Collier County™
POLLUTION CONTROL
LIVE GREEN. SAVE BLUE.

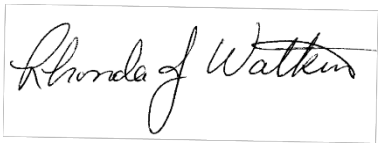
December 4, 2017

Roxanne Taylor
Office of Everglades Policy and Coordination
South Florida Water Management District
2600 Horseshoe Drive North, Suite 101
Naples, FL 34104

Dear Roxanne,

Please find below the FY17 Groundwater Report that satisfies Task 2 of South Florida Water Management District's Purchase Order #PO 4500096684. The report includes a summary of program activities, problems encountered, and exceedances of groundwater standards. The electronic data deliverables were placed on the SharePoint site (Collier WQ). If you have any questions, please contact me at (239) 252-2502 or rhondawatkins@colliergov.net.

Sincerely,



Rhonda J. Watkins
Principal Environmental Specialist

cc: Rod Braun, SFWMD

I. Introduction

This report satisfies the requirements of Task 2 of Purchase Order 4500096684 between the Collier County Pollution Control the South Florida Water Management District for the collection and analyses of ground water quality samples in Collier County.

II. Scope of Work

Forty-eight ground water wells are monitored semi-annually; once during the dry season (February-April) and once during the wet season (August-October). These sites are listed in Appendix A. An additional three, randomly selected, residential drinking water wells (surficial aquifer) are also sampled semi-annually. See Figure 1 for a map of the sampling station locations. All the samples collected are analyzed for the parameters listed in Appendix B.

III. Program Activities

Purging and sampling of wells followed the Collier County Pollution Control Field Sampling Quality Manual; Florida Department of Environmental Protection's (FDEP) Standard Operating Procedures (SOPs) *DEP-SOP-001/01FS 2200 Groundwater Sampling*; and the SOPs referenced therein.

All chemical parameters for this project were analyzed by the Collier County Pollution Control Laboratory (CCPCL) or PACE Analytical, Inc., (PACE) laboratory. All laboratories held current National Environmental Laboratory Accreditation Program (NELAP) certification for all the parameters being analyzed for this project. Physical measurements of pH, dissolved oxygen, specific conductance, and temperature were obtained during well purging and stabilization using a Yellow Springs Instrument (YSI) ProDSS multi-probe and flow-through cell. Field turbidity measurements were also obtained as part of the purge stabilization process using a HF Scientific MicroTPW portable field meter. However, the turbidity readings provided in the data reports are those obtained through laboratory analysis.

For the random well monitoring portion of the contract, wells were randomly selected from the county's well permit records. Letters of intent were sent to the property owners requesting their voluntary participation in the project. To be considered for sampling, each well was required to have a spigot at the well-head to prevent any potential sample contamination from the on-site treatment system. Samples were collected directly from the spigot. Copies of the laboratory results and explanation of the results were sent to the well owners.

