Hillsborough County
Florida

Office of the County Administrator
Michael S. Merrill

September 12, 2013

Mr. John Morris, P.G.
Florida Department of Environmental Protection
Waste Permitting Section
13051 Telecom Parkway
Temple Terrace, FL 33637

RE: **Southeast County Landfill**
Laboratory Analytical Results
Initial Assessment Monitoring Plan
Report No. 35 – July 2013

Dear Mr. Morris:

The Hillsborough County Public Utilities Department (County) is pleased to provide the analytical results from the July 2013 sampling event conducted as part of our continuation of the Initial Assessment Monitoring Plan (IAMP). The IAMP was developed to address the potential impacts to groundwater from the sinkhole in Phase VI of the Southeast County Landfill (SCLF), which was discovered on December 14, 2010.

As part of the agreement between the County and FDEP Southwest District, three (3) upper Floridan/Limestone aquifer monitoring wells, TH-72, TH-76 and TH-77 are sampled on a monthly schedule. Representative samples were collected on July 3, 2013 and analyzed for total dissolved solids (TDS), chloride, total ammonia, arsenic, iron, sodium, and five (5) field parameters. The samples collected were analyzed by our contracted laboratory, Test America, Inc. The following paragraphs summarize the parameter specific results pertinent to the evaluation of potential water quality impacts from the sinkhole at the SCLF.

Turbidity
During this monthly IAMP sampling event, turbidity values in Upper Floridan/Limestone aquifer monitoring wells TH-72, TH-76, and TH-77 were 0.41, 28.6 and 38.4 Nephelometric Turbidity Units (NTUs), respectively. The elevated turbidity observed in TH-76 and TH-77 is Not uncommon for monitoring wells for a few sampling events after installation. The County believes that the turbidity values at these two locations will continue to decrease over time as they are pumped during sampling activities.

Conductivity
The conductivity values observed in TH-72, TH-76, and TH-77 were 1,450, 398, and 388 micromhos per centimeter (umhos/cm), respectively. Monitoring well TH-72 is the closest well to the sinkhole and continues to exhibit groundwater impacts similar to those observed over the last year. The values observed in TH-76 and TH-77 are consistent with the unaffected deep wells across the site.

Total Dissolved Solids (TDS)
The TDS in TH-72 was observed at 820 mg/l and continues to be above the SDWS of 500 mg/l. The remaining two wells, TH-76 and TH-77 both exhibited a TDS value of 210 mg/l.

Chloride
The chloride in TH-72 was observed at 280 mg/l, which is above the PDWS of 250 mg/l. TH-76 and TH-77 exhibited chloride values of 12 mg/l and 8.9 mg/l, respectively. It is apparent that the elevated chloride value in TH-72 is attributable to the sinkhole and/or grouting activities, but the impacts continue to be limited to the immediate vicinity of the feature.

Iron
Total iron concentrations in each of the three (3) upper Floridan/Limestone aquifer monitoring wells were observed above the SDWS of 0.3 mg/l. TH-72, TH-76 and TH-77 exhibited iron at 0.79, 0.99, and 1.1 mg/l, respectively. The elevated iron concentrations observed in these wells are consistent with historical data set, and are likely naturally occurring and/or the result of past strip mining activities at the site.

Total Ammonia
The upper Floridan well TH-72 continues to exhibit ammonia above the former GCTL of 2.8 mg/l, at a concentration of 8.8 mg/l. The other two wells, TH-76 and TH-77 were observed at 0.34 and 0.4 mg/l, respectively.

Groundwater Elevations and Direction of Flow

On July 3, 2013, the County collected groundwater and surface water elevation data at sixty-five (65) points across the site, including twenty eight (28) surficial aquifer wells, seven (7) upper Floridan (limestone) aquifer wells, twenty three (23) piezometers, and seven (7) surface water sites. As previously discussed, piezometer P-5D was observed to be filled with sand approximately 15.6 feet below the top of casing. It appears that this piezometer has been structurally compromised and the County requests approval from the Department to properly abandon P-5D. Replacement of this data point does not appear to be necessary.

No significant changes to the patterns of flow in the surficial aquifer were noted in the July data set and the diagram is consistent with the observations over the period of record. The general direction of flow within the surficial aquifer has historically been to the west northwest across the Southeast County Landfill site. The elevations observed within the wells closest to the sinkhole indicate that flow patterns may be somewhat affected, which would not be unexpected. However, the overall direction of flow within the surficial remains toward the west/northwest across the site.

A contour diagram of the upper Floridan / Limestone aquifer has been prepared for the general area around the sinkhole and is included with this submittal. For the month of July, the elevation change between TH-72 and TH-76 is only 0.07 ft., and the change between TH-72 and TH-77 is only 0.16 ft. Contouring of these three wells, indicates that flow is to the north/northwest, but at what appears to be a very slow rate. When the other upper Floridan / Limestone aquifer monitoring wells located at the SCLF are included, the contouring process becomes difficult, and inconclusive. Therefore for this event we have contoured the flow utilizing just the three points closest to the sinkhole. We will continue to evaluate the flow direction with the upper Floridan / Limestone aquifer, and a more comprehensive understanding of the direction of flow within this system will be developed over time.

Conclusions

The upper Floridan / Limestone aquifer monitoring well, TH-72, which is located closest to the sinkhole, continues to exhibit. It appears that the impacts are likely attributable to the waste within the sinkhole and/or the fluids introduced during the extensive grouting activities conducted as part of the remedial actions. The impacts continue to exhibit elevated concentrations of TDS, chloride, ammonia, iron and sodium, along with elevated conductivity. These impacts were not unexpected in the immediate vicinity of the sinkhole.

The two new upper Floridan / Limestone aquifer monitoring wells TH-76 and TH-77 exhibit good water quality with no evidence of impact from the sinkhole. Conductivity values, TDS, chloride and ammonia are all very low and consistent with the historical data set for the unaffected UFA monitoring wells at the SCLF.

