper separation from the groundwater table), removal efficiencies up to 95-percent can be achieved. Phosphorous which is not removed and makes its way into the groundwater and even surface water can cause concerns and impair water quality at much lower levels than similar concentrations of nitrogen. In fact, studies have demonstrated eutrophic conditions (which promote algae growth) when phosphorous concentrations exceed just 0.02 mg/L. A recent study performed in 2010 (Tjandraatmadja et al) found that phosphorous was present in 97-percent of 156 tested household products (e.g. soaps, cleaners and personal care products). Recognizing the impacts of phosphorous at elevated levels, significant changes have been made over the years in reducing the amount of phosphorous used in products such as dishwater detergents. In fact, in 2010, 16 states instituted bans on the sale of dishwater detergents which contain more than 0.5-percent phosphorous. Florida was not one of these states, however. As a result of the progression in lowering the concentration of phosphorous in household products, wastewater concentrations are typically less than 10 mg/L. Although proper soils are expected to be effective in removing or reducing the phosphorous from effluent, research has shown that phosphorous plumes can develop in groundwater even where systems appear to be working properly. The recommended means of reducing this phosphorous transport to surface water is by increasing the separation from water bodies and thereby increasing the potential for adsorption by the soil (Lusk et al, 2011)

1.4.6 Fecal Coliform Characterization

There are numerous microorganisms which can be present in wastewater and hence wastewater effluent from a septic tank. The majority of these are not harmful, but certain types are. For example, cholera, dysentery, shigellosis, and typhoid fever are all waterborne diseases caused by bacteria. As the number microorganisms that could be present are numerous, detecting and testing for all types would be cost-prohibitive. As such, indicator bacteria such as fecal coliform are typically tested for instead. As fecal coliform is a survivor of the intestinal flora, its presence can be used to reflect the possible presence of all human pathogens in wastewater. As mentioned above, given proper soil types and conditions, fecal coliform removal efficiencies can reach near 100-percent. However, with improper soil types and/or a lack of separation from the water table, the removal efficiency can be greatly compromised. Bacteria present in the effluent can be removed through filtration or straining as well as through adsorption. Where the soil pores are smaller than the bacteria, the pores are able to block the bacteria from passing, and hence are strained from the effluent. If the soils are too course or porous, the straining is less effective. Where the soil pores are larger than the bacteria, then bacterial removal can also be accomplished through adsorption. Adsorption occurs when the electrically charged bacteria adheres to the surface of the soil particle. In addition to straining and adsorption, it is noted that some bacteria which exits in the effluent may not survive well outside of the human body. Several Florida studies have demonstrated increased bacterial concentrations to groundwater in coastal areas with high housing densities. In these cases, the bacteria transport to groundwater was attributed to saturated soils (i.e. limited separation from the groundwater. Although current regulations prohibit release to saturated soils (with a minimum separation from the seasonal high water table of 24-inches), older systems may not meet this requirement (Lusk et al, 2011).

1.5 WATER QUALITY RESULTS

As mentioned above, sampling and testing began in June of 2012 and has continued through the date that this report was prepared. Thus far, sampling has been performed in June/July of 2012; September/October of 2012; January/February of 2013 and March/April of 2013. The goal has been to collect samples during different periods of the year in order to view water quality results at different times of year where the water table is varied. As such, performing the sampling and testing approximately every 2 months allows us to see if there is a variation in the results at specific locations and/or at different times of the year and with varying water tables.

1.5.1 Nitrogen Results

For nitrogen testing, it was decided to test for nitrates and nitrites. Alternately, testing could be performed for total nitrogen (which would include the addition of total kjeldahl nitrogen (TKN) to the nitrates and nitrites). However, as the organic nitrogen and ammonia which comprise TKN are typically removed through nitrification process within the soils, a decision was made to just test for those parameters likely to be present, nitrates and nitrites.

Nitrogen has been tested for in accordance with EPA method 353.2. More specifically, the samples were tested for nitrate (NO_3) and nitrite (NO_2) and for combined nitrate + nitrite (NO_3+NO_2). The minimum detection limit for each of these parameters is 0.004 mg/L. For those results which indicate a result of 0.004 mg/L in the test report, it is likely that the parameter was non-detectable or at least below the minimum limit.

For NO_2 + NO_3 the groundwater sample results ranged from non-detectable to 39.17 mg/L with an average of 0.637 mg/L. Of the 50+ samples taken during each sample period, it is noted that the majority of the wells demonstrated little to no significant impact at the time of sampling. However, four (4) wells in particular demonstrated elevated levels during multiple sampling periods. Groundwater well (GW) 9 tested at 19.439 mg/L and 4.692 mg/L during the first two (2) sampling periods. (Due to low water table, this well was not able to be sampled during the last two (2) sampling periods.) Similarly, wells GW-19 and GW-40 had multiple sampling periods where the levels were above 2 mg/L and with high test results of 17.33 mg/L and 15.171 mg/L, respectively. The low, high and average nitrate + nitrite levels for the groundwater samples are provided in Table 2 below for each sampling period. In addition, the average depth of the water table below land surface (BLS) is also displayed. Results for all sampling data are provided graphically in Charts 4 and 5. Chart 4 displays the data for results less than 1 mg/L (as the majority of the results were in this range), while Chart 5 displays the data for all results, including those above 1 mg/L.

Table 2

Nitrate + Nitrite Concentrations in Groundwater Well Samples

	Jun/Jul 2012	Sep/Oct 2012	Jan/Feb 2013	Mar/Apr 2013
Low	0.004 mg/L	0.004 mg/L	0.004 mg/L	0.004 mg/L
High	19.439 mg/L	4.692 mg/L	17.33 mg/L	39.17 mg/L
Water Table	2.1 ft BLS	2.1 ft BLS	3.1 ft BLS	3.9 ft BLS
Average	.605 mg/L	0.184 mg/L	0.743 mg/L	1.02 mg/L

In comparing the test results to the groundwater elevation, it is noted that in general, the highest individual samples as well the highest average samples occurred during the period where the groundwater table is at its lowest. However, these results correspond with the period of year when water usage is typically at its highest. As a portion of the East & West Spring Lake residents are seasonal, it is estimated that the nitrogen levels are at their highest when the OSTDS contribution is also at its highest.

Chart 4

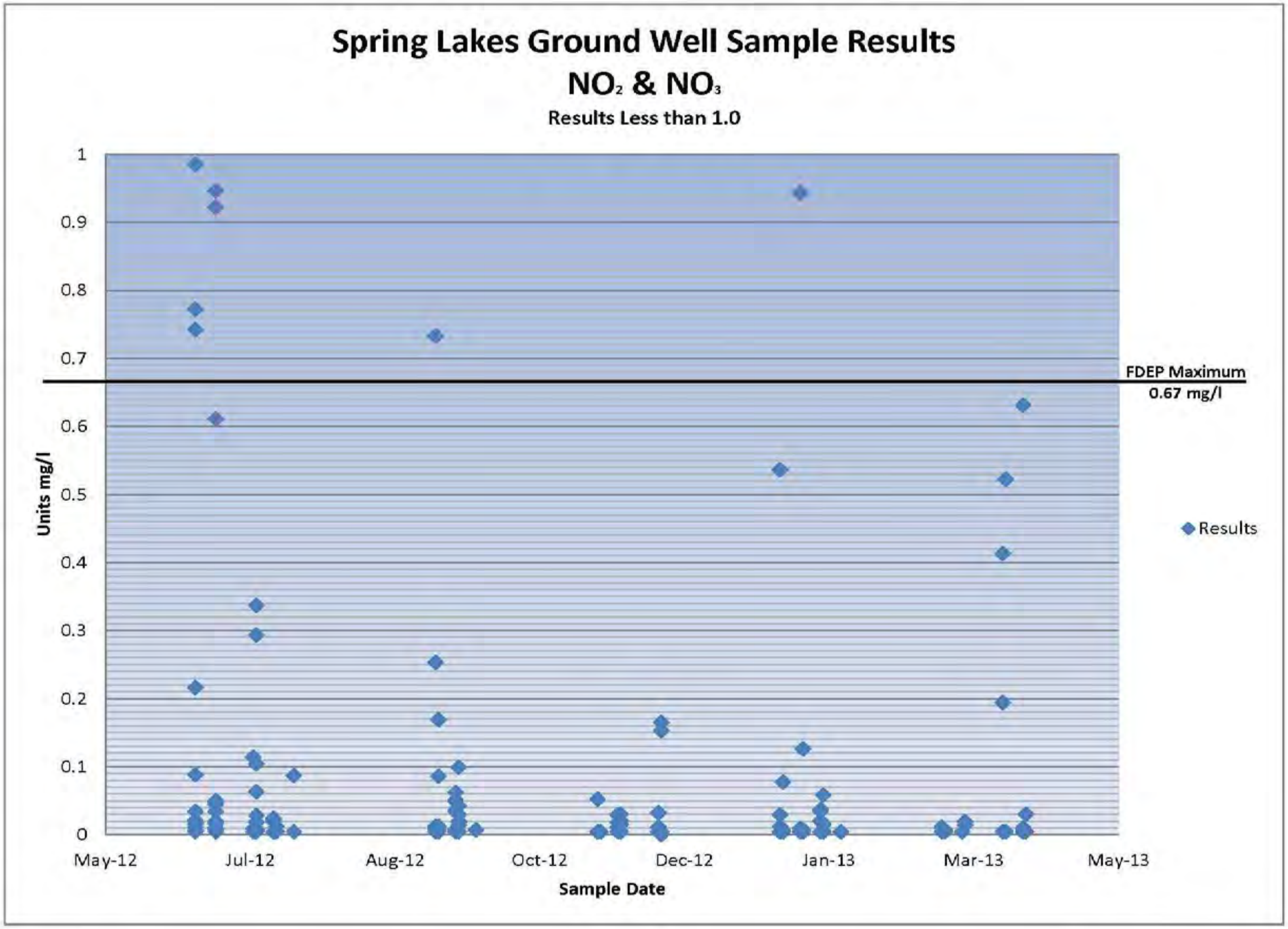
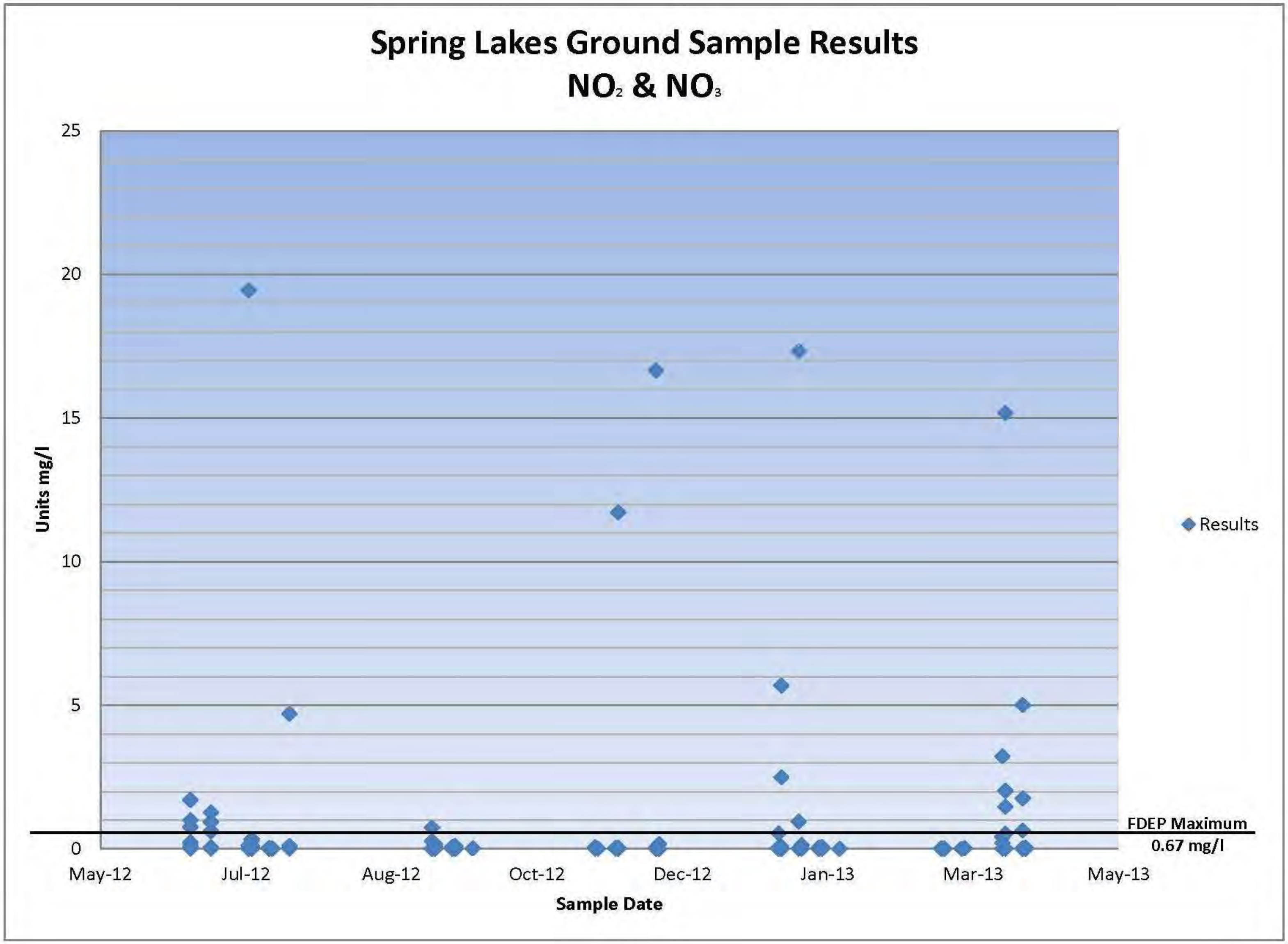

Spring Lakes Ground Well Sample Results
NO₂ & NO₃
Results Less than 1.0
Units mg/l
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
May-12
Jul-12
Aug-12
Oct-12
Dec-12
Jan-13
Mar-13
May-13
Sample Date
FDEP Maximum
0.67 mg/l
Results

Chart 5



TETRA TECH

As mentioned above, the NNC rule has set a maximum discharge concentration of 0.667 mg/L for total nitrogen for Charlotte Proper, based on a 3-year period. Although the sampling period is for less than 1-year it is noted that the groundwater levels on a near 1-year average (for just nitrates and nitrites) are above these levels. (Keep in mind that the testing performed to date has just been for nitrates and nitrites and does not include the potential for the addition of TKN, which would only increase the concentrate.) Please note that the NNC rule **does not** apply to groundwater but rather only to surface water. However, once nitrogen concentrations have made it into the groundwater, little if any of the nutrients are removed. In addition, and as will be explained later in this report, once effluent, rainwater, etc., makes its way into the groundwater, it does not necessarily make its way to surface water. A portion will be released to surface water, but a portion will also be retained as groundwater and will migrate within the groundwater zones, and possibly to points where water is removed from wells downstream for potable or other uses. As such, it is critical to recognize the impact to the groundwater as well as the potential impact to surface water (as will be discussed below in section 1.9 - Surface Water Vs Groundwater). It is estimated that 11-22% of the total nitrogen load to the Charlotte Harbor is contributed by septic systems (Staugler, 2013).

In addition to the groundwater well samples, 21 sample locations were set within the adjacent canals to determine background levels upstream and downstream of the East & West Spring Lake area. As expected, the nitrogen levels within the canal samples were much lower than the levels within groundwater samples, ranging from 0.004 mg/L (non-detectable) to 0.062 mg/L. Table 3 provides the low, high and average nitrate + nitrite levels for the canal samples taken. Charts 6 and 7 graphically display the results for all sample taken, with Chart 6 displaying the results within Spring Lake and Chart 7 displaying the results from the upstream canals. As displayed, the levels within Spring Lake are higher than the upstream levels.

Table 3

Nitrate + Nitrite Concentrations in Canal Samples

	Jun/Jul 2012	Sep/Oct 2012	Jan/Feb 2013	Mar/Apr 2013
Low	.004 mg/L	0.004 mg/L	0.004 mg/L	0.004 mg/L
High	0.033 mg/L	0.062 mg/L	0.033 mg/L	0.038 mg/L
Average	0.021 mg/L	0.03 mg/L	0.013 mg/L	0.012 mg/L

Chart 6

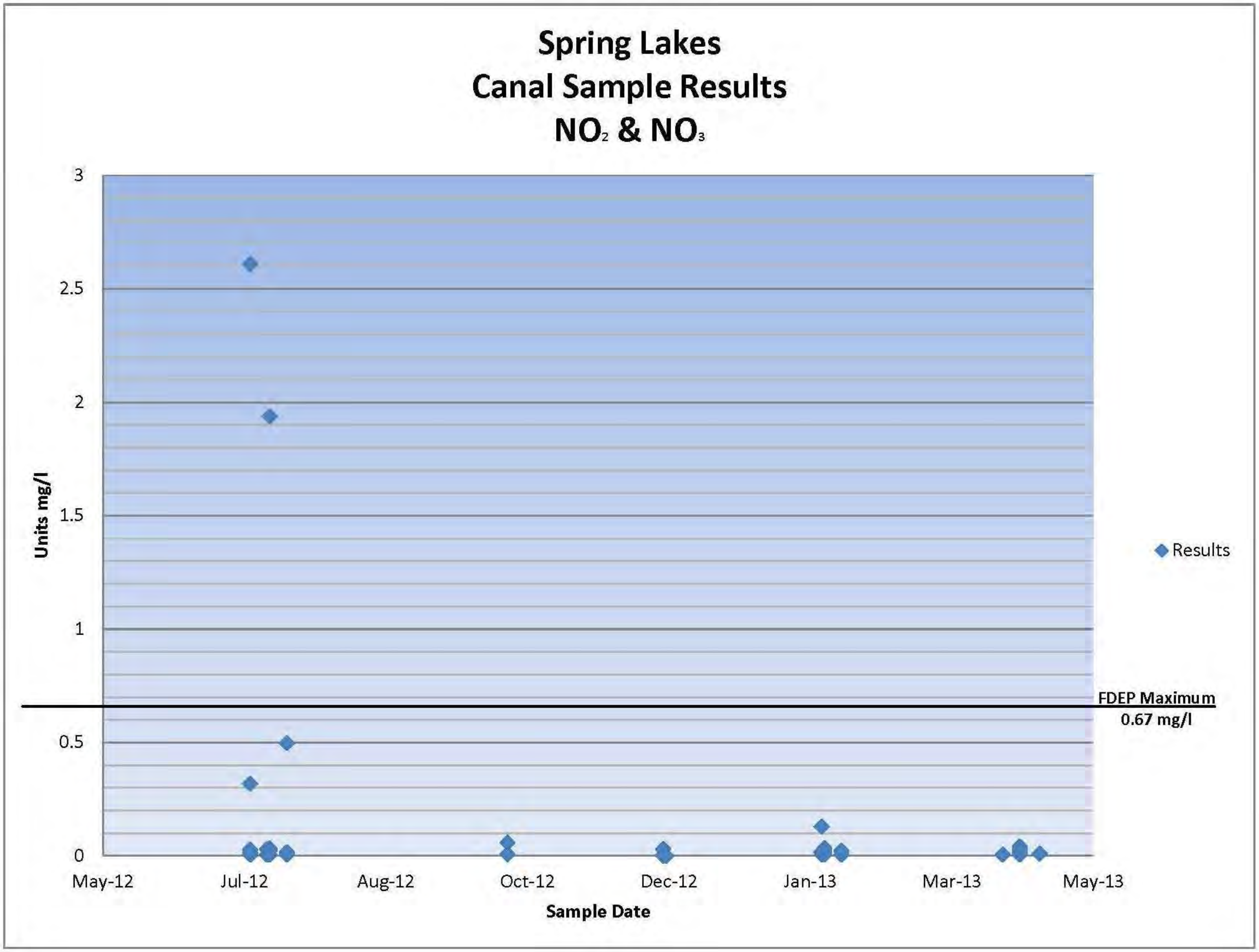
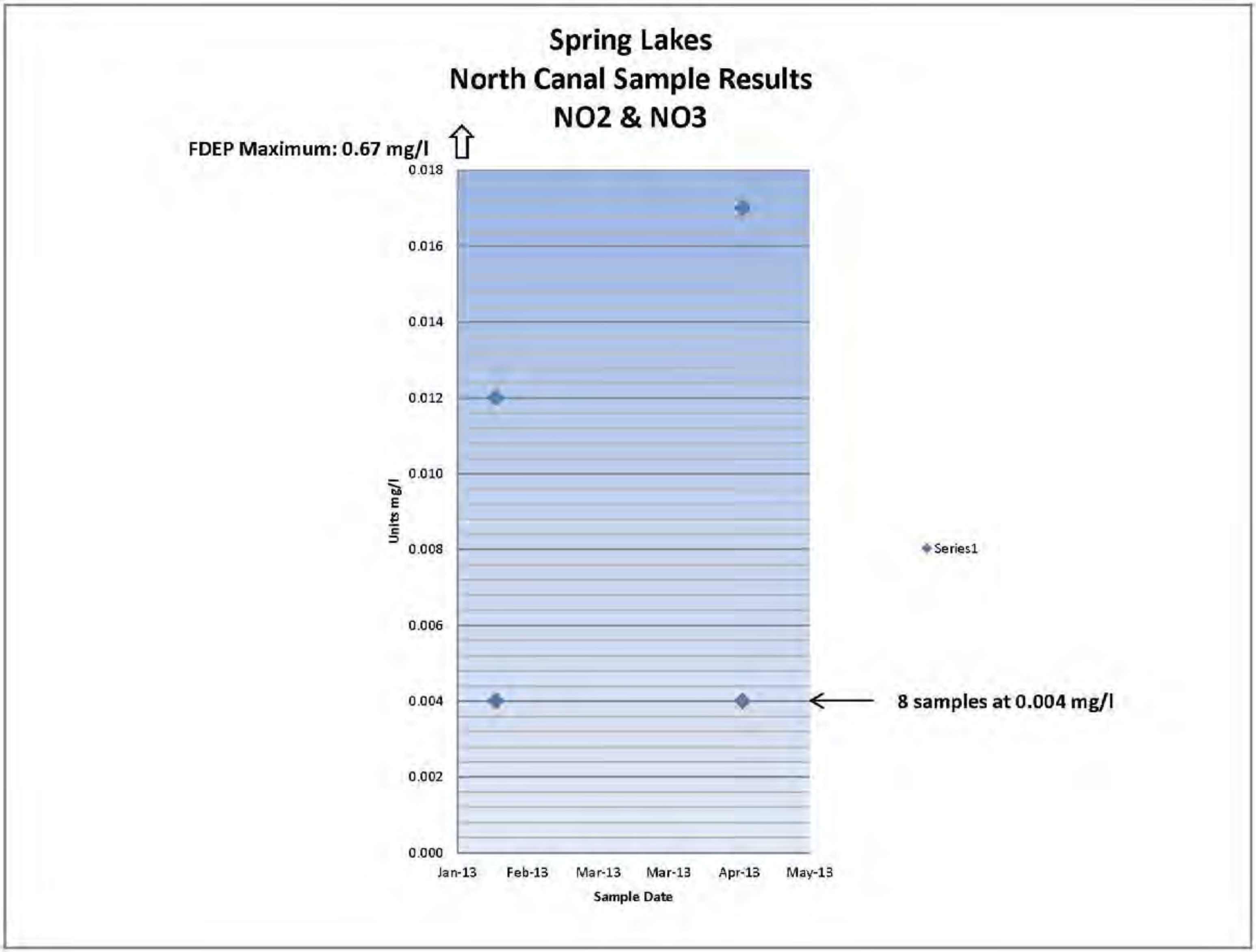

Spring Lakes
Canal Sample Results
NO2 & NO3
Units mg/l
3
2.5
2
1.5
1
0.5
0
May-12
Jul-12
Aug-12
Oct-12
Dec-12
Jan-13
Mar-13
May-13
Sample Date
Results
FDEP Maximum
0.67 mg/l

Chart 7


Spring Lakes
North Canal Sample Results
NO2 & NO3
FDEP Maximum: 0.67 mg/l
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
Units mg/l
Jan-13
Feb-13
Mar-13
Mar-13
Apr-13
May-13
Sample Date
Series1
8 samples at 0.004 mg/l

As displayed, these levels are significantly below the NNC level set for this area (0.67 mg/L). However, as mentioned above, the levels tested were solely for nitrates and nitrites and did not include the TKN portion of total nitrogen. Please note the significance of sampling within the canals was to establish and understand what the current downstream and upstream nutrient concentrations are within the canal system. These results are not meant to represent an impact of the East & West Spring Lake area from either OSTDS's or other parameters (fertilizers etc.) released from within the study area.

1.5.2 Phosphorous Results

Phosphorous has been tested in accordance with EPA method 365.4. The minimum detection level for phosphorous (P) is 0.02 mg/L. For those results which indicate a result of 0.02 mg/L in the test report, it is likely that the parameter was non-detectable or at least below the minimum limit.

For phosphorous, the groundwater sample results ranged from non-detectable to 13.53 mg/L with an average of 1.43 mg/L for all samples taken. The majority of the samples tested positive for phosphorous and were significantly above the NNC limit of 0.19 mg/L. The low, high and average phosphorous levels for the groundwater samples are provided in Table 4 below for each sampling period. In addition, the average depth of the water table below land surface (BLS) is also displayed. Results for all sampling data are provided graphically in Charts 8 and 9. Chart 8 displays the data for all results while Chart 9 displays the data for results less than 5 mg/L (as the majority of the results were in this range).

Table 4

Phosphorous Concentrations in Groundwater Well Samples

	Jun/Jul 2012	Sep/Oct 2012	Jan/Feb 2013	Mar/Apr 2013
Low	.02 mg/L	0.02 mg/L	0.11 mg/L	0.15 mg/L
High	4.05 mg/L	13.53 mg/L	5.62 mg/L	31.69 mg/L
Water Table	2.1 ft BLS	2.1 ft BLS	3.1 ft BLS	3.9 ft BLS
Average	1.05 mg/L	1.36 mg/L	1.12 mg/L	2.39 mg/L

In comparing the test results to the groundwater elevation, it is noted that in general, the highest individual sample as well the highest average for samples occurred during the period where the

Chart 8

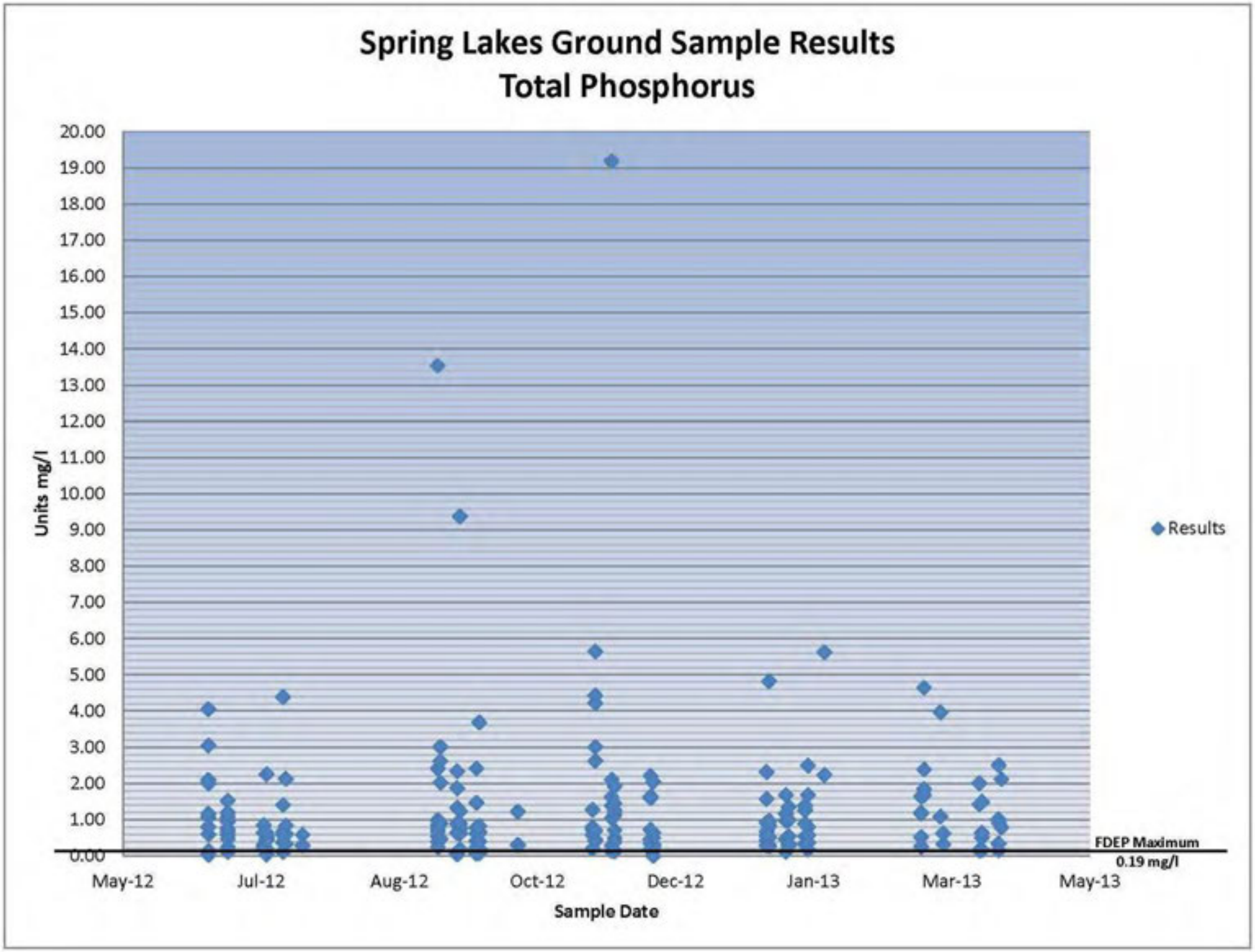
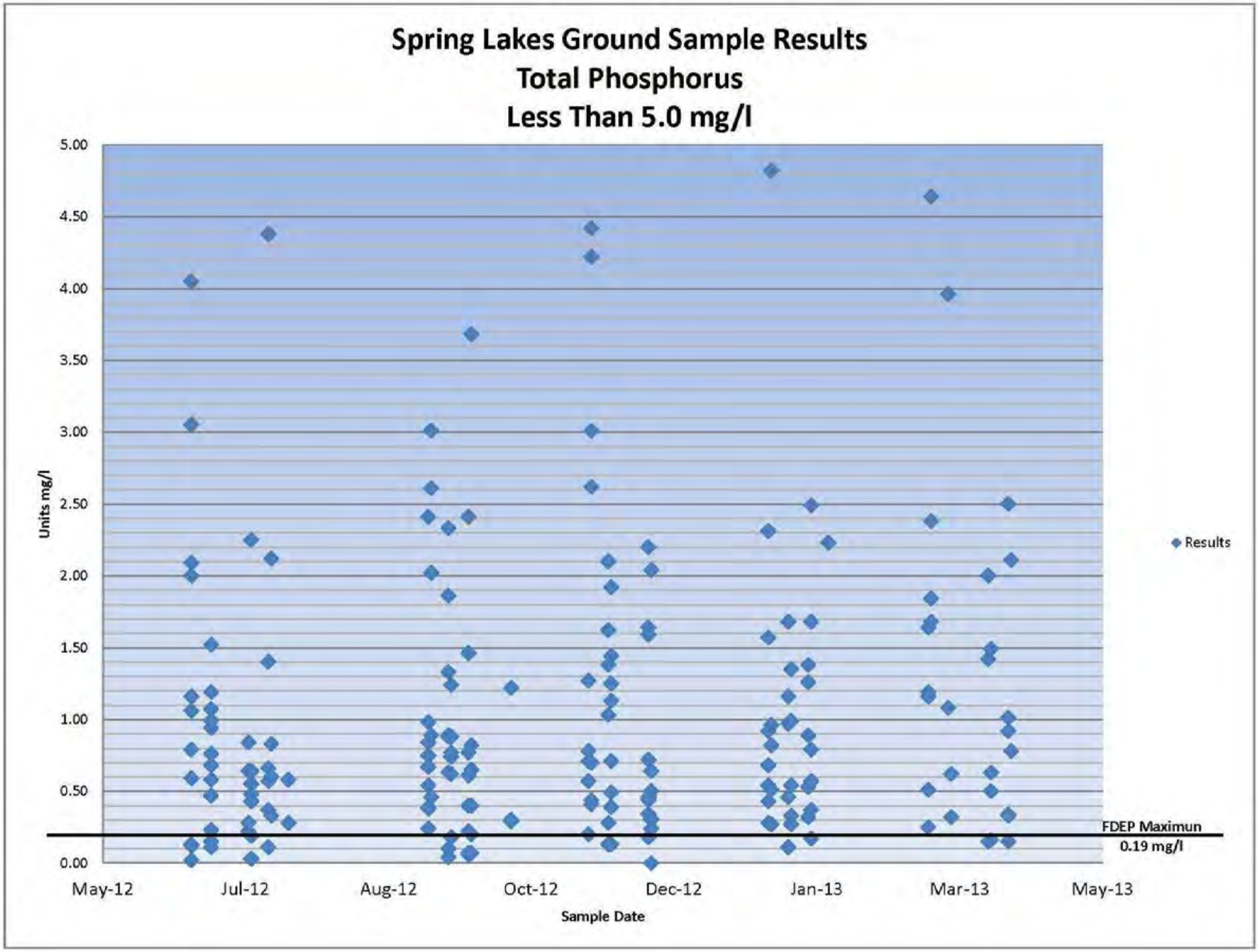

Spring Lakes Ground Sample Results
Total Phosphorus
Units mg/l
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
May-12
Jul-12
Aug-12
Oct-12
Dec-12
Jan-13
Mar-13
May-13
Sample Date
Results
FDEP Maximum
0.19 mg/l

Chart 9


Spring Lakes Ground Sample Results
Total Phosphorus
Less Than 5.0 mg/l
Units mg/l
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
May-12
Jul-12
Aug-12
Oct-12
Dec-12
Jan-13
Mar-13
May-13
Sample Date
Results
FDEP Maximun
0.19 mg/l

groundwater table is at its lowest. However, these results correspond with the period of year when water usage is typically at its highest. As a portion of the East & West Spring Lake residents are seasonal, it is estimated that the phosphorous levels are at their highest when the OSTDS contribution is also at its highest.