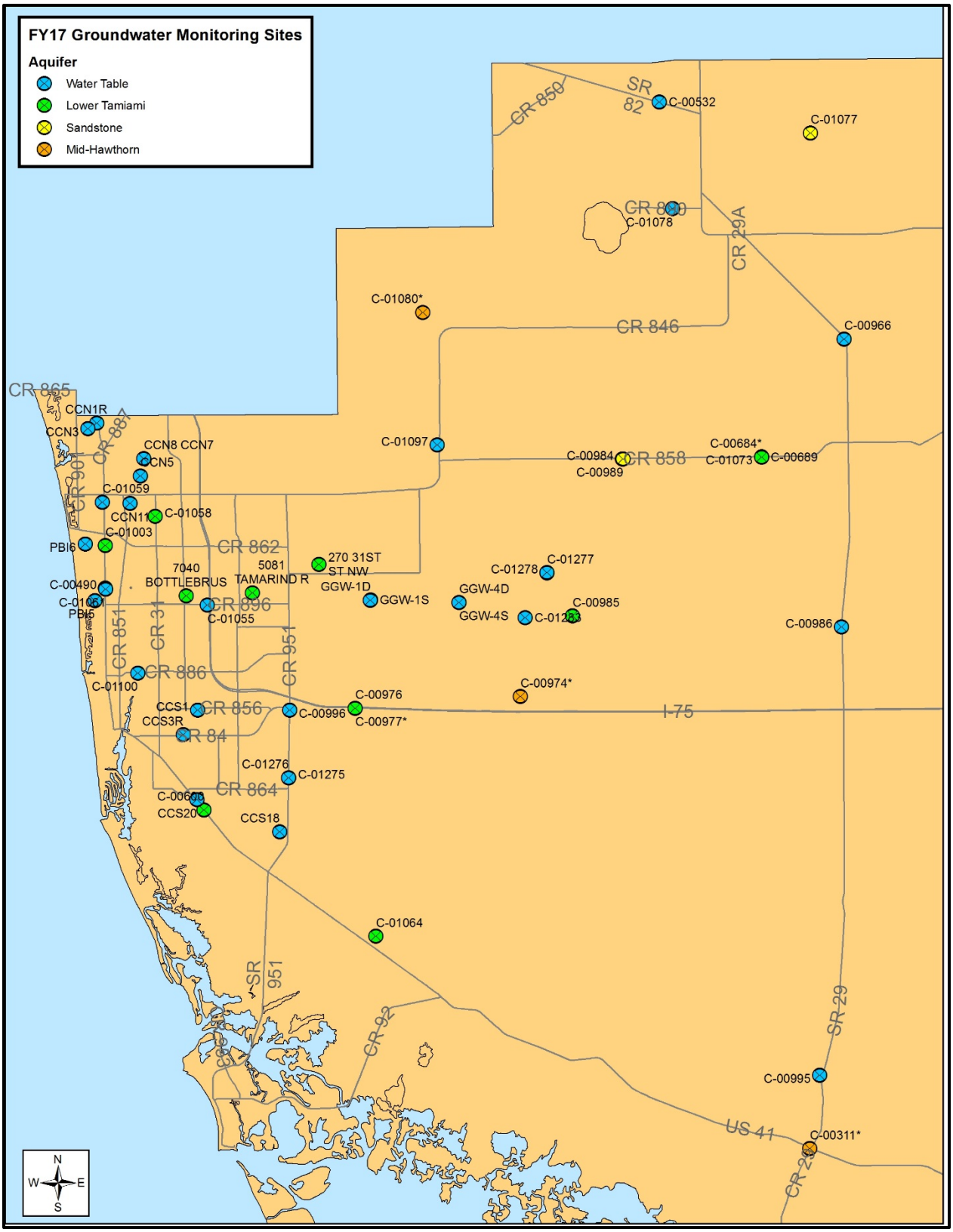


Figure 1. Groundwater Monitoring Sites

IV. Problems Encountered

Please see Appendix C for the sampling and laboratory analytical status of each well.

A. During the dry season sampling, a temperature probe on a field datasonde failed its monthly calibration check. Because the other probes/sonde readings depend on the temperature probe accuracy, some field readings for the dry season sampling were "J" qualified as a result of this temperature calibration failure. This sonde was placed out of service until a new temperature probe was ordered.

B. Well CCN7 was sampled in place of well CCN8 during both dry and wet seasons. CCN8, which was mistakenly abandoned, was next to CCN7 in Imperial Golf Course. Although CCN8 was 43 ft. deep and CCN7 is 18.05 ft. deep, both wells represent the water table aquifer.

C. Access to well C-01077 continues to present problems each time this well is sampled. High water levels during the wet season and lack of maintenance of access roads (private agriculture roads) are creating issues that could lead to potential vehicle damage. If conditions persist, this Sandstone aquifer well may have to be dropped from the network.

D. The residential well sampled at 5081 Tamarind Ridge Rd. had to be re-sampled during the wet season due to the presence of E. Coli during the first sampling event. The resample showed no indications of the presence of E. Coli.

V. Data Validity

The data provided in this report have been checked for accuracy and completeness and the Collier County Pollution Control attests to the validity of these results. All data qualifiers follow Florida Administrative Code (FAC) 62-160 Table 1.

All CCPCL and PACE data have been submitted using the ADaPT software and the quality control checks provided in the software were applied. Calibration logs for field instruments were reviewed and all associated data that were outside the quality control criteria were qualified using a "J" flag in the electronic data report.

VI. Exceedances

Appendix D provides a list of all FY17 groundwater results that were in exceedance of the Primary and Secondary Drinking Water Standards, Florida Administrative Code (FAC) Chapter 62-550. These standards were adopted and referenced as the state's ground water quality standards by FAC Chapter 62-520. Table 1 shows the frequency of exceedances in each aquifer.