Recommendations

The County recommends continuing the optimized IAMP, which includes the monthly sampling of the three upper Floridan / Limestone aquifer monitoring wells, TH-72, TH-76, and TH-77, and the quarterly sampling of the three surficial aquifer monitoring wells, TH-73, TH-74, and TH-75. We will continue to evaluate any water quality changes in both the surficial and upper Floridan wells, and present the findings within the monthly IAMP reports.

Enclosed for your review please find a site location map depicting the monitoring wells sampled, the water quality data summary table for the July 2013 sampling event, a groundwater elevation data table, groundwater contour and flow diagrams for the surficial and upper Floridan / Limestone aquifers, the historical data tables for each well sampled this month, and the complete analytical data report from our contracted laboratory, Test America, Inc.

Should you have any questions or require any additional information please feel free to call me at (813) 663-3221.

Respectfully submitted,

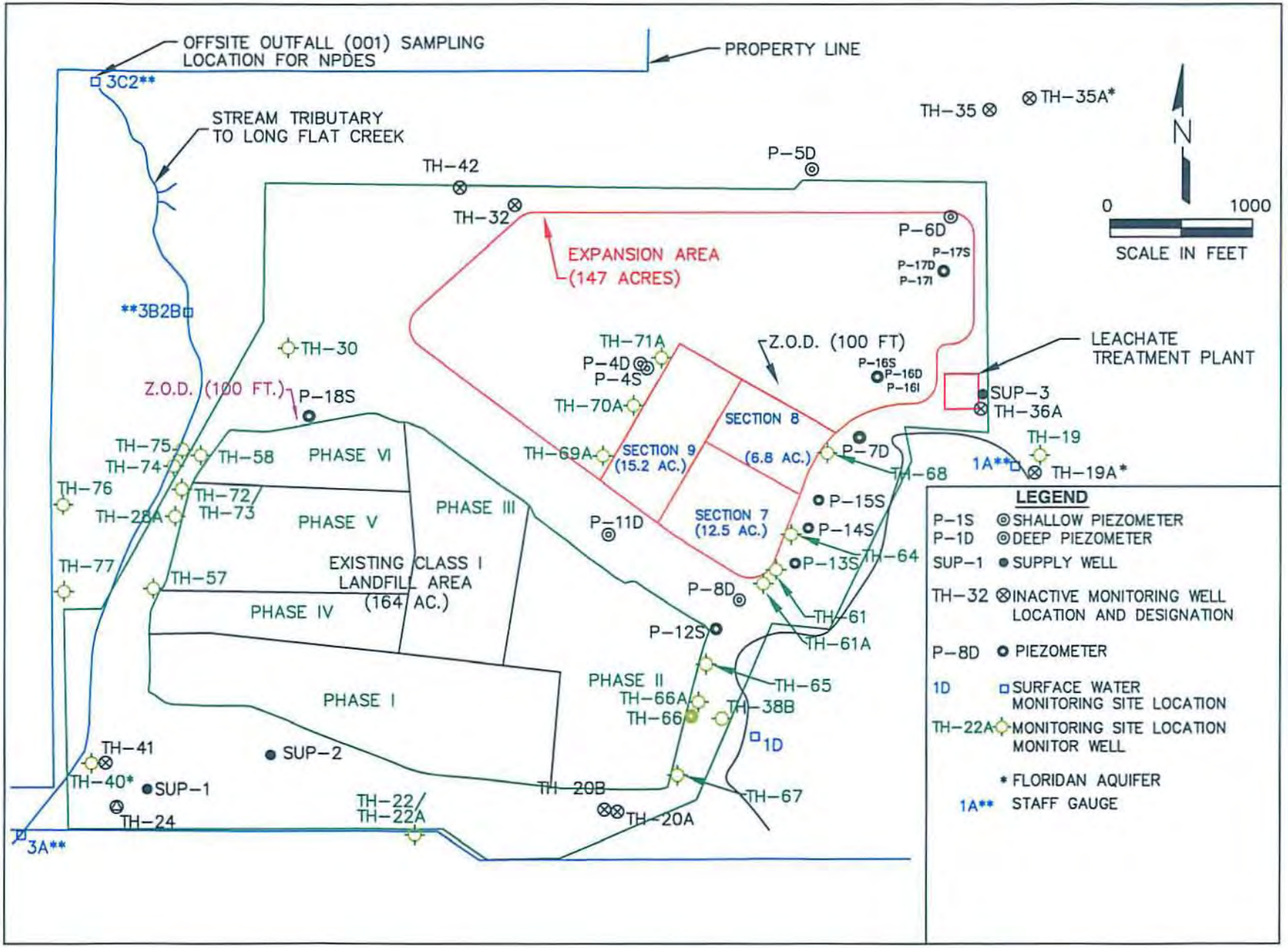
David S. Adams 9/12/13

David S. Adams, P.G
Environmental Manager
Public Utilities Department

DAVID S. ADAMS LICENSE No 1827 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

G:/enviro/self/ ADRs/IAMP Reports/ IAMP Report No.35.doc
Final copy scanned to LFS/Southeast/Sinkhole/SCLF – IAMP Report No 35.pdf

xc: John Lyons, Director, Public Utilities Department
Patricia Berry, Public Utilities Department
Andy Berry, Public Utilities Department
Larry Ruiz, Public Utilities Department
Michelle Van Dyk, Public Utilities Department
Richard Tedder, FDEP Tallahassee
Clark Moore, FDEP Tallahassee
Jeff Greenwell, FDEP Southwest District
Susan Pelz, FDEP Southwest District
Steve Morgan, FDEP, Southwest District
Andy Schipfer, EPC
Ernest Ely, WMI
Brian Miller, DOH
Rich Siemering, HDR
Joe O'Neill, CDS



Site Map

Southeast County Landfill Facility, Hillsborough County, Florida

Southeast County Landfill
Laboratory Analytical Data
Upper Floridan Groundwater Monitoring Wells
July 3, 2013