Unlike nitrogen, only two (2) test samples resulted in phosphorous levels at the non-detection limit of 0.02 mg/L. All other samples were above the non-detection limit, with many of these being above the state established NNC level of 0.19 mg/L for Charlotte Proper. In fact, and as displayed, the average during each sample period was more than five (5) times the state allowed NNC level for phosphorous released to surface water for the first testing period and more than 12 times for the most recent testing period. As with Nitrogen, the NNC requirements for phosphorous are for surface water, and **do not** apply to groundwater. However, similarly with nitrogen, once phosphorous is released into the groundwater, little if any is removed.

As mentioned above, high levels of phosphorous can be more significant than high levels of nitrogen due to the potential for eutrophic conditions at a very low level (as low as 0.02 mg/L).

In addition to the groundwater samples, samples were also taken from the 21 canal testing locations. Results of testing from the canals showed phosphorous levels ranging from 0.1 mg/L to 0.66 mg/L. Although these levels are much lower than the groundwater levels, they are above the levels set for numeric nutrient criteria. Within the canals, 55 of 69 samples tested higher than the NNC established limit of 0.19 mg/L. As mentioned above, phosphorous can be eutrophic and promote algae growth at a much lower level than nitrogen, with eutrophic conditions reported as low as 0.02 mg/L. It is noted that in general, the phosphorous levels within the canals are higher during the wet and warmer periods of the year than the dry and cooler periods of the year, being nearly double during the wet and warmer periods. However, even during the cooler periods, the average levels are near or above the NNC limit.

Table 5 provides the low, high and average phosphorous levels for the canal samples taken. Charts 10 and 11 graphically display the results for all samples taken, with Chart 10 displaying the results within Spring Lake and Chart 11 displaying the results from the upstream canals. As displayed, the levels within Spring Lake are higher than the upstream levels.

Table 5

Phosphorous Concentrations in Canal Samples

	Jun/Jul 2012	Sep/Oct 2012	Jan/Feb 2013	Mar/Apr 2013
Low	0.22 mg/L	0.29 mg/L	0.02 mg/L	0.04 mg/L
High	0.66 mg/L	0.52 mg/L	0.32 mg/L	0.42 mg/L
Average	0.42 mg/L	0.41 mg/L	0.18 mg/L	0.23 mg/L

1.5.3 Fecal Coliform Results

Fecal coliform has been tested for in accordance with method SM9222D. Minimum detection limits for fecal coliform are 10 colonies per 100 ml. Many of the samples collected indicate a result of 10 col/100 ml. In those cases, it is likely that the result was less than the reported result as the minimum detection limit is reported, even if the result was less, as there is no way to distinguish if the result is less than the minimum detection limit. Of particular note, samples from GW-29 tested high during two (2) sample periods, June/July of 2012 and September/October 2012. The samples tested at 440 and 1720 col/100 ml, respectively. The low, high and average fecal coliform levels for the groundwater samples are provided in Table 6 below for each sampling period. In addition, the average depth of the water table below land surface (BLS) is also displayed. Results for sampling data are provided graphically in Chart 12.

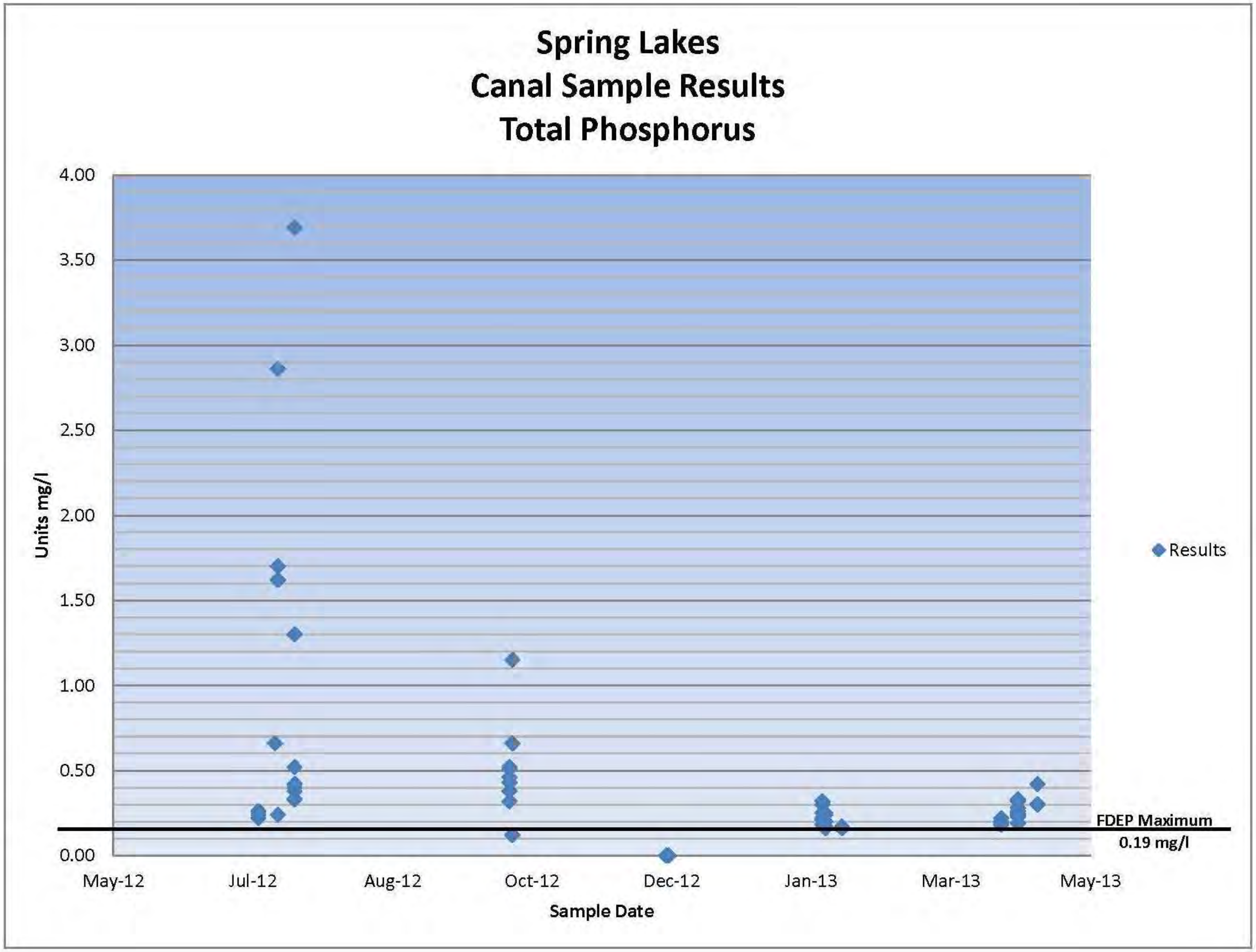
Table 6

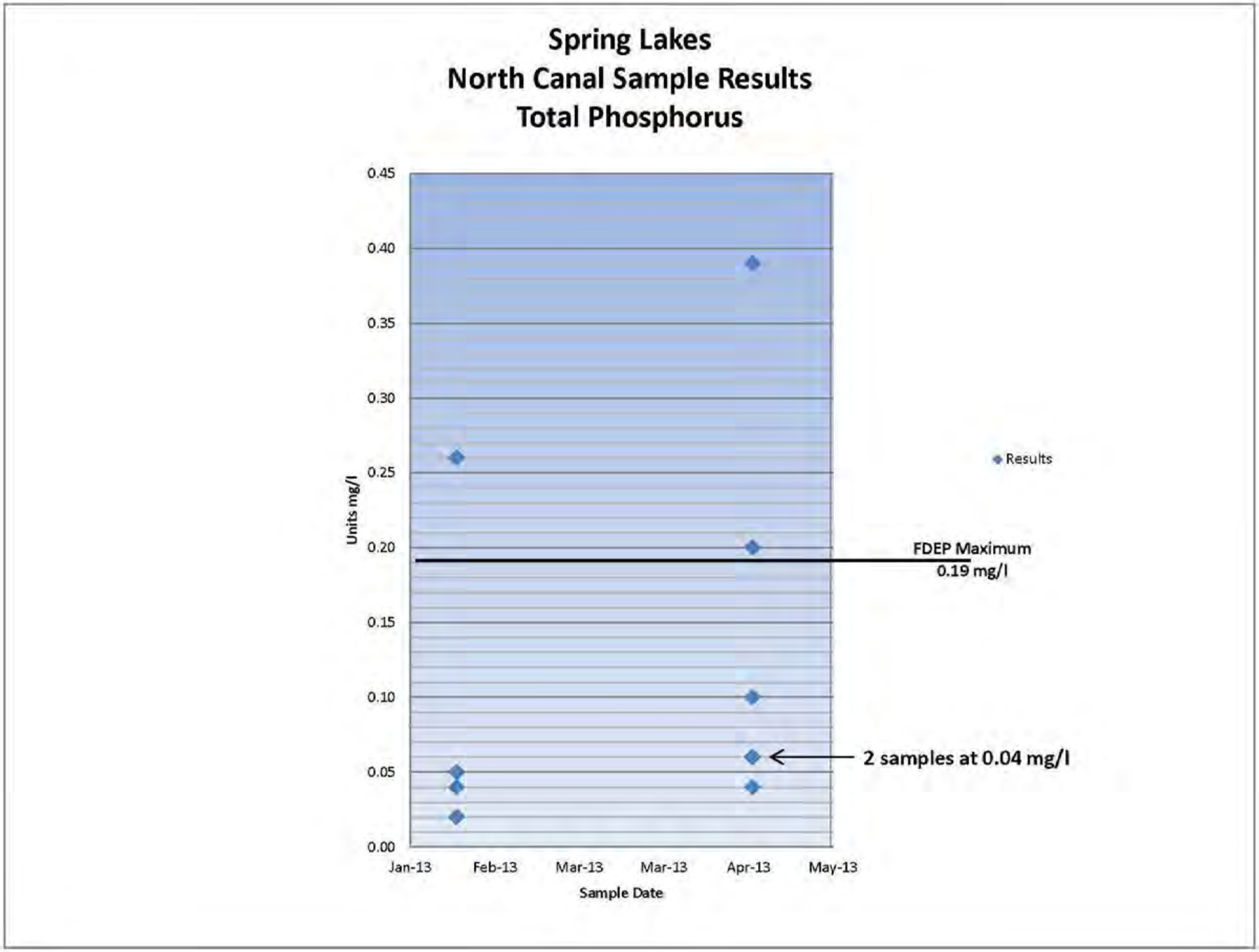
Fecal Coliform Concentrations in Groundwater Samples

	Jun/Jul 2012	Sep/Oct 2012	Jan/Feb 2013	Mar/Apr 2013
Low	10 col/100 ml	10 col/100 ml	10 col/100 ml	10 col/100 ml
High	2940 col/100 ml	1720 col/100 ml	10 col/100 ml	10 col/100 ml
Water Table	2.1 ft BLS	2.1 ft BLS	3.1 ft BLS	3.9 ft BLS
Average	123.5 col/100 ml	44.9 col/100 ml	10 col/100 ml	10 col/100 ml

Unlike nitrogen and phosphorous, the fecal coliform readings corresponded to the wet season when the water table is at its highest. This result is expected as bacteria, such as fecal coliform, do not survive well outside of the human body. As such, when the water table is at its lowest, during the dry period, it is more difficult for colonies to survive through the soil and make it into the water table. Conversely, nitrogen and phosphorous are nutrients and are not effected by time outside of an organism, but rather depend on the soil for filtering and adsorption.

Chart 10

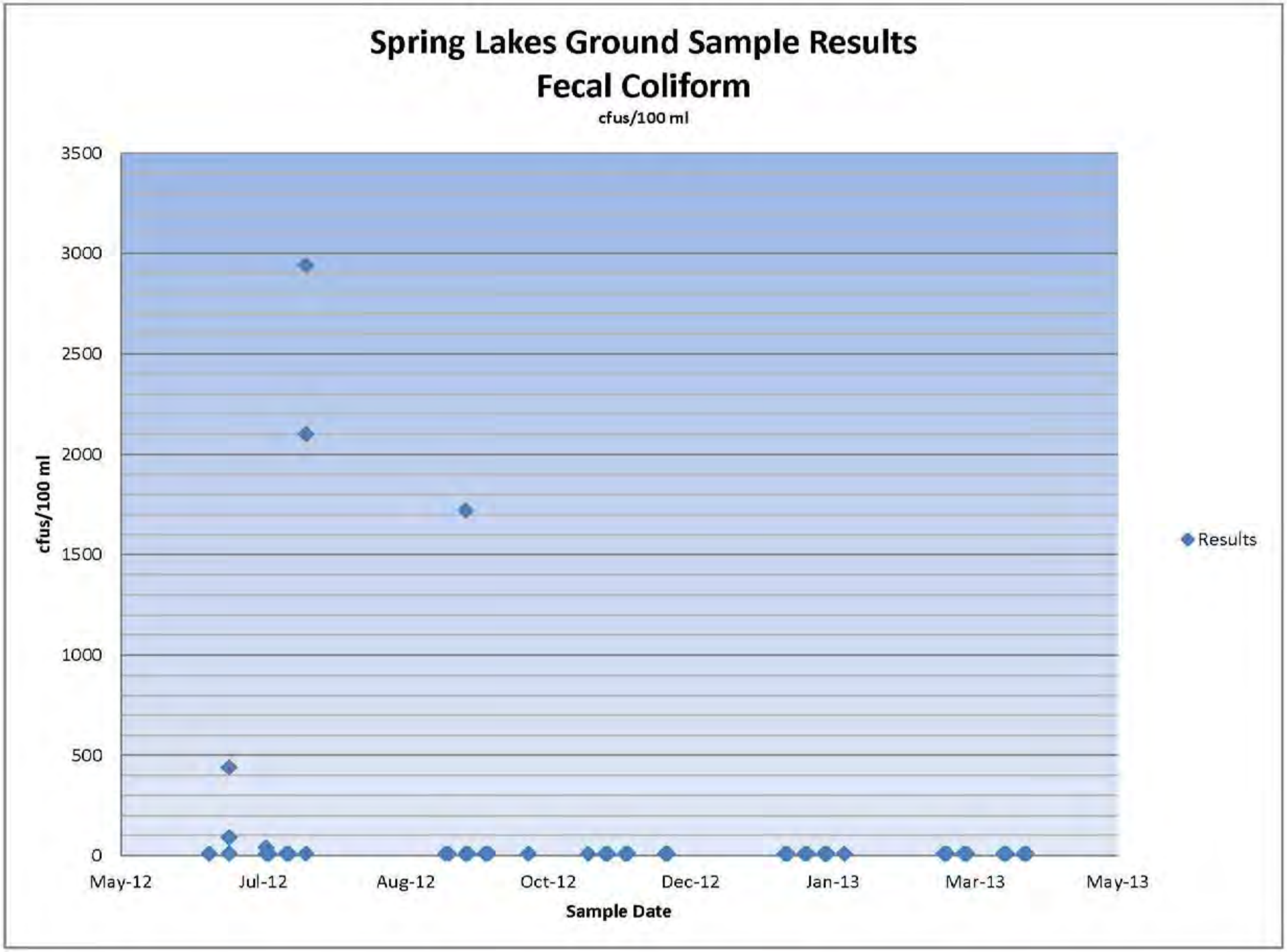

Spring Lakes
Canal Sample Results
Total Phosphorus
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Units mg/l
May-12
Jul-12
Aug-12
Oct-12
Dec-12
Jan-13
Mar-13
May-13
Sample Date
Results
FDEP Maximum
0.19 mg/l



Spring Lakes
North Canal Sample Results
Total Phosphorus
Units mg/l
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
Jan-13
Feb-13
Mar-13
Mar-13
Apr-13
May-13
Sample Date
Results
FDEP Maximum
0.19 mg/l
2 samples at 0.04 mg/l

Chart 11

Chart 12



Spring Lakes Ground Sample Results
Fecal Coliform
cfus/100 ml
cfus/100 ml
3500
3000
2500
2000
1500
1000
500
0
May-12
Jul-12
Aug-12
Oct-12
Dec-12
Jan-13
Mar-13
May-13
Sample Date
Results

In addition to the groundwater wells, the 21 canal sample points have also been sampled for fecal coliform. The samples ranged from a low of 10 col/100 ml to a high of 200 col/100 ml. Although the highest concentrations of fecal coliform from the canal testing was much lower than the high value taken from the groundwater wells, the canals had more hits above the non-detection limit (10 col/100 ml). As mentioned, the canal samples were taken to give an upstream and downstream indication of the background surface water levels and are not meant to indicate a direct correlation or contribution from OSTDS's within East & West Spring Lake. Of more concern are those hits of fecal coliform within the groundwater samples within Spring Lake. As fecal coliform is not naturally occurring in the groundwater the source is projected be from an outside influence, such as an OSTDS.

Table 7 provides the low, high and average fecal coliform levels for the canal samples taken. Charts 13 and 14 graphically display the results for all sample taken, with Chart 13 displaying the results within Spring Lake and Chart 14 displaying the results from the upstream canals. As displayed, on average, the levels within Spring Lake are higher than the upstream levels.

Table 7

Fecal Coliform Concentrations in Canal Samples

	Jun/Jul 2012	Sep/Oct 2012	Jan/Feb 2013	Mar/Apr 2013
Low	10 col/100 ml	10 col/100 ml	10 col/100 ml	10 col/100 ml
High	90 col/100 ml	80 col/100 ml	200 col/100 ml	70 col/100 ml
Average	41.3 col/100 ml	29.1 col/100 ml	31.9 col/100 ml	18.1 col/100 ml

1.6 SIGNIFICANCE OF TEST RESULTS

As mentioned above, initial groundwater wells were randomly placed throughout East & West Spring Lake area. This random placement provides an overview of the general study area, but is not directly indicative of an issue with a failing OSTDS. However, it is noted that with this random sampling, it is difficult to achieve a true indication of the impact on the groundwater. The reason is that as effluent is released from a septic tank and migrates downward through the soil within the drainfield, once it makes it into the water table, it immediately begins to move in the direction of groundwater flow. As effluent is not released 24-hours per day, but rather sporadically throughout the day (and dependent on clothes washing, dish washing, showers, etc.), it is very difficult to capture a sample at a specific point in the water table at the specific

Chart 13

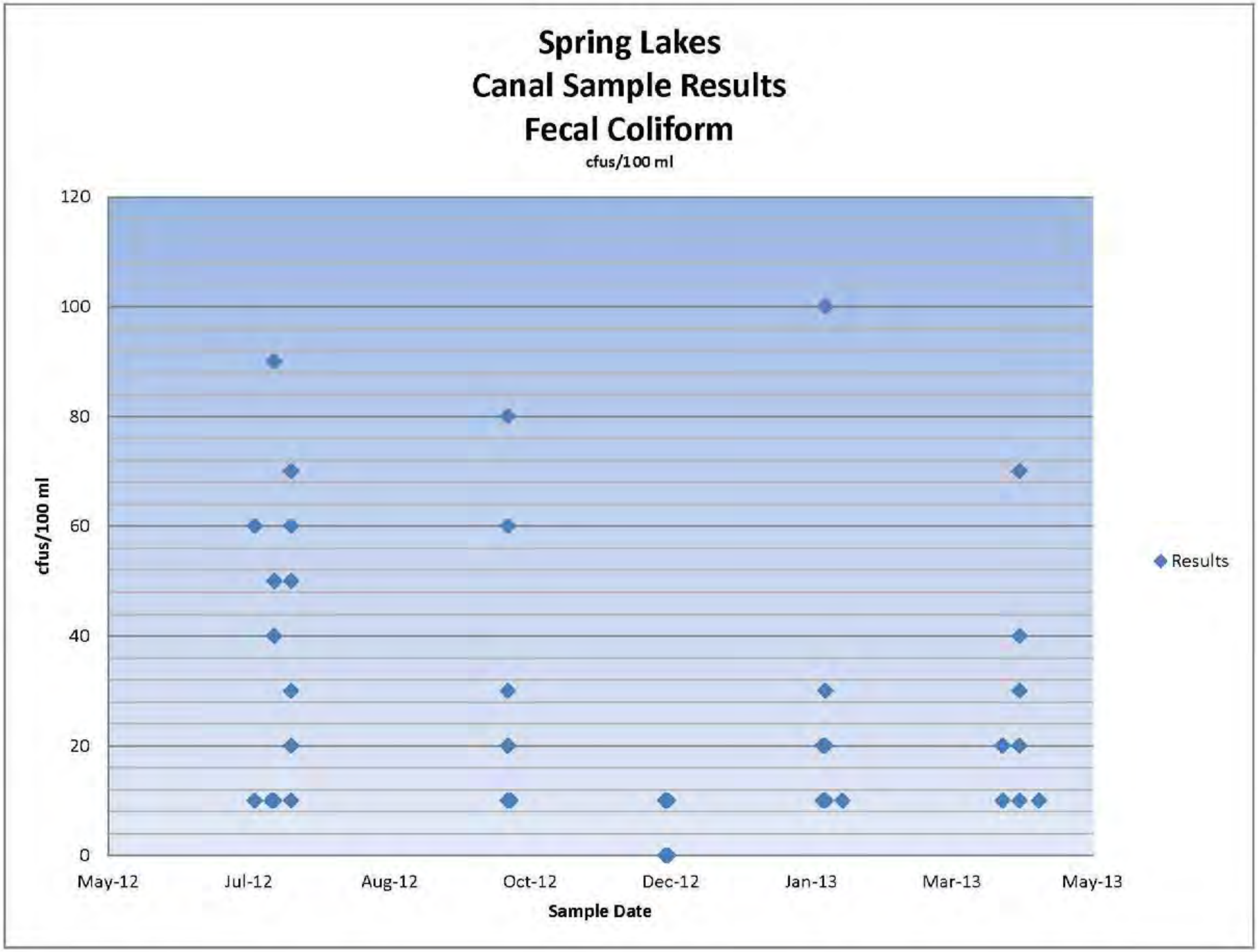
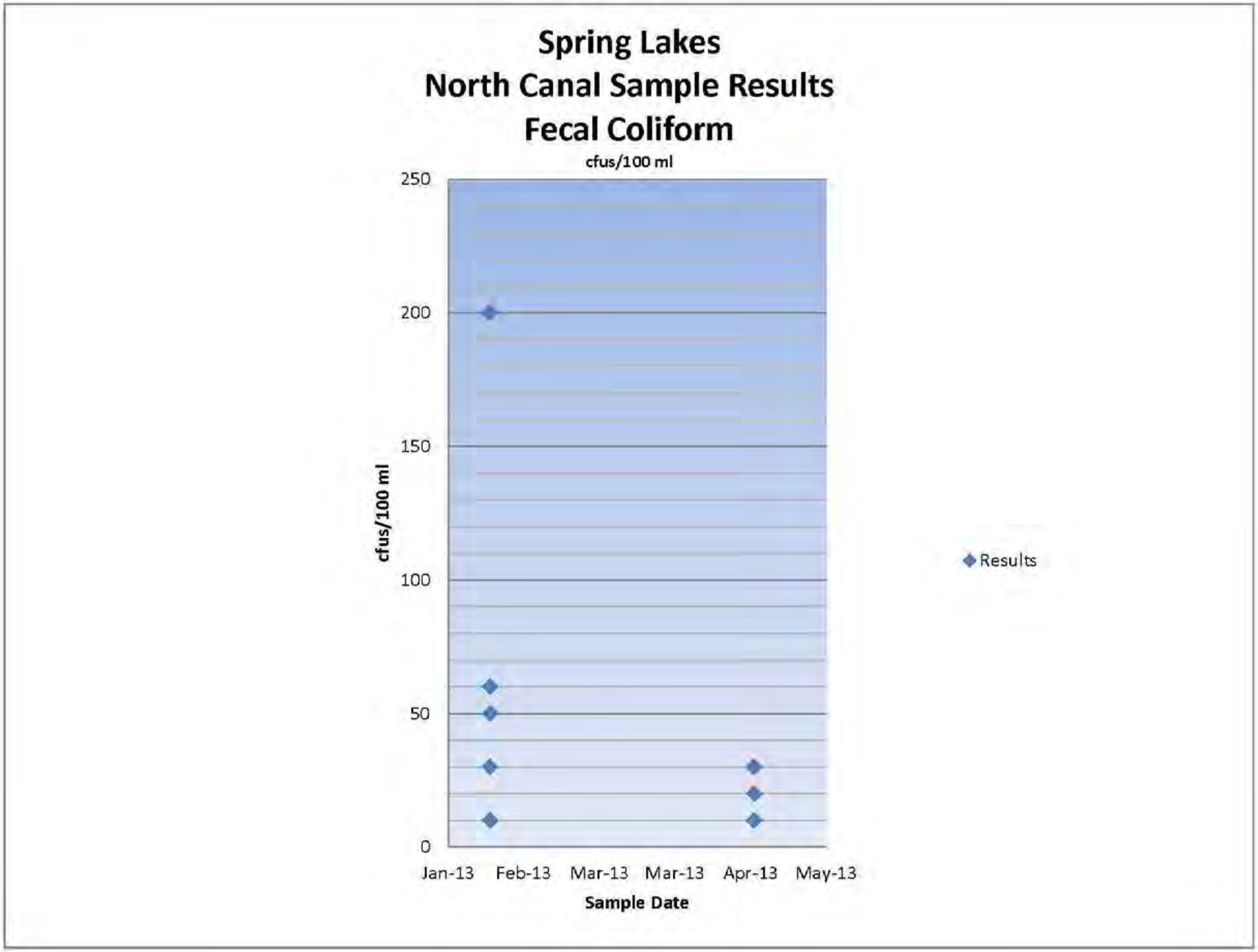

Spring Lakes
Canal Sample Results
Fecal Coliform
cfus/100 ml
cfus/100 ml
0
20
40
60
80
100
120
May-12
Jul-12
Aug-12
Oct-12
Dec-12
Jan-13
Mar-13
May-13
Sample Date
Results

Chart 14


Spring Lakes
North Canal Sample Results
Fecal Coliform
cfus/100 ml
cfus/100 ml
250
200
150
100
50
0
Jan-13
Feb-13
Mar-13
Mar-13
Apr-13
May-13
Sample Date
Results

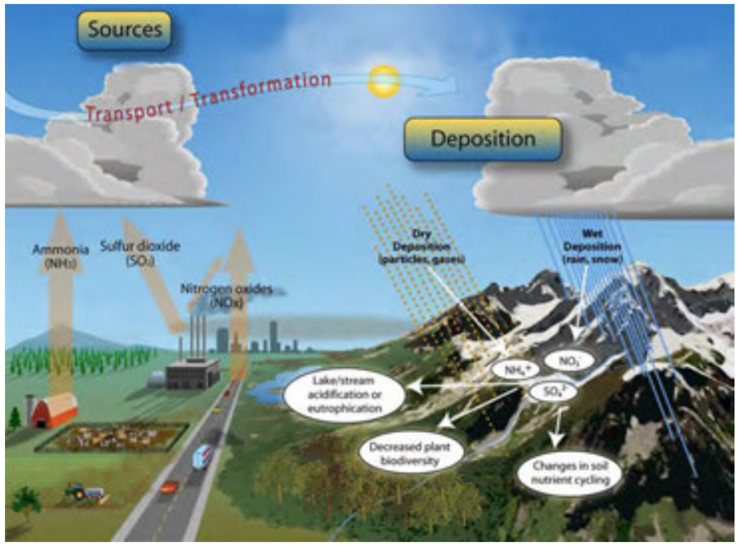
time that the effluent makes its way past a sample well. That being said, when a positive sample is obtained in a random location within the water table, such as where the initial 50 groundwater wells were set, it raises more concern that a point source such as an OSTDS likely was the cause of the “spike”. As fecal coliform is an indicator of bacteria present in human waste, to have samples testing in the range 1720 and 2940 col/100 ml within the groundwater away from OSTDS’s, questions must be raised as to how the bacteria (which is not naturally occurring in the groundwater), was introduced. Having multiple samples testing with high levels raises more concern. It has been suggested that fecal coliform could be from animals and not from human waste released from OSTDS’s. For the surface water samples, which actually had more hits above the non-detection limit than the groundwater samples, this is a reasonable conclusion. However, as animal feces (bird, dog, cat, etc.) would be introduced externally, above-ground, the likelihood that fecal content would make it into the water table, is less than fecal content released directly into the soil system, such as from a failing or inefficient OSTDS. Similarly, concentrations of nitrogen and phosphorous to the levels tested are more likely to be attributed to an internal release such as from an OSTDS than external release as well.