Table 1. Frequency of Groundwater Exceedances by Aquifer

Aquifer	Frequency of Exceedances
Water Table	
Arsenic	6%
Chloride	2%
Fluoride	1%
Iron	37%
Manganese	7%
Nitrate (N)	1%
Residues- Filterable (TDS)	17%
Sodium	3%
Lower Tamiami	
Arsenic	1%
Chloride	3%
E. coli	1%
Iron	11%
Manganese	1%
Residues- Filterable (TDS)	16%
Sodium	3%
Sulfate	2%
Sandstone	
Chloride	2%
Residues- Filterable (TDS)	4%
Sodium	4%
Mid-Hawthorn	
Chloride	4%
Residues- Filterable (TDS)	6%
Sodium	6%
Sulfate	4%

Appendix A
Station Names

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer
C-00311*	25.91073	-81.36497	4	450	Mid-Hawthorn
C-00490	26.22061	-81.80033	2	71	Lower Tamiami
C-00532	26.49212	-81.45981	4	13	Water Table
C-00600	26.09751	-81.73882	4	52	Lower Tamiami
C-00684*	26.29509	-81.39595	4	490	Mid-Hawthorn
C-00689	26.29503	-81.39590	4	265	Sandstone
C-00966	26.36076	-81.34512	6	40	Water Table
C-00974*	26.16144	-81.54414	6	460	Mid-Hawthorn
C-00976	26.15455	-81.64602	6	40	Water Table
C-00977*	26.15455	-81.64602	6	140	Lower Tamiami
C-00984	26.29376	-81.48174	6	40	Water Table
C-00986	26.20074	-81.34631	6	40	Water Table
C-00995	25.95146	-81.35902	2	37	Water Table
C-00996	26.15325	-81.68632	4	24	Water Table
C-01003	26.24410	-81.80062	4	61	Lower Tamiami
C-01055	26.21139	-81.73732	4	25	Water Table
C-01058	26.26047	-81.76987	4	80	Lower Tamiami
C-01059	26.26822	-81.80247	4	25	Water Table
C-01064	26.02782	-81.63253	4	120	Lower Tamiami
C-01073	26.29506	-81.39589	4	160	Lower Tamiami
C-01077	26.47511	-81.36628	4	210	Sandstone
C-01078	26.43294	-81.45130	4	38	Water Table
C-01080*	26.37469	-81.60542	4	309	Mid-Hawthorn
C-01097	26.30108	-81.59621	4	18	Water Table
C-01100	26.17345	-81.78002	4	20	Water Table
C-01275	26.11573	-81.68668	2	118	Lower Tamiami
C-01276	26.11575	-81.68668	2	15	Water Table
C-01277	26.23030	-81.52810	2	133	Lower Tamiami
C-01278	26.23032	-81.52809	2	13	Water Table
C-01283	26.20519	-81.54130	4	40	Water Table
CCN1	26.31224	-81.80631	2	18	Water Table
CCN3	26.30902	-81.81172	2	14	Water Table
CCS1	26.15294	-81.74300	2	15	Water Table
CCS3	26.13934	-81.75183	2	15	Water Table
GGW-1D	26.21468	-81.63681	4	61	Lower Tamiami
GGW-1S	26.21465	-81.63682	4	15	Water Table
GGW-4D	26.21363	-81.58222	4	77	Lower Tamiami
GGW-4S	26.21361	-81.58223	4	16	Water Table
C-00985	26.20632	-81.51226	6	160	Lower Tamiami
C-00989	26.29374	-81.48138	6	270	Sandstone

Appendix A
Station Names

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer
C-01061	26.21996	-81.80019	4	25	Water Table
CCN11	26.26758	-81.78540	2	12	Water Table
CCN5	26.28293	-81.77914	2	17	Water Table
CCN8 (CCN7)	26.29266	-81.77720	2	43 (18.05)	Water Table
CCS18	26.08567	-81.69196	2	9	Water Table
CCS20	26.10321	-81.74303	2	11	Water Table
PBI5	26.21356	-81.80671	2	13	Water Table
PBI6	26.24482	-81.81283	2	12	Water Table
270 31ST ST NW	26.23440	-81.66865	4	100	Lower Tamiami
5081 TAMARIND R	26.21829	-81.70957	4	80	Lower Tamiami
7040 BOTTLEBRUS	26.21653	-81.75041	4	90	Lower Tamiami