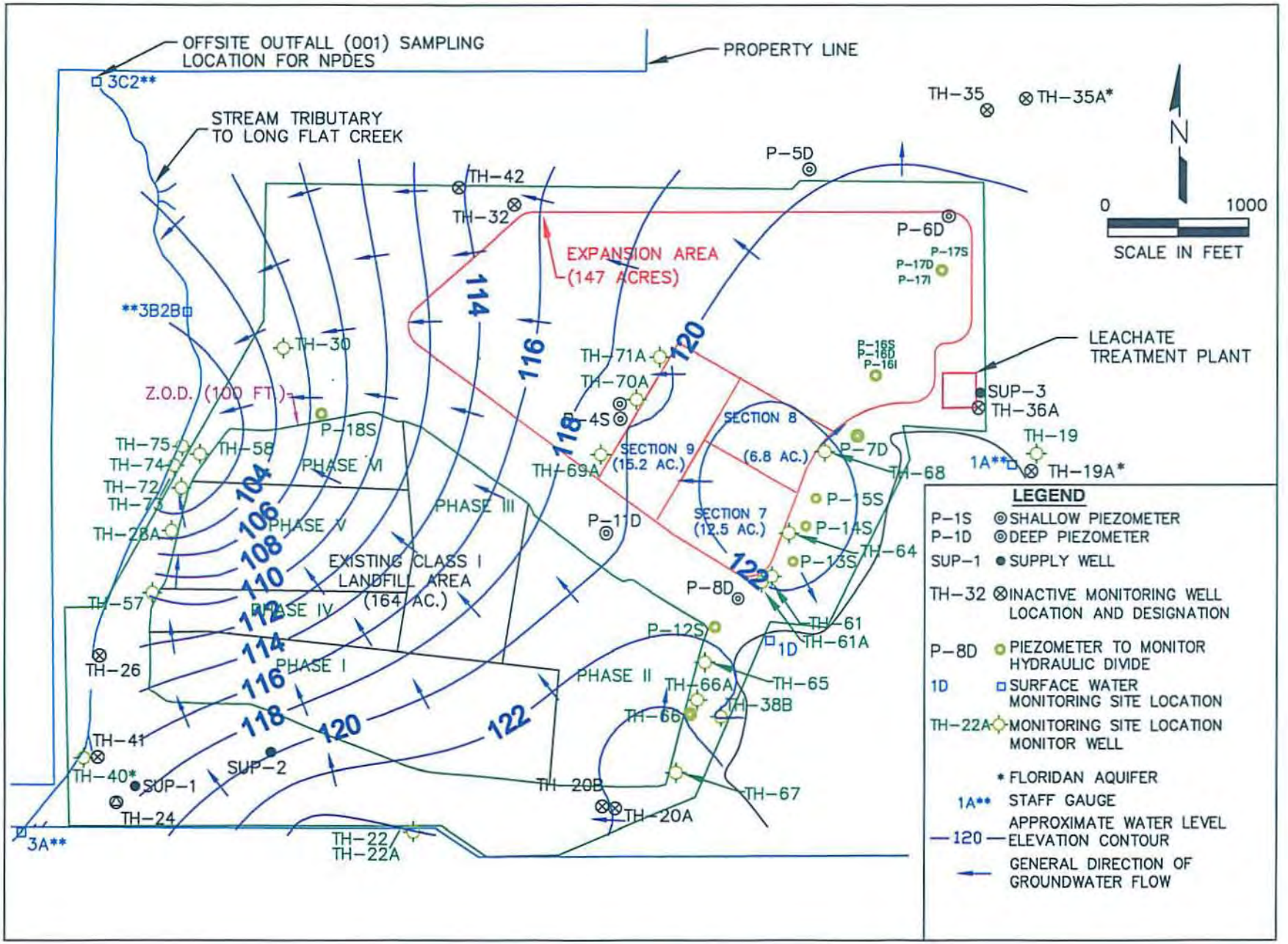
GENERAL	Upper Floridan Wells			(MCL) STANDARD
PARAMETERS	TH-72	TH-76	TH-77	
conductivity (umhos/cm) (field)	1450	398	388	NS
dissolved oxygen (mg/l) (field)	0.18	0.19	0.41	NS
pH (field)	7.03	8.00	7.80	(6.5 - 8.5)**
temperature (°C) (field)	23.50	23.00	23.70	NS
turbidity (NTU) (field)	0.41	28.6	38.4	NS
total dissolved solids (mg/l)	**820**	210	210	500**
chloride (mg/l)	**280**	12	8.9	250**
ammonia nitrogen (mg/l as N)	**8.8**	0.34	0.4	2.8***
				(MCL) STANDARD
Metals: (mg/l)	TH-72	TH-76	TH-77	
arsenic	0.004 *u*	0.004 *u*	0.004 *u*	0.01*
iron	**0.79**	**0.99**	**1.1**	0.3**
sodium	120	22	17	160*

Note: Ref. Groundwater Guidance Concentrations, FDEP 2012
MCL=MAXIMUM CONTAMINANT LEVEL
BDL=BELOW DETECTION LIMIT
NTU=NEPHELOMETRIC TURBIDITY UNITS
u = parameter was analyzed but not detected.
*=DENOTES PRIMARY DRINKING WATER STANDARD
**=DENOTES SECONDARY DRINKING WATER STANDARD
***=DENOTES GROUNDWATER CLEANUP TARGET LEVELS
820
ug/l=MICROGRAMS PER LITER
mg/l=MILLIGRAMS PER LITER
NS=NO STANDARD