In order to take a more direct approach in sampling, the Charlotte County Health Department (CCHD) was contacted to determine locations of recent reported septic tank complaints. The CCHD logs nuisance complaints and shared the location of twelve (12) complaints within the East & West Spring Lake area. Nuisance complaints can be minor in nature such as a cleanout lid missing, or they can be related to a more major system failure. In each of the cases specific information about the complaint was not provided by the CCHD. Following receipt of the addresses for the complaint areas, new groundwater monitoring wells were installed adjacent to the OSTDS system, with permission by the home owner. At the time that this report was prepared, four (4) of the twelve (12) wells had been completed with initial samples taken. Two (2) of the four (4) wells tested positive for both nitrogen and phosphorous. In fact, the highest sample for Nitrogen taken to date was at one (1) of these locations. That level, as indicated above was 39.17 mg/L, a level that is nearly triple the allowable drinking water average.

1.7 OTHER CONTRIBUTORS

In addition to wastewater released from homes into OSTDS’s, other nutrient contributors should be considered. In residential areas such as the East & West Spring Lake area, these contributors primarily consist of atmospheric deposition and fertilizers. The difference with both atmospheric deposition and fertilizer application from wastewater/effluent from an OSTDS is that the effluent is released below ground and, into the soil whereas fertilizers and atmospheric deposition are released above-ground, where the majority of the nitrogen and phosphorous deposited from external application is taken in by the vegetation.

1.7.1 Atmospheric Deposition



Atmospheric deposition refers to the transfer of particles from the atmosphere to the ground through air movement and precipitation. Specific information related to the atmospheric deposition of nitrogen and/or phosphorous within Charlotte County and specifically within East & West Spring Lake was unavailable for this study. However, studies performed in various areas of Florida have suggested atmospheric deposition can contribute up to 30-percent of the total contribution to a given area. As the atmospheric deposition is simply that, deposits made from the atmosphere to the ground, the majority of the nutrient loadings are expected to be utilized by plant life prior to reaching the groundwater tables. The atmospheric loadings could result in increased concentrations within the canals but the contribution to the groundwater is estimated to be limited due to nutrient uptake by the vegetation.

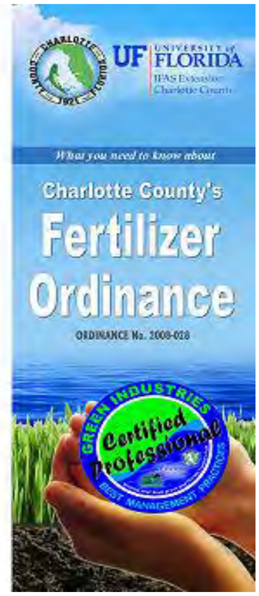
1.7.2 Fertilizer Restrictions

Charlotte County Fertilizer Ordinance was written in 2008 to allow for maintaining healthy landscapes while minimizing the potential impact to groundwater and surface water. The Ordinance was amended in 2011 (No. 2011-017) to further restrict the period when fertilizer can be applied and to further restrict the application of nitrogen. Highlights of the ordinance include:

1. No fertilizer containing nitrogen or phosphorus may be applied from June 1st to September 30th to turf or landscape plants.

2. No more than 4 pounds of nitrogen per 1,000 square feet total per year can be applied to St. Augustine grass.

3. No more than 0.5 pounds of Phosphorous per 1,000 square feet total per year can be applied to any turf type.



With restrictions in place, the County has taken steps in the right direction of significantly reducing the potential for nitrogen or phosphorous to make its way into either the groundwater or surface water. By eliminating the ability to apply fertilizer during the rainy season, the potential for the rain to either wash the fertilizer into nearby swales, streams or canals is virtually eliminated. Likewise, the potential for the saturation to push the nitrogen or phosphorous into the groundwater is also virtually eliminated. Finally, restricting the nitrogen and phosphorous to 4 pounds and 0.5 pounds per 1,000 square feet, per year, respectively, nearly guarantees that the nutrients will be taken in by the plants with little if any excess nutrients remaining to make their way into the groundwater or nearby surface waters. Within the East & West Spring Lake area, the typical lot size is 80-feet wide by 125 feet deep, or 10,000 square feet. This equates to an annual loading of 40 pounds for nitrogen per residence and 5 pounds of phosphorous. With 1,708 current residences within East & West Spring Lake, this further equates to a maximum of 68,320 pounds (34.16 tons) of nitrogen and 8,540 pounds (4.27 tons) of phosphorous applied annually to the area.

In comparison, an estimated 11.2 grams per day per capita of nitrogen (Toor et al, 2011) and 2.7 grams per day per capita of phosphorous (Lusk et al, 2011) are released into residential wastewater. CCU has estimated that daily flow per residence is approximately 120 gallons per day. It is therefore estimated that 18 pounds of nitrogen and 4.34 pounds of phosphorous are generated and released within 43,800 gallons of wastewater per residence on an annual basis. With 1,708 current residences within East & West Spring Lake, this equates to 30,744 pounds (15.4 tons) of nitrogen, 7,413 pounds (3.7 tons) of phosphorous and 74.8 million gallons per year released to OSTDS's and potentially to groundwater. Please note the difference that nitrogen and phosphorous from OSTDS's are applied under the ground surface as to atmospherically. Atmospheric application is to a large extent, utilized by plant life, as is its purpose in application.

1.8 SOILS

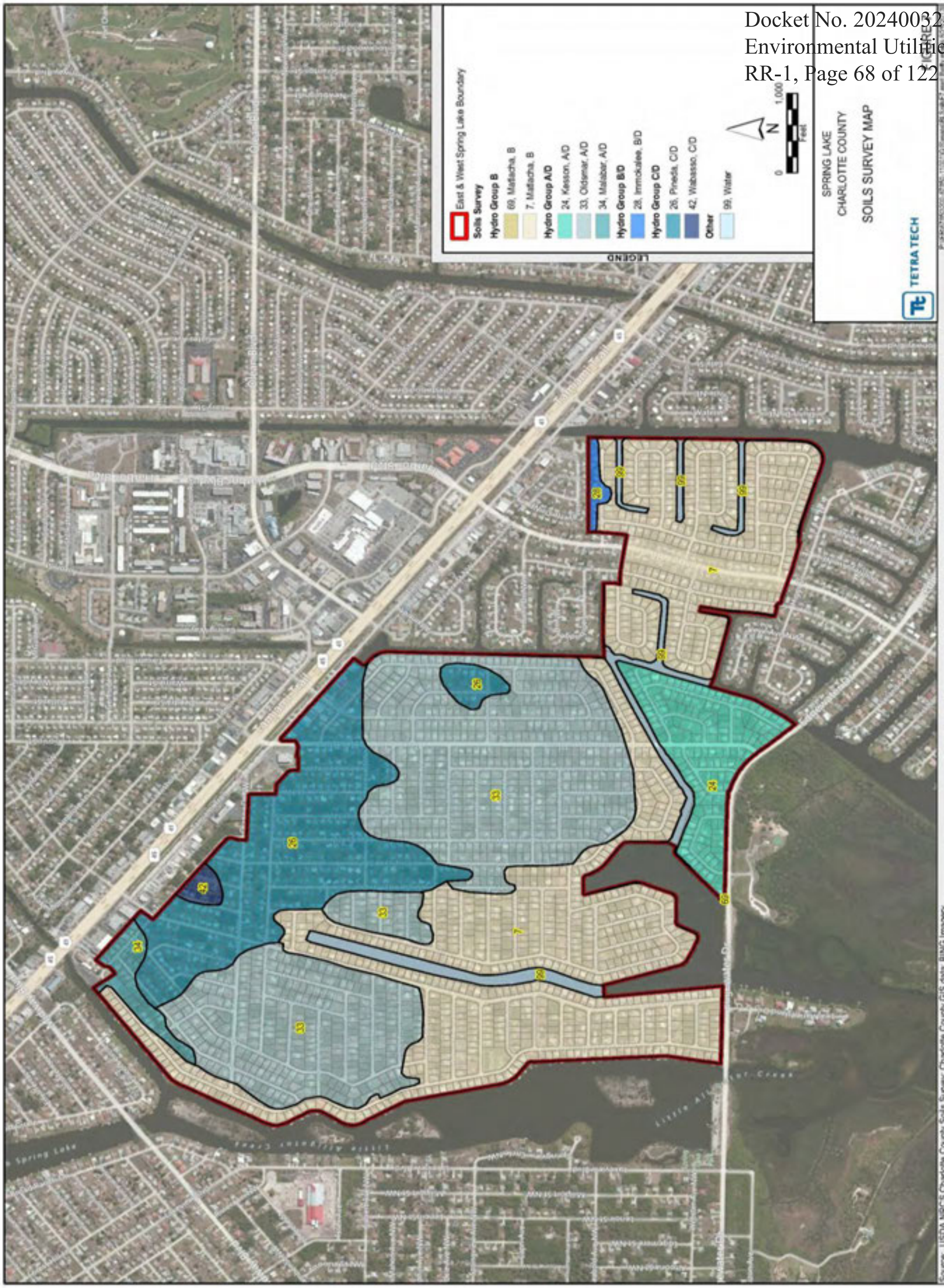
According to the Soil Survey of Charlotte County, the primary soils within the East and West Spring Lake area primarily consist of Matlacha Sands, Kesson Fine Sand, Oldsmar Sand and Pineda Fine Sand. As shown in Figure 7 below, the soil distribution is fairly even amongst the East and West Spring Lake area. A general description of each soil type is provided below:

- Matlacha Sands: The upper sands within this complex (approximately 40-inches) consist of gravelly fine sand and sandy material with fragments of limestone and shell. The next layer of soils to a depth of 80-inches includes primarily fine sand, Permeability within this soil complex is moderately rapid to rapid. Some areas of this soil type contain boulders or compacted material which can impede proper functioning of septic tank absorption fields.

- Kesson Fine Sand – this is a nearly level poorly drained soil in broad tidal swamps and subject to tidal flooding. Soils within this complex (approximately 80-inches) consist of gravelly fine sand and sandy material with fragments of limestone and shell. Permeability within this soil is considered to be moderately rapid to rapid and unsuitable for OSTDS.

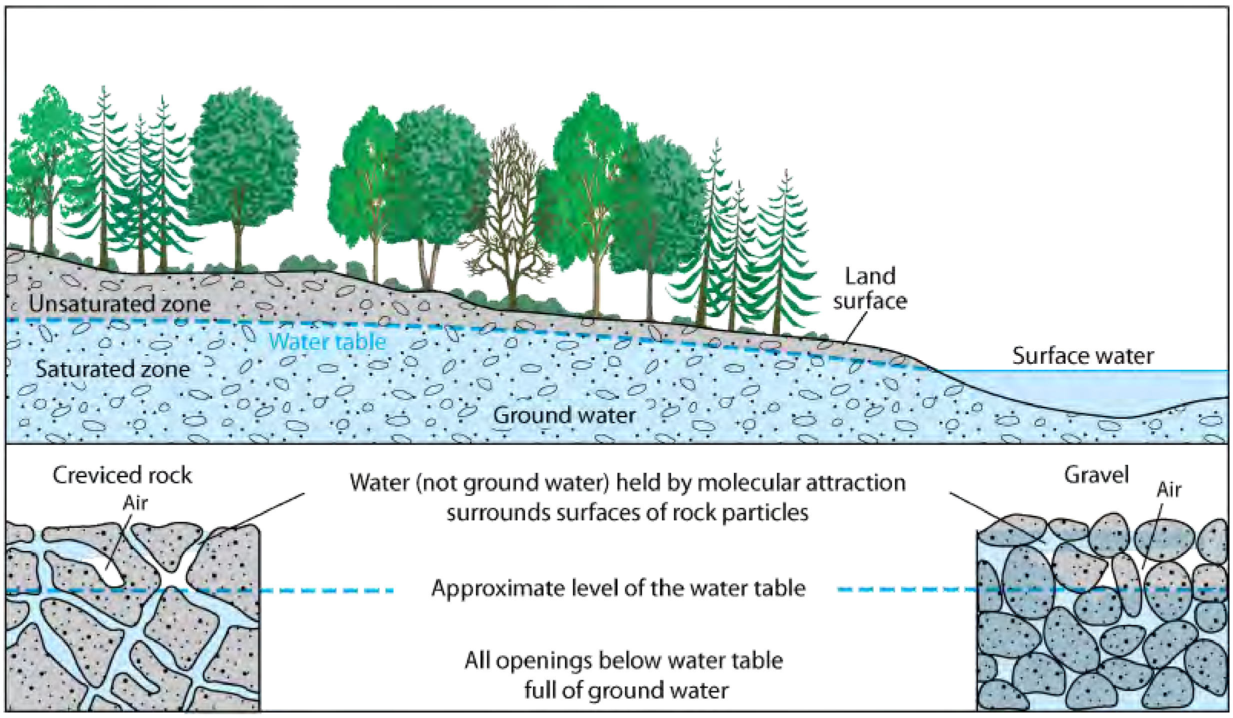
- Pineda Fine Sand – this soil type consists primarily of poorly drained fine sand to nearly 40 inches. Beneath the fine sand is a layer of sandy loam with a thickness of approximately 18-inches. Limestone or shell fragments are known to exist within these soil types at a depth of approximately 60-inches below land surface. In most years, the water table is within 10-inches of land surface for 2-4 months. Rapid permeability and close proximity to the water table makes this soil type unfavorable for OSTDS installations, without proper soils utilized above the native material for the drainfield and proper elevating of the drainfield as required under current regulations (post 1983).

- Oldsmar Sand – this soil type consists of gray to black, poorly drained sand to a depth of approximately 40 to 45 inches. Below the poorly drained sand is an approximate 11-inch layer of fine sandy loam, followed by a pale brown sand to a depth of approximately 80-inches. In most years, the water table is within 10-inches of land surface for 2-4 months. Rapid permeability and close proximity to the water table makes this soil type unfavorable for OSTDS installations, without proper soils utilized above the native material for the drainfield and proper elevating of the drainfield as required under current regulations (post 1983).


LEGEND
East & West Spring Lake Boundary
Soils Survey
Hydro Group B
69, Matlacha, B
7, Matlacha, B
Hydro Group A/D
24, Kesson, A/D
33, Oldsmar, A/D
34, Malabar, A/D
Hydro Group B/D
28, Immokalee, B/D
Hydro Group C/D
26, Pineda, C/D
42, Wabasso, C/D
Other
99, Water
N
0
1,000
Feet
SPRING LAKE
CHARLOTTE COUNTY
SOILS SURVEY MAP
TETRA TECH
Source: USDA NRCS Charlotte County Soils Survey; Charlotte County GIS data; BING Imagery

1.9 SURFACE WATER VS GROUNDWATER

It is important to note the purpose of the sampling points and the difference between groundwater well samples and canal samples, especially as it related to the Charlotte Harbor estuary. Various studies have been performed in the past for different purposes on the water quality in Charlotte Harbor. The FDEP has even used data to determine water quality related impairments. Most recently, the FDEP has developed rule 62-302, the NNC rule described above for surface water impairment. Similarly, it is noted that studies performed have been within the harbor, or within the surrounding surface waters, some of which will be summarized later in this report. Although surface water, both within Charlotte Harbor and upstream of the Harbor, is very important to consider, equally important in the consideration of contaminants is



the groundwater. As the project is associated with the potential for replacement of the OSTDS's, we must consider the fact that effluent released from an OSTDS is released into the ground and ultimately into the groundwater. From that point, a portion of the groundwater ultimately makes its way into the surface water (Charlotte Harbor) but a portion is also retained in the aquifer system and intermixed with existing groundwater. In the process of treatment and post treatment (treatment from the soils beyond the drainfield, but prior to entering the groundwater), nutrients remaining from the OSTDS process can be further reduced. The effectiveness of reduction is dependent on the soil type and the nutrient, both of which were discussed in sections of this report, above.

1.10 OTHER RELEVANT STUDIES

Numerous water quality studies have been performed throughout the State of Florida, including several relevant studies within Charlotte Harbor. Although the majority of these studies are related to the water quality of the estuary itself, and not specific to East & West Spring Lake, nor to the groundwater within the area, the reports have value in understanding water quality over an extended period of time. Provided below is a summary of some the relevant reports prepared:

1.10.1 Charlotte Harbor & Estero Bay Aquatic Preserves Water Quality Status & Trends for 1998-2005 (September 2007)

This study was prepared for the Florida Department of Environmental Protection (FDEP) Charlotte Harbor National Estuary Program in part to provide an understanding of water quality trends for the study period within the Charlotte Harbor and Estero Bay areas. Data from within the study area was collected at various locations and compared to other areas in the region as well as to other areas of the State of Florida and to regulatory requirements. The East & West Spring Lake area is included within Upper Charlotte portion of the Gasparilla-Charlotte Harbor Aquatic Preserve. This area extends from the Myakka and Peace River mouths, southwest to Boca Grande Pass. Charlotte Harbor Proper is located within the Gasparilla-Charlotte Harbor Aquatic Preserve.

The study considered several water quality parameters, including but not limited to: Secchi depth (used to provide an estimate of water clarity); temperature; dissolved oxygen; pH; salinity; nitrogen; phosphorous; chlorophyll a; fecal coliform; turbidity; and color. Water quality in Upper Charlotte Harbor (where East & West Spring Lake are located) was generally below average in comparison to other estuaries within the study area as well as throughout Florida. In particular, this region recorded the highest single total phosphorous recording (1.5 mg/L) and had the highest median phosphorous levels (0.24 mg/L). Similarly, this northern region of Charlotte Harbor recorded the highest single total nitrogen recording (4.6 mg/L) and second highest median nitrogen levels (0.975 mg/L). In comparison to other Florida estuaries, nitrogen levels within Upper Charlotte Harbor rank in the 80th percentile of Florida estuaries. This means that Upper Charlotte Harbor, where the East & West Spring Lake study area is located, has higher total nitrogen levels than 80 percent of other estuaries throughout the State of Florida. Similarly, the median total phosphorous levels for the region are in the 90th percentile of State estuaries, and for each of the seven (7) study years, the median value within Upper Charlotte Harbor ranked in the 70th percentile or above for total phosphorous. In other words, in all seven (7) years, the total phosphorous within Upper Charlotte Harbor (where the East and West Spring Lake study area is located) was higher than at least 70-percent of Florida estuaries. Finally, fecal coliform readings in the Upper Charlotte Harbor estuary were the second highest in the region and in the 80th percentile of Florida estuaries.

1.10.2 The Effects of Seasonal Variability and Weather on Microbial Fecal Pollution and Enteric Pathogens in a Subtropical Estuary (April 2001)

This study was performed on the Charlotte Harbor estuary in an effort to address the seasonal variations in microbial indicators and human pathogen levels in Charlotte Harbor shellfish and recreational waters. Twelve (12) sample stations were established and sampled monthly over a 1-year period (March 1997 – February 1998). The samples were tested for fecal coliform bacteria, enterococci, *Clostridium perfringens* and coliphage. In general, the study showed that fecal indicators were concentrated in areas of low salinity and high densities of septic tank systems. Overall, the Charlotte Harbor estuary demonstrated lower contamination levels than other watersheds in Southwest Florida. However, sites of greater freshwater influence and sites with high OSTDS density, tended to be more contaminated within the study area. Specifically, within the general East & West Spring Lake area, samples were taken at East Spring Lake, West Spring Lake, Sunrise Waterway and Countryman Waterway. Of the twelve (12) sample locations, the samples tested within these four (4) locations tested in both the water column and sediment tested amongst the highest of all areas. In fact, the samples in East and West Spring Lakes had the highest and second highest single fecal coliform counts respectively of all water samples. Conversely, the lowest risk area was furthest offshore and away from influences such as OSTDS's. In addition to the concentration of higher contaminants to those freshwater and urbanized areas, it was noted that the concentrations were seasonal, with the highest levels occurring during the wet season periods when wet weather storm events are more likely to transport indicators and human viruses further into the estuary.

1.10.3 Assessing the Densities and Potential Water Quality Impacts of Septic Tank Systems in the Peace and Myakka River Basins (September 2003)

The Charlotte Environmental Center, Inc. was contracted by the Charlotte National Estuary Program to assess the densities and potential water quality impacts within the Peace and Myakka River basins. The study utilized statistical data on residential densities, GIS data, land use data, centralized waste system data, soil characteristics, number of septic systems, etc. and estimated nutrient loads using the MANAGE model. In addition to loading projections, increased loadings based on soil types and potential for failure were also considered within the model. Soil types were input into the model with standard failure rates based on soil types. Based on input data for densities, land use, etc., potential hot spots were identified. For this area, hot spots were estimated to include all of the Port Charlotte area, with more than 58-percent of urban soils within the study area estimated to be unsuitable for OSTDS use due to the shallow water table. As a result, it is estimated that 15-percent of established OSTDS's are believed to be showing signs of failure for all or part of the year.

1.10.4 Groundwater System Water Quality Data Port Charlotte Area (August 1995)

This study was performed for Charlotte County for the purpose of characterizing the surface and groundwater quality in Port Charlotte. With this study, eight (8) sites were selected for monitoring based on the results of a survey that was sent to over 400 home owners located on canals within the study area who utilize OSTDS for wastewater treatment. Monitoring wells were placed at rear lot lines (as OSTDS's were typically installed in the front lawns in this area). In addition, samples were taken adjacent to and upstream of the drainfield at each location in order to estimate background nutrient levels and the water table (for gradient flow verification). The study indicated that the individual results varied from site to site, as well as within each individual site. In general, the average total nitrogen levels were 21.62 mg/L at the drainfield and 7.92 mg/L at the rear lot line. Similarly, the total phosphorous levels averaged 26.43 mg/L at the drainfield and 14.80 mg/L at the rear lot line. In comparison, the Southwest Florida Water Management District (SWFWMD) indicated background phosphorous levels >0.5 mg/L in Polk and Hardee Counties (in the phosphate mining areas), but noted that the belt near the coast had levels in the >0.1 mg/L range. The phosphorous levels measured in this study were significantly higher than both of these background levels. Similarly, the SWFWMD reported background levels for ammonia nitrogen of 0.4 mg/L and total kjeldahl nitrogen (TKN) of 0.8

mg/L. Of the samples taken within the study area, nearly 100-percent of the samples exceeded the TKN background levels.

1.10.5 Multiple Nitrogen Loading Assessments from Onsite Waste Treatment and Disposal Systems Within the Wekiva River Basin (May 2007)

The Florida Legislature tasked the Florida Department of Health to perform this study for the Wekiva study area, which encompasses over 300,000 acres and is located within portions of Lake, Orange and Seminole Counties and includes a population of 485,000. One task of the study was an assessment of whether OSTDS's are a significant source of nitrogen. Although this study was not prepared for a study within the Charlotte Harbor area, it was a relevant study as one of the tasks was specifically related to the impact of OSTDS's as it relates to nutrients.

For this study, a sample of sites were made for testing, based on the following criteria: selection of one (1) site from each county; depth to water within reach of direct push drilling method; selected sites to have varying groundwater depths; septic tank systems to have been installed post 1982, but with no repairs after 1999; properties large enough to capture nitrogen plume on-site, without interference from up-gradient drainfields; properties using minimal fertilizer and no reclaimed water; and properties with homes on public water with year-round residents. Once the sample sites were selected, the system sizes were determined along with the condition, separation from water table, etc. Initial sampling was performed to determine the concentrations of nitrogen within the effluent between the septic tank and drainfield. In order to determine the nitrogen plume surrounding the drainfield, push probes were installed downgradient of the drainfield and tested at varying depths. The results of the study showed that once released, the total nitrogen plume can extend well beyond the limits of the drainfield, and in one (1) of the three (3) sample sites demonstrated a total nitrogen plume of 10 mg/L over 80 feet from the perimeter of the drainfield. In review of the total nitrogen concentration in the drainfield and using an estimated loading per person, based on EPA guidelines and estimated nitrification/denitrification percentage, mass loadings to the shallow aquifer system were determined to be in the range of 2.61 pounds per person per year to 12.07 pounds per person per year. It is noted that the study was for a limited time period for just three (3) of nearly 55,000 total OSTDS sites in the study area.

In a similar study performed by the University of Florida's Institute of Food and Agricultural Services (IFAS) for the Wekiva area, it was estimated that 482 tons of nitrogen per year are released to the groundwater, accounting for nearly 40-percent of the total nitrogen loading on groundwater within the study area. By comparison, 4-percent is attributed to background (atmospheric) and 8-percent is attributed to residential fertilizer.

1.10.6 Contribution of On-Site Treatment and Disposal System on Coastal Pollutant Loading (2005)

This study was performed on the east coast of Florida and compared two (2) different residential canal areas, one (1) with a centralized wastewater collection system and one (1) which utilizes OSTDS's. After sampling sites were located, samples were taken at the height of the wet season (October/November) and at the height of the dry season (February/March). Samples collected were tested for pH, temperature, conductivity, salinity, dissolved oxygen, total dissolved solids, secchi depth, nitrates, total coliform and *enterococcus*. In general, the samples associated with OSTDS displayed higher levels for pH, conductivity and total dissolved solids. In addition, the dissolved oxygen levels at these sites were also lower, indicating a potential contamination due to sewage inputs. As for nutrients, nitrate-nitrogen levels measured in the OSTDS sample sites were approximately twice the levels from within the centralized sewered areas. When wet and dry season comparisons were made, the wet season levels were significantly higher, to the point where wet season data within the OSTDS tested areas potentially constituted a public health threat.

1.11 SUMMARY AND CONCLUSIONS

As displayed within this document, numerous factors have been analyzed which have led to the conclusion that OSTDS's within the East & West Spring Lake area are a contributor to elevated nutrient levels within adjoining water bodies, and hence, decreased water quality. Based on these factors and findings within this report, it is evident that replacement of the OSTDS's would be a strong positive step in improving water quality and diminishing the impairment to Charlotte Harbor.

Several historical studies have been performed, both within and outside of the Charlotte Harbor area. Some of these studies have used models to predict septic tank loadings and failures, while others have taken a hands-on approach to specifically measuring water quality at the source. Each of these approaches has merit and the one commonality amongst all of these studies as well as the findings of this report is that OSTDS systems are a source for elevated nutrient loadings, primarily nitrogen and phosphorous. In particular, the study consensus for Charlotte Harbor indicated that the health of Charlotte Harbor is well below average in comparison to other estuaries within the State. In fact, The East & West Spring Lake area of Charlotte Harbor ranked in the 80th and 70th percentiles respectively for the worst nitrogen and phosphorous loadings in the entire State. The studies correlated high nutrient and/or bacteria indicators to densely populated areas which utilize OSTDS, such as East & West Spring Lake.

The approach taken with this study was to develop random groundwater monitoring locations based on a grid of the East & West Spring Lake area. By overlaying a grid onto the boundaries of the East & West Spring Lake area, 50 equidistant locations were selected, with final field adjustments made to assure the locations were within right-of-ways. The 50 groundwater wells were installed and sampled every 2 months over the past year. In addition to the groundwater wells, 21 canal sample points were selected in order to understand the water quality within the adjacent and upstream canals.

The samples were tested for nitrate + nitrite, total phosphorous and fecal coliform. Based on the results of testing, it is evident from significant positive samples of each parameter within multiple wells, that a point source, is the cause of not only spikes, but also of the high average levels for both nitrogen and phosphorous. During testing, nitrate + nitrate levels from multiple wells recorded levels as high as nearly 40 mg/L during multiple sampling periods. Similarly, phosphorous levels from multiple wells tested as high as 31.69 mg/L. Concentrations this high raises concern as to the potential source. As background levels have demonstrated to be significantly lower (in the range of 0.18 mg/L for phosphorous and 0.729 mg/L for nitrogen), it is doubtful that the cause is atmospheric. Likewise, as fertilizer use is restricted in quantity and time of year, and as plant uptake accounts for a large percentage of nutrient loadings applied by fertilizer, the reasonable source is OSTDS contribution.

To assist in providing further confirmation of potential OSTDS contributions, following the initial testing of the 50 random wells, the County installed additional wells adjacent to OSTDS's which were reported by the CCHD as having nuisance complaints. Additional wells have been installed and tested near these complaint areas. As mentioned, the nature of the nuisance complaint is unknown. To date, four (4) wells have been installed and one (1) testing cycle has been performed. Of the samples tested, the nitrogen levels tested higher than any other samples tested in any other sampling period for the initial 50 wells. Similarly, the second highest phosphorous recording was also recorded in one of these wells. This data provide further correlation between nutrients and OSTDS's within East & West Spring Lake.

In review of the soils composition within the East & West Spring Lake area, there are three (3) primary soil types which include: Matlacha Sands, Kesson Fine Sand, Pineda Fine Sand and Oldsmar Fine Sand. In general, these soils are consistent, each being poorly drained, with the water table within 10-inches of the ground surface during the wet season. For these reasons, all of these soil types are considered unfavorable for OSTDS installations.