* Artesian

Appendix B
Parameters and Sampling Frequency

Frequency	Parameter	Method
Semi-annually	Alkalinity	SM18 2320 B
Semi-annually	Ammonia	EPA 350.1 No Distillation (NH3)
Semi-annually	Arsenic (total)	EPA 200.8 (As)
Semi-annually	Barium (total)	EPA 200.8 (Ba)
Semi-annually	Cadmium (total)	EPA 200.8 (Cd)
Semi-annually	Calcium	EPA 200.7 (Ca)
Semi-annually	Chloride	EPA 300.0 (Chloride)
Semi-annually	Chromium (total)	EPA 200.8 (Cr)
Semi-annually	Copper (total)	EPA 200.8 (Cu)
Semi-annually	E. Coli*	Colilert/QT 2000
Semi-annually	Fluoride	EPA 300.0 (Fluoride)
Semi-annually	Hardness (total)	SM18 2340 B
Semi-annually	Iron	EPA 200.7 (Fe)
Semi-annually	Lead (total)	EPA 200.8 (Pb)
Semi-annually	Magnesium (total)	EPA 200.7 (Mg)
Semi-annually	Manganese (total)	EPA 200.8 (Mn)
Semi-annually	Nickel (total)	EPA 200.8 (Ni)
Semi-annually	Nitrate	EPA 300.0 (Nitrate (N))
Semi-annually	Nitrate/Nitrite (NOX)	NO2+NO3
Semi-annually	Nitrite	EPA 300.0 (Nitrite (N))
Semi-annually	Ortho-phosphate	SM18 4500-P E (Orthophosphate)
Semi-annually	Potassium	EPA 200.7 (K)
Semi-annually	Selenium (total)	EPA 200.8 (Se)
Semi-annually	Silver (total)	EPA 200.8 (Ag)
Semi-annually	Sodium	EPA 200.7 (Na)
Semi-annually	Strontium (total)	EPA 200.7 (Sr)
Semi-annually	Sulfate	EPA 300.0 (Sulfate)
Semi-annually	Sulfide	SM18 4500-S E
Semi-annually	Total Dissolved Solids	SM18 2540 C
Semi-annually	Residues- Nonfilterable (TSS)	SM18 2540 D
Semi-annually	Total Kjeldahl Nitrogen	EPA 351.2
Semi-annually	Total Nitrogen	TKN+NO3+NO2
Semi-annually	Total Phosphorus	SM18 4500-P E (Phosphorus - Total)
Semi-annually	Turbidity	SM18 2130 B
Semi-annually	Zinc	EPA 200.8 (Zn)

*Only analyzed in private, potable wells

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
C-00311*	25.91073	-81.36497	4	450	Mid-Hawthorn	02/27/2017	07/06/2017	
C-00490	26.22061	-81.80033	2	71	Lower Tamiami	04/04/2017	08/01/2017	
C-00532	26.49212	-81.45981	4	13	Water Table	02/08/2017	07/07/2017	
C-00600	26.09751	-81.73882	4	52	Lower Tamiami	04/05/2017	07/07/2017	
C-00684*	26.29509	-81.39595	4	490	Mid-Hawthorn	02/06/2017	07/10/2017	
C-00689	26.29503	-81.39590	4	265	Sandstone	02/06/2017	07/10/2017	
C-00966	26.36076	-81.34512	6	40	Water Table	03/22/2017	07/05/2017	
C-00974*	26.16144	-81.54414	6	460	Mid-Hawthorn	03/21/2017	07/12/2017	
C-00976	26.15455	-81.64602	6	40	Water Table	03/13/2017	08/02/2017	
C-00977*	26.15455	-81.64602	6	140	Lower Tamiami	03/13/2017	08/02/2017	
C-00984	26.29376	-81.48174	6	40	Water Table	03/07/2017	07/11/2017	
C-00985	26.20632	-81.51226	6	160	Lower Tamiami	03/07/2017	07/11/2017	Dry season total Kjeldahl nitrogen was analyzed outside the acceptable holding limit. This affects the total nitrogen value.
C-00986	26.20074	-81.34631	6	40	Water Table	03/27/2017	07/10/2017	
C-00989	26.29374	-81.48138	6	270	Sandstone	03/07/2017	07/11/2017	
C-00995	25.95146	-81.35902	2	37	Water Table	03/27/2017	07/06/2017	
C-00996	26.15325	-81.68632	4	24	Water Table	02/15/2017	07/24/2017	Wet season total dissolved solids was analyzed outside the acceptable holding time.
C-01003	26.24410	-81.80062	4	61	Lower Tamiami	03/09/2017	07/14/2017	
C-01055	26.21139	-81.73732	4	25	Water Table	03/13/2017	07/11/2017	
C-01058	26.26047	-81.76987	4	80	Lower Tamiami	04/04/2017	07/20/2017	
C-01059	26.26822	-81.80247	4	25	Water Table	03/30/2017	07/20/2017	
C-01061	26.21996	-81.80019	4	25	Water Table	03/09/2017	07/20/2017	
C-01064	26.02782	-81.63253	4	120	Lower Tamiami	03/27/2017	07/06/2017	