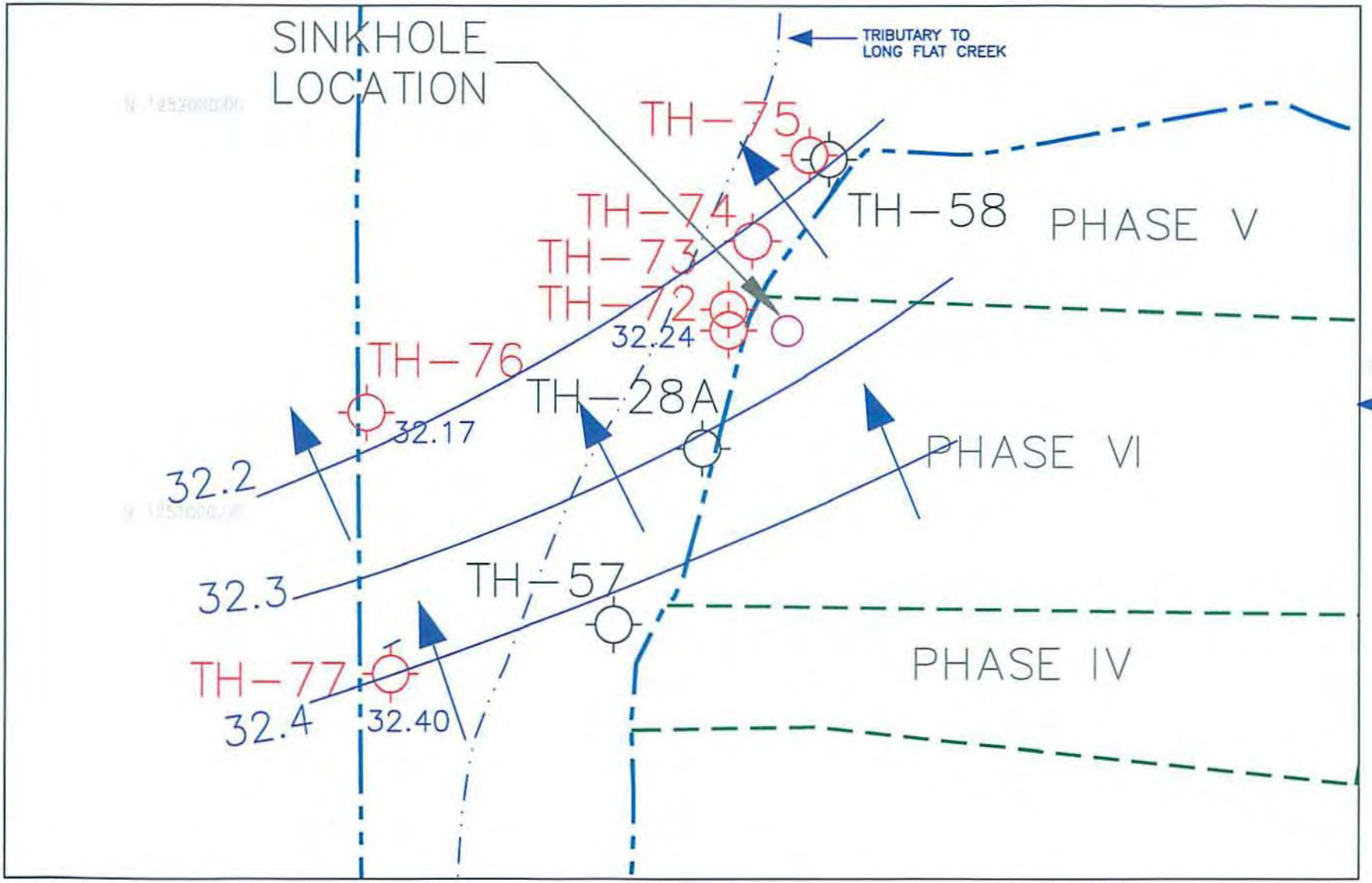
Southeast County Landfill
Groundwater and Surface Water Elevations
July 3, 2013

Measuring Point I.D.	T.O.C. Elevations (NGVD)	07/03/2013 W.L. B.T.O.C.	W.L. (NGVD)	Time
P-4D	140.78	22.55	118.23	11:02
P-4S	140.95	Dry	ND	11:01
P-5D	151.94	ND	ND	14:00
P-6D-A	148.01	25.10	122.91	13:51
P-7D	138.92	17.17	121.75	14:14
P-8D	138.34	17.73	120.61	14:31
P-11D	138.02	17.67	120.35	10:54
P-12S	134.97	13.84	121.13	14:35
P-13S	140.21	16.55	123.66	14:27
P-14S	138.56	14.81	123.75	14:24
P-15S	139.19	16.31	122.88	14:21
P-16S	143.38	15.57	127.81	13:42
P-16I	144.15	23.75	120.40	13:41
P-16D	143.84	23.40	120.44	13:40
P-17S	137.35	12.14	125.21	14:07
P-17I	137.32	15.09	122.23	14:06
P-17D	137.22	15.38	121.84	14:05
P-18S	129.86	18.20	111.66	10:45
P-19	133.36	11.62	121.74	13:56
P-20	132.38	10.72	121.66	13:36
P-21	122.79	1.48	121.31	13:27
P-22	128.35	6.98	121.37	13:29
P-23	143.13	22.79	120.34	13:33
TH-19*	130.27	99.16	31.11	13:52
TH-20A	131.86	8.21	123.65	12:58
TH-20B	132.57	9.02	123.55	12:57
TH-22	128.82	3.75	125.07	12:46
TH-22A	129.27	4.40	124.87	12:44
TH-24A	128.23	2.83	125.40	12:39
TH-28A	131.10	27.41	103.69	11:36
TH-30	128.88	23.77	105.11	11:25
TH-32	129.90	14.85	115.05	14:25
TH-35	145.98	27.89	118.09	14:07
TH-36A	152.70	33.03	119.67	13:46
TH-38A	130.68	9.36	121.32	13:10
TH-38B	131.81	9.94	121.87	13:11
TH-40*	124.99	93.65	31.34	11:47
TH-41*	125.00	97.75	27.25	11:44
TH-42*	116.74	77.24	39.50	14:29
TH-57	128.36	18.44	109.92	11:39
TH-58	127.88	27.55	100.33	11:28
TH-61	138.73	16.38	122.35	14:30
TH-61A	139.45	15.42	124.03	14:28
TH-64	139.64	15.56	124.08	14:25
TH-65	135.40	12.45	122.95	13:06
TH-66	130.58	6.74	123.84	13:04
TH-66A	130.66	6.81	123.85	13:05
TH-67	129.51	2.99	126.52	13:02
TH-68	140.01	17.05	122.96	14:20
TH-69A	144.97	25.94	119.03	10:51
TH-70A	146.63	26.69	119.94	10:59
TH-71A	146.95	27.14	119.81	13:23
TH-72	130.96	98.72	32.24	11:34
TH-73	131.07	30.22	100.85	11:32
TH-74	109.08	8.90	100.18	11:55
TH-75	106.92	7.34	99.58	11:59
TH-76	111.21	79.04	32.17	10:32
TH-77	119.88	87.48	32.40	10:17
SW-3A	3.0'=125.53'	1.08	123.61	14:41
SW-3B2B	3.0'=97.97'	2.08	97.05	10:37
SW-3C2	6.0'=92.33'	1.90	88.23	14:22
Mine Cut #1	4.0'=122.14'	2.30	120.44	14:34
Mine Cut #2	6.0'=123.47'	2.30	119.77	14:00
Mine Cut #3	4.0'=112.27'	2.20	110.47	14:18
Mine Cut #4	5.0'=97.54'	1.82	94.36	14:11