In review of the East & West Spring Lake area, it has been determined that of the 1,708 known systems, 1286 (over 75-percent) are at least 30 years old. The significance of the age is two-fold. First, the estimated life of an OSTDS is approximately 12 - 20 years (Maryland Task Force, 1999). Second, 1983 (30 years ago) is when a major regulatory change was made to require a minimum separation of 24-inches between the bottom of the drainfield and the seasonal high water table. In review of water table data collected by the County, over 80-percent of the well locations, where water samples were collected were within 3.5-feet of ground surface (depth required to meet the 24-inch separation) during part of the year. In addition, 72-percent of the locations were within 2.5 feet of ground surface (depth required to meet the pre-1983 separation requirement of 12-inches). This water table data is based upon a year in which the total rainfall was less than average thereby reflecting a lower seasonal high water level for this area then required by Florida Statues for OSTDS designs. As the East & West Spring Lake area is relatively flat, the projection can therefore be made that as the majority of the systems were built prior to 1983, it is probable that the majority of the existing OSTDS's do not meet the current regulatory standards for groundwater separation, and many of the systems probably do not meet the pre-1983 standards. This lack of separation prevents the soils from properly being able to remove nutrients, and hence, one reason why the average nutrient levels are consistently high throughout the year.

As for system age and life expectancy, of the 1,286 units over 30 years old, 333 or 25.9-percent of these had been reported as having been repaired, following implementation of the County's OSTDS Management Ordinance (2007-061). Given that these repairs were made following adoption of this ordinance, there is concern as to how long these repair needs went unnoticed or ignored until the home owner was required to make the repair. This concern is not only with the potential groundwater contamination that may have occurred prior to the repairs, but also with the fact that as nearly 74-percent of these older systems have not been repaired or replaced, it is only a matter of time before repair, or more likely replacement, is required. Given the high water table and unsuitable native soils, the logical options to meet current regulatory requirements for a failing OSTDS is full replacement with an elevated, mounded system, or connection to a centralized sewer system.

In conclusion, several factors have been reviewed and determined to link OSTDS to decreased water quality within the East & West Spring Lake area. These factors include:

- Soils unsuitable for OSTDS installation, operation and maintenance
- A seasonal High Water Table which does not provide required regulatory separation from drainfields for proper treatment and disposal
- A high residential density within East & West Spring Lake unfavorable for OSTDS type of sewer systems
- Close proximity to the canals (Charlotte County Ordinance 3-7-56 prohibits OSTDS installation within 150 feet of a tidal water body)
- Limitation of the treatment capability of an OSTDS
- Test Results indicating positive correlation with nutrients and bacteria loadings

Based on these factors and the efforts of this study as well as other studies performed in this region, it is concluded that OSTDS's are a strong contributor of nutrient loadings and resulting decreased water quality within East & West Spring Lake area. Previous studies have demonstrated higher nutrient loadings within the Upper Charlotte Harbor area in comparison to other areas in the Charlotte estuary which do not contain OSTDS's. Given the age, number of past repairs, separation from the groundwater table, and related factors, the majority of the existing OSTDS's within the East & West Spring Lake area are projected to be of continual concern without replacement or elimination. It is therefore recommended that Charlotte County consider the installation of a centralized wastewater sewer system for this area. Centralized sewer would eliminate further potential pollution and be a positive step in cleaning up groundwater and surface water and in helping to diminish the impairment of Charlotte Harbor, which is of great importance in supporting recreation and tourism industries.

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APPENDIX A
(WATER QUALITY TEST RESULTS)

September 13, 2012

Report ID: Spring Lake 06&07-12

Bruce Bullert
Charlotte County Utility
Engineering Department
25550 Harbor View Rd
Port Charlotte, FL 33980

June and July 2012 Lab Results

East Port Laboratory

Lab ID # E54436

The East Port Laboratory is certified by the Florida Department of Health Bureau of Laboratories Environmental Water as a Basic Environmental Laboratory. The East Port Laboratory has a Florida Department of Health approved Comprehensive Quality Assurance/Quality Control Plan which specifies the procedures used in the analysis of the referenced samples. The East Port Laboratory certifies that results meet all requirements of NELAC Standards. The Lab ID number above should be referenced when attesting to regulatory agencies regarding the analytical procedures used.

Attached please find the results from the samples collected by you and sent to the East Port Laboratory for analysis. There are custody numbers assigned to each sample for quality control purposes; please refer to these custody numbers when requesting information regarding these samples. Results relate to samples only.

The East Port Laboratory is pleased to have served you. If you require any further assistance, please feel free to contact me directly.

Sincerely,

Sandra Lavoie

Sandra Lavoie
Laboratory Manager
Tel.: 941-764-4593

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-2783	MW-26	6/21/2012	0938	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2784	MW-26	6/21/2012	0938	Total Phosphorus	2.00	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2784	MW-26	6/21/2012	0938	NO_2+NO_3	0.216	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2784	MW-26	6/21/2012	0938	NO_3	0.206	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2785	MW-26	6/21/2012	0938	NO_2	0.010	mg/l	I	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2786	MW-27	6/21/2012	0957	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2787	MW-27	6/21/2012	0957	Total Phosphorus	3.05	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2787	MW-27	6/21/2012	0957	NO_2+NO_3	0.034	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2787	MW-27	6/21/2012	0957	NO_3	0.034	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2788	MW-27	6/21/2012	0957	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2789	MW-28	6/21/2012	1013	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2790	MW-28	6/21/2012	1013	Total Phosphorus	4.05	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2790	MW-28	6/21/2012	1013	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2790	MW-28	6/21/2012	1013	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2791	MW-28	6/21/2012	1013	NO_2	0.005	mg/l	I	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2792	MW-30	6/21/2012	1034	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2793	MW-30	6/21/2012	1034	Total Phosphorus	1.06	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2793	MW-30	6/21/2012	1034	NO_2+NO_3	0.006	mg/l	I	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2793	MW-30	6/21/2012	1034	NO_3	0.006	mg/l	I C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2794	MW-30	6/21/2012	1034	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2795	MW-31	6/21/2012	1055	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2796	MW-31	6/21/2012	1055	Total Phosphorus	0.02	mg/l	U	EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2796	MW-31	6/21/2012	1055	NO_2+NO_3	0.021	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2796	MW-31	6/21/2012	1055	NO_3	0.016	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2797	MW-31	6/21/2012	1055	NO_2	0.005	mg/l	I	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2798	MW-37	6/21/2012	1117	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2799	MW-37	6/21/2012	1117	Total Phosphorus	0.02	mg/l	I	EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2799	MW-37	6/21/2012	1117	NO_2+NO_3	1.696	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2799	MW-37	6/21/2012	1117	NO_3	1.544	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2800	MW-37	6/21/2012	1117	NO_2	0.152	mg/l		EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2765	#1	6/21/2012	0945	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2766	#1	6/21/2012	0945	Total Phosphorus	2.09	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2766	#1	6/21/2012	0945	NO_2+NO_3	0.985	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2766	#1	6/21/2012	0945	NO_3	0.922	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2767	#1	6/21/2012	0945	NO_2	0.063	mg/l		EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-2768	#2	6/21/2012	1012	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2769	#2	6/21/2012	1012	Total Phosphorus	1.62	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2769	#2	6/21/2012	1012	NO_2+NO_3	0.104	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2769	#2	6/21/2012	1012	NO_3	0.095	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2770	#2	6/21/2012	1012	NO_2	0.009	mg/l	I	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2771	#3	6/21/2012	1145	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2772	#3	6/21/2012	1145	Total Phosphorus	0.33	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2772	#3	6/21/2012	1145	NO_2+NO_3	0.063	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2772	#3	6/21/2012	1145	NO_3	0.047	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2773	#3	6/21/2012	1145	NO_2	0.016	mg/l		EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2774	#5	6/21/2012	1124	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2775	#5	6/21/2012	1124	Total Phosphorus	1.40	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2775	#5	6/21/2012	1124	NO_2+NO_3	0.293	mg/l		EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2775	#5	6/21/2012	1124	NO_3	0.283	mg/l	C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2776	#5	6/21/2012	1124	NO_2	0.010	mg/l	I	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2777	#6	6/21/2012	1037	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2778	#6	6/21/2012	1037	Total Phosphorus	0.13	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2778	#6	6/21/2012	1037	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2778	#6	6/21/2012	1037	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2779	#6	6/21/2012	1037	NO_2	0.004	mg/l	I	EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2780	#7	6/21/2012	1101	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/21/2012	1250	6/21/2012	1507	WH
12-2781	#7	6/21/2012	1101	Total Phosphorus	0.55	mg/l		EPA 365.4	0.02 mg/L	6/21/2012	1250	7/14/2012	1358	EMR
12-2781	#7	6/21/2012	1101	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	WH
12-2781	#7	6/21/2012	1101	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	6/21/2012	1250	6/22/2012	1406	SL
12-2782	#7	6/21/2012	1101	NO_2	0.012	mg/l		EPA 353.2	0.003 mg/l	6/21/2012	1250	6/22/2012	0913	WH
12-2885	MW-4	6/28/2012	0935	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2886	MW-4	6/28/2012	0935	Total Phosphorus	0.03	mg/l	I	EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2886	MW-4	6/28/2012	0935	NO_2+NO_3	2.609	mg/l		EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2886	MW-4	6/28/2012	0935	NO_3	2.582	mg/l	C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2887	MW-4	6/28/2012	0935	NO_2	0.027	mg/l		EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2888	MW-8	6/28/2012	1004	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2889	MW-8	6/28/2012	1004	Total Phosphorus	0.24	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2889	MW-8	6/28/2012	1004	NO_2+NO_3	0.008	mg/l	I	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2889	MW-8	6/28/2012	1004	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2890	MW-8	6/28/2012	1004	NO_2	0.010	mg/l	I	EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2891	MW-13	6/28/2012	1020	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2892	MW-13	6/28/2012	1020	Total Phosphorus	0.79	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2892	MW-13	6/28/2012	1020	NO_2+NO_3	0.742	mg/l		EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2892	MW-13	6/28/2012	1020	NO_3	0.717	mg/l	C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2893	MW-13	6/28/2012	1020	NO_2	0.025	mg/l		EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-2894	MW-14	6/28/2012	1038	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2895	MW-14	6/28/2012	1038	Total Phosphorus	0.94	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2895	MW-14	6/28/2012	1038	NO_2+NO_3	0.047	mg/l		EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2895	MW-14	6/28/2012	1038	NO_3	0.031	mg/l	C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2896	MW-14	6/28/2012	1038	NO_2	0.016	mg/l		EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2897	MW-16	6/28/2012	1054	Fecal Coliform	90	col/100ml		SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2898	MW-16	6/28/2012	1054	Total Phosphorus	1.52	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2898	MW-16	6/28/2012	1054	NO_2+NO_3	0.922	mg/l		EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2898	MW-16	6/28/2012	1054	NO_3	0.910	mg/l	C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2899	MW-16	6/28/2012	1054	NO_2	0.012	mg/l		EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2900	MW-23	6/28/2012	1110	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2901	MW-23	6/28/2012	1110	Total Phosphorus	0.15	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2901	MW-23	6/28/2012	1110	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2901	MW-23	6/28/2012	1110	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2902	MW-23	6/28/2012	1110	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2903	MW-25	6/28/2012	1134	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2904	MW-25	6/28/2012	1134	Total Phosphorus	1.19	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2904	MW-25	6/28/2012	1134	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2904	MW-25	6/28/2012	1134	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2905	MW-25	6/28/2012	1134	NO_2	0.007	mg/l	I	EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2906	MW-29	6/28/2012	1148	Fecal Coliform	440	col/100ml	B	SM9222D	20 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2907	MW-29	6/28/2012	1148	Total Phosphorus	0.84	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2907	MW-29	6/28/2012	1148	NO_2+NO_3	1.261	mg/l		EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2907	MW-29	6/28/2012	1148	NO_3	1.234	mg/l	C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2908	MW-29	6/28/2012	1148	NO_2	0.027	mg/l		EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2909	MW-9	6/28/2012	1205	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2910	MW-9	6/28/2012	1205	Total Phosphorus	0.43	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2910	MW-9	6/28/2012	1205	NO_2+NO_3	19.439	mg/l		EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2910	MW-9	6/28/2012	1205	NO_3	19.245	mg/l	C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2911	MW-9	6/28/2012	1205	NO_2	0.194	mg/l		EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2912	MW-12	6/28/2012	1219	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2913	MW-12	6/28/2012	1219	Total Phosphorus	0.37	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2913	MW-12	6/28/2012	1219	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2913	MW-12	6/28/2012	1219	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2914	MW-12	6/28/2012	1219	NO_2	0.009	mg/l	I	EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-2915	MW-22	6/28/2012	1236	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2916	MW-22	6/28/2012	1236	Total Phosphorus	0.12	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2916	MW-22	6/28/2012	1236	NO_2+NO_3	0.088	mg/l		EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2916	MW-22	6/28/2012	1236	NO_3	0.081	mg/l	C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2917	MW-22	6/28/2012	1236	NO_2	0.007	mg/l	I	EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-2918	MW-17	6/28/2012	1254	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	6/28/2012	1410	6/28/2012	1527	EMR
12-2919	MW-17	6/28/2012	1254	Total Phosphorus	0.68	mg/l		EPA 365.4	0.02 mg/L	6/28/2012	1410	7/14/2012	1358	EMR
12-2919	MW-17	6/28/2012	1254	NO_2+NO_3	0.015	mg/l	I	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	EMR
12-2919	MW-17	6/28/2012	1254	NO_3	0.015	mg/l	I C	EPA 353.2	0.004 mg/l	6/28/2012	1410	6/29/2012	1042	SL
12-2920	MW-17	6/28/2012	1254	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	6/28/2012	1410	6/29/2012	0846	EMR
12-3137	MW-15	7/11/2012	1002	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/11/2012	1450	7/11/2012	1540	WH
12-3138	MW-15	7/11/2012	1002	Total Phosphorus	0.47	mg/l		EPA 365.4	0.02 mg/L	7/11/2012	1450	7/30/2012	1415	EMR
12-3138	MW-15	7/11/2012	1002	NO_2+NO_3	0.020	mg/l		EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	EMR
12-3138	MW-15	7/11/2012	1002	NO_3	0.020	mg/l	C	EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	SL
12-3139	MW-15	7/11/2012	1002	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/11/2012	1450	7/13/2012	1138	EMR
12-3140	MW-24	7/11/2012	1030	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/11/2012	1450	7/11/2012	1540	WH
12-3141	MW-24	7/11/2012	1030	Total Phosphorus	0.57	mg/l		EPA 365.4	0.02 mg/L	7/11/2012	1450	7/30/2012	1415	EMR
12-3141	MW-24	7/11/2012	1030	NO_2+NO_3	0.318	mg/l		EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	EMR
12-3141	MW-24	7/11/2012	1030	NO_3	0.296	mg/l	C	EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	SL
12-3142	MW-24	7/11/2012	1030	NO_2	0.022	mg/l		EPA 353.2	0.003 mg/l	7/11/2012	1450	7/13/2012	1138	EMR
12-3143	MW-36	7/11/2012	1107	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/11/2012	1450	7/11/2012	1540	WH
12-3144	MW-36	7/11/2012	1107	Total Phosphorus	0.11	mg/l		EPA 365.4	0.02 mg/L	7/11/2012	1450	7/30/2012	1415	EMR
12-3144	MW-36	7/11/2012	1107	NO_2+NO_3	0.337	mg/l		EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	EMR
12-3144	MW-36	7/11/2012	1107	NO_3	0.321	mg/l	C	EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	SL
12-3145	MW-36	7/11/2012	1107	NO_2	0.016	mg/l		EPA 353.2	0.003 mg/l	7/11/2012	1450	7/13/2012	1138	EMR
12-3146	MW-38	7/11/2012	1142	Fecal Coliform	40	col/100ml	B	SM9222D	10 col/100ml	7/11/2012	1450	7/11/2012	1540	WH
12-3147	MW-38	7/11/2012	1142	Total Phosphorus	2.86	mg/l		EPA 365.4	0.02 mg/L	7/11/2012	1450	7/30/2012	1415	EMR
12-3147	MW-38	7/11/2012	1142	NO_2+NO_3	0.018	mg/l		EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	EMR
12-3147	MW-38	7/11/2012	1142	NO_3	0.018	mg/l	C	EPA 353.2	0.004 mg/l	7/11/2012	1450	7/13/2012	1425	SL
12-3148	MW-38	7/11/2012	1142	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/11/2012	1450	7/13/2012	1138	EMR
12-3178	MW-10	7/12/2012	0955	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3179	MW-10	7/12/2012	0955	Total Phosphorus	2.12	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3179	MW-10	7/12/2012	0955	NO_2+NO_3	0.028	mg/l		EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3179	MW-10	7/12/2012	0955	NO_3	0.028	mg/l	C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3180	MW-10	7/12/2012	0955	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3181	MW-11	7/12/2012	1033	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3182	MW-11	7/12/2012	1033	Total Phosphorus	0.60	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3182	MW-11	7/12/2012	1033	NO_2+NO_3	0.018	mg/l		EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3182	MW-11	7/12/2012	1033	NO_3	0.015	mg/l	C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3183	MW-11	7/12/2012	1033	NO_2	0.003	mg/l	I	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3184	MW-21	7/12/2012	1106	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3185	MW-21	7/12/2012	1106	Total Phosphorus	0.99	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3185	MW-21	7/12/2012	1106	NO_2+NO_3	0.044	mg/l		EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3185	MW-21	7/12/2012	1106	NO_3	0.041	mg/l	C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3186	MW-21	7/12/2012	1106	NO_2	0.003	mg/l	I	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-3190	MW-33	7/12/2012	1129	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3191	MW-33	7/12/2012	1129	Total Phosphorus	0.76	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	8/2/2012	1301	EMR
12-3191	MW-33	7/12/2012	1129	NO_2+NO_3	0.034	mg/l		EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3191	MW-33	7/12/2012	1129	NO_3	0.023	mg/l	C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3192	MW-33	7/12/2012	1129	NO_2	0.011	mg/l	I	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3187	MW-34	7/12/2012	1204	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3188	MW-34	7/12/2012	1204	Total Phosphorus	0.64	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3188	MW-34	7/12/2012	1204	NO_2+NO_3	0.010	mg/l	I	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3188	MW-34	7/12/2012	1204	NO_3	0.010	mg/l	I C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3189	MW-34	7/12/2012	1204	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3193	MW-20	7/12/2012	1231	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3194	MW-20	7/12/2012	1231	Total Phosphorus	1.16	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3194	MW-20	7/12/2012	1231	NO_2+NO_3	0.772	mg/l		EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3194	MW-20	7/12/2012	1231	NO_3	0.683	mg/l	C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3195	MW-20	7/12/2012	1231	NO_2	0.089	mg/l		EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3196	MW-19	7/12/2012	1303	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3197	MW-19	7/12/2012	1303	Total Phosphorus	0.48	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3197	MW-19	7/12/2012	1303	NO_2+NO_3	0.114	mg/l		EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3197	MW-19	7/12/2012	1303	NO_3	0.101	mg/l	C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3198	MW-19	7/12/2012	1303	NO_2	0.013	mg/l		EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3199	C-8	7/12/2012	1323	Fecal Coliform	60	col/100ml	B	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3200	C-8	7/12/2012	1323	Total Phosphorus	0.64	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	8/2/2012	1301	EMR
12-3200	C-8	7/12/2012	1323	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3200	C-8	7/12/2012	1323	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3201	C-8	7/12/2012	1323	NO_2	0.009	mg/l	I	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3202	C-9	7/12/2012	1338	Fecal Coliform	60	col/100ml	B	SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3203	C-9	7/12/2012	1338	Total Phosphorus	0.66	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3203	C-9	7/12/2012	1338	NO_2+NO_3	0.026	mg/l		EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3203	C-9	7/12/2012	1338	NO_3	0.026	mg/l	C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3204	C-9	7/12/2012	1338	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3205	C-10	7/12/2012	1354	Fecal Coliform	10	col/100ml		SM9222D	10 col/100ml	7/12/2012	1449	7/12/2012	1558	EMR
12-3206	C-10	7/12/2012	1354	Total Phosphorus	0.66	mg/l		EPA 365.4	0.02 mg/L	7/12/2012	1449	7/30/2012	1415	EMR
12-3206	C-10	7/12/2012	1354	NO_2+NO_3	0.014	mg/l	I	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	EMR
12-3206	C-10	7/12/2012	1354	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/12/2012	1449	7/13/2012	1425	SL
12-3207	C-10	7/12/2012	1354	NO_2	0.011	mg/l	I	EPA 353.2	0.003 mg/l	7/12/2012	1449	7/13/2012	1138	EMR
12-3288	MW-18	7/18/2012	1013	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/18/2012	1335	7/18/2012	1424	EMR
12-3289	MW-18	7/18/2012	1013	Total Phosphorus	4.38	mg/l		EPA 365.4	0.02 mg/L	7/18/2012	1335	8/2/2012	1301	EMR
12-3289	MW-18	7/18/2012	1013	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	WH
12-3289	MW-18	7/18/2012	1013	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	SL
12-3290	MW-18	7/18/2012	1013	NO_2	0.012	mg/l		EPA 353.2	0.003 mg/l	7/18/2012	1335	7/20/2012	1109	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-3291	MW-42	7/18/2012	1043	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/18/2012	1335	7/18/2012	1424	EMR
12-3292	MW-42	7/18/2012	1043	Total Phosphorus	1.70	mg/l		EPA 365.4	0.02 mg/L	7/18/2012	1335	8/2/2012	1301	EMR
12-3292	MW-42	7/18/2012	1043	NO_2+NO_3	0.006	mg/l	I	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	WH
12-3292	MW-42	7/18/2012	1043	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	SL
12-3293	MW-42	7/18/2012	1043	NO_2	0.004	mg/l	I	EPA 353.2	0.003 mg/l	7/18/2012	1335	7/20/2012	1109	WH
12-3294	MW-41	7/18/2012	1107	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/18/2012	1335	7/18/2012	1424	EMR
12-3295	MW-41	7/18/2012	1107	Total Phosphorus	0.83	mg/l		EPA 365.4	0.02 mg/L	7/18/2012	1335	8/2/2012	1301	EMR
12-3295	MW-41	7/18/2012	1107	NO_2+NO_3	0.008	mg/l	I	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	WH
12-3295	MW-41	7/18/2012	1107	NO_3	0.005	mg/l	I C	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	SL
12-3296	MW-41	7/18/2012	1107	NO_2	0.003	mg/l	I	EPA 353.2	0.003 mg/l	7/18/2012	1335	7/20/2012	1109	WH
12-3297	MW-39	7/18/2012	1132	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/18/2012	1335	7/18/2012	1424	EMR
12-3297	MW-39	7/18/2012	1132	Total Phosphorus	0.59	mg/l		EPA 365.4	0.02 mg/L	7/18/2012	1335	8/2/2012	1301	EMR
12-3298	MW-39	7/18/2012	1132	NO_2+NO_3	0.011	mg/l	I	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	WH
12-3298	MW-39	7/18/2012	1132	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	SL
12-3299	MW-39	7/18/2012	1132	NO_2	0.016	mg/l		EPA 353.2	0.003 mg/l	7/18/2012	1335	7/20/2012	1109	WH
12-3300	C-6	7/18/2012	1154	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/18/2012	1335	7/18/2012	1424	EMR
12-3301	C-6	7/18/2012	1154	Total Phosphorus	0.58	mg/l		EPA 365.4	0.02 mg/L	7/18/2012	1335	8/2/2012	1301	EMR
12-3301	C-6	7/18/2012	1154	NO_2+NO_3	0.018	mg/l		EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	WH
12-3301	C-6	7/18/2012	1154	NO_3	0.018	mg/l	C	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	SL
12-3302	C-6	7/18/2012	1154	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/18/2012	1335	7/20/2012	1109	WH
12-3303	MW-35	7/18/2012	1227	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/18/2012	1335	7/18/2012	1424	EMR
12-3304	MW-35	7/18/2012	1227	Total Phosphorus	1.07	mg/l		EPA 365.4	0.02 mg/L	7/18/2012	1335	8/2/2012	1301	EMR
12-3304	MW-35	7/18/2012	1227	NO_2+NO_3	0.611	mg/l		EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	WH
12-3304	MW-35	7/18/2012	1227	NO_3	0.548	mg/l	C	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	SL
12-3305	MW-35	7/18/2012	1227	NO_2	0.063	mg/l		EPA 353.2	0.003 mg/l	7/18/2012	1335	7/20/2012	1109	WH
12-3306	MW-40	7/18/2012	1253	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/18/2012	1335	7/18/2012	1424	EMR
12-3307	MW-40	7/18/2012	1253	Total Phosphorus	0.23	mg/l		EPA 365.4	0.02 mg/L	7/18/2012	1335	8/2/2012	1301	EMR
12-3307	MW-40	7/18/2012	1253	NO_2+NO_3	0.946	mg/l		EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	WH
12-3307	MW-40	7/18/2012	1253	NO_3	0.931	mg/l	C	EPA 353.2	0.004 mg/l	7/18/2012	1335	7/20/2012	1523	SL
12-3308	MW-40	7/18/2012	1253	NO_2	0.015	mg/l		EPA 353.2	0.003 mg/l	7/18/2012	1335	7/20/2012	1109	WH
12-3325	C-7	7/19/2012	0946	Fecal Coliform	50	col/100ml	B	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3326	C-7	7/19/2012	0946	Total Phosphorus	0.52	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3326	C-7	7/19/2012	0946	NO_2+NO_3	0.028	mg/l		EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3326	C-7	7/19/2012	0946	NO_3	0.020	mg/l	C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3327	C-7	7/19/2012	0946	NO_2	0.008	mg/l	I	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH
12-3328	MW-43	7/19/2012	1010	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3329	MW-43	7/19/2012	1010	Total Phosphorus	0.11	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3329	MW-43	7/19/2012	1010	NO_2+NO_3	0.050	mg/l		EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3329	MW-43	7/19/2012	1010	NO_3	0.050	mg/l	C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3330	MW-43	7/19/2012	1010	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-3331	C-1	7/19/2012	1022	Fecal Coliform	90	col/100ml	B	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3332	C-1	7/19/2012	1022	Total Phosphorus	0.22	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3332	C-1	7/19/2012	1022	NO_2+NO_3	0.017	mg/l		EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3332	C-1	7/19/2012	1022	NO_3	0.017	mg/l	C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3333	C-1	7/19/2012	1022	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH
12-3334	MW-45	7/19/2012	1111	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3335	MW-45	7/19/2012	1111	Total Phosphorus	0.28	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3335	MW-45	7/19/2012	1111	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3335	MW-45	7/19/2012	1111	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3336	MW-45	7/19/2012	1111	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH
12-3337	C-2	7/19/2012	1120	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3338	C-2	7/19/2012	1120	Total Phosphorus	0.22	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3338	C-2	7/19/2012	1120	NO_2+NO_3	0.007	mg/l	I	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3338	C-2	7/19/2012	1120	NO_3	0.007	mg/l	U C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3339	C-2	7/19/2012	1120	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH
12-3340	MW-46	7/19/2012	1140	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3341	MW-46	7/19/2012	1140	Total Phosphorus	0.26	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3341	MW-46	7/19/2012	1140	NO_2+NO_3	0.016	mg/l		EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3341	MW-46	7/19/2012	1140	NO_3	0.009	mg/l	I C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3342	MW-46	7/19/2012	1140	NO_2	0.007	mg/l	I	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH
12-3343	C-4	7/19/2012	1148	Fecal Coliform	40	col/100ml	B	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3344	C-4	7/19/2012	1148	Total Phosphorus	0.24	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3344	C-4	7/19/2012	1148	NO_2+NO_3	0.009	mg/l	I	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3344	C-4	7/19/2012	1148	NO_3	0.005	mg/l	I C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3345	C-4	7/19/2012	1148	NO_2	0.004	mg/l	I	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH
12-3346	MW-44	7/19/2012	1211	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/19/2012	1250	7/19/2012	1430	WH
12-3347	MW-44	7/19/2012	1211	Total Phosphorus	2.25	mg/l		EPA 365.4	0.02 mg/L	7/19/2012	1250	8/2/2012	1301	EMR
12-3347	MW-44	7/19/2012	1211	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	WH
12-3347	MW-44	7/19/2012	1211	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/19/2012	1250	7/20/2012	1523	SL
12-3348	MW-44	7/19/2012	1211	NO_2	0.006	mg/l	I	EPA 353.2	0.003 mg/l	7/19/2012	1250	7/20/2012	1109	WH
12-3417	MW-47	7/25/2012	1144	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3418	MW-47	7/25/2012	1144	Total Phosphorus	0.19	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3418	MW-47	7/25/2012	1144	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3418	MW-47	7/25/2012	1144	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3419	MW-47	7/25/2012	1144	NO_2	0.003	mg/l	I V	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3420	MW-48	7/25/2012	1211	Fecal Coliform	2940	col/100ml	B	SM9222D	20 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3421	MW-48	7/25/2012	1211	Total Phosphorus	0.38	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3421	MW-48	7/25/2012	1211	NO_2+NO_3	0.004	mg/l	I	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3421	MW-48	7/25/2012	1211	NO_3	0.004	mg/l	I C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3422	MW-48	7/25/2012	1211	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-3423	MW-50	7/25/2012	1243	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3424	MW-50	7/25/2012	1243	Total Phosphorus	1.30	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3424	MW-50	7/25/2012	1243	NO_2+NO_3	0.022	mg/l		EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3424	MW-50	7/25/2012	1243	NO_3	0.022	mg/l	C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3425	MW-50	7/25/2012	1243	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3426	C-5	7/25/2012	1258	Fecal Coliform	30	col/100ml	B	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3427	C-5	7/25/2012	1258	Total Phosphorus	0.33	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3427	C-5	7/25/2012	1258	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3427	C-5	7/25/2012	1258	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3428	C-5	7/25/2012	1258	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3429	MW-49	7/25/2012	1322	Fecal Coliform	2100	col/100ml	B	SM9222D	20 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3430	MW-49	7/25/2012	1322	Total Phosphorus	3.69	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3430	MW-49	7/25/2012	1322	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3430	MW-49	7/25/2012	1322	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3431	MW-49	7/25/2012	1322	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3432	C-3	7/25/2012	1338	Fecal Coliform	30	col/100ml	B	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3433	C-3	7/25/2012	1338	Total Phosphorus	0.38	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3433	C-3	7/25/2012	1338	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3433	C-3	7/25/2012	1338	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3434	C-3	7/25/2012	1338	NO_2	0.016	mg/l	V	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3435	C-11	7/25/2012	1408	Fecal Coliform	50	col/100ml	B	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3436	C-11	7/25/2012	1408	Total Phosphorus	0.40	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3436	C-11	7/25/2012	1408	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3436	C-11	7/25/2012	1408	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3437	C-11	7/25/2012	1408	NO_2	0.006	mg/l	I V	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3438	C-13	7/25/2012	1425	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3439	C-13	7/25/2012	1425	Total Phosphorus	0.42	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3439	C-13	7/25/2012	1425	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3439	C-13	7/25/2012	1425	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3440	C-13	7/25/2012	1425	NO_2	0.007	mg/l	I V	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3441	C-12	7/25/2012	1438	Fecal Coliform	60	col/100ml	B	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3442	C-12	7/25/2012	1438	Total Phosphorus	0.58	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3442	C-12	7/25/2012	1438	NO_2+NO_3	0.019	mg/l		EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3442	C-12	7/25/2012	1438	NO_3	0.014	mg/l	I C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3443	C-12	7/25/2012	1438	NO_2	0.005	mg/l	I	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3444	C-14	7/25/2012	1504	Fecal Coliform	70	col/100ml	B	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3445	C-14	7/25/2012	1504	Total Phosphorus	0.28	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3445	C-14	7/25/2012	1504	NO_2+NO_3	0.024	mg/l		EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3445	C-14	7/25/2012	1504	NO_3	0.008	mg/l	I C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3446	C-14	7/25/2012	1504	NO_2	0.016	mg/l		EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-3447	C-15	7/25/2012	1519	Fecal Coliform	60	col/100ml	B	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3448	C-15	7/25/2012	1519	Total Phosphorus	0.28	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3448	C-15	7/25/2012	1519	NO_2+NO_3	0.033	mg/l		EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3448	C-15	7/25/2012	1519	NO_3	0.023	mg/l	C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3449	C-15	7/25/2012	1519	NO_2	0.010	mg/l	I	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH
12-3450	C-16	7/25/2012	1537	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	7/25/2012	1613	7/25/2012	1725	WH
12-3451	C-16	7/25/2012	1537	Total Phosphorus	0.28	mg/l		EPA 365.4	0.02 mg/L	7/25/2012	1613	8/13/2012	0959	EMR
12-3451	C-16	7/25/2012	1537	NO_2+NO_3	0.023	mg/l		EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	WH
12-3451	C-16	7/25/2012	1537	NO_3	0.017	mg/l	C	EPA 353.2	0.004 mg/l	7/25/2012	1613	7/27/2012	1023	SL
12-3452	C-16	7/25/2012	1537	NO_2	0.006	mg/l	I	EPA 353.2	0.003 mg/l	7/25/2012	1613	7/27/2012	0806	WH

East Port Laboratory

Charlotte County Utilities

EAST PORT WRF

3100 Loveland blvd.

PORT CHARLOTTE, FL. 33980

DATA QUALIFIER DEFINITIONS

A = Value reported is an average of two or more determinations.
B = Results based upon colony counts outside the acceptable range.
C = Calculated value
F = Tested in the field
I = Reported value is between the laboratory MDL and PQL.
J1 = Est. value quality control criteria for precision or accuracy not met. (Spike Recovery)
J2 = Est. value quality control criteria for precision or accuracy not met.(Duplicate RPD)
J3 = Est. value quality control criteria for precision or accuracy not met.(Glucose/Glutamic Acid)
J4 = Est. value quality control criteria for precision or accuracy not met.(analyte detected in blank)
J5 = Est. value quality control criteria for precision or accuracy not met.(DO Depletion <2.00 mg/L)
J6 = Est. value quality control criteria for precision or accuracy not met.(Test Replicate Difference)
K-1 = Off-scale low. The value is less than the lowest calibration standard.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond accepted hold time.
T = Value reported is < MDL. Reported for informational purposes only and shall not be used in statistical analysis.
U = Analyte analyzed but not detected at the value indicated.
V = Analyte detected in sample and method blank.
Y = Analysis performed on an improperly preserved sample. Data may be inaccurate.
Z = Too many colonies were present (TNTC). The numeric value represents the filtration volume
! = Data deviate from historically established concentration ranges.
? = Data rejected and should not be used. Some or all of QC data were outside criteria, and the Presence or absence of the analyte cannot be determined from the data.
* = Not reported due to interference.