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
C-01073	26.29506	-81.39589	4	160	Lower Tamiami	02/08/2017	07/10/2017	
C-01077	26.47511	-81.36628	4	210	Sandstone	02/07/2017	07/25/2017	
C-01078	26.43294	-81.45130	4	38	Water Table	03/22/2017	07/05/2017	
C-01080*	26.37469	-81.60542	4	309	Mid-Hawthorn	02/22/2017	07/18/2017	
C-01097	26.30108	-81.59621	4	18	Water Table	03/21/2017	07/18/2017	Dry season total Kjeldahl nitrogen was analyzed outside the acceptable holding limit. This affects the total nitrogen value.
C-01100	26.17345	-81.78002	4	20	Water Table	02/14/2017	07/13/2017	Dry season NO2, NO3 and alkalinity were analyzed outside the acceptable holding time. This also affects the total nitrogen value.
C-01275	26.11573	-81.68668	2	118	Lower Tamiami	02/15/2017	07/24/2017	Wet season total dissolved solids was analyzed outside the acceptable holding time.
C-01276	26.11575	-81.68668	2	15	Water Table	02/15/2017	07/24/2017	Wet season total dissolved solids was analyzed outside the acceptable holding time.
C-01277	26.23030	-81.52810	2	133	Lower Tamiami	03/20/2017	07/13/2017	
C-01278	26.23032	-81.52809	2	13	Water Table	No sample. Well dry.	07/13/2017	Wet season orthophosphate was analyzed outside the acceptable holding time.
C-01283	26.20519	-81.54130	4	40	Water Table	03/21/2017	07/12/2017	
CCN11	26.26758	-81.78540	2	12	Water Table	03/30/2017	07/20/2017	
CCN1R	26.31224	-81.80631	2	18	Water Table	03/01/2017	08/04/2017	

Appendix C
Sampling Summary and Problems Encountered

Station	Latitude	Longitude	Diameter (in)	Depth (ft)	Aquifer	Dry Season Sampling Date	Wet Season Sampling Date	Comments
CCN3	26.30902	-81.81172	2	14	Water Table	03/01/2017	07/21/2017	
CCN5	26.28293	-81.77914	2	17	Water Table	03/30/2017	08/09/2017	
~~CCN8~~ CCN7	26.29266	-81.77720	2	~~43~~(18.05)	Water Table	03/30/2017	08/01/2017	
CCS1	26.15294	-81.74300	2	15	Water Table	02/28/2017	08/09/2017	
CCS18	26.08567	-81.69196	2	9	Water Table	04/05/2017	08/11/2017	
CCS20	26.10321	-81.74303	2	11	Water Table	04/05/2017	08/11/2017	
CCS3R	26.13934	-81.75183	2	15	Water Table	02/21/2017	07/11/2017	
GGW-1D	26.21468	-81.63681	4	61	Lower Tamiami	04/04/2017	08/07/2017	
GGW-1S	26.21465	-81.63682	4	15	Water Table	02/27/2017	08/07/2017	
GGW-4D	26.21363	-81.58222	4	77	Lower Tamiami	02/27/2017	08/07/2017	
GGW-4S	26.21361	-81.58223	4	16	Water Table	02/27/2017	08/07/2017	
PBI5	26.21356	-81.80671	2	13	Water Table	03/01/2017	08/01/2017	
PBI6	26.24482	-81.81283	2	12	Water Table	03/01/2017	08/01/2017	
270 31ST ST NW	26.23440	-81.66865	4	100	Lower Tamiami	03/02/2017	08/07/2017	No sulfide sample was collected during wet season
5081 TAMARIND R	26.21829	-81.70957	4	80	Lower Tamiami	03/02/2017	08/07/2017	No sulfide sample was collected during wet season
7040 BOTTLEBRUS	26.21653	-81.75041	4	90	Lower Tamiami	03/02/2017	08/07/2017	No sulfide sample was collected during wet season