NGVD = National Geodetic Vertical Datum
T.O.C. = Top of Casing
B.T.O.C. = Below Top of Casing
* = Floridan Well
ND =No Data
W.L. = Water Level



Southeast County Landfill
Groundwater Elevation Contour Diagram – July 3, 2013



JULY 2013
UPPER FLORIDAN / LIMESTONE AQUIFER CONTOUR DIAGRAM
IN THE VICINITY OF THE FORMER SINKHOLE
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

Hillsborough County Southeast Landfill
Laboratory Analytical Results from IAMP Groundwater Monitoring
TH-72

Date	Depth to Water (feet)	Water Table Elevation (NGVD)	conductivity (umhos/cm) (field)	dissolved oxygen (mg/l) (field)	pH (field)	temperature (°C) (field)	turbidity (NTU) (field)	total dissolved solids (mg/l)	chloride (mg/l)	ammonia nitrogen (mg/l as N)	arsenic (mg/l)	iron (mg/l)	sodium (mg/l)
01/27/2011	115.69	15.27	551	0.39	7.43	22.88	3.2	320	32	0.22	0.004 u	**0.52**	32
02/03/2011	112.18	18.78	565	1.09	7.38	22.95	9.9	300	32	0.21	0.004 u	**0.62**	27
02/10/2011	109.80	21.16	514	1.58	7.34	22.65	3.2	340	31	0.28	0.004 u	**0.54**	31
02/14/2011	108.18	22.78	483	1.15	7.36	22.7	3.5	320	32	0.24	0.0013 u	**0.58**	32
02/24/2011	111.71	19.25	513	0.19	7.34	22.85	1	350	32	0.22	0.004 u	**0.53**	31
03/03/2011	111.88	19.08	579	0.77	7.35	22.8	0.8	330	31	0.23	0.004 u	**0.43**	32
03/10/2011	113.65	17.31	551	1.26	7.41	22.73	0.9	320	30	0.18	0.004 u	**0.35**	31
03/17/2011	112.85	18.11	388	1.05	7.34	22.9	0.9	330	30	0.31	0.004 u	0.25	31
03/24/2011	114.33	16.63	1192	1.5	7.58	23.1	1.5	**1,100**	**350**	**9**	0.004 u	**0.64**	130
04/01/2011	115.70	15.26	928	0.16	7.41	22.8	3.6	**520**	110	2	0.004 u	0.24	59
04/08/2011	112.10	18.86	810	0.92	7.35	23.13	6.1	420	87	1.9	0.004 u	0.22	51
05/05/2011	116.21	14.75	609	0.71	7.67	23.01	6.6	320	33	0.3	0.004 u	0.27	37
06/08/2011	119.19	11.77	607	0.71	7.65	23.35	4.51	340	32	0.57	0.004 u	0.2	34
07/07/2011	113.30	17.66	606	0.72	7.4	23.25	3.94	150	64	2.1	0.004 u	**7.9**	27
08/04/2011	103.31	27.65	564	0.33	7.29	23.18	0.4	360	33	0.21	0.004 u	0.18 i	34
09/08/2011	97.99	32.97	536	1.11	7.29	23.2	0.6	340	34	0.41	0.004 u	0.18 i	36
10/04/2011	99.45	31.51	471	1.69	7.31	23.13	1.1	290	31	0.3	0.004 u	0.14 i	34
11/03/2011	103.37	27.59	550	1.8	7.28	23.04	1.51	290	32	0.29	0.004 u	0.15 i	34
12/08/2011	106.80	24.16	528	1.92	7.31	22.9	0.73	320	29	0.32	0.004 u	0.13 i	33
01/05/2012	113.08	17.88	535	0.2	7.23	22.74	0.44	330	32	0.29	0.004 u	0.097 i	31
02/10/2012	113.86	17.10	511	0.94	7.3	22.89	1.39	310	28	0.28	0.004 u	0.13 i	30
03/07/2012	121.00	9.96	575	0.27	7.15	23.23	0.5	310	25	0.22	0.004 u	0.11 i	31
04/05/2012	124.96	6.00	522	1.09	7.08	23.18	0.65	280	28	0.41	0.004 u	0.11 i	29
05/03/2012	126.55	4.41	746	1.6	6.9	23.46	0.81	380	72	2.3	0.004 u	**0.54**	49
06/07/2012	120.46	10.50	641	0.72	7.07	23.4	0.26	370	46	1	0.004 u	0.23	37
07/05/2012	104.95	26.01	900	0.23	6.54	23.52	0.4	**650**	190	**2.9 j3**	0.004 u	**0.39**	70
08/03/2012	98.26	32.70	843	0.69	6.77	23.6	2.23	**730**	210	**3**	0.004 u	**0.48**	78
09/06/2012	91.18	39.66	2,357	0.2	6.51	23.62	1.05	**1,300**	**570**	**12**	0.004 u	**1.1**	**170**
10/04/2012	90.19	40.77	1,654	0.6	**6.43**	23.22	0.46	**1,500**	**650**	**25**	0.004 u	**1.9**	**210**
11/07/2012	99.29	31.67	2,488	0.76	6.58	23.03	0.74	**1,400**	**540**	**15**	0.004 u	**1.4**	**180**
12/05/2012	101.82	29.14	2,416	0.23	**6.49**	23.18	0.45	**1,300**	**540**	**13**	0.004 u	**1.3**	**180 j3**
01/03/2013	100.65	30.31	2,430	1.1	**6.44**	23.09	0.42	**1,400**	**500**	**15**	0.004 u	**1.3**	**170 j3**
02/07/2013	105.58	25.38	2,206	0.6	6.5	23.1	0.22	**1,100**	**470**	**13**	0.004 u	**1.1**	160
03/07/2013	110.00	20.96	1,234	0.3	6.61	22.85	0.41	**770**	**290**	**11**	0.004 u	**1.1**	110
04/04/2013	111.35	19.61	1,252	0.33	6.74	23.15	9.9	**870**	**260**	**10**	0.004 u	**1**	100
05/02/2013	109.56	21.40	1,615	0.18	6.83	23.16	0.45	**810**	**300**	**8.6**	0.004 u	**0.87**	110
06/05/2013	109.62	21.34	1,440	0.31	7.13	23.3	0.27	**850**	**290**	**8.4**	0.004 u	**0.82**	120