NOTES:
PQL = 4 x MDL
Ammonia PQL = 0.10 mg/L
TKN PQL = 0.50 mg/L

November 5, 2012

Report ID: Spring Lake 09&10-12

Bruce Bullert
Charlotte County Utility
Engineering Department
25550 Harbor View Rd
Port Charlotte, FL 33980

September & October 2012 Lab Results

East Port Laboratory

Lab ID # E54436

The East Port Laboratory is certified by the Florida Department of Health Bureau of Laboratories Environmental Water as a Basic Environmental Laboratory. The East Port Laboratory has a Florida Department of Health approved Comprehensive Quality Assurance/Quality Control Plan which specifies the procedures used in the analysis of the referenced samples. The East Port Laboratory certifies that results meet all requirements of NELAC Standards. The Lab ID number above should be referenced when attesting to regulatory agencies regarding the analytical procedures used.

Attached please find the results from the samples collected by you and sent to the East Port Laboratory for analysis. There are custody numbers assigned to each sample for quality control purposes; please refer to these custody numbers when requesting information regarding these samples. Results relate to samples only.

The East Port Laboratory is pleased to have served you. If you require any further assistance, please feel free to contact me directly.

Sincerely,

Sandra Lavoie

Sandra Lavoie
Laboratory Manager
Tel.: 941-764-4593

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4216	MW-1	09/12/2012	0920	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4217	MW-1	09/12/2012	0920	Total Phosphorus	13.53	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4217	MW-1	09/12/2012	0920	NO_2+NO_3	1.937	mg/l		EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4217	MW-1	09/12/2012	0920	NO_3	1.937	mg/l	C	EPA 353 2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4218	MW-1	09/12/2012	0920	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4219	MW-2	09/12/2012	0951	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4220	MW-2	09/12/2012	0951	Total Phosphorus	0.38	mg/l		EPA 365.4	0.02mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4220	MW-2	09/12/2012	0951	NO_2+NO_3	0.128	mg/l		EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4220	MW-2	09/12/2012	0951	NO_3	0.128	mg/l	C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4221	MW-2	09/12/2012	0951	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4222	MW-5	09/12/2012	1009	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4223	MW-5	09/12/2012	1009	Total Phosphorus	0.98	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4223	MW-5	09/12/2012	1009	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4223	MW-5	09/12/2012	1009	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4224	MW-5	09/12/2012	1009	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4225	MW-3	09/12/2012	1031	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4226	MW-3	09/12/2012	1031	Total Phosphorus	0.75	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4226	MW-3	09/12/2012	1031	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4226	MW-3	09/12/2012	1031	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4227	MW-3	09/12/2012	1031	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4228	MW-4	09/12/2012	1052	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4229	MW-4	09/12/2012	1052	Total Phosphorus	0.39	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4229	MW-4	09/12/2012	1052	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4229	MW-4	09/12/2012	1052	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4230	MW-4	09/12/2012	1052	NO_2	0.007	mg/l	I	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4231	MW-7	09/12/2012	1113	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4232	MW-7	09/12/2012	1113	Total Phosphorus	0.54	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4232	MW-7	09/12/2012	1113	NO_2+NO_3	0.012	mg/l	I	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4232	MW-7	09/12/2012	1113	NO_3	0.012	mg/l	I C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4233	MW-7	09/12/2012	1113	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4234	MW-6	09/12/2012	1137	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4235	MW-6	09/12/2012	1137	Total Phosphorus	0.24	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4235	MW-6	09/12/2012	1137	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4235	MW-6	09/12/2012	1137	NO_3	0.004	Units	U C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4236	MW-6	09/12/2012	1137	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4237	MW-15	09/12/2012	1200	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4238	MW-15	09/12/2012	1200	Total Phosphorus	0.67	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4238	MW-15	09/12/2012	1200	NO_2+NO_3	0.005	mg/l	I	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4238	MW-15	09/12/2012	1200	NO_3	0.005	mg/l	I C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4239	MW-15	09/12/2012	1200	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4240	MW-24	09/12/2012	1220	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4241	MW-24	09/12/2012	1220	Total Phosphorus	0.84	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4241	MW-24	09/12/2012	1220	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4241	MW-24	09/12/2012	1220	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4242	MW-24	09/12/2012	1220	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4243	MW-26	09/12/2012	1242	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/12/2012	1327	09/12/2012	1502	SOK
12-4244	MW-26	09/12/2012	1242	Total Phosphorus	2.41	mg/l		EPA 365.4	0.02 mg/L	09/12/2012	1327	10/01/2012	1220	SOK
12-4244	MW-26	09/12/2012	1242	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	WH
12-4244	MW-26	09/12/2012	1242	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/12/2012	1327	09/14/2012	0938	SL
12-4245	MW-26	09/12/2012	1242	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/12/2012	1327	09/14/2012	0749	WH
12-4262	MW-27	09/13/2012	0929	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/13/2012	1200	09/13/2012	1315	WH
12-4263	MW-27	09/13/2012	0929	Total Phosphorus	2.61	mg/l		EPA 365.4	0.02 mg/L	09/13/2012	1200	10/01/2012	1220	SOK
12-4263	MW-27	09/13/2012	0929	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	WH
12-4263	MW-27	09/13/2012	0929	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	SL
12-4264	MW-27	09/13/2012	0929	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/13/2012	1200	09/14/2012	0749	WH
12-4265	MW-28	09/13/2012	0955	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/13/2012	1200	09/13/2012	1315	WH
12-4266	MW-28	09/13/2012	0955	Total Phosphorus	3.01	mg/l		EPA 365.4	0.02 mg/L	09/13/2012	1200	10/01/2012	1220	SOK
12-4266	MW-28	09/13/2012	0955	NO_2+NO_3	0.004	mg/l	I	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	WH
12-4266	MW-28	09/13/2012	0955	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	SL
12-4267	MW-28	09/13/2012	0955	NO_2	0.004	mg/l	I	EPA 353.2	0.003 mg/l	09/13/2012	1200	09/14/2012	0749	WH
12-4268	MW-8	09/13/2012	1023	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/13/2012	1200	09/13/2012	1315	WH
12-4269	MW-8	09/13/2012	1023	Total Phosphorus	0.46	mg/l		EPA 365.4	0.02 mg/L	09/13/2012	1200	10/01/2012	1220	SOK
12-4269	MW-8	09/13/2012	1023	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	WH
12-4269	MW-8	09/13/2012	1023	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	SL
12-4270	MW-8	09/13/2012	1023	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/13/2012	1200	09/14/2012	0749	WH
12-4271	MW-13	09/13/2012	1047	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/13/2012	1200	09/13/2012	1315	WH
12-4272	MW-13	09/13/2012	1047	Total Phosphorus	0.89	mg/l		EPA 365.4	0.02 mg/L	09/13/2012	1200	10/01/2012	1220	SOK
12-4272	MW-13	09/13/2012	1047	NO_2+NO_3	0.005	mg/l	I	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	WH
12-4272	MW-13	09/13/2012	1047	NO_3	0.005	mg/l	I C	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	SL
12-4273	MW-13	09/13/2012	1047	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/13/2012	1200	09/14/2012	0749	WH
12-4274	MW-14	09/13/2012	1112	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/13/2012	1200	09/13/2012	1315	WH
12-4275	MW-14	09/13/2012	1112	Total Phosphorus	2.02	mg/l		EPA 365.4	0.02 mg/L	09/13/2012	1200	10/01/2012	1220	SOK
12-4275	MW-14	09/13/2012	1112	NO_2+NO_3	0.496	mg/l		EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	WH
12-4275	MW-14	09/13/2012	1112	NO_3	0.452	mg/l	C	EPA 353.2	0.004 mg/l	09/13/2012	1200	09/14/2012	0938	SL
12-4276	MW-14	09/13/2012	1112	NO_2	0.044	mg/l		EPA 353.2	0.003 mg/l	09/13/2012	1200	09/14/2012	0749	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4345	MW-16	09/19/2012	1016	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/19/2012	1350	09/19/2012	1443	EMR
12-4346	MW-16	09/19/2012	1016	Total Phosphorus	1.86	mg/l		EPA 365.4	0.02 mg/L	09/19/2012	1350	10/01/2012	1220	SOK
12-4346	MW-16	09/19/2012	1016	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	EMR
12-4346	MW-16	09/19/2012	1016	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	SL
12-4347	MW-16	09/19/2012	1016	NO_2	0.003	mg/l	I	EPA 353.2	0.003 mg/l	09/19/2012	1350	09/21/2012	0922	EMR
12-4348	MW-25	09/19/2012	1049	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/19/2012	1350	09/19/2012	1443	EMR
12-4349	MW-25	09/19/2012	1049	Total Phosphorus	1.33	mg/l		EPA 365.4	0.02 mg/L	09/19/2012	1350	10/01/2012	1220	SOK
12-4349	MW-25	09/19/2012	1049	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	EMR
12-4349	MW-25	09/19/2012	1049	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	SL
12-4350	MW-25	09/19/2012	1049	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/19/2012	1350	09/21/2012	0922	EMR
12-4351	MW-29	09/19/2012	1112	Fecal Coliform	1720	col/100ml		SM9222D	20 col/100ml	09/19/2012	1350	09/19/2012	1443	EMR
12-4352	MW-29	09/19/2012	1112	Total Phosphorus	0.89	mg/l		EPA 365.4	0.02 mg/L	09/19/2012	1350	10/01/2012	1220	SOK
12-4352	MW-29	09/19/2012	1112	NO_2+NO_3	0.042	mg/l		EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	EMR
12-4352	MW-29	09/19/2012	1112	NO_3	0.042	mg/l	C	EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	SL
12-4353	MW-29	09/19/2012	1112	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/19/2012	1350	09/21/2012	0922	EMR
12-4354	MW-22	09/19/2012	1136	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/19/2012	1350	09/19/2012	1443	EMR
12-4355	MW-22	09/19/2012	1136	Total Phosphorus	0.04	mg/l	I	EPA 365.4	0.02 mg/L	09/19/2012	1350	10/01/2012	1220	SOK
12-4355	MW-22	09/19/2012	1136	NO_2+NO_3	0.015	mg/l	I	EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	EMR
12-4355	MW-22	09/19/2012	1136	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/19/2012	1350	09/21/2012	1111	SL
12-4356	MW-22	09/19/2012	1136	NO_2	0.016	mg/l		EPA 353.2	0.003 mg/l	09/19/2012	1350	09/21/2012	0922	EMR
12-4357	MW-12	09/19/2012	1201	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/19/2012	1351	09/19/2012	1443	EMR
12-4358	MW-12	09/19/2012	1201	Total Phosphorus	0.10	mg/l		EPA 365.4	0.02 mg/L	09/19/2012	1351	10/01/2012	1220	SOK
12-4358	MW-12	09/19/2012	1201	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	EMR
12-4358	MW-12	09/19/2012	1201	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	SL
12-4359	MW-12	09/19/2012	1201	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/19/2012	1351	09/21/2012	0922	EMR
12-4360	MW-9	09/19/2012	1221	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/19/2012	1351	09/19/2012	1443	EMR
12-4361	MW-9	09/19/2012	1221	Total Phosphorus	0.63	mg/l		EPA 365.4	0.02 mg/L	09/19/2012	1351	10/01/2012	1220	SOK
12-4361	MW-9	09/19/2012	1221	NO_2+NO_3	4.692	mg/l		EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	EMR
12-4361	MW-9	09/19/2012	1221	NO_3	4.496	mg/l	C	EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	SL
12-4362	MW-9	09/19/2012	1221	NO_2	0.196	mg/l		EPA 353.2	0.003 mg/l	09/19/2012	1351	09/21/2012	0922	EMR
12-4363	MW-11	09/19/2012	1252	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/19/2012	1351	09/19/2012	1443	EMR
12-4364	MW-11	09/19/2012	1252	Total Phosphorus	0.88	mg/l		EPA 365.4	0.02 mg/L	09/19/2012	1351	10/01/2012	1220	SOK
12-4364	MW-11	09/19/2012	1252	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	EMR
12-4364	MW-11	09/19/2012	1252	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	SL
12-4365	MW-11	09/19/2012	1252	NO_2	0.006	mg/l	I	EPA 353.2	0.003 mg/l	09/19/2012	1351	09/21/2012	0922	EMR
12-4366	MW-10	09/19/2012	1322	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/19/2012	1351	09/19/2012	1443	EMR
12-4367	MW-10	09/19/2012	1322	Total Phosphorus	2.33	mg/l		EPA 365.4	0.02 mg/L	09/19/2012	1351	10/01/2012	1220	SOK
12-4367	MW-10	09/19/2012	1322	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	EMR
12-4367	MW-10	09/19/2012	1322	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/19/2012	1351	09/21/2012	1111	SL
12-4368	MW-10	09/19/2012	1322	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/19/2012	1351	09/21/2012	0922	EMR

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4385	MW-18	09/20/2012	0934	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/20/2012	1350	09/20/2012	1500	WH
12-4386	MW-18	09/20/2012	0934	Total Phosphorus	0.74	mg/l		EPA 365.4	0.02 mg/L	09/20/2012	1350	10/01/2012	1220	SOK
12-4386	MW-18	09/20/2012	0934	NO_2+NO_3	0.087	mg/l		EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	EMR
12-4386	MW-18	09/20/2012	0934	NO_3	0.066	mg/l	C	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	SL
12-4387	MW-18	09/20/2012	0934	NO_2	0.021	mg/l		EPA 353.2	0.003 mg/l	09/20/2012	1350	09/21/2012	0922	EMR
12-4388	MW-17	09/20/2012	1005	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/20/2012	1350	09/20/2012	1500	WH
12-4389	MW-17	09/20/2012	1005	Total Phosphorus	9.37	mg/l		EPA 365.4	0.02 mg/L	09/20/2012	1350	10/01/2012	1220	SOK
12-4389	MW-17	09/20/2012	1005	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	EMR
12-4389	MW-17	09/20/2012	1005	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	SL
12-4390	MW-17	09/20/2012	1005	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/20/2012	1350	09/21/2012	0922	EMR
12-4391	MW-21	09/20/2012	1031	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/20/2012	1350	09/20/2012	1500	WH
12-4392	MW-21	09/20/2012	1031	Total Phosphorus	0.62	mg/l		EPA 365.4	0.02 mg/L	09/20/2012	1350	10/02/2012	1408	EMR
12-4392	MW-21	09/20/2012	1031	NO_2+NO_3	0.008	mg/l	I	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	EMR
12-4392	MW-21	09/20/2012	1031	NO_3	0.008	mg/l	I C	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	SL
12-4393	MW-21	09/20/2012	1031	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/20/2012	1350	09/21/2012	0922	EMR
12-4394	MW-33	09/20/2012	1059	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/20/2012	1350	09/20/2012	1500	WH
12-4395	MW-33	09/20/2012	1059	Total Phosphorus	0.77	mg/l		EPA 365.4	0.02 mg/L	09/20/2012	1350	10/02/2012	1408	EMR
12-4395	MW-33	09/20/2012	1059	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	EMR
12-4395	MW-33	09/20/2012	1059	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	SL
12-4396	MW-33	09/20/2012	1059	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/20/2012	1350	09/21/2012	0922	EMR
12-4397	MW-34	09/20/2012	1134	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/20/2012	1350	09/20/2012	1500	WH
12-4398	MW-34	09/20/2012	1134	Total Phosphorus	0.88	mg/l		EPA 365.4	0.02 mg/L	09/20/2012	1350	10/02/2012	1408	EMR
12-4398	MW-34	09/20/2012	1134	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	EMR
12-4398	MW-34	09/20/2012	1134	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	SL
12-4399	MW-34	09/20/2012	1134	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/20/2012	1350	09/21/2012	0922	EMR
12-4400	MW-20	09/20/2012	1209	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/20/2012	1350	09/20/2012	1500	WH
12-4401	MW-20	09/20/2012	1209	Total Phosphorus	1.24	mg/l		EPA 365.4	0.02 mg/L	09/20/2012	1350	10/02/2012	1408	EMR
12-4401	MW-20	09/20/2012	1209	NO_2+NO_3	0.253	mg/l		EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	EMR
12-4401	MW-20	09/20/2012	1209	NO_3	0.233	mg/l	C	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	SL
12-4402	MW-20	09/20/2012	1209	NO_2	0.020	mg/l		EPA 353.2	0.003 mg/l	09/20/2012	1350	09/21/2012	0922	EMR
12-4403	MW-19	09/20/2012	1247	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/20/2012	1350	09/20/2012	1500	WH
12-4404	MW-19	09/20/2012	1247	Total Phosphorus	0.18	mg/l		EPA 365.4	0.02 mg/L	09/20/2012	1350	10/02/2012	1408	EMR
12-4404	MW-19	09/20/2012	1247	NO_2+NO_3	0.733	mg/l		EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	EMR
12-4404	MW-19	09/20/2012	1247	NO_3	0.677	mg/l	C	EPA 353.2	0.004 mg/l	09/20/2012	1350	09/21/2012	1111	SL
12-4405	MW-19	09/20/2012	1247	NO_2	0.056	mg/l		EPA 353.2	0.003 mg/l	09/20/2012	1350	09/21/2012	0922	EMR
12-4474	MW-30	09/26/2012	0941	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4475	MW-30	09/26/2012	0941	Total Phosphorus	2.41	mg/l		EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4475	MW-30	09/26/2012	0941	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4475	MW-30	09/26/2012	0941	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4476	MW-30	09/26/2012	0941	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4477	MW-31	09/26/2012	1011	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4478	MW-31	09/26/2012	1011	Total Phosphorus	0.40	mg/l		EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4478	MW-31	09/26/2012	1011	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4478	MW-31	09/26/2012	1011	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4479	MW-31	09/26/2012	1011	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH
12-4480	MW-37	09/26/2012	1038	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4481	MW-37	09/26/2012	1038	Total Phosphorus	0.22	mg/l		EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4481	MW-37	09/26/2012	1038	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4481	MW-37	09/26/2012	1038	NO_3	0.004	Units	U C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4482	MW-37	09/26/2012	1038	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH
12-4483	MW-38	09/26/2012	1059	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4484	MW-38	09/26/2012	1059	Total Phosphorus	0.61	mg/l		EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4484	MW-38	09/26/2012	1059	NO_2+NO_3	0.004	mg/l	U	EPA 353..2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4484	MW-38	09/26/2012	1059	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4485	MW-38	09/26/2012	1059	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH
12-4486	MW-36	09/26/2012	1120	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4487	MW-36	09/26/2012	1120	Total Phosphorus	0.06	mg/l	I	EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4487	MW-36	09/26/2012	1120	NO_2+NO_3	0.012	mg/l	I	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4487	MW-36	09/26/2012	1120	NO_3	0.012	mg/l	I C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4488	MW-36	09/26/2012	1120	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH
12-4489	MW-32	09/26/2012	1146	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4490	MW-32	09/26/2012	1146	Total Phosphorus	1.46	mg/l		EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4490	MW-32	09/26/2012	1146	NO_2+NO_3	0.007	mg/l	I	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4490	MW-32	09/26/2012	1146	NO_3	0.007	mg/l	I C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4491	MW-32	09/26/2012	1146	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH
12-4492	MW-42	09/26/2012	1211	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4493	MW-42	09/26/2012	1211	Total Phosphorus	0.22	mg/l		EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4493	MW-42	09/26/2012	1211	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4493	MW-42	09/26/2012	1211	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4494	MW-42	09/26/2012	1211	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH
12-4495	MW-39	09/26/2012	1233	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4496	MW-39	09/26/2012	1233	Total Phosphorus	0.07	mg/l	I	EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4496	MW-39	09/26/2012	1233	NO_2+NO_3	0.169	mg/l		EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4496	MW-39	09/26/2012	1233	NO_3	0.156	mg/l	C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4497	MW-39	09/26/2012	1233	NO_2	0.013	mg/l		EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH
12-4498	MW-41	09/26/2012	1305	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/26/2012	1333	09/26/2012	1431	SOK
12-4499	MW-41	09/26/2012	1305	Total Phosphorus	0.77	mg/l		EPA 365.4	0.02 mg/L	09/26/2012	1333	10/02/2012	1408	EMR
12-4499	MW-41	09/26/2012	1305	NO_2+NO_3	0.007	mg/l	I	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	WH
12-4499	MW-41	09/26/2012	1305	NO_3	0.007	mg/l	I C	EPA 353.2	0.004 mg/l	09/26/2012	1333	09/28/2012	0958	EMR
12-4500	MW-41	09/26/2012	1305	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/26/2012	1333	09/28/2012	0818	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4517	MW-35	09/27/2012	0927	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/27/2012	1233	09/27/2012	1309	EMR
12-4518	MW-35	09/27/2012	0927	Total Phosphorus	0.65	mg/l		EPA 365.4	0.02 mg/L	09/27/2012	1233	10/02/2012	1408	EMR
12-4518	MW-35	09/27/2012	0927	NO_2+NO_3	0.012	mg/l	I	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	WH
12-4518	MW-35	09/27/2012	0927	NO_3	0.012	mg/l	I C	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	EMR
12-4519	MW-35	09/27/2012	0927	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/27/2012	1233	09/28/2012	0818	WH
12-4520	MW-40	09/27/2012	0956	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/27/2012	1233	09/27/2012	1309	EMR
12-4521	MW-40	09/27/2012	0956	Total Phosphorus	0.82	mg/l		EPA 365.4	0.02 mg/L	09/27/2012	1233	10/02/2012	1408	EMR
12-4521	MW-40	09/27/2012	0956	NO_2+NO_3	0.086	mg/l		EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	WH
12-4521	MW-40	09/27/2012	0956	NO_3	0.086	mg/l	C	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	EMR
12-4522	MW-40	09/27/2012	0956	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/27/2012	1233	09/28/2012	0818	WH
12-4523	MW-43	09/27/2012	1026	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/27/2012	1233	09/27/2012	1309	EMR
12-4524	MW-43	09/27/2012	1026	Total Phosphorus	0.07	mgl	I	EPA 365.4	0.02 mg/L	09/27/2012	1233	10/02/2012	1408	EMR
12-4524	MW-43	09/27/2012	1026	NO_2+NO_3	0.011	mg/l	I	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	WH
12-4524	MW-43	09/27/2012	1026	NO_3	0.004	mg/l	I C	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	EMR
12-4525	MW-43	09/27/2012	1026	NO_2	0.007	mg/l	I	EPA 353.2	0.003 mg/l	09/27/2012	1233	09/28/2012	0818	WH
12-4526	MW-44	09/27/2012	1053	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/27/2012	1233	09/27/2012	1309	EMR
12-4527	MW-44	09/27/2012	1053	Total Phosphorus	3.68	mg/l		EPA 365.4	0.02 mg/L	09/27/2012	1233	10/02/2012	1408	EMR
12-4527	MW-44	09/27/2012	1053	NO_2+NO_3	0.007	mg/l	I	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	WH
12-4527	MW-44	09/27/2012	1053	NO_3	0.007	mg/l	I C	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	EMR
12-4528	MW-44	09/27/2012	1053	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/27/2012	1233	09/28/2012	0818	WH
12-4529	MW-45	09/27/2012	1132	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/27/2012	1233	09/27/2012	1309	EMR
12-4530	MW-45	09/27/2012	1132	Total Phosphorus	0.20	mg/l		EPA 365.4	0.02 mg/L	09/27/2012	1233	10/02/2012	1408	EMR
12-4530	MW-45	09/27/2012	1132	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	WH
12-4530	MW-45	09/27/2012	1132	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	EMR
12-4531	MW-45	09/27/2012	1132	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/27/2012	1233	09/28/2012	0818	WH
12-4532	MW-46	09/27/2012	1205	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	09/27/2012	1233	09/27/2012	1309	EMR
12-4533	MW-46	09/27/2012	1205	Total Phosphorus	0.40	mg/l		EPA 365.4	0.02 mg/L	09/27/2012	1233	10/02/2012	1408	EMR
12-4533	MW-46	09/27/2012	1205	NO_2+NO_3	0.008	mg/l	I	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	WH
12-4533	MW-46	09/27/2012	1205	NO_3	0.008	mg/l	I C	EPA 353.2	0.004 mg/l	09/27/2012	1233	09/28/2012	0958	EMR
12-4534	MW-46	09/27/2012	1205	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	09/27/2012	1233	09/28/2012	0818	WH
12-4778	C-5	10/10/2012	0940	Fecal Coliform	80	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4779	C-5	10/10/2012	0940	Total Phosphorus	0.32	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4779	C-5	10/10/2012	0940	NO_2+NO_3	0.030	mg/l		EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4779	C-5	10/10/2012	0940	NO_3	0.030	mg/l	C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4780	C-5	10/10/2012	0940	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH
12-4781	C-6	10/10/2012	0958	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4782	C-6	10/10/2012	0958	Total Phosphorus	0.52	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4782	C-6	10/10/2012	0958	NO_2+NO_3	0.049	mg/l		EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4782	C-6	10/10/2012	0958	NO_3	0.049	mg/l	C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4783	C-6	10/10/2012	0958	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4784	C-7	10/10/2012	1016	Fecal Coliform	60	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4785	C-7	10/10/2012	1016	Total Phosphorus	0.51	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4785	C-7	10/10/2012	1016	NO_2+NO_3	0.051	mg/l		EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4785	C-7	10/10/2012	1016	NO_3	0.042	mg/l	C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4786	C-7	10/10/2012	1016	NO_2	0.009	mg/l	I	EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH
12-4787	C-8	10/10/2012	1042	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4788	C-8	10/10/2012	1042	Total Phosphorus	0.46	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4788	C-8	10/10/2012	1042	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4788	C-8	10/10/2012	1042	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4789	C-8	10/10/2012	1042	NO_2	0.014	mg/l		EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH
12-4790	C-9	10/10/2012	1057	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4791	C-9	10/10/2012	1057	Total Phosphorus	0.43	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4791	C-9	10/10/2012	1057	NO_2+NO_3	0.036	mg/l		EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4791	C-9	10/10/2012	1057	NO_3	0.022	mg/l	C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4792	C-9	10/10/2012	1057	NO_2	0.014	mg/l		EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH
12-4793	C-10	10/10/2012	1113	Fecal Coliform	60	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4794	C-10	10/10/2012	1113	Total Phosphorus	0.43	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4794	C-10	10/10/2012	1113	NO_2+NO_3	0.062	mg/l		EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4794	C-10	10/10/2012	1113	NO_3	0.048	mg/l	C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4795	C-10	10/10/2012	1113	NO_2	0.014	mg/l		EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH
12-4796	C-11	10/10/2012	1130	Fecal Coliform	30	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4797	C-11	10/10/2012	1130	Total Phosphorus	0.38	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4797	C-11	10/10/2012	1130	NO_2+NO_3	0.034	mg/l		EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4797	C-11	10/10/2012	1130	NO_3	0.027	mg/l	C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4798	C-11	10/10/2012	1130	NO_2	0.007	mg/l	I	EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH
12-4799	C-12	10/10/2012	1147	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	10/10/2012	1248	10/10/2012	1347	SOK
12-4800	C-12	10/10/2012	1147	Total Phosphorus	0.52	mg/l		EPA 365.4	0.02 mg/L	10/10/2012	1248	10/17/2012	1338	EMR
12-4800	C-12	10/10/2012	1147	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	WH
12-4800	C-12	10/10/2012	1147	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	10/10/2012	1248	10/12/2012	1232	EMR
12-4801	C-12	10/10/2012	1147	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	10/10/2012	1248	10/12/2012	0745	WH
12-4818	MW-47	10/11/2012	0951	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	10/11/2012	1316	10/11/2012	1356	EMR
12-4819	MW-47	10/11/2012	0951	Total Phosphorus	0.12	mg/l		EPA 365.4	0.02 mg/L	10/11/2012	1316	10/17/2012	1338	EMR
12-4819	MW-47	10/11/2012	0951	NO_2+NO_3	0.020	mg/l		EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	WH
12-4819	MW-47	10/11/2012	0951	NO_3	0.020	mg/l	C	EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	EMR
12-4820	MW-47	10/11/2012	0951	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	10/11/2012	1316	10/12/2012	0745	WH
12-4821	MW-48	10/11/2012	1025	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	10/11/2012	1316	10/11/2012	1356	EMR
12-4822	MW-48	10/11/2012	1025	Total Phosphorus	1.15	mg/l		EPA 365.4	0.02 mg/L	10/11/2012	1316	10/17/2012	1338	EMR
12-4822	MW-48	10/11/2012	1025	NO_2+NO_3	0.006	mg/l	I	EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	WH
12-4822	MW-48	10/11/2012	1025	NO_3	0.006	mg/l	I C	EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	EMR
12-4823	MW-48	10/11/2012	1025	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	10/11/2012	1316	10/12/2012	0745	WH