Appendix D
FY17 Exceedances

Well #	Sample Date	Aquifer	Parameter	Result	Units	Lab Qualifier	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-01064	07/06/2017	Lower Tamiami	Arsenic	10.1	ug/L		0.1	10	
CCN11	03/30/2017	Water Table	Arsenic	54.5	ug/L		0.1	10	
CCN11	07/20/2017	Water Table	Arsenic	22.6	ug/L		0.1	10	
CCN5	03/30/2017	Water Table	Arsenic	49.8	ug/L		0.1	10	
CCN5	08/09/2017	Water Table	Arsenic	89.7	ug/L		0.1	10	
CCN7	08/01/2017	Water Table	Arsenic	12	ug/L		0.1	10	
CCS18	04/05/2017	Water Table	Arsenic	13.5	ug/L		0.1	10	
C-00311	02/27/2017	Mid-Hawthorn	Chloride	448	mg/L		0.25		250
C-00311	07/06/2017	Mid-Hawthorn	Chloride	446	mg/L		0.5		250
C-00974	03/21/2017	Mid-Hawthorn	Chloride	2130	mg/L		2.5		250
C-00974	07/12/2017	Mid-Hawthorn	Chloride	2030	mg/L		1.25		250
C-01064	03/27/2017	Lower Tamiami	Chloride	337	mg/L		0.25		250
C-01077	02/07/2017	Sandstone	Chloride	354	mg/L		0.25		250
C-01077	07/25/2017	Sandstone	Chloride	382	mg/L		0.5		250
C-01275	02/15/2017	Lower Tamiami	Chloride	1450	mg/L		2.5		250
C-01275	07/24/2017	Lower Tamiami	Chloride	1450	mg/L		1.25		250
PBI6	03/01/2017	Water Table	Chloride	269	mg/L		0.25		250
PBI6	08/01/2017	Water Table	Chloride	316	mg/L		0.25		250
5081 TAMARIND R	08/07/2017	Lower Tamiami	E. coli	2	mpn/100ml	J	2	0	
CCS3R	02/21/2017	Water Table	Fluoride	5.85	mg/L		0.002		2
C-00490	04/04/2017	Lower Tamiami	Iron	1520	ug/L		1.98		300
C-00490	08/01/2017	Lower Tamiami	Iron	1240	ug/L		1.98		300
C-00532	02/08/2017	Water Table	Iron	338	ug/L		1.98		300
C-00532	02/08/2017	Water Table	Iron	304	ug/L		1.98		300
C-00532	07/07/2017	Water Table	Iron	767	ug/L		1.98		300
C-00600	04/05/2017	Lower Tamiami	Iron	763	ug/L		1.98		300
C-00600	07/07/2017	Lower Tamiami	Iron	695	ug/L		1.98		300
C-00600	07/07/2017	Lower Tamiami	Iron	648	ug/L		1.98		300
C-00966	03/22/2017	Water Table	Iron	3550	ug/L		1.98		300
C-00966	03/22/2017	Water Table	Iron	3560	ug/L		1.98		300
C-00966	07/05/2017	Water Table	Iron	2880	ug/L		1.98		300

Appendix D
FY17 Exceedances

Well #	Sample Date	Aquifer	Parameter	Result	Units	Lab Qualifier	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-00984	03/07/2017	Water Table	Iron	2840	ug/L		1.98		300
C-00984	07/11/2017	Water Table	Iron	2810	ug/L		1.98		300
C-00995	03/27/2017	Water Table	Iron	310	ug/L		1.98		300
C-00995	07/06/2017	Water Table	Iron	334	ug/L		1.98		300
C-00996	02/15/2017	Water Table	Iron	1280	ug/L		1.98		300
C-00996	07/24/2017	Water Table	Iron	1660	ug/L		1.98		300
C-01003	03/09/2017	Lower Tamiami	Iron	3350	ug/L		1.98		300
C-01003	07/14/2017	Lower Tamiami	Iron	3350	ug/L		1.98		300
C-01055	03/13/2017	Water Table	Iron	3000	ug/L		1.98		300
C-01055	07/11/2017	Water Table	Iron	3090	ug/L		1.98		300
C-01059	07/20/2017	Water Table	Iron	9590	ug/L		1.98		300
C-01061	03/09/2017	Water Table	Iron	374	ug/L		1.98		300
C-01061	07/20/2017	Water Table	Iron	407	ug/L		1.98		300
C-01064	03/27/2017	Lower Tamiami	Iron	2730	ug/L		1.98		300
C-01064	07/06/2017	Lower Tamiami	Iron	2030	ug/L		1.98		300
C-01078	03/22/2017	Water Table	Iron	2210	ug/L		1.98		300
C-01078	07/05/2017	Water Table	Iron	3360	ug/L		1.98		300
C-01097	07/18/2017	Water Table	Iron	3020	ug/L		1.98		300
C-01100	07/13/2017	Water Table	Iron	318	ug/L		1.98		300
CCN11	03/30/2017	Water Table	Iron	2390	ug/L		1.98		300
CCN11	07/20/2017	Water Table	Iron	923	ug/L		1.98		300
CCN1R	08/04/2017	Water Table	Iron	489	ug/L		1.98		300
CCN1R	08/04/2017	Water Table	Iron	562	ug/L		1.98		300
CCN5	03/30/2017	Water Table	Iron	7230	ug/L		1.98		300
CCN5	08/09/2017	Water Table	Iron	3730	ug/L		1.98		300
CCS1	02/28/2017	Water Table	Iron	1620	ug/L		1.98		300
CCS1	08/09/2017	Water Table	Iron	5290	ug/L		1.98		300
CCS18	04/05/2017	Water Table	Iron	7350	ug/L		1.98		300
CCS18	08/11/2017	Water Table	Iron	1280	ug/L		1.98		300
CCS3R	02/21/2017	Water Table	Iron	1030	ug/L		1.98		300
GGW-1D	04/04/2017	Lower Tamiami	Iron	9710	ug/L	J	1.98		300
GGW-1D	08/07/2017	Lower Tamiami	Iron	591	ug/L		1.98		300
GGW-1S	02/27/2017	Water Table	Iron	812	ug/L		1.98		300