New survey data beginning with 10/4/2012.

u = parameter was analyzed but not detected

i = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

j3 = estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

1,100 EXCEEDS STANDARD

Hillsborough County Southeast Landfill
Laboratory Analytical Results from IAMP Groundwater Monitoring
TH-76

Date	Depth to Water (feet)	Water Table Elevation (NGVD)	conductivity (umhos/cm) (field)	dissolved oxygen (mg/l) (field)	pH (field)	temperature (°C) (field)	turbidity (NTU) (field)	total dissolved solids (mg/l)	chloride (mg/l)	ammonia nitrogen (mg/l as N)	arsenic (mg/l)	iron (mg/l)	sodium (mg/l)
05/02/2013	89.83	21.38	450	0.22	7.63	22.81	36.9	220	13	0.4	0.004 u	**1.1**	20
06/05/2013	89.91	21.30	401	0.27	7.86	22.9	16.2	240	13	0.4	0.004 u	**0.66**	22

u = parameter was analyzed but not detected

1.1 EXCEEDS STANDARD

Hillsborough County Southeast Landfill
Laboratory Analytical Results from IAMP Groundwater Monitoring
TH-77

Date	Depth to Water (feet)	Water Table Elevation (NGVD)	conductivity (umhos/cm) (field)	dissolved oxygen (mg/l) (field)	pH (field)	temperature (°C) (field)	turbidity (NTU) (field)	total dissolved solids (mg/l)	chloride (mg/l)	ammonia nitrogen (mg/l as N)	arsenic (mg/l)	iron (mg/l)	sodium (mg/l)
05/02/2013	98.31	21.57	440	0.57	7.39	23.39	59.4	190	9.4	0.39	0.004 u	**1.2**	17
06/05/2013	98.38	21.50	384	0.56	7.86	23.59	35.4	230	8.9	0.42	0.004 u	**0.89**	18

u = parameter was analyzed but not detected

1.2 EXCEEDS STANDARD

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Tampa
6712 Benjamin Road
Suite 100
Tampa, FL 33634
Tel: (813)885-7427

TestAmerica Job ID: 660-55277-1
Client Project/Site: SELF IAMP Monitoring Wells

For:
Hillsborough County Public Utilities Dep
Solid Waste Management Group
Brandon Support Operations Complex
332 North Falkenburg Rd, 2nd Floor
Tampa, Florida 33619

Attn: David Adams

Authorized for release by:
7/16/2013 2:32:26 PM

Nancy Robertson, Project Manager II
nancy.robertson@testamericainc.com

Table of Contents

Sample Summary

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
660-55277-1	BLANK EQUIPMENT	Ground Water	07/03/13 10:15	07/03/13 15:45
660-55277-2	TH-77	Ground Water	07/03/13 11:09	07/03/13 15:45
660-55277-3	TH-76	Ground Water	07/03/13 12:06	07/03/13 15:45
660-55277-4	TH-72	Ground Water	07/03/13 13:22	07/03/13 15:45

Job ID: 660-55277-1

Laboratory: TestAmerica Tampa

Narrative

Job Narrative
660-55277-1

Comments
No additional comments.

Receipt
The samples were received on 7/3/2013 3:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3º C.

Metals
No analytical or quality issues were noted.

General Chemistry
Method 300.0: Spike compounds were inadvertently omitted matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for batch 284142. The associated laboratory control sample (LCS) and sample duplicates met acceptance criteria. The sample is flagged with J3.

No other analytical or quality issues were noted.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

Metals

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

General Chemistry

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Detection Summary

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Client Sample ID: BLANK EQUIPMENT — Lab Sample ID: 660-55277-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	0.39	I	0.50	0.31	mg/L	1		6010B	Total Recoverable

Client Sample ID: TH-77 — Lab Sample ID: 660-55277-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.9	J3	0.50	0.25	mg/L	1		300.0	Total/NA
Iron	1100		200	50	ug/L	1		6010B	Total Recoverable
Sodium	17		0.50	0.31	mg/L	1		6010B	Total Recoverable
Ammonia as N	0.40		0.050	0.026	mg/L	1		350.1	Total/NA
Total Dissolved Solids	210		10	10	mg/L	1		SM 2540C	Total/NA
Field pH	7.80				SU	1		Field Sampling	Total/NA
Field Temperature	23.7				Degrees C	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.41				mg/L	1		Field Sampling	Total/NA
Specific Conductance	388				uS/cm	1		Field Sampling	Total/NA
Turbidity	38.4				NTU	1		Field Sampling	Total/NA