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
12-4824	MW-49	10/11/2012	1101	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	10/11/2012	1316	10/11/2012	1356	EMR
12-4825	MW-49	10/11/2012	1101	Total Phosphorus	0.66	mg/l		EPA 365.4	0.02 mg/L	10/11/2012	1316	10/17/2012	1338	EMR
12-4825	MW-49	10/11/2012	1101	NO_2+NO_3	0.058	mg/l		EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	WH
12-4825	MW-49	10/11/2012	1101	NO_3	0.027	mg/l	C	EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	EMR
12-4826	MW-49	10/11/2012	1101	NO_2	0.031	mg/l		EPA 353.2	0.003 mg/l	10/11/2012	1316	10/12/2012	0745	WH
12-4827	MW-50	10/11/2012	1131	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	10/11/2012	1316	10/11/2012	1356	EMR
12-4828	MW-50	10/11/2012	1131	Total Phosphorus	1.22	mg/l		EPA 365.4	0.02 mg/L	10/11/2012	1316	10/17/2012	1328	EMR
12-4828	MW-50	10/11/2012	1131	NO_2+NO_3	0.099	mg/l		EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	WH
12-4828	MW-50	10/11/2012	1131	NO_3	0.081	mg/l	C	EPA 353.2	0.004 mg/l	10/11/2012	1316	10/12/2012	1232	EMR
12-4829	MW-50	10/11/2012	1131	NO_2	0.018	mg/l		EPA 353.2	0.003 mg/l	10/11/2012	1316	10/12/2012	0745	WH
12-4830	C-16	10/11/2012	1157	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	10/11/2012	1315	10/11/2012	1356	EMR
12-4831	C-16	10/11/2012	1157	Total Phosphorus	0.30	mg/l		EPA 365.4	0.02 mg/L	10/11/2012	1315	10/17/2012	1338	EMR
12-4831	C-16	10/11/2012	1157	NO_2+NO_3	0.018	mg/l		EPA 353.2	0.004 mg/l	10/11/2012	1315	10/12/2012	1232	WH
12-4831	C-16	10/11/2012	1157	NO_3	0.009	mg/l	I C	EPA 353.2	0.004 mg/l	10/11/2012	1315	10/12/2012	1232	EMR
12-4832	C-16	10/11/2012	1157	NO_2	0.009	mg/l	I	EPA 353.2	0.003 mg/l	10/11/2012	1315	10/12/2012	0745	WH
12-4833	C-15	10/11/2012	1215	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	10/11/2012	1315	10/11/2012	1356	EMR
12-4834	C-15	10/11/2012	1215	Total Phosphorus	0.29	mg/l		EPA 365.4	0.02 mg/L	10/11/2012	1315	10/17/2012	1338	EMR
12-4834	C-15	10/11/2012	1215	NO_2+NO_3	0.014	mg/l	I	EPA 353.2	0.004 mg/l	10/11/2012	1315	10/12/2012	1232	WH
12-4834	C-15	10/11/2012	1215	NO_3	0.014	mg/l	I C	EPA 353.2	0.004 mg/l	10/11/2012	1315	10/12/2012	1232	EMR
12-4835	C-15	10/11/2012	1215	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	10/11/2012	1315	10/12/2012	0745	WH
12-4836	C-14	10/11/2012	1234	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	10/11/2012	1315	10/11/2012	1356	EMR
12-4837	C-14	10/11/2012	1234	Total Phosphorus	0.30	mg/l		EPA 365.4	0.02 mg/L	10/11/2012	1315	10/17/2012	1338	EMR
12-4837	C-14	10/11/2012	1234	NO_2+NO_3	0.029	mg/l		EPA 353.2	0.004 mg/l	10/11/2012	1315	10/12/2012	1232	WH
12-4837	C-14	10/11/2012	1234	NO_3	0.024	mg/l	C	EPA 353.2	0.004 mg/l	10/11/2012	1315	10/12/2012	1232	EMR
12-4838	C-14	10/11/2012	1234	NO_2	0.005	mg/l	I	EPA 353.2	0.003 mg/l	10/11/2012	1315	10/12/2012	0745	WH

East Port Laboratory

Charlotte County Utilities

EAST PORT WRF

3100 Loveland blvd.

PORT CHARLOTTE, FL. 33980

DATA QUALIFIER DEFINITIONS

A = Value reported is an average of two or more determinations.
B = Results based upon colony counts outside the acceptable range.
C = Calculated value
F = Tested in the field
I = Reported value is between the laboratory MDL and PQL.
J1 = Est. value quality control criteria for precision or accuracy not met. (Spike Recovery)
J2 = Est. value quality control criteria for precision or accuracy not met.(Duplicate RPD)
J3 = Est. value quality control criteria for precision or accuracy not met.(Glucose/Glutamic Acid)
J4 = Est. value quality control criteria for precision or accuracy not met.(analyte detected in blank)
J5 = Est. value quality control criteria for precision or accuracy not met.(DO Depletion <2.00 mg/L)
J6 = Est. value quality control criteria for precision or accuracy not met.(Test Replicate Difference)
K-1 = Off-scale low. The value is less than the lowest calibration standard.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond accepted hold time.
T = Value reported is < MDL. Reported for informational purposes only and shall not be used in statistical analysis.
U = Analyte analyzed but not detected at the value indicated.
V = Analyte detected in sample and method blank.
Y = Analysis performed on an improperly preserved sample. Data may be inaccurate.
Z = Too many colonies were present (TNTC). The numeric value represents the filtration volume.
! = Data deviate from historically established concentration ranges.
? = Data rejected and should not be used. Some or all of QC data were outside criteria, and the Presence or absence of the analyte cannot be determined from the data.
* = Not reported due to interference.

NOTES:
PQL = 4 x MDL
Ammonia PQL = 0.10 mg/L
TKN PQL = 0.50 mg/L

Charlotte County Government
"To exceed expectations in the delivery of public services."
www.CharlotteCountyFL.com

February 21, 2013

Report ID: Spring Lake 01&02-13

Bruce Bullert
Charlotte County Utility
Engineering Department
25550 Harbor View Rd
Port Charlotte, FL 33980

January & February 2013 Lab Results

East Port Laboratory

Lab ID # E54436

The East Port Laboratory is certified by the Florida Department of Health Bureau of Laboratories Environmental Water as a Basic Environmental Laboratory. The East Port Laboratory has a Florida Department of Health approved Comprehensive Quality Assurance/Quality Control Plan which specifies the procedures used in the analysis of the referenced samples. The East Port Laboratory certifies that results meet all requirements of NELAC Standards. The Lab ID number above should be referenced when attesting to regulatory agencies regarding the analytical procedures used.

Attached please find the results from the samples collected by you and sent to the East Port Laboratory for analysis. There are custody numbers assigned to each sample for quality control purposes; please refer to these custody numbers when requesting information regarding these samples. Results relate to samples only.

The East Port Laboratory is pleased to have served you. If you require any further assistance, please feel free to contact me directly.

Sincerely,

Sandra Lavoie

Sandra Lavoie
Laboratory Manager
Tel.: 941-764-4593

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-0168	MW-50	1/9/2013	0834	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/9/2013	1239	1/9/2013	1355	WH
13-0169	MW-50	1/9/2013	0834	Total Phosphorus	0.54	mg/l		EPA 365.4	0.02 mg/L	1/9/2013	1239	1/26/2013	1126	EMR
13-0169	MW-50	1/9/2013	0834	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	EMR
13-0169	MW-50	1/9/2013	0834	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	SL
13-0170	MW-50	1/9/2013	0834	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/9/2013	1239	1/11/2013	1116	EMR
13-0171	MW-49	1/9/2013	0902	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/9/2013	1239	1/9/2013	1355	WH
13-0172	MW-49	1/9/2013	0902	Total Phosphorus	0.92	mg/l		EPA 365.4	0.02 mg/L	1/9/2013	1239	1/26/2013	1126	EMR
13-0172	MW-49	1/9/2013	0902	NO_2+NO_3	0.029	mg/l		EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	EMR
13-0172	MW-49	1/9/2013	0902	NO_3	0.029	mg/l	C	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	SL
13-0173	MW-49	1/9/2013	0902	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/9/2013	1239	1/11/2013	1116	EMR
13-0174	MW-48	1/9/2013	0935	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/9/2013	1239	1/9/2013	1355	WH
13-0175	MW-48	1/9/2013	0935	Total Phosphorus	2.31	mg/l		EPA 365.4	0.02 mg/L	1/9/2013	1239	1/26/2013	1126	EMR
13-0175	MW-48	1/9/2013	0935	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	EMR
13-0175	MW-48	1/9/2013	0935	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	SL
13-0176	MW-48	1/9/2013	0935	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/9/2013	1239	1/11/2013	1116	EMR
13-0177	MW-47	1/9/2013	1010	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/9/2013	1239	1/9/2013	1355	WH
13-0178	MW-47	1/9/2013	1010	Total Phosphorus	0.43	mg/l		EPA 365.4	0.02 mg/L	1/9/2013	1239	1/26/2013	1126	EMR
13-0178	MW-47	1/9/2013	1010	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	EMR
13-0178	MW-47	1/9/2013	1010	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	SL
13-0179	MW-47	1/9/2013	1010	NO_2	0.005	mg/l	I	EPA 353.2	0.003 mg/l	1/9/2013	1239	1/11/2013	1116	EMR
13-0180	MW-45	1/9/2013	1040	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/9/2013	1239	1/9/2013	1355	WH
13-0181	MW-45	1/9/2013	1040	Total Phosphorus	0.68	mg/l		EPA 365.4	0.02 mg/L	1/9/2013	1239	1/26/2013	1126	EMR
13-0181	MW-45	1/9/2013	1040	NO_2+NO_3	0.536	mg/l		EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	EMR
13-0181	MW-45	1/9/2013	1040	NO_3	0.527	mg/l	C	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	SL
13-0182	MW-45	1/9/2013	1040	NO_2	0.009	mg/l	I	EPA 353.2	0.003 mg/l	1/9/2013	1239	1/11/2013	1116	EMR
13-0183	MW-46	1/9/2013	1105	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/9/2013	1239	1/9/2013	1355	WH
13-0184	MW-46	1/9/2013	1105	Total Phosphorus	0.28	mg/l		EPA 365.4	0.02 mg/L	1/9/2013	1239	1/26/2013	1126	EMR
13-0184	MW-46	1/9/2013	1105	NO_2+NO_3	0.012	mg/l	I	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	EMR
13-0184	MW-46	1/9/2013	1105	NO_3	0.012	mg/l	I C	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	SL
13-0185	MW-46	1/9/2013	1105	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/9/2013	1239	1/11/2013	1116	EMR
13-0186	MW-44	1/9/2013	1137	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/9/2013	1239	1/9/2013	1355	WH
13-0187	MW-44	1/9/2013	1137	Total Phosphorus	1.57	mg/l		EPA 365.4	0.02 mg/L	1/9/2013	1239	1/26/2013	1126	EMR
13-0187	MW-44	1/9/2013	1137	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	EMR
13-0187	MW-44	1/9/2013	1137	NO_3	0.004	Units	U C	EPA 353.2	0.004 mg/l	1/9/2013	1239	1/11/2013	1344	SL
13-0188	MW-44	1/9/2013	1137	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/9/2013	1239	1/11/2013	1116	EMR

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-0205	MW-43	1/10/2013	0946	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/10/2013	1412	1/10/2013	1450	EMR
13-0206	MW-43	1/10/2013	0946	Total Phosphorus	0.96	mg/l		EPA 365.4	0.02 mg/L	1/10/2013	1412	1/26/2013	1136	EMR
13-0206	MW-43	1/10/2013	0946	NO_2+NO_3	0.077	mg/l		EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	EMR
13-0206	MW-43	1/10/2013	0946	NO_3	0.077	mg/l	C	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	SL
13-0207	MW-43	1/10/2013	0946	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/10/2013	1412	1/11/2013	1116	EMR
13-0208	MW-42	1/10/2013	1023	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/10/2013	1412	1/10/2013	1450	EMR
13-0209	MW-42	1/10/2013	1023	Total Phosphorus	4.82	mg/l		EPA 365.4	0.02 mg/L	1/10/2013	1412	1/26/2013	1136	EMR
13-0209	MW-42	1/10/2013	1023	NO_2+NO_3	5.684	mg/l		EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	EMR
13-0209	MW-42	1/10/2013	1023	NO_3	5.552	mg/l	C	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	SL
13-0210	MW-42	1/10/2013	1023	NO_2	0.132	mg/l		EPA 353.2	0.003 mg/l	1/10/2013	1412	1/11/2013	1116	EMR
13-0211	MW-41	1/10/2013	1053	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/10/2013	1412	1/10/2013	1450	EMR
13-0212	MW-41	1/10/2013	1053	Total Phosphorus	0.82	mg/l		EPA 365.4	0.02 mg/L	1/10/2013	1412	1/26/2013	1136	EMR
13-0212	MW-41	1/10/2013	1053	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	EMR
13-0212	MW-41	1/10/2013	1053	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	SL
13-0213	MW-41	1/10/2013	1053	NO_2	0.009	mg/l	I	EPA 353.2	0.003 mg/l	1/10/2013	1412	1/11/2013	1116	EMR
13-0214	MW-35	1/10/2013	1145	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/10/2013	1412	1/10/2013	1450	EMR
13-0215	MW-35	1/10/2013	1145	Total Phosphorus	0.27	mg/l		EPA 365.4	0.02 mg/L	1/10/2013	1412	1/26/2013	1136	EMR
13-0215	MW-35	1/10/2013	1145	NO_2+NO_3	0.006	mg/l	I	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	EMR
13-0215	MW-35	1/10/2013	1145	NO_3	0.006	mg/l	I C	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	SL
13-0216	MW-35	1/10/2013	1145	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/10/2013	1412	1/11/2013	1116	EMR
13-0217	MW-40	1/10/2013	1213	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/10/2013	1412	1/10/2013	1450	EMR
13-0218	MW-40	1/10/2013	1213	Total Phosphorus	0.82	mg/l		EPA 365.4	0.02 mg/L	1/10/2013	1412	1/26/2013	1136	EMR
13-0218	MW-40	1/10/2013	1213	NO_2+NO_3	2.491	mg/l		EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	EMR
13-0218	MW-40	1/10/2013	1213	NO_3	2.452	mg/l	C	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	SL
13-0219	MW-40	1/10/2013	1213	NO_2	0.039	mg/l		EPA 353.2	0.003 mg/l	1/10/2013	1412	1/11/2013	1116	EMR
13-0220	MW-38	1/10/2013	1300	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/10/2013	1412	1/10/2013	1450	EMR
13-0221	MW-38	1/10/2013	1300	Total Phosphorus	0.51	mg/l		EPA 365.4	0.02 mg/L	1/10/2013	1412	1/26/2013	1136	EMR
13-0221	MW-38	1/10/2013	1300	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	EMR
13-0221	MW-38	1/10/2013	1300	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/10/2013	1412	1/11/2013	1344	SL
13-0222	MW-38	1/10/2013	1300	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/10/2013	1412	1/11/2013	1116	EMR
13-0290	MW-30	1/16/2013	0910	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/16/2013	1220	1/16/2013	1306	EMR
13-0291	MW-30	1/16/2013	0910	Total Phosphorus	1.68	mg/l		EPA 365.4	0.02 mg/L	1/16/2013	1220	2/12/2013	1509	SOK
13-0291	MW-30	1/16/2013	0910	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	WH
13-0291	MW-30	1/16/2013	0910	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	SL
13-0292	MW-30	1/16/2013	0910	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/16/2013	1220	1/18/2013	0911	WH
13-0293	MW-31	1/16/2013	0932	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/16/2013	1220	1/16/2013	1306	EMR
13-0294	MW-31	1/16/2013	0932	Total Phosphorus	0.46	mg/l		EPA 365.4	0.02 mg/L	1/16/2013	1220	2/12/2013	1509	SOK
13-0294	MW-31	1/16/2013	0932	NO_2+NO_3	0.009	mg/l	I	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	WH
13-0294	MW-31	1/16/2013	0932	NO_3	0.009	mg/l	I C	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	SL
13-0295	MW-31	1/16/2013	0932	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/16/2013	1220	1/18/2013	0911	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-0296	MW-34	1/16/2013	1002	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/16/2013	1220	1/16/2013	1306	EMR
13-0297	MW-34	1/16/2013	1002	Total Phosphorus	0.97	mg/l		EPA 365.4	0.02 mg/L	1/16/2013	1220	2/12/2013	1509	SOK
13-0297	MW-34	1/16/2013	1002	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	WH
13-0297	MW-34	1/16/2013	1002	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	SL
13-0298	MW-34	1/16/2013	1002	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/16/2013	1220	1/18/2013	0911	WH
13-0299	MW-20	1/16/2013	1040	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/16/2013	1220	1/16/2013	1306	EMR
13-0300	MW-20	1/16/2013	1040	Total Phosphorus	1.16	mg/l		EPA 365.4	0.02 mg/L	1/16/2013	1220	2/12/2013	1509	SOK
13-0300	MW-20	1/16/2013	1040	NO_2+NO_3	0.943	mg/l		EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	WH
13-0300	MW-20	1/16/2013	1040	NO_3	0.943	mg/l	C	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	SL
13-0301	MW-20	1/16/2013	1040	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/16/2013	1220	1/18/2013	0911	WH
13-0302	MW-19	1/16/2013	1104	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/16/2013	1220	1/16/2013	1306	EMR
13-0303	MW-19	1/16/2013	1104	Total Phosphorus	0.11	mg/l		EPA 365.4	0.02 mg/L	1/16/2013	1220	2/12/2013	1509	SOK
13-0303	MW-19	1/16/2013	1104	NO_2+NO_3	17.330	mg/l		EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	WH
13-0303	MW-19	1/16/2013	1104	NO_3	16.786	mg/l	C	EPA 353.2	0.004 mg/l	1/16/2013	1220	1/19/2013	1353	SL
13-0304	MW-19	1/16/2013	1104	NO_2	0.544	mg/l		EPA 353.2	0.003 mg/l	1/16/2013	1220	1/18/2013	0911	WH
13-0321	MW-21	1/17/2013	0952	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/17/2013	1336	1/17/2013	1442	WH
13-0322	MW-21	1/17/2013	0952	Total Phosphorus	0.54	mg/l		EPA 365.4	0.02 mg/L	1/17/2013	1336	2/12/2013	1509	SOK
13-0322	MW-21	1/17/2013	0952	NO_2+NO_3	0.007	mg/l	I	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	WH
13-0322	MW-21	1/17/2013	0952	NO_3	0.007	mg/l	I C	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	SL
13-0323	MW-21	1/17/2013	0952	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/17/2013	1336	1/18/2013	0911	WH
13-0324	MW-33	1/17/2013	1027	FecalColiform	10	col/100ml	U	SM9222D	10 col/100ml	1/17/2013	1336	1/17/2013	1442	WH
13-0325	MW-33	1/17/2013	1027	Total Phosphorus	0.33	mg/l		EPA 365.4	0.02 mg/L	1/17/2013	1336	2/12/2013	1509	SOK
13-0325	MW-33	1/17/2013	1027	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	WH
13-0325	MW-33	1/17/2013	1027	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	SL
13-0326	MW-33	1/17/2013	1027	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/17/2013	1336	1/18/2013	0911	WH
13-0327	MW-22	1/17/2013	1100	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/17/2013	1336	1/17/2013	1442	WH
13-0328	MW-22	1/17/2013	1100	Total Phosphorus	0.27	mg/l		EPA 365.4	0.02 mg/L	1/17/2013	1336	2/12/2013	1509	SOK
13-0328	MW-22	1/17/2013	1100	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	WH
13-0328	MW-22	1/17/2013	1100	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	SL
13-0329	MW-22	1/17/2013	1100	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/17/2013	1336	1/18/2013	0911	WH
13-0330	MW-17	1/17/2013	1133	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/17/2013	1336	1/17/2013	1442	WH
13-0331	MW-17	1/17/2013	1133	Total Phosphorus	0.99	mg/l		EPA 365.4	0.02 mg/L	1/17/2013	1336	2/12/2013	1509	SOK
13-0331	MW-17	1/17/2013	1133	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	WH
13-0331	MW-17	1/17/2013	1133	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	SL
13-0332	MW-17	1/17/2013	1133	NO_2	0.004	mg/l	I	EPA 353.2	0.003 mg/l	1/17/2013	1336	1/18/2013	0911	WH
13-0333	MW-12	1/17/2013	1208	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/17/2013	1336	1/17/2013	1442	WH
13-0334	MW-12	1/17/2013	1208	Total Phosphorus	0.27	mg/l		EPA 365.4	0.02 mg/L	1/17/2013	1336	2/12/2013	1509	SOK
13-0334	MW-12	1/17/2013	1208	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	WH
13-0334	MW-12	1/17/2013	1208	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	SL
13-0335	MW-12	1/17/2013	1208	NO_2	0.005	mg/l	I	EPA 353.2	0.003 mg/l	1/17/2013	1336	1/18/2013	0911	WH

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-0336	MW-11	1/17/2013	1242	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/17/2013	1336	1/17/2013	1442	WH
13-0337	MW-11	1/17/2013	1242	Total Phosphorus	1.35	mg/l		EPA 365.4	0.02 mg/L	1/17/2013	1336	2/12/2013	1509	SOK
13-0337	MW-11	1/17/2013	1242	NO_2+NO_3	0.126	mg/l		EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	WH
13-0337	MW-11	1/17/2013	1242	NO_3	0.121	mg/l	C	EPA 353.2	0.004 mg/l	1/17/2013	1336	1/19/2013	1353	SL
13-0338	MW-11	1/17/2013	1242	NO_2	0.005	mg/l	I	EPA 353.2	0.003 mg/l	1/17/2013	1336	1/18/2013	0911	WH
13-0399	MW-8	1/23/2013	0841	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/23/2013	1252	1/23/2013	1418	WH
13-0400	MW-8	1/23/2013	0841	Total Phosphorus	0.32	mg/l		EPA 365.4	0.02 mg/L	1/23/2013	1252	2/12/2013	1509	SOK
13-0400	MW-8	1/23/2013	0841	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	EMR
13-0400	MW-8	1/23/2013	0841	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	SL
13-0401	MW-8	1/23/2013	0841	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/23/2013	1252	1/24/2013	0941	EMR
13-0402	MW-16	1/23/2013	0943	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/23/2013	1252	1/23/2013	1418	WH
13-0403	MW-16	1/23/2013	0943	Total Phosphorus	1.38	mg/l		EPA365.4	0.02 mg/L	1/23/2013	1252	2/12/2013	1509	SOK
13-0403	MW-16	1/23/2013	0943	NO_2+NO_3	0.004	mg/l	U	EPA353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	EMR
13-0403	MW-16	1/23/2013	0943	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	SL
13-0404	MW-16	1/23/2013	0943	NO_2	0.015	mg/l		EPA 353.2	0.003 mg/l	1/23/2013	1252	1/24/2013	0941	EMR
13-0405	MW- 25	1/23/2013	1018	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/23/2013	1252	1/23/2013	1418	WH
13-0406	MW-25	1/23/2013	1018	Total Phosphorus	0.89	mg/l		EPA 365.4	0.02 mg/L	1/23/2013	1252	2/12/2013	1509	SOK
13-0406	MW-25	1/23/2013	1018	NO_2+NO_3	0.020	mg/l		EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	EMR
13-0406	MW-25	1/23/2013	1018	NO_3	0.020	mg/l	C	EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	SL
13-0407	MW-25	1/23/2013	1018	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/23/2013	1252	1/24/2013	0941	EMR
13-0408	MW-29	1/23/2013	1054	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/23/2013	1252	1/23/2013	1418	WH
13-0409	MW-29	1/23/2013	1054	Total Phosphorus	1.26	mg /l		EPA 365.4	0.02 mg/L	1/23/2013	1252	2/12/2013	1509	SOK
13-0409	MW-29	1/23/2013	1054	NO_2+NO_3	0.034	mg/l		EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	EMR
13-0409	MW-29	1/23/2013	1054	NO_3	0.034	mg/l	C	EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	SL
13-0410	MW-29	1/23/2013	1054	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/23/2013	1252	1/24/2013	0941	EMR
13-0411	MW-2	1/23/2013	1150	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/23/2013	1252	1/23/2013	1418	WH
13-0412	MW-2	1/23/2013	1150	Total Phosphorus	0.53	mg/l		EPA 365.4	0.02 mg/L	1/23/2013	1252	2/12/2013	1509	SOK
13-0412	MW-2	1/23/2013	1150	NO_2+NO_3	0.037	mg/l		EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	EMR
13-0412	MW-2	1/23/2013	1150	NO_3	0.037	mg/l	C	EPA 353.2	0.004 mg/l	1/23/2013	1252	1/25/2013	1154	SL
13-0413	MW-2	1/23/2013	1150	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/23/2013	1252	1/24/2013	0941	EMR
13-0430	MW-3	1/24/2013	0947	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/24/2013	1334	1/24/2013	1505	WH
13-0431	MW-3	1/24/2013	0947	Total Phosphorus	1.68	mg/l		EPA 365.4	0.02 mg/L	1/24/2013	1334	2/12/2013	1509	SOK
13-0431	MW-3	1/24/2013	0947	NO_2+NO_3	0.058	mg/l		EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	EMR
13-0431	MW-3	1/24/2013	0947	NO_3	0.058	mg/l	C	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	SL
13-0432	MW-3	1/24/2013	0947	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/24/2013	1334	1/25/2013	0849	EMR
13-0433	MW-5	1/24/2013	1024	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/24/2013	1334	1/24/2013	1505	WH
13-0434	MW-5	1/24/2013	1024	Total Phosphorus	0.57	mg/l		EPA 365.4	0.02 mg/L	1/24/2013	1334	2/12/2013	1509	SOK
13-0434	MW-5	1/24/2013	1024	NO_2+NO_3	0.015	mg/l	I	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	EMR
13-0434	MW-5	1/24/2013	1024	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	SL
13-0435	MW-5	1/24/2013	1024	NO_2	0.011	mg/l	I	EPA 353.2	0.003 mg/l	1/24/2013	1334	1/25/2013	0849	EMR