Appendix D
FY17 Exceedances

Well #	Sample Date	Aquifer	Parameter	Result	Units	Lab Qualifier	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
GGW-1S	08/07/2017	Water Table	Iron	1680	ug/L		1.98		300
GGW-4S	08/07/2017	Water Table	Iron	714	ug/L		1.98		300
PBI5	03/01/2017	Water Table	Iron	1630	ug/L		1.98		300
PBI5	08/01/2017	Water Table	Iron	3790	ug/L		1.98		300
C-01064	03/27/2017	Lower Tamiami	Manganese	51.2	ug/L		0.1		50
CCN11	03/30/2017	Water Table	Manganese	90.9	ug/L		0.1		50
CCN11	07/20/2017	Water Table	Manganese	101	ug/L		0.1		50
CCN5	03/30/2017	Water Table	Manganese	4950	ug/L		10		50
CCN5	08/09/2017	Water Table	Manganese	4320	ug/L		2.5		50
CCS18	04/05/2017	Water Table	Manganese	65.7	ug/L		0.1		50
CCS20	04/05/2017	Water Table	Manganese	55.8	ug/L		0.1		50
CCS20	08/11/2017	Water Table	Manganese	328	ug/L	J	0.2		50
C-01100	02/14/2017	Water Table	Nitrate (N)	11.8	mg/L	QJ	0.002	10	
31ST_ST_NW_270	03/02/2017	Lower Tamiami	Residues-Filterable (TDS)	586	mg/L		2		500
31ST_ST_NW_270	08/07/2017	Lower Tamiami	Residues-Filterable (TDS)	526	mg/L		2		500
5081 TAMARIND R	03/02/2017	Lower Tamiami	Residues-Filterable (TDS)	638	mg/L		2		500
5081 TAMARIND R	08/07/2017	Lower Tamiami	Residues-Filterable (TDS)	562	mg/L		2		500
7040 BOTTLEBRUS	03/02/2017	Lower Tamiami	Residues-Filterable (TDS)	620	mg/L		2		500
7040 BOTTLEBRUS	08/07/2017	Lower Tamiami	Residues-Filterable (TDS)	576	mg/L		2		500
C-00311	02/27/2017	Mid-Hawthorn	Residues-Filterable (TDS)	1290	mg/L		2		500

Appendix D
FY17 Exceedances

Well #	Sample Date	Aquifer	Parameter	Result	Units	Lab Qualifier	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-00311	07/06/2017	Mid-Hawthorn	Residues-Filterable (TDS)	1130	mg/L		2		500
C-00684	02/06/2017	Mid-Hawthorn	Residues-Filterable (TDS)	2300	mg/L		2		500
C-00684	07/10/2017	Mid-Hawthorn	Residues-Filterable (TDS)	1990	mg/L		2		500
C-00974	03/21/2017	Mid-Hawthorn	Residues-Filterable (TDS)	3860	mg/L		2		500
C-00974	07/12/2017	Mid-Hawthorn	Residues-Filterable (TDS)	3970	mg/L		2		500
C-00977	03/13/2017	Lower Tamiami	Residues-Filterable (TDS)	624	mg/L		2		500
C-00977	08/02/2017	Lower Tamiami	Residues-Filterable (TDS)	732	mg/L		2		500
C-00989	03/07/2017	Sandstone	Residues-Filterable (TDS)	768	mg/L		2		500
C-00989	07/11/2017	Sandstone	Residues-Filterable (TDS)	664	mg/L		2		500
C-01058	04/04/2017	Lower Tamiami	Residues-Filterable (TDS)	632	mg/L		2		500
C-01058	07/20/2017	Lower Tamiami	Residues-Filterable (TDS)	694	mg/L		2		500
C-01064	03/27/2017	Lower Tamiami	Residues-Filterable (TDS)	929	mg/L	J	2		500