Client Sample ID: TH-76 — Lab Sample ID: 660-55277-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12		0.50	0.25	mg/L	1		300.0	Total/NA
Iron	990		200	50	ug/L	1		6010B	Total Recoverable
Sodium	22		0.50	0.31	mg/L	1		6010B	Total Recoverable
Ammonia as N	0.34		0.050	0.026	mg/L	1		350.1	Total/NA
Total Dissolved Solids	210		10	10	mg/L	1		SM 2540C	Total/NA
Field pH	8.00				SU	1		Field Sampling	Total/NA
Field Temperature	23.0				Degrees C	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.19				mg/L	1		Field Sampling	Total/NA
Specific Conductance	398				uS/cm	1		Field Sampling	Total/NA
Turbidity	28.6				NTU	1		Field Sampling	Total/NA

Client Sample ID: TH-72 — Lab Sample ID: 660-55277-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	280		5.0	2.5	mg/L	10		300.0	Total/NA
Iron	790		200	50	ug/L	1		6010B	Total Recoverable
Sodium	120		0.50	0.31	mg/L	1		6010B	Total Recoverable
Ammonia as N	8.8		0.25	0.13	mg/L	5		350.1	Total/NA
Total Dissolved Solids	820		25	25	mg/L	1		SM 2540C	Total/NA
Field pH	7.03				SU	1		Field Sampling	Total/NA
Field Temperature	23.5				Degrees C	1		Field Sampling	Total/NA
Oxygen, Dissolved	0.18				mg/L	1		Field Sampling	Total/NA
Specific Conductance	1450				uS/cm	1		Field Sampling	Total/NA
Turbidity	0.41				NTU	1		Field Sampling	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Client Sample ID: BLANK EQUIPMENT
Date Collected: 07/03/13 10:15
Date Received: 07/03/13 15:45

Lab Sample ID: 660-55277-1
Matrix: Ground Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.25	U	0.50	0.25	mg/L			07/10/13 22:14	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		07/09/13 09:13	07/09/13 15:16	1
Iron	50	U	200	50	ug/L		07/09/13 09:13	07/09/13 15:16	1
Sodium	**0.39**	**I**	0.50	0.31	mg/L		07/09/13 09:13	07/09/13 15:16	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	0.026	U	0.050	0.026	mg/L			07/08/13 15:30	1
Total Dissolved Solids	5.0	U	5.0	5.0	mg/L			07/10/13 11:43	1

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Client Sample ID: TH-77
Date Collected: 07/03/13 11:09
Date Received: 07/03/13 15:45

Lab Sample ID: 660-55277-2
Matrix: Ground Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.9	J3	0.50	0.25	mg/L			07/10/13 21:19	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		07/09/13 09:13	07/09/13 15:20	1
Iron	1100		200	50	ug/L		07/09/13 09:13	07/09/13 15:20	1
Sodium	17		0.50	0.31	mg/L		07/09/13 09:13	07/09/13 15:20	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	0.40		0.050	0.026	mg/L			07/08/13 15:30	1
Total Dissolved Solids	210		10	10	mg/L			07/10/13 11:43	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.80				SU			07/03/13 11:09	1
Field Temperature	23.7				Degrees C			07/03/13 11:09	1
Oxygen, Dissolved	0.41				mg/L			07/03/13 11:09	1
Specific Conductance	388				uS/cm			07/03/13 11:09	1
Turbidity	38.4				NTU			07/03/13 11:09	1

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Client Sample ID: TH-76
Date Collected: 07/03/13 12:06
Date Received: 07/03/13 15:45

Lab Sample ID: 660-55277-3
Matrix: Ground Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		0.50	0.25	mg/L			07/10/13 21:57	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		07/09/13 09:13	07/09/13 15:23	1
Iron	990		200	50	ug/L		07/09/13 09:13	07/09/13 15:23	1
Sodium	22		0.50	0.31	mg/L		07/09/13 09:13	07/09/13 15:23	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	0.34		0.050	0.026	mg/L			07/08/13 15:30	1
Total Dissolved Solids	210		10	10	mg/L			07/10/13 11:43	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.00				SU			07/03/13 12:06	1
Field Temperature	23.0				Degrees C			07/03/13 12:06	1
Oxygen, Dissolved	0.19				mg/L			07/03/13 12:06	1
Specific Conductance	398				uS/cm			07/03/13 12:06	1
Turbidity	28.6				NTU			07/03/13 12:06	1

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Client Sample ID: TH-72
Date Collected: 07/03/13 13:22
Date Received: 07/03/13 15:45

Lab Sample ID: 660-55277-4
Matrix: Ground Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	280		5.0	2.5	mg/L			07/10/13 22:21	10

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		07/09/13 09:13	07/09/13 15:26	1
Iron	790		200	50	ug/L		07/09/13 09:13	07/09/13 15:26	1
Sodium	120		0.50	0.31	mg/L		07/09/13 09:13	07/09/13 15:26	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	8.8		0.25	0.13	mg/L			07/08/13 17:11	5
Total Dissolved Solids	820		25	25	mg/L			07/10/13 11:43	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.03				SU			07/03/13 13:22	1
Field Temperature	23.5				Degrees C			07/03/13 13:22	1
Oxygen, Dissolved	0.18				mg/L			07/03/13 13:22	1
Specific Conductance	1450				uS/cm			07/03/13 13:22	1
Turbidity	0.41				NTU			07/03/13 13:22	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 680-284142/2
Matrix: Water
Analysis Batch: 284142

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.25	U	0.50	0.25	mg/L			07/10/13 20:30	1

Lab Sample ID: LCS 680-284142/3
Matrix: Water
Analysis Batch: 284142

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.66		mg/L		97	90 - 110

Lab Sample ID: LCSD 680-284142/4
Matrix: Water
Analysis Batch: 284142

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	9.67		mg/L		97	90 - 110	0	30

Lab Sample ID: 660-55277-2 MS
Matrix: Ground Water
Analysis Batch: 284142

Client Sample ID: TH-77
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	8.9	J3	10.0	8.89	J3	mg/L		-0.01	90 - 110

Lab Sample ID: 660-55277-2 MSD
Matrix: Ground Water
Analysis Batch: 284142

Client Sample ID: TH-77
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	8.9	J3	10.0	8.90	J3	mg/L		0.05	90 - 110	0	30

Lab Sample ID: 660-55277-3 DU
Matrix: Ground Water
Analysis Batch: 284142

Client Sample ID: TH-76
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	12		12.5		mg/L		0.1	30