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13-0436	MW-6	1/24/2013	1051	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/24/2013	1334	1/24/2013	1505	WH
13-0437	MW-6	1/24/2013	1051	Total Phosphorus	0.17	mg/l		EPA 365.4	0.02 mg/L	1/24/2013	1334	2/12/2013	1509	SOK
13-0437	MW-6	1/24/2013	1051	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	EMR
13-0437	MW-6	1/24/2013	1051	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	SL
13-0438	MW-6	1/24/2013	1051	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/24/2013	1334	1/25/2013	0849	EMR
13-0439	MW-7	1/24/2013	1126	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/24/2013	1334	1/24/2013	1505	WH
13-0440	MW-7	1/24/2013	1126	Total Phosphorus	0.37	mg/l		EPA 365.4	0.02 mg/L	1/24/2013	1334	2/12/2013	1509	SOK
13-0440	MW-7	1/24/2013	1126	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	EMR
13-0440	MW-7	1/24/2013	1126	NO_3	0.004	Units	U C	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	SL
13-0441	MW-7	1/24/2013	1126	NO_2	0.012	mg/l		EPA 353.2	0.003 mg/l	1/24/2013	1334	1/25/2013	0849	EMR
13-0442	MW-15	1/24/2013	1213	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/24/2013	1334	1/24/2013	1505	WH
13-0443	MW-15	1/24/2013	1213	Total Phosphorus	0.79	mg/l		EPA 365.4	0.02 mg/L	1/24/2013	1334	2/12/2013	1509	SOK
13-0443	MW-15	1/24/2013	1213	NO_2+NO_3	0.015	mg/l	I	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	EMR
13-0443	MW-15	1/24/2013	1213	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	SL
13-0444	MW-15	1/24/2013	1213	NO_2	0.015	mg/l		EPA 353.2	0.003 mg/l	1/24/2013	1334	1/25/2013	0849	EMR
13-0445	MW-26	1/24/2013	1255	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/24/2013	1334	1/24/2013	1505	WH
13-0446	MW-26	1/24/2013	1255	Total Phosphorus	2.49	mg/l	I	EPA 365.4	0.02 mg/L	1/24/2013	1334	2/12/2013	1509	SOK
13-0446	MW-26	1/24/2013	1255	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	EMR
13-0446	MW-26	1/24/2013	1255	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/24/2013	1334	1/25/2013	1154	SL
13-0447	MW-26	1/24/2013	1255	NO_2	0.003	mg/l	U	EPA 353.2	0.003 mg/l	1/24/2013	1334	1/25/2013	0849	EMR
13-0508	MW-27	1/30/2013	0845	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0509	MW-27	1/30/2013	0845	Total Phosphorus	5.62	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0509	MW-27	1/30/2013	0845	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0509	MW-27	1/30/2013	0845	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0510	MW-27	1/30/2013	0845	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0511	MW-28	1/30/2013	0902	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0512	MW-28	1/30/2013	0902	Total Phosphorus	2.23	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0512	MW-28	1/30/2013	0902	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0512	MW-28	1/30/2013	0902	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0513	MW-28	1/30/2013	0902	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0514	C-1	1/30/2013	0940	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0515	C-1	1/30/2013	0940	Total Phosphorus	0.25	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0515	C-1	1/30/2013	0940	NO_2+NO_3	0.014	mg/l	I	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0515	C-1	1/30/2013	0940	NO_3	0.014	mg/l	I C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0516	C-1	1/30/2013	0940	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0517	C-2	1/30/2013	0951	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0518	C-2	1/30/2013	0951	Total Phosphorus	0.30	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0518	C-2	1/30/2013	0951	NO_2+NO_3	0.014	mg/l	I	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0518	C-2	1/30/2013	0951	NO_3	0.014	mg/l	I C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0519	C-2	1/30/2013	0951	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-0520	C-4	1/30/2013	1006	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0521	C-4	1/30/2013	1006	Total Phosphorus	0.22	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0521	C-4	1/30/2013	1006	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0521	C-4	1/30/2013	1006	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0522	C-4	1/30/2013	1006	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0523	C-3	1/30/2013	1022	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0524	C-3	1/30/2013	1022	Total Phosphorus	0.32	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0524	C-3	1/30/2013	1022	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0524	C-3	1/30/2013	1022	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0525	C-3	1/30/2013	1022	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0526	C-5	1/30/2013	1037	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0527	C-5	1/30/2013	1037	Total Phosphorus	0.22	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0527	C-5	1/30/2013	1037	NO_2+NO_3	0.019	mg/l		EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0527	C-5	1/30/2013	1037	NO_3	0.019	mg/l	C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0528	C-5	1/30/2013	1037	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0529	C-6	1/30/2013	1052	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0530	C-6	1/30/2013	1052	Total Phosphorus	0.21	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0530	C-6	1/30/2013	1052	NO_2+NO_3	0.013	mg/l	I	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0530	C-6	1/30/2013	1052	NO_3	0.013	mg/l	I C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0531	C-6	1/30/2013	1052	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0532	C-7	1/30/2013	1106	Fecal Coliform	20	col/100 ml	B	SM9222D	20 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0533	C-7	1/30/2013	1106	Total Phosphorus	0.18	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0533	C-7	1/30/2013	1106	NO_2+NO_3	0.016	mg/l		EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0533	C-7	1/30/2013	1106	NO_3	0.016	mg/l	C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0534	C-7	1/30/2013	1106	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0535	C-8	1/30/2013	1124	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	1/30/2013	1224	1/30/2013	1340	SOK
13-0536	C-8	1/30/2013	1124	Total Phosphorus	0.21	mg/l		EPA 365.4	0.02 mg/L	1/30/2013	1224	2/17/2013	1314	SOK
13-0536	C-8	1/30/2013	1124	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	EMR
13-0536	C-8	1/30/2013	1124	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/15/2013	1259	SL
13-0537	C-8	1/30/2013	1124	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/30/2013	1224	2/1/2013	1128	EMR
13-0554	C-9	1/31/2013	0945	Fecal Coliform	100	col/100ml	B	SM9222D	10 col/100ml	1/31/2013	1133	1/31/2013	1215	EMR
13-0555	C-9	1/31/2013	0945	Total Phosphorus	0.17	mg/l		EPA 365.4	0.02 mg/L	1/31/2013	1133	2/17/2013	1314	SOK
13-0555	C-9	1/31/2013	0945	NO_2+NO_3	0.033	mg/l		EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	EMR
13-0555	C-9	1/31/2013	0945	NO_3	0.021	mg/l	C	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	SL
13-0556	C-9	1/31/2013	0945	NO_2	0.012	mg/l	I	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/1/2013	1128	EMR
13-0557	C-10	1/31/2013	1003	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	1/31/2013	1133	1/31/2013	1215	EMR
13-0558	C-10	1/31/2013	1003	Total Phosphorus	0.16	mg/l		EPA 365.4	0.02 mg/L	1/31/2013	1133	2/17/2013	1314	SOK
13-0558	C-10	1/31/2013	1003	NO_2+NO_3	0.026	mg/l		EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	EMR
13-0558	C-10	1/31/2013	1003	NO_3	0.017	mg/l	C	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	SL
13-0559	C-10	1/31/2013	1003	NO_2	0.009	mg/l	I	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/1/2013	1128	EMR

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-0560	C-11	1/31/2013	1027	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	1/31/2013	1133	1/31/2013	1215	EMR
13-0561	C-11	1/31/2013	1027	Total Phosphorus	0.24	mg/l		EPA 365.4	0.02 mg/L	1/31/2013	1133	2/17/2013	1314	SOK
13-0561	C-11	1/31/2013	1027	NO_2+NO_3	0.016	mg/l		EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	EMR
13-0561	C-11	1/31/2013	1027	NO_3	0.016	mg/l	C	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	SL
13-0562	C-11	1/31/2013	1027	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/1/2013	1128	EMR
13-0563	C-12	1/31/2013	1045	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	1/31/2013	1133	1/31/2013	1215	EMR
13-0564	C-12	1/31/2013	1045	Total Phosphorus	0.25	mg/l		EPA 365.4	0.02 mg/L	1/31/2013	1133	2/17/2013	1314	SOK
13-0564	C-12	1/31/2013	1045	NO_2+NO_3	0.013	mg/l	I	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	EMR
13-0564	C-12	1/31/2013	1045	NO_3	0.013	mg/l	I C	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	SL
13-0565	C-12	1/31/2013	1045	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/1/2013	1128	EMR
13-0566	C-13	1/31/2013	1103	Fecal Coliform	30	col/100ml	B	SM9222D	10 col/100ml	1/31/2013	1133	1/31/2013	1215	EMR
13-0567	C-13	1/31/2013	1103	Total Phosphorus	0.20	mg/l		EPA 365.4	0.02 mg/L	1/31/2013	1133	2/17/2013	1314	SOK
13-0567	C-13	1/31/2013	1103	NO_2+NO_3	0.026	mg/l		EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	EMR
13-0567	C-13	1/31/2013	1103	NO_3	0.026	mg/l	C	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/15/2013	1259	SL
13-0568	C-13	1/31/2013	1103	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	1/31/2013	1133	2/1/2013	1128	EMR
13-0682	C-14	2/6/2013	0923	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0683	C-14	2/6/2013	0923	Total Phosphorus	0.17	mg/l		EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0683	C-14	2/6/2013	0923	NO_2+NO_3	0.018	mg/l		EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0683	C-14	2/6/2013	0923	NO_3	0.008	mg/l	I C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0684	C-14	2/6/2013	0923	NO_2	0.010	mg/l	I	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK
13-0685	C-15	2/6/2013	0935	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0686	C-15	2/6/2013	0935	Total Phosphorus	0.17	mg/l		EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0686	C-15	2/6/2013	0935	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0686	C-15	2/6/2013	0935	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0687	C-15	2/6/2013	0935	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK
13-0688	C-16	2/6/2013	0948	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0689	C-16	2/6/2013	0948	Total Phosphorus	0.16	mg/l		EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0689	C-16	2/6/2013	0948	NO_2+NO_3	0.022	mg/l		EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0689	C-16	2/6/2013	0948	NO_3	0.022	mg/l	C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0690	C-16	2/6/2013	0948	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK
13-0691	C-17	2/6/2013	1017	Fecal Coliform	60	col/100ml	B	SM9222D	10 col/100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0692	C-17	2/6/2013	1017	Total Phosphorus	0.26	mg/l		EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0692	C-17	2/6/2013	1017	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0692	C-17	2/6/2013	1017	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0693	C-17	2/6/2013	1017	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK
13-0694	C-18	2/6/2013	1035	Fecal Coliform	200	col/100ml		SM9222D	10 col/100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0695	C-18	2/6/2013	1035	Total Phosphorus	0.04	mg/l	I	EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0695	C-18	2/6/2013	1035	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0695	C-18	2/6/2013	1035	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0696	C-18	2/6/2013	1035	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-0697	C-19	2/6/2013	1050	Fecal Coliform	50	col/100ml	B	SM9222D	10 col /100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0698	C-19	2/6/2013	1050	Total Phosphorus	0.02	mg/l	U	EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0698	C-19	2/6/2013	1050	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0698	C-19	2/6/2013	1050	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0699	C-19	2/6/2013	1050	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK
13-0700	C-20	2/6/2013	1141	Fecal Coliform	30	col/100ml	B	SM9222D	10 col/100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0701	C-20	2/6/2013	1141	Total Phosphorus	0.04	mg/l	I	EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0701	C-20	2/6/2013	1141	NO_2+NO_3	0.012	mg/l	I	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0701	C-20	2/6/2013	1141	NO_3	0.012	mg/l	I C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0702	C-20	2/6/2013	1141	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK
13-0703	C-21	2/6/2013	1113	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	2/6/2013	1348	2/6/2013	1437	SOK
13-0704	C-21	2/6/2013	1113	Total Phosphorus	0.05	mg/l	I	EPA 365.4	0.02 mg/L	2/6/2013	1348	2/17/2013	1314	SOK
13-0704	C-21	2/6/2013	1113	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	EMR
13-0074	C-21	2/6/2013	1113	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/15/2013	1259	SL
13-0705	C-21	2/6/2013	1113	NO_2	0.008	mg/l	I	EPA 353.2	0.004 mg/l	2/6/2013	1348	2/8/2013	0840	SOK

East Port Laboratory

Charlotte County Utilities

EAST PORT WRF

3100 Loveland blvd.

PORT CHARLOTTE, FL. 33980

DATA QUALIFIER DEFINITIONS

A = Value reported is an average of two or more determinations.
B = Results based upon colony counts outside the acceptable range.
C = Calculated value
F = Tested in the field
I = Reported value is between the laboratory MDL and PQL.
J1 = Est. value quality control criteria for precision or accuracy not met. (Spike Recovery)
J2 = Est. value quality control criteria for precision or accuracy not met.(Duplicate RPD)
J3 = Est. value quality control criteria for precision or accuracy not met.(Glucose/Glutamic Acid)
J4 = Est. value quality control criteria for precision or accuracy not met.(analyte detected in blank)
J5 = Est. value quality control criteria for precision or accuracy not met.(DO Depletion <2.00 mg/L)
J6 = Est. value quality control criteria for precision or accuracy not met.(Test Replicate Difference)
K-1 = Off-scale low. The value is less than the lowest calibration standard.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond accepted hold time.
T = Value reported is < MDL. Reported for informational purposes only and shall not be used in statistical analysis.
U = Analyte analyzed but not detected at the value indicated.
V = Analyte detected in sample and method blank.
Y = Analysis performed on an improperly preserved sample. Data may be inaccurate.
Z = Too many colonies were present (TNTC). The numeric value represents the filtration volume.
! = Data deviate from historically established concentration ranges.
? = Data rejected and should not be used. Some or all of QC data were outside criteria, and the Presence or absence of the analyte cannot be determined from the data.
* = Not reported due to interference.

NOTES:
PQL = 4 x MDL
Ammonia PQL = 0.10 mg/L
TKN PQL = 0.50 mg/L

May 13, 2013

Report ID: Spring Lake 03&04-13

East Port Laboratory

Bruce Bullert
Charlotte County Utility
Engineering Department
25550 Harbor View Rd
Port Charlotte, FL 33980

March & April 2013 Lab Results

Lab ID # E54436

The East Port Laboratory is certified by the Florida Department of Health Bureau of Laboratories Environmental Water as a Basic Environmental Laboratory. The East Port Laboratory has a Florida Department of Health approved Comprehensive Quality Assurance/Quality Control Plan which specifies the procedures used in the analysis of the referenced samples. The East Port Laboratory certifies that results meet all requirements of NELAC Standards. The Lab ID number above should be referenced when attesting to regulatory agencies regarding the analytical procedures used.

Attached please find the results from the samples collected by you and sent to the East Port Laboratory for analysis. There are custody numbers assigned to each sample for quality control purposes; please refer to these custody numbers when requesting information regarding these samples. Results relate to samples only.

The East Port Laboratory is pleased to have served you. If you require any further assistance, please feel free to contact me directly.

Sincerely,

Sandra Lavoie

Sandra Lavoie
Laboratory Manager
Tel.: 941-764-4593

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-1059	MW-2	3/6/2013	0928	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/6/2013	1256	3/6/2013	1340	EMR
13-1060	MW-2	3/6/2013	0928	Total Phosphorus	0.51	mg/l		EPA 365.4	0.02 mg/L	3/6/2013	1256	3/13/2013	1320	EMR
13-1060	MW-2	3/6/2013	0928	NO_2+NO_3	0.011	mg/l	I	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	EMR
13-1060	MW-2	3/6/2013	0928	NO_3	0.006	mg/l	I C	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	SL
13-1061	MW-2	3/6/2013	0928	NO_2	0.005	mg/l	I	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1048	EMR
13-1062	MW-6	3/6/2013	0948	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/6/2013	1256	3/6/2013	1340	EMR
13-1063	MW-6	3/6/2013	0948	Total Phosphorus	0.25	mg/l		EPA 365.4	0.02 mg/L	3/6/2013	1256	3/13/2013	1320	EMR
13-1063	MW-6	3/6/2013	0948	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	EMR
13-1063	MW-6	3/6/2013	0948	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	SL
13-1064	MW-6	3/6/2013	0948	NO_2	0.004	mg/l	I	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1048	EMR
13-1065	MW-5	3/6/2013	1021	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/6/2013	1256	3/6/2013	1340	EMR
13-1066	MW-5	3/6/2013	1021	Total Phosphorus	1.19	mg/l		EPA 365.4	0.02 mg/L	3/6/2013	1256	3/13/2013	1320	EMR
13-1066	MW-5	3/6/2013	1021	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	EMR
13-1066	MW-5	3/6/2013	1021	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	SL
13-1067	MW-5	3/6/2013	1021	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1048	EMR
13-1068	MW-15	3/6/2013	1125	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/6/2013	1256	3/6/2013	1340	EMR
13-1069	MW-15	3/6/2013	1125	Total Phosphorus	1.16	mg/l		EPA 365.4	0.02 mg/L	3/6/2013	1256	3/13/2013	1320	EMR
13-1069	MW-15	3/6/2013	1125	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	EMR
13-1069	MW-15	3/6/2013	1125	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	SL
13-1070	MW-15	3/6/2013	1125	NO_2	0.006	mg/l	I	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1048	EMR
13-1071	MW-24	3/6/2013	1149	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/6/2013	1256	3/6/2013	1340	EMR
13-1072	MW-24	3/6/2013	1149	Total Phosphorus	1.64	mg/l		EPA 365.4	0.02 mg/L	3/6/2013	1256	3/13/2013	1320	EMR
13-1072	MW-24	3/6/2013	1149	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	EMR
13-1072	MW-24	3/6/2013	1149	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1158	SL
13-1073	MW-24	3/6/2013	1149	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/6/2013	1256	3/8/2013	1048	EMR
13-1101	MW-26	3/7/2013	1025	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/7/2013	1313	3/7/2013	1358	EMR
13-1102	MW-26	3/7/2013	1025	Total Phosphorus	2.38	mg/l		EPA 365.4	0.02 mg/L	3/7/2013	1313	3/13/2013	1320	EMR
13-1102	MW-26	3/7/2013	1025	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	EMR
13-1102	MW-26	3/7/2013	1025	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	SL
13-1103	MW-26	3/7/2013	1025	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1048	EMR
13-1104	MW-27	3/7/2013	1106	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/7/2013	1313	3/7/2013	1358	EMR
13-1105	MW-27	3/7/2013	1106	Total Phosphorus	1.84	mg/l		EPA 365.4	0.02 mg/L	3/7/2013	1313	3/13/2013	1320	EMR
13-1105	MW-27	3/7/2013	1106	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	EMR
13-1105	MW-27	3/7/2013	1106	NO_3	0.004	Units	U C	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	SL
13-1106	MW-27	3/7/2013	1106	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1048	EMR

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-1107	MW-28	3/7/2013	1149	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/7/2013	1313	3/7/2013	1358	EMR
13-1108	MW-28	3/7/2013	1149	Total Phosphorus	4.64	mg/l		EPA 365.4	0.02 mg/L	3/7/2013	1313	3/13/2013	1320	EMR
13-1108	MW-28	3/7/2013	1149	NO_2+NO_3	0.004	mg/l	I	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	EMR
13-1108	MW-28	3/7/2013	1149	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	SL
13-1109	MW-28	3/7/2013	1149	NO_2	0.010	mg/l	I	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1048	EMR
13-1110	MW-8	3/7/2013	1224	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/7/2013	1313	3/7/2013	1358	EMR
13-1111	MW-8	3/7/2013	1224	Total Phosphorus	1.68	mg/l		EPA 365.4	0.02 mg/L	3/7/2013	1313	3/13/2013	1320	EMR
13-1111	MW-8	3/7/2013	1224	NO_2+NO_3	0.006	mg/l	I	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	EMR
13-1111	MW-8	3/7/2013	1224	NO_3	0.006	mg/l	I C	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1158	SL
13-1112	MW-8	3/7/2013	1224	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/7/2013	1313	3/8/2013	1048	EMR
13-1173	MW-25	3/13/2013	1030	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/13/2013	1239	3/13/2013	1407	SOK
13-1174	MW-25	3/13/2013	1030	Total Phosphorus	1.08	mg/l		EPA 365.4	0.02 mg/L	3/13/2013	1239	4/6/2013	1215	EMR
13-1174	MW-25	3/13/2013	1030	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/13/2013	1239	3/15/2013	1235	EMR
13-1174	MW-25	3/13/2013	1030	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/13/2013	1239	3/15/2013	1235	SL
13-1175	MW-25	3/13/2013	1030	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	3/13/2013	1239	3/15/2013	1130	EMR
13-1176	MW29	3/13/2013	1108	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/13/2013	1239	3/13/2013	1407	SOK
13-1177	MW29	3/13/2013	1108	Total Phosphorus	3.96	mg/l		EPA 365.4	0.02 mg/L	3/13/2013	1239	4/6/2013	1215	EMR
13-1177	MW29	3/13/2013	1108	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/13/2013	1239	3/15/2013	1235	EMR
13-1177	MW29	3/13/2013	1108	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/13/2013	1239	3/15/2013	1235	SL
13-1178	MW29	3/13/2013	1108	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	3/13/2013	1239	3/15/2013	1130	EMR
13-1195	MW33	3/14/2013	1055	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/14/2013	1305	3/14/2013	1347	EMR
13-1196	MW33	3/14/2013	1055	Total Phosphorus	0.32	mg/l		EPA 365.4	0.02 mg/L	3/14/2013	1305	4/6/2013	1215	EMR
13-1196	MW33	3/14/2013	1055	NO_2+NO_3	0.014	mg/l	I	EPA 353.2	0.004 mg/l	3/14/2013	1305	3/15/2013	1235	EMR
13-1196	MW33	3/14/2013	1055	NO_3	0.014	mg/l	C I	EPA 353.2	0.004 mg/l	3/14/2013	1305	3/15/2013	1235	SL
13-1197	MW33	3/14/2013	1055	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	3/14/2013	1305	3/15/2013	1130	EMR
13-1198	MW32	3/14/2013	1150	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/14/2013	1305	3/14/2013	1347	EMR
13-1199	MW32	3/14/2013	1150	Total Phosphorus	0.62	mg/l		EPA 365.4	0.02 mg/L	3/14/2013	1305	4/6/2013	1215	EMR
13-1199	MW32	3/14/2013	1150	NO_2+NO_3	0.019	mg/l		EPA 353.2	0.004 mg/l	3/14/2013	1305	3/15/2013	1235	EMR
13-1199	MW32	3/14/2013	1150	NO_3	0.019	mg/l	C	EPA 353.2	0.004 mg/l	3/14/2013	1305	3/15/2013	1235	SL
13-1200	MW32	3/14/2013	1150	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	3/14/2013	1305	3/15/2013	1130	EMR
13-1324	MW-30	3/27/2013	0844	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/27/2013	1431	3/27/2013	1529	SOK
13-1325	MW-30	3/27/2013	0844	Total Phosphorus	2.00	mg/l		EPA 365.4	0.02 mg/L	3/27/2013	1431	4/6/2013	1215	EMR
13-1325	MW-30	3/27/2013	0844	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	EMR
13-1325	MW-30	3/27/2013	0844	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	SL
13-1326	MW-30	3/27/2013	0844	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	3/27/2013	1431	3/29/2013	1024	EMR
13-1327	MW-31	3/27/2013	0907	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/27/2013	1431	3/27/2013	1529	SOK
13-1328	MW-31	3/27/2013	0907	Total Phosphorus	0.15	mg/l		EPA 365.4	0.02 mg/L	3/27/2013	1431	4/6/2013	1215	EMR
13-1328	MW-31	3/27/2013	0907	NO_2+NO_3	0.194	mg/l		EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	EMR
13-1328	MW-31	3/27/2013	0907	NO_3	0.180	mg/l	C	EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	SL
13-1329	MW-31	3/27/2013	0907	NO_2	0.014	mg/l	I	EPA 353.2	0.003 mg/l	3/27/2013	1431	3/29/2013	1024	EMR

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-1330	MW19	3/27/2013	1044	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/27/2013	1431	3/27/2013	1529	SOK
13-1331	MW19	3/27/2013	1044	Total Phosphorus	0.15	mg/l		EPA 365.4	0.02 mg/L	3/27/2013	1431	4/6/2013	1215	EMR
13-1331	MW19	3/27/2013	1044	NO_2+NO_3	3.218	mg/l		EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	EMR
13-1331	MW19	3/27/2013	1044	NO_3	2.978	mg/l	C	EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	SL
13-1332	MW19	3/27/2013	1044	NO_2	0.240	mg/l	U	EPA 353.2	0.003 mg/l	3/27/2013	1431	3/29/2013	1024	EMR
13-1333	MW-20	3/27/2013	1122	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/27/2013	1431	3/27/2013	1529	SOK
13-1334	MW-20	3/27/2013	1122	Total Phosphorus	1.42	mg/l		EPA 365.4	0.02 mg/L	3/27/2013	1431	4/6/2013	1215	EMR
13-1334	MW-20	3/27/2013	1122	NO_2+NO_3	0.413	mg/l		EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	EMR
13-1334	MW-20	3/27/2013	1122	NO_3	0.413	mg/l	C	EPA 353.2	0.004 mg/l	3/27/2013	1431	3/30/2013	1124	SL
13-1335	MW-20	3/27/2013	1122	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	3/27/2013	1431	3/29/2013	1024	EMR
13-1352	MW35	3/28/2013	1028	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/28/2013	1346	3/28/2013	1422	EMR
13-1353	MW35	3/28/2013	1028	Total Phosphorus	0.16	mg/l		EPA 365.4	0.02 mg/L	3/28/2013	1346	4/6/2013	1215	EMR
13-1353	MW35	3/28/2013	1028	NO_2+NO_3	1.455	mg/l		EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	EMR
13-1353	MW35	3/28/2013	1028	NO_3	1.405	mg/l	C	EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	SL
13-1354	MW35	3/28/2013	1028	NO_2	0.050	mg/l		EPA 353.2	0.003 mg/l	3/28/2013	1346	3/29/2013	1024	EMR
13-1355	MW40	3/28/2013	1104	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/28/2013	1346	3/28/2013	1422	EMR
13-1356	MW40	3/28/2013	1104	Total Phosphorus	0.50	mg/l		EPA 365.4	0.02 mg/L	3/28/2013	1346	4/6/2013	1215	EMR
13-1356	MW40	3/28/2013	1104	NO_2+NO_3	15.171	mg/l		EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	EMR
13-1356	MW40	3/28/2013	1104	NO_3	15.141	mg/l	C	EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	SL
13-1357	MW40	3/28/2013	1104	NO_2	0.030	mg/l		EPA 353.2	0.003 mg/l	3/28/2013	1346	3/29/2013	1024	EMR
13-1358	MW41	3/28/2013	1144	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/28/2013	1346	3/28/2013	1422	EMR
13-1359	MW41	3/28/2013	1144	Total Phosphorus	0.63	mg/l		EPA 365.4	0.02 mg/L	3/28/2013	1346	4/6/2013	1215	EMR
13-1359	MW41	3/28/2013	1144	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	EMR
13-1359	MW41	3/28/2013	1144	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	SL
13-1360	MW41	3/28/2013	1144	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	3/28/2013	1346	3/29/2013	1024	EMR
13-1361	MW39	3/28/2013	1219	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/28/2013	1346	3/28/2013	1422	EMR
13-1362	MW39	3/28/2013	1219	Total Phosphorus	1.49	mg/l		EPA 365.4	0.02 mg/L	3/28/2013	1346	4/6/2013	1215	EMR
13-1362	MW39	3/28/2013	1219	NO_2+NO_3	2.021	mg/l		EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	EMR
13-1362	MW39	3/28/2013	1219	NO_3	1.999	mg/l	C	EPA 353.2	0.004 mg/l	3/28/2013	1346	3/30/2013	1124	SL
13-1363	MW39	3/28/2013	1219	NO_2	0.022	mg/l		EPA 353.2	0.003 mg/l	3/28/2013	1346	3/29/2013	1024	EMR
13-1364	MW42	3/28/2013	1303	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	3/28/2013	1345	3/28/2013	1422	EMR
13-1365	MW42	3/28/2013	1303	Total Phosphorus	31.69	mg/l		EPA 365.4	0.02 mg/L	3/28/2013	1345	4/6/2013	1215	EMR
13-1365	MW42	3/28/2013	1303	NO_2+NO_3	0.522	mg/l		EPA 353.2	0.004 mg/l	3/28/2013	1345	3/30/2013	1124	EMR
13-1365	MW42	3/28/2013	1303	NO_3	0.465	mg/l	C	EPA 353.2	0.004 mg/l	3/28/2013	1345	3/30/2013	1124	SL
13-1366	MW42	3/28/2013	1303	NO_2	0.057	mg/l		EPA 353.2	0.003 mg/l	3/28/2013	1345	3/29/2013	1123	EMR
13-1446	MW43	4/3/2013	0855	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/3/2013	1256	4/3/2013	1337	EMR
13-1447	MW43	4/3/2013	0855	Total Phosphorus	1.01	mg/l		EPA 365.4	0.02 mg/L	4/3/2013	1256	4/6/2013	1215	EMR
13-1447	MW43	4/3/2013	0855	NO_2+NO_3	1.754	mg/l		EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	EMR
13-1447	MW43	4/3/2013	0855	NO_3	1.633	mg/l	C	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	SL
13-1448	MW43	4/3/2013	0855	NO_2	0.121	mg/l		EPA 353.2	0.003 mg/l	4/3/2013	1256	4/5/2013	0925	EMR

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-1449	MW44	4/3/2013	0934	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/3/2013	1256	4/3/2013	1337	EMR
13-1450	MW44	4/3/2013	0934	Total Phosphorus	0.92	mg/l		EPA 365.4	0.02 mg/L	4/3/2013	1256	4/6/2013	1215	EMR
13-1450	MW44	4/3/2013	0934	NO_2+NO_3	0.009	mg/l	I	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	EMR
13-1450	MW44	4/3/2013	0934	NO_3	0.009	mg/l	C I	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	SL
13-1451	MW44	4/3/2013	0934	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/3/2013	1256	4/5/2013	0928	EMR
13-1452	MW45	4/3/2013	1011	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/3/2013	1256	4/3/2013	1337	EMR
13-1453	MW45	4/3/2013	1011	Total Phosphorus	0.34	mg/l		EPA 365.4	0.02 mg/L	4/3/2013	1256	4/6/2013	1215	EMR
13-1453	MW45	4/3/2013	1011	NO_2+NO_3	4.995	mg/l		EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	EMR
13-1453	MW45	4/3/2013	1011	NO_3	4.917	mg/l	C	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	SL
13-1454	MW45	4/3/2013	1011	NO_2	0.078	mg/l		EPA 353.2	0.003 mg/l	4/3/2013	1256	4/5/2013	0925	EMR
13-1455	MW46	4/3/2013	1035	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/3/2013	1256	4/3/2013	1337	EMR
13-1456	MW46	4/3/2013	1035	Total Phosphorus	0.33	mg/l		EPA 365.4	0.02 mg/ L	4/3/2013	1256	4/6/2013	1215	EMR
13-1456	MW46	4/3/2013	1035	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg /l	4/3/2013	1256	4/5/2013	1255	EMR
13-1456	MW46	4/3/2013	1035	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	SL
13-1457	MW46	4/3/2013	1035	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/3/2013	1256	4/5/2013	0925	EMR
13-1458	MW48	4/3/2013	1110	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/3/2013	1256	4/3/2013	1337	EMR
13-1459	MW48	4/3/2013	1110	Total Phosph orus	2.50	mg/l		EPA 365.4	0.02 mg/L	4/3/2013	1256	4/6/2013	1215	EMR
13-1459	MW48	4/3/2013	1110	NO_2+NO_3	0 .010	mg/l	I	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	EMR
13-1459	MW48	4/3/2013	1110	NO_3	0.010	mg/l	C I	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	SL
13-1460	MW48	4/3/2013	1110	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/3/2013	1256	4/5/2013	0925	EMR
13-1461	MW47	4/3/2013	1140	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/3/2013	1256	4/3/2013	1337	EMR
13-1462	MW47	4/3/2013	1140	Total Phosphorus	0.15	mg/l		EPA 365.4	0.02 mg/L	4/3/2013	1256	4/6/2013	1215	EMR
13-1462	MW47	4/3/2013	1140	NO_2+NO_3	0.631	mg/l		EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	EMR
13-1462	MW47	4/3/2013	1140	NO_3	0.557	mg/l	C	EPA 353.2	0.004 mg/l	4/3/2013	1256	4/5/2013	1255	SL
13-1463	MW47	4/3/2013	1140	NO_2	0.074	mg/l		EPA 353.2	0 .003mg/l	4/3/2013	1256	4/5/2013	0925	EMR
13-1485	MW49	4/4/2013	1026	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/4/2013	1330	4/4/2013	1432	EMR
13-1486	MW49	4/4/2013	1026	Total Phosphorus	2.11	mg/l		EPA 365.4	0.02 mg/L	4/4/2013	1330	5/2/2013	1454	EMR
13-1486	MW49	4/4/2013	1026	NO_2+NO_3	0.030	mg/l		EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	EMR
13-1486	MW49	4/4/2013	1026	NO_3	0.024	mg/l	C	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	SL
13-1487	MW49	4/4/2013	1026	NO_2	0.006	mg/l	I	EPA 353.2	0.003 mg/l	4/4/2013	1330	4/5/2013	0925	EMR
13-1488	MW50	4/4/2013	1058	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/4/2013	1330	4/4/2013	1432	EMR
13-1489	MW50	4/4/2013	1058	Total Phosphorus	0.78	mg/l		EPA 365.4	0.02 mg/L	4/4/2013	1330	5/2/2013	1454	EMR
13-1489	MW50	4/4/2013	1058	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	EMR
13-1489	MW50	4/4/2013	1058	NO_3	0.004	mg/l	C U	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	SL
13-1490	MW50	4/4/2013	1058	NO_2	0.004	mg/l	I	EPA 353.2	0.003 mg/l	4/4/2013	1330	4/5/2013	0925	EMR
13-1491	C-1	4/4/2013	1126	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	4/4/2013	1330	4/4/2013	1432	EMR
13-1492	C-1	4/4/2013	1126	Total Phosphorus	0.20	mg/l		EPA 365.4	0.02 mg/L	4/4/2013	1330	5/2/2013	1454	EMR
13-1492	C-1	4/4/2013	1126	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	EMR
13-1492	C-1	4/4/2013	1126	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	SL
13-1493	C-1	4/4/2013	1126	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/4/2013	1330	4/5/2013	0925	EMR