Appendix D
FY17 Exceedances

Well #	Sample Date	Aquifer	Parameter	Result	Units	Lab Qualifier	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
C-01064	07/06/2017	Lower Tamiami	Residues-Filterable (TDS)	525	mg/L		2		500
C-01073	02/08/2017	Lower Tamiami	Residues-Filterable (TDS)	533	mg/L		2		500
C-01077	02/07/2017	Sandstone	Residues-Filterable (TDS)	1030	mg/L		2		500
C-01077	07/25/2017	Sandstone	Residues-Filterable (TDS)	927	mg/L		2		500
C-01100	02/14/2017	Water Table	Residues-Filterable (TDS)	611	mg/L		2		500
C-01100	07/13/2017	Water Table	Residues-Filterable (TDS)	1300	mg/L		2		500
C-01275	02/15/2017	Lower Tamiami	Residues-Filterable (TDS)	2990	mg/L		2		500
C-01275	07/24/2017	Lower Tamiami	Residues-Filterable (TDS)	2950	mg/L	Q	2		500
C-01276	02/15/2017	Water Table	Residues-Filterable (TDS)	899	mg/L		2		500
C-01276	07/24/2017	Water Table	Residues-Filterable (TDS)	930	mg/L	Q	2		500
CCN11	03/30/2017	Water Table	Residues-Filterable (TDS)	690	mg/L		2		500
CCN11	07/20/2017	Water Table	Residues-Filterable (TDS)	670	mg/L		2		500

Appendix D
FY17 Exceedances

Well #	Sample Date	Aquifer	Parameter	Result	Units	Lab Qualifier	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
CCN3	03/01/2017	Water Table	Residues-Filterable (TDS)	509	mg/L		2		500
CCN3	03/01/2017	Water Table	Residues-Filterable (TDS)	513	mg/L		2		500
CCN3	07/21/2017	Water Table	Residues-Filterable (TDS)	559	mg/L		2		500
CCN5	03/30/2017	Water Table	Residues-Filterable (TDS)	947	mg/L		2		500
CCN5	08/09/2017	Water Table	Residues-Filterable (TDS)	798	mg/L		2		500
CCS1	08/09/2017	Water Table	Residues-Filterable (TDS)	519	mg/L		2		500
CCS18	04/05/2017	Water Table	Residues-Filterable (TDS)	569	mg/L		2		500
CCS3R	02/21/2017	Water Table	Residues-Filterable (TDS)	612	mg/L		2		500
GGW-1D	04/04/2017	Lower Tamiami	Residues-Filterable (TDS)	553	mg/L		2		500
PBI5	08/01/2017	Water Table	Residues-Filterable (TDS)	518	mg/L	J	2		500
PBI6	03/01/2017	Water Table	Residues-Filterable (TDS)	816	mg/L		2		500
PBI6	08/01/2017	Water Table	Residues-Filterable (TDS)	794	mg/L		2		500

Appendix D
FY17 Exceedances

Well #	Sample Date	Aquifer	Parameter	Result	Units	Lab Qualifier	Detection Limit	FAC 62-550 Primary Drinking Water Standard	FAC 62-550 Secondary Drinking Water Standard
7040 BOTTLEBRUS	03/02/2017	Lower Tamiami	Sodium	241	mg/L		0.38	160	
C-00311	02/27/2017	Mid-Hawthorn	Sodium	412	mg/L		0.38	160	
C-00311	07/06/2017	Mid-Hawthorn	Sodium	399	mg/L		0.38	160	
C-00684	02/06/2017	Mid-Hawthorn	Sodium	369	mg/L		0.38	160	
C-00684	07/10/2017	Mid-Hawthorn	Sodium	382	mg/L		0.38	160	
C-00974	03/21/2017	Mid-Hawthorn	Sodium	1040	mg/L		0.76	160	
C-00974	07/12/2017	Mid-Hawthorn	Sodium	1090	mg/L		0.76	160	
C-00989	03/07/2017	Sandstone	Sodium	210	mg/L		0.38	160	
C-00989	07/11/2017	Sandstone	Sodium	228	mg/L		0.38	160	
C-01077	02/07/2017	Sandstone	Sodium	185	mg/L		0.38	160	
C-01077	07/25/2017	Sandstone	Sodium	211	mg/L		0.38	160	
C-01275	02/15/2017	Lower Tamiami	Sodium	721	mg/L		0.38	160	
C-01275	07/24/2017	Lower Tamiami	Sodium	726	mg/L		0.38	160	
CCN5	03/30/2017	Water Table	Sodium	173	mg/L		0.38	160	
PBI6	03/01/2017	Water Table	Sodium	189	mg/L		0.38	160	
PBI6	08/01/2017	Water Table	Sodium	203	mg/L		0.38	160	
C-00684	02/06/2017	Mid-Hawthorn	Sulfate	1320	mg/L		2.5		250
C-00684	07/10/2017	Mid-Hawthorn	Sulfate	1130	mg/L		1.25		250
C-00974	03/21/2017	Mid-Hawthorn	Sulfate	510	mg/L		2.5		250
C-00974	07/12/2017	Mid-Hawthorn	Sulfate	634	mg/L		1.25		250
C-01275	02/15/2017	Lower Tamiami	Sulfate	438	mg/L		2.5		250
C-01275	07/24/2017	Lower Tamiami	Sulfate	479	mg/L		1.25		250