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Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-1494	C-4	4/4/2013	1145	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	4/4/2013	1330	4/4/2013	1432	EMR
13-1495	C-4	4/4/2013	1145	Total Phosphorus	0.19	mg/l		EPA 365.4	0.02 mg/L	4/4/2013	1330	5/2/2013	1454	EMR
13-1495	C-4	4/4/2013	1145	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	EMR
13-1495	C-4	4/4/2013	1145	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	SL
13-1496	C-4	4/4/2013	1145	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/4/2013	1330	4/5/2013	0925	EMR
13-1497	C-2	4/4/2013	1210	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/4/2013	1330	4/4/2013	1432	EMR
13-1498	C-2	4/4/2013	1210	Total Phosphorus	0.22	mg/l		EPA 365.4	0.02 mg/L	4/4/2013	1330	5/2/2013	1454	EMR
13-1498	C-2	4/4/2013	1210	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	EMR
13-1498	C-2	4/4/2013	1210	NO_3	0.004	Units	U C	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	SL
13-1499	C-2	4/4/2013	1210	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/4/2013	1330	4/5/2013	0925	EMR
13-1500	C-3	4/4/2013	1236	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	4/4/2013	1330	4/4/2013	1432	EMR
13-1501	C-3	4/4/2013	1236	Total Phosphorus	0.18	mg/l		EPA 365.4	0.02 mg/L	4/4/2013	1330	5/2/2013	1454	EMR
13-1501	C-3	4/4/2013	1236	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	EMR
13-1501	C-3	4/4/2013	1236	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	SL
13-1502	C-3	4/4/2013	1236	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/4/2013	1330	4/5/2013	0925	EMR
13-1503	C-5	4/4/2013	1256	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	4/4/2013	1330	4/4/2013	1432	EMR
13-1504	C-5	4/4/2013	1256	Total Phosphorus	0.18	mg/l		EPA 365.4	0.02 mg/L	4/4/2013	1330	5/2/2013	1454	EMR
13-1504	C-5	4/4/2013	1256	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	EMR
13-1504	C-5	4/4/2013	1256	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	4/4/2013	1330	4/5/2013	1255	SL
13-1505	C-5	4/4/2013	1256	NO_2	0.004	mg/l	U	EPA 353.2	0.003 mg/l	4/4/2013	1330	4/5/2013	1044	EMR
13-1597	C-6	4/10/2013	0850	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1598	C-6	4/10/2013	0850	Total Phosphorus	0.26	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1454	EMR
13-1598	C-6	4/10/2013	0850	NO_2+NO_3	0.038	mg/l		EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1598	C-6	4/10/2013	0850	NO_3	0.038	mg/l	C	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1599	C-6	4/10/2013	0850	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1600	C-7	4/10/2013	0915	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1601	C-7	4/10/2013	0915	Total Phosphorus	0.25	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1454	EMR
13-1601	C-7	4/10/2013	0915	NO_2+NO_3	0.018	mg/l		EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1601	C-7	4/10/2013	0915	NO_3	0.018	mg/l	C	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1602	C-7	4/10/2013	0915	NO_2	0.004	mg/l	U	EPA 353.2	0.004mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1603	C-8	4/10/2013	0935	Fecal Coliform	30	col/100ml	B	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1604	C-8	4/10/2013	0935	Total Phosphorus	0.33	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1554	EMR
13-1604	C-8	4/10/2013	0935	NO_2+NO_3	0.024	mg/l		EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1604	C-8	4/10/2013	0935	NO_3	0.014	mg/l	I C	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1605	C-8	4/10/2013	0935	NO_2	0.010	mg/l	I	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1606	C-9	4/10/2013	0950	Fecal Coliform	40	col/100ml	B	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1607	C-9	4/10/2013	0950	Total Phosphorus	0.28	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1554	EMR
13-1607	C-9	4/10/2013	0950	NO_2+NO_3	0.040	mg/l		EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1607	C-9	4/10/2013	0950	NO_3	0.040	mg/l	C	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1608	C-9	4/10/2013	0950	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR

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13-1609	C-10	4/10/2013	1010	Fecal Coliform	70	col/100ml	B	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1610	C-10	4/10/2013	1010	Total Phosphorus	0.23	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1554	EMR
13-1610	C-10	4/10/2013	1010	NO_2+NO_3	0.031	mg/l		EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1610	C-10	4/10/2013	1010	NO_3	0.031	mg/l	C	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1611	C-10	4/10/2013	1010	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1612	C-11	4/10/2013	1025	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1613	C-11	4/10/2013	1025	Total Phosphorus	0.23	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1554	EMR
13-1613	C-11	4/10/2013	1025	NO_2+NO_3	0.012	mg/l	I	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1613	C-11	4/10/2013	1025	NO_3	0.012	mg/l	C I	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1614	C-11	4/10/2013	1025	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1615	C-13	4/10/2013	1045	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1616	C-13	4/10/2013	1045	Total Phosphorus	0.24	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1554	EMR
13-1616	C-13	4/10/2013	1045	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1616	C-13	4/10/2013	1045	NO_3	0.004	mg/l	C U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1617	C-13	4/10/2013	1045	NO_2	0.018	mg/l		EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1618	C-12	4/10/2013	1110	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1619	C-12	4/10/2013	1110	Total Phosphorus	0.19	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1554	EMR
13-1619	C-12	4/10/2013	1110	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1619	C-12	4/10/2013	1110	NO_3	0.004	mg/l	C U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1620	C-12	4/10/2013	1110	NO_2	0.017	mg/l		EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1621	C-14	4/10/2013	1125	Fecal Coliform	20	col/100ml	B	SM9222D	20 col/100ml	4/10/2013	1257	4/10/2013	1415	EMR
13-1622	C-14	4/10/2013	1125	Total Phosphorus	0.32	mg/l		EPA 365.4	0.02 mg/L	4/10/2013	1257	5/2/2013	1554	EMR
13-1622	C-14	4/10/2013	1125	NO_2+NO_3	0.016	mg/l	I	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	EMR
13-1622	C-14	4/10/2013	1125	NO_3	0.016	mg/l	C I	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/12/2013	1258	SL
13-1623	C-14	4/10/2013	1125	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/10/2013	1257	4/11/2013	1116	EMR
13-1709	C-15	4/17/2013	0941	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/17/2013	1250	4/17/2013	1412	EMR
13-1710	C-15	4/17/2013	0941	Total Phosphorus	0.42	mg/l		EPA 365.4	0.02 mg/L	4/17/2013	1250	5/2/2013	1554	EMR
13-1710	C-15	4/17/2013	0941	NO_2+NO_3	0.008	mg/l	I	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	EMR
13-1710	C-15	4/17/2013	0941	NO_3	0.008	mg/l	C I	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	SL
13-1711	C-15	4/17/2013	0941	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	0834	EMR
13-1712	C-16	4/17/2013	0959	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	4/17/2013	1250	4/17/2013	1412	EMR
13-1713	C-16	4/17/2013	0959	Total Phosphorus	0.30	mg/l		EPA 365.4	0.02 mg/L	4/17/2013	1250	5/2/2013	1554	EMR
13-1713	C-16	4/17/2013	0959	NO_2+NO_3	0.009	mg/l	I	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	EMR
13-1713	C-16	4/17/2013	0959	NO_3	0.009	mg/l	C I	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	SL
13-1714	C-16	4/17/2013	0959	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	0834	EMR
13-1715	C-17	4/17/2013	1049	Fecal Coliform	20	col/100ml	B	SM9222D	10 col/100ml	4/17/2013	1250	4/17/2013	1412	EMR
13-1716	C-17	4/17/2013	1049	Total Phosphorus	0.39	mg/l		EPA 365.4	0.02 mg/L	4/17/2013	1250	5/2/2013	1646	EMR
13-1716	C-17	4/17/2013	1049	NO_2+NO_3	0.017	mg/l		EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	EMR
13-1716	C-17	4/17/2013	1049	NO_3	0.007	mg/l	C I	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	SL
13-1717	C-17	4/17/2013	1049	NO_2	0.010	mg/l	I	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	0834	EMR

East Port Laboratory Results

Lab ID	Sample	Spl Date	Spl Time	Analysis	Results	Units	Qual.	Method	Det. Limits	Rec'd Date	Rec'd Time	Anal. Date	Anal. Time	Analyst
13-1718	C-18	4/17/2013	1110	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	4/17/2013	1250	4/17/2013	1412	EMR
13-1719	C-18	4/17/2013	1110	Total Phosphorus	0.06	mg/l	I	EPA 365.4	0.02 mg/L	4/17/2013	1250	5/2/2013	1646	EMR
13-1719	C-18	4/17/2013	1110	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	EMR
13-1719	C-18	4/17/2013	1110	NO_3	0.004	mg/l	C U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	SL
13-1720	C-18	4/17/2013	1110	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	0834	EMR
13-1721	C-19	4/17/2013	1127	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/17/2013	1250	4/17/2013	1412	EMR
13-1722	C-19	4/17/2013	1127	Total Phosphorus	0.04	mg/l	I	EPA 365.4	0.02 mg/L	4/17/2013	1250	5/2/2013	1646	EMR
13-1722	C-19	4/17/2013	1127	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	EMR
13-1722	C-19	4/17/2013	1127	NO_3	0.004	mg/l	C U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	SL
13-1723	C-19	4/17/2013	1127	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	0834	EMR
13-1724	C-20	4/17/2013	1158	Fecal Coliform	10	col/100ml	B	SM9222D	10 col/100ml	4/17/2013	1250	4/17/2013	1412	EMR
13-1725	C-20	4/17/2013	1158	Total Phosphorus	0.20	mg/l		EPA 365.4	0.02 mg/L	4/17/2013	1250	5/2/2013	1646	EMR
13-1725	C-20	4/17/2013	1158	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	EMR
13-1725	C-20	4/17/2013	1158	NO_3	0.004	mg/l	C U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	SL
13-1726	C-20	4/17/2013	1158	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	0834	EMR
13-1727	C-21	4/17/2013	1215	Fecal Coliform	30	col/100ml	B	SM9222D	10 col/100ml	4/17/2013	1250	4/17/2013	1412	EMR
13-1728	C-21	4/17/2013	1215	Total Phosphorus	0.10	mg/l		EPA 365.4	0.02 mg/L	4/17/2013	1250	5/2/2013	1646	EMR
13-1728	C-21	4/17/2013	1215	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	EMR
13-1728	C-21	4/17/2013	1215	NO_3	0.004	mg/l	C U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	1032	SL
13-1729	C-21	4/17/2013	1215	NO_2	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/17/2013	1250	4/19/2013	0834	SOK
13-1746	MW53	4/18/2013	1119	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/18/2013	1355	4/18/2013	1412	EMR
13-1747	MW53	4/18/2013	1119	Total Phosphorus	1.22	mg/l		EPA 365.4	0.02 mg/L	4/18/2013	1355	5/2/2013	1646	EMR
13-1747	MW53	4/18/2013	1119	NO_2+NO_3	0.004	mg/l	U	EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	EMR
13-1747	MW53	4/18/2013	1119	NO_3	0.004	mg/l	U C	EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	SL
13-1748	MW53	4/18/2013	1119	NO_2	0.014	mg/l	I	EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	0834	EMR
13-1749	MW51	4/18/2013	1202	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/18/2013	1355	4/18/2013	1427	EMR
13-1750	MW51	4/18/2013	1202	Total Phosphorus	3.60	mg/l		EPA 365.4	0.02 mg/L	4/18/2013	1355	5/2/2013	1646	EMR
13-1750	MW51	4/18/2013	1202	NO_2+NO_3	0.037	mg/l		EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	EMR
13-1750	MW51	4/18/2013	1202	NO_3	0.027	mg/l	C	EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	SL
13-1751	MW51	4/18/2013	1202	NO_2	0.010	mg/l	I	EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	0834	EMR
13-1752	MW57	4/18/2013	1237	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/18/2013	1355	4/18/2013	1427	EMR
13-1753	MW57	4/18/2013	1237	Total Phosphorus	7.02	mg/l		EPA 365.4	0.02 mg/L	4/18/2013	1355	5/2/2013	1646	EMR
13-1753	MW57	4/18/2013	1237	NO_2+NO_3	23.128	mg/l		EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	EMR
13-1753	MW57	4/18/2013	1237	NO_3	22.918	mg/l	C	EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	SL
13-1754	MW57	4/18/2013	1237	NO_2	0.210	mg/l		EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	0834	EMR
13-1755	MW56	4/18/2013	1315	Fecal Coliform	10	col/100ml	U	SM9222D	10 col/100ml	4/18/2013	1355	4/18/2013	1427	EMR
13-1756	MW56	4/18/2013	1315	Total Phosphorus	1.88	mg/l		EPA 365.4	0.02mg/L	4/18/2013	1355	5/2/2013	1646	EMR
13-1756	MW56	4/18/2013	1315	NO_2+NO_3	39.170	mg/l		EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	EMR
13-1756	MW56	4/18/2013	1315	NO_3	38.980	mg/l	C	EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	1032	SL
13-1757	MW56	4/18/2013	1315	NO_2	0.190	mg/l		EPA 353.2	0.004 mg/l	4/18/2013	1355	4/19/2013	0834	EMR

East Port Laboratory

Charlotte County Utilities

EAST PORT WRF

3100 Loveland blvd.

PORT CHARLOTTE, FL. 33980

DATA QUALIFIER DEFINITIONS

A = Value reported is an average of two or more determinations.
B = Results based upon colony counts outside the acceptable range.
C = Calculated value
F = Tested in the field
I = Reported value is between the laboratory MDL and PQL.
J1 = Est. value quality control criteria for precision or accuracy not met. (Spike Recovery)
J2 = Est. value quality control criteria for precision or accuracy not met.(Duplicate RPD)
J3 = Est. value quality control criteria for precision or accuracy not met.(Glucose/Glutamic Acid)
J4 = Est. value quality control criteria for precision or accuracy not met.(analyte detected in blank)
J5 = Est. value quality control criteria for precision or accuracy not met.(DO Depletion <2.00 mg/L)
J6 = Est. value quality control criteria for precision or accuracy not met.(Test Replicate Difference)
K-1 = Off-scale low. The value is less than the lowest calibration standard.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond accepted hold time.
T = Value reported is < MDL. Reported for informational purposes only and shall not be used in statistical analysis.
U = Analyte analyzed but not detected at the value indicated.
V = Analyte detected in sample and method blank.
Y = Analysis performed on an improperly preserved sample. Data may be inaccurate.
Z = Too many colonies were present (TNTC). The numeric value represents the filtration volume.
! = Data deviate from historically established concentration ranges.
? = Data rejected and should not be used. Some or all of QC data were outside criteria, and the Presence or absence of the analyte cannot be determined from the data.
* = Not reported due to interference.

NOTES:
PQL = 4 x MDL
Ammonia PQL = 0.10 mg/L
TKN PQL = 0.50 mg/L

APPENDIX B
(WATER ELEVATION DATA)

East West Spring Lake Area WW Expansion Pilot Study - 11-0048
Water Table Elevations

Well ID	GROUND ELEVATION	#1 H20 ELEVATION	#1 SAMPLE DATE	#2 H20 ELEVATION	#2 SAMPLE DATE	#3 H20 ELEVATION	#3 SAMPLE DATE	#4 H20 ELEVATION	#4 SAMPLE DATE	#5 H20 ELEVATION	#5 SAMPLE DATE
1 Ground	7.5	0.30	21-Jun-12	0.93	12-Sep-12	*Notation below	7-Nov-12	*Notation below	23-Jan-13	*Notation below	6-Mar-13
2 Ground	6.7	2.98	21-Jun-12	3.87	12-Sep-12	2.84	7-Nov-12	2.33	23-Jan-13	2.12	6-Mar-13
3 Ground	6.4	3.49	21-Jun-12	5.07	12-Sep-12	3.93	7-Nov-12	2.76	24-Jan-13	2.08	6-Mar-13
4 Ground	7.3	6.98	28-Jun-12	6.08	12-Sep-12	5.20	7-Nov-12	*Notation below	23-Jan-13	3.61	6-Mar-13
5 Ground	5.6	1.90	21-Jun-12	4.50	12-Sep-12	3.52	7-Nov-12	2.08	24-Jan-13	1.76	6-Mar-13
6 Ground	4.6	1.48	21-Jun-12	2.48	12-Sep-12	1.76	7-Nov-12	0.62	24-Jan-13	0.68	6-Mar-13
7 Ground	5.3	2.33	21-Jun-12	4.19	12-Sep-12	3.15	8-Nov-12	1.77	24-Jan-13	1.41	6-Mar-13
8 Ground	6.0	5.78	28-Jun-12	4.77	13-Sep-12	4.14	8-Nov-12	3.47	23-Jan-13	2.77	7-Mar-13
9 Ground	6.8	6.69	28-Jun-12	6.63	19-Sep-12	*Notation below	8-Nov-12	*Notation below	16-Jan-13	*Notation below	13-Mar-13
10 Ground	6.8	6.15	21-Jun-12	6.41	19-Sep-12	4.78	14-Nov-12	3.99	16-Jan-13	3.86	27-Mar-13
11 Ground	6.4	4.40	21-Jun-12	4.82	19-Sep-12	3.71	14-Nov-12	40.70	17-Jan-13	2.46	13-Mar-13
12 Ground	5.3	4.24	28-Jun-12	4.19	19-Sep-12	3.30	14-Nov-12	2.97	17-Jan-13	*Notation below	*Notation below
13 Ground	6.1	4.89	28-Jun-12	3.51	13-Sep-12	2.75	8-Nov-12	*Notation below	23-Jan-13	1.50	7-Mar-13
14 Ground	5.3	5.24	28-Jun-12	3.40	13-Sep-12	2.70	8-Nov-12	*Notation below	23-Jan-13	1.69	13-Mar-13
15 Ground	4.0	4.03	11-Jul-12	3.37	12-Sep-12	2.50	8-Nov-12	1.51	24-Jan-13	1.32	6-Mar-13
16 Ground	3.9	3.78	28-Jun-12	4.08	19-Sep-12	2.30	14-Nov-12	1.64	23-Jan-13	1.16	13-Mar-13
17 Ground	5.2	5.09	28-Jun-12	4.71	20-Sep-12	2.91	14-Nov-12	2.51	17-Jan-13	1.88	14-Mar-13
18 Ground	5.7	5.07	28-Jun-12	5.03	20-Sep-12	3.70	14-Nov-12	*Notation below	17-Jan-13	*Notation below	27-Mar-13
19 Ground	6.2	2.46	12-Jul-12	2.17	20-Sep-12	0.84	15-Nov-12	0.64	16-Jan-13	0.31	27-Mar-13
20 Ground	5.0	2.08	12-Jul-12	2.05	20-Sep-12	0.61	15-Nov-12	0.50	16-Jan-13	-0.20	27-Mar-13
21 Ground	5.0	3.57	12-Jul-12	3.50	20-Sep-12	2.02	14-Nov-12	1.42	17-Jan-13	0.85	14-Mar-13
22 Ground	4.6	3.81	28-Jun-12	3.59	19-Sep-12	2.40	15-Nov-12	1.89	17-Jan-13	1.39	7-Mar-13
23 Ground	4.7	4.68	28-Jun-12	*Notation below	19-Sep-12	*Notation below	N/A	N/A	N/A	N/A	N/A
24 Ground	4.3	4.02	11-Jul-12	3.57	12-Sep-12	2.55	8-Nov-12	*Notation below	23-Jan-13	2.20	6-Mar-13
25 Ground	5.2	4.89	28-Jun-12	5.08	19-Sep-12	3.28	14-Nov-12	2.88	23-Jan-13	1.94	13-Mar-13
26 Ground	4.7	2.49	21-Jun-12	3.52	12-Sep-12	2.60	8-Nov-12	1.60	24-Jan-13	1.09	7-Mar-13
27 Ground	4.3	2.77	21-Jun-12	3.35	13-Sep-12	2.59	8-Nov-12	2.61	30-Jan-13	2.05	7-Mar-13
28 Ground	4.4	1.65	21-Jun-12	2.36	13-Sep-12	1.51	8-Nov-12	0.93	30-Jan-13	0.29	7-Mar-13
29 Ground	4.4	4.26	28-Jun-12	3.99	19-Sep-12	1.82	14-Nov-12	1.19	23-Jan-13	0.86	7-Mar-13
30 Ground	3.1	1.29	21-Jun-12	1.99	26-Sep-12	1.02	28-Nov-12	0.82	16-Jan-13	1.05	27-Mar-13
31 Ground	4.0	1.67	21-Jun-12	2.97	26-Sep-12	1.69	28-Nov-12	1.97	16-Jan-13	0.88	27-Mar-13
32 Ground	3.9	*Notation below	21-Jun-12	2.53	26-Sep-12	1.38	15-Nov-12	*Notation below	16-Jan-13	0.75	14-Mar-13
33 Ground	4.7	3.03	11-Jul-12	2.97	20-Sep-12	2.21	15-Nov-12	1.79	17-Jan-13	1.19	14-Mar-13
34 Ground	5.3	1.35	12-Jul-12	1.22	20-Sep-12	0.15	15-Nov-12	0.26	16-Jan-13	*Notation below	*Notation below
35 Ground	4.7	2.54	18-Jul-12	2.03	27-Sep-12	0.94	28-Nov-12	0.49	10-Jan-13	0.55	28-Mar-13
36 Ground	5.4	2.49	11-Jul-12	1.83	26-Sep-12	0.90	28-Nov-12	*See Below	10-Jan-13	0.66	27-Mar-13
37 Ground	3.3	1.51	21-Jul-12	2.45	26-Sep-12	1.21	15-Nov-12	0.55	16-Jan-13	1.15	27-Mar-13
38 Ground	4.7	2.99	11-Jul-12	2.15	26-Sep-12	1.29	28-Nov-12	0.99	10-Jan-13	0.63	14-Mar-13
39 Ground	4.8	1.99	18-Jul-12	1.90	26-Sep-12	0.64	28-Nov-12	*See Below	10-Jan-13	0.45	28-Mar-13
40 Ground	5.3	1.42	18-Jul-12	0.70	27-Sep-12	0.07	29-Nov-12	-0.10	10-Jan-13	-0.14	28-Mar-13
41 Ground	4.7	1.09	18-Jul-12	0.84	26-Sep-12	0.35	28-Nov-12	-0.010	10-Jan-13	-0.10	28-Mar-13
42 Ground	4.0	0.80	18-Jul-12	0.66	26-Sep-12	0.45	28-Nov-12	-0.02	10-Jan-13	-0.40	28-Mar-13
43 Ground	5.7	3.50	19-Jul-12	2.52	27-Sep-12	0.77	29-Nov-12	0.45	10-Jan-13	0.40	3-Mar-13
44 Ground	4.9	1.60	19-Jul-12	1.18	27-Sep-12	0.43	29-Nov-12	0.23	9-Jan-13	0.20	3-Mar-13
45 Ground	4.5	0.88	19-Jul-12	0.56	27-Sep-12	0.10	29-Nov-12	-0.10	9-Jan-13	-0.06	3-Mar-13
46 Ground	5.2	0.54	19-Jul-12	0.19	27-Sep-12	0.04	29-Nov-12	-0.15	9-Jan-13	-0.06	3-Mar-13
47 Ground	4.5	1.20	25-Jul-12	1.42	11-Oct-12	-0.04	29-Nov-12	-0.42	9-Jan-13	-0.05	3-Mar-13
48 Ground	4.8	0.41	25-Jul-12	0.50	11-Oct-12	-0.75	29-Nov-12	0.87	9-Jan-13	-0.66	3-Mar-13
49 Ground	3.6	2.61	25-Jul-12	2.82	11-Oct-12	*See Below	29-Nov-12	0.56	9-Jan-13	0.90	4-Mar-13
50 Ground	4.9	2.27	25-Jul-12	2.54	11-Oct-12	*See Below	29-Nov-12	0.51	9-Jan-13	0.73	4-Mar-13

*1-32 Sample not available. 2-23 Sample removed by unknown. 3-9 Sample point to be repaired; 3-23 Sample removed by unknown; 3-49-50 Not tested. 4-18-36-39 Well dried up during purge; 4-23 No longer testing; 4-24 Hydrant flushing filled well; 4-32 Needs to be repaired; K-1-9-18- Dry sample point, K-12 Damaged, K-23 No longer testing, K-34 Sample not available.

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EDUCATION

2005 Doctor of Philosophy, Marine Biology and Fisheries *University of Miami, Rosenstiel School of Marine and Atmospheric Science, Virginia Key, Florida (UM-RSMAS)*
Cumulative GPA (Ph.D. and M.S. studies): 3.78

Dissertation: *Impacts of salinity fluctuations on the productivity of coastal mangrove fish populations* [Dr. Jerald S. Ault, Committee Chair]

1996 Master of Science, Marine Biology and Fisheries *University of Miami, Rosenstiel School of Marine and Atmospheric Science, Virginia Key, Florida (UM-RSMAS)*

Thesis: *Age and growth study of the Atlantic swordfish, Xiphias gladius* [Dr. Nelson M. Ehrhardt, Committee Chair]

1993 Bachelor of Science, Marine Science and Biology (Minor: Chemistry) *University of Miami, Coral Gables, Florida*
GPA: 3.51

1992 Study abroad, Marine Science and Biology at *James Cook University, Queensland, Australia*

PUBLICATIONS

Ehrhardt, N. M., R. J. Robbins, and F. Arocha.1996. Age validation and growth of swordfish, *Xiphias gladius*, in the Northwest Atlantic. International Commission for the Conservation of Atlantic Tunas, Coll. Vol. Sci. Pap., vol. 45(2):358–367.

(In preparation) publications presenting the original research from PhD dissertation on the effects of salinity fluctuation on the key life history parameters (i.e., growth and reproduction) of two estuarine cyprinodont fish species:

- Salinity effects on the growth, reproductive parameters, and life history schedule of *Cyprinodon variegatus* and *Poecilia latipinna* (dissertation chapters 3-6)
- Individual-based model of salinity effects on the productivity of two estuarine cyprinodont fish species (dissertation chapter 7)

PROFESSIONAL EXPERIENCE

1993-2005 — Graduate Teaching and Research Assistant, *University of Miami, Rosenstiel School of Marine and Atmospheric Science (UM-RSMAS)*

- Teaching assistant for graduate level courses at UM-RSMAS:
    - Biometrics in Marine Science (statistics) MBF 508
        - Created and assessed lab practicals, tutoring
    - Biology and Ecology of Mangroves MBF 513
        - Created and presented lectures on select topics
    - Marine Population Dynamics MBF 613
    - Tropical Marine Biology (Bimini Biological Field Station) MBF 514
        - Preparation and logistics for weeklong field course
        - Assisted in field trips and collection at coral reef, mangrove and beach sites.
        - Created and assessed taxonomy lab practical
        - Assisted in operational logistics of field station
- Teaching assistant for undergraduate course at University of Miami Coral Gables campus:
    - Introduction to Marine Biology MSC 230 & 232 (laboratory and field)
        - Created and assessed lab practicals, tutoring
        - Organized and presented laboratory classes and field trips
- Teaching assistant at Maritime and Science Technology Academy (MAST), Virginia Key
    - Assisted high school faculty with laboratory classes
- Teaching staff, Instar/UM Summer Scholars, UM-RSMAS Experimental Fish Hatchery, 2003, 2004
    - Led courses on data analysis for high school students
    - Field sampling and collection instruction for educators
- Elective research
    - Examined the effects of salinity on the buoyancy, dispersal, and settlement of Red mangrove, *Rhizophora mangle*, propagules
- Involvement in other research:
    - Collection of Atlantic Spanish mackerel, *Scomberomorus maculatus*, length, weight, and otolith data for estimation of life history parameters necessary for fisheries stock assessment. Communication and coordination with commercial fishermen and wholesale dealers in Florida Keys and Everglades City.
    - Assisted with roller-frame trawl sampling of pink shrimp, *Farfantepenaeus duorarum*, in Biscayne Bay as a fishery-independent survey of shrimp population size frequency distribution.
    - Assisted with throw-trap sampling of pink shrimp, *Farfantepenaeus duorarum*, in Whitewater Bay as biological indicator of estuary restoration.
    - Assisted in field data collection on Red mangrove, *Rhizophora mangle*, in Everglades National Park.
- Assisted in formatting, style editing, and reviews for *Bulletin of Marine Science* peer-reviewed scientific journal

Summers 1990, 1991 — Intern, *Ohio Environmental Protection Agency (EPA), Northeast Ohio District*

- Collection of chemical water quality data in the Cuyahoga River, Cuyahoga River watershed, and Lake Erie.
- Stream discharge measurement using USGS Pygmy Price current meters.
- Electrofishing sampling of fish in the Cuyahoga River and tributaries for bioassessment.
- Preparation, calibration of dissolved oxygen, conductivity, and pH meters.
- Calibration and deployment of HYDROLAB DataSondes in shipping channel of Cuyahoga River.
- Collection of fish and macroinvertebrate biological criteria for Index of Biotic Integrity assessments.
- Analysis of shoreline bacteria count data with respect to storm water runoff events.

Summer 1998 Field staff, *Gaby & Gaby Environmental Consultants, Miami, Florida*

Collection of biological survey data for rocky pineland environmental mitigation project. Identification of native and invasive plants in rocky pineland habitat. Data analysis and monitoring report writing. Scientific literature research to assist in proposals and reports.

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