Lab Sample ID: MB 680-284150/2
Matrix: Water
Analysis Batch: 284150

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.25	U	0.50	0.25	mg/L			07/10/13 13:03	1

Lab Sample ID: LCS 680-284150/3
Matrix: Water
Analysis Batch: 284150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	9.93		mg/L		99	90 - 110

Lab Sample ID: LCSD 680-284150/4
Matrix: Water
Analysis Batch: 284150

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			10.0	9.93		mg/L		99	90 - 110	0	30

Lab Sample ID: 660-55259-D-1 MS
Matrix: Water
Analysis Batch: 284150

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	42		20.0	62.2		mg/L		100	90 - 110		

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 660-139189/1-A
Matrix: Water
Analysis Batch: 139195

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 139189

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.0	U	10	4.0	ug/L		07/09/13 09:13	07/09/13 14:22	1
Iron	50	U	200	50	ug/L		07/09/13 09:13	07/09/13 14:22	1
Sodium	0.31	U	0.50	0.31	mg/L		07/09/13 09:13	07/09/13 14:22	1

Lab Sample ID: LCS 660-139189/2-A
Matrix: Water
Analysis Batch: 139195

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 139189

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic			1000	991		ug/L		99	80 - 120		
Iron			1000	1010		ug/L		101	80 - 120		
Sodium			10.0	9.91		mg/L		99	80 - 120		

Lab Sample ID: 640-44177-B-1-B MS
Matrix: Water
Analysis Batch: 139195

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 139189

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	4.0	U	1000	1020		ug/L		102	80 - 120		
Iron	330		1000	1320		ug/L		100	80 - 120		
Sodium	46		10.0	55.7		mg/L		101	80 - 120		

Lab Sample ID: 640-44177-B-1-C MSD
Matrix: Water
Analysis Batch: 139195

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 139189

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	4.0	U	1000	1020		ug/L		102	80 - 120	0	20
Iron	330		1000	1330		ug/L		100	80 - 120	1	20
Sodium	46		10.0	55.5		mg/L		99	80 - 120	0	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 680-283694/28
Matrix: Water
Analysis Batch: 283694

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	0.026	U	0.050	0.026	mg/L			07/08/13 15:49	1

Lab Sample ID: LCS 680-283694/11
Matrix: Water
Analysis Batch: 283694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	1.00	1.03		mg/L		103	90 - 110

Lab Sample ID: 400-76910-C-2 MS
Matrix: Water
Analysis Batch: 283694

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia as N	0.14		1.00	1.14		mg/L		100	90 - 110

Lab Sample ID: 400-76910-C-2 MSD
Matrix: Water
Analysis Batch: 283694

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia as N	0.14		1.00	1.15		mg/L		101	90 - 110	1	30

Lab Sample ID: 400-76927-E-1 DU
Matrix: Water
Analysis Batch: 283694

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia as N	4.1		4.11		mg/L		0.6	30

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 660-139250/1
Matrix: Water
Analysis Batch: 139250

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5.0	U	5.0	5.0	mg/L			07/10/13 11:43	1

Lab Sample ID: LCS 660-139250/2
Matrix: Water
Analysis Batch: 139250

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	10000	9930		mg/L		99	80 - 120

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 660-55277-2 DU
Matrix: Ground Water
Analysis Batch: 139250

Client Sample ID: TH-77
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	210			236		mg/L				13	20

HPLC/IC

Analysis Batch: 284142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-55277-2	TH-77	Total/NA	Ground Water	300.0	
660-55277-2 MS	TH-77	Total/NA	Ground Water	300.0	
660-55277-2 MSD	TH-77	Total/NA	Ground Water	300.0	
660-55277-3	TH-76	Total/NA	Ground Water	300.0	
660-55277-3 DU	TH-76	Total/NA	Ground Water	300.0	
660-55277-4	TH-72	Total/NA	Ground Water	300.0	
LCS 680-284142/3	Lab Control Sample	Total/NA	Water	300.0	
LCSD 680-284142/4	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-284142/2	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 284150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-55259-D-1 MS	Matrix Spike	Total/NA	Water	300.0	
660-55277-1	BLANK EQUIPMENT	Total/NA	Ground Water	300.0	
LCS 680-284150/3	Lab Control Sample	Total/NA	Water	300.0	
LCSD 680-284150/4	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 680-284150/2	Method Blank	Total/NA	Water	300.0	

Metals

Prep Batch: 139189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
640-44177-B-1-B MS	Matrix Spike	Total Recoverable	Water	3005A	
640-44177-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
660-55277-1	BLANK EQUIPMENT	Total Recoverable	Ground Water	3005A	
660-55277-2	TH-77	Total Recoverable	Ground Water	3005A	
660-55277-3	TH-76	Total Recoverable	Ground Water	3005A	
660-55277-4	TH-72	Total Recoverable	Ground Water	3005A	
LCS 660-139189/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 660-139189/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 139195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
640-44177-B-1-B MS	Matrix Spike	Total Recoverable	Water	6010B	139189
640-44177-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	6010B	139189
660-55277-1	BLANK EQUIPMENT	Total Recoverable	Ground Water	6010B	139189
660-55277-2	TH-77	Total Recoverable	Ground Water	6010B	139189
660-55277-3	TH-76	Total Recoverable	Ground Water	6010B	139189
660-55277-4	TH-72	Total Recoverable	Ground Water	6010B	139189
LCS 660-139189/2-A	Lab Control Sample	Total Recoverable	Water	6010B	139189
MB 660-139189/1-A	Method Blank	Total Recoverable	Water	6010B	139189

General Chemistry

Analysis Batch: 139250

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-55277-1	BLANK EQUIPMENT	Total/NA	Ground Water	SM 2540C	
660-55277-2	TH-77	Total/NA	Ground Water	SM 2540C	
660-55277-2 DU	TH-77	Total/NA	Ground Water	SM 2540C	
660-55277-3	TH-76	Total/NA	Ground Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 139250 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-55277-4	TH-72	Total/NA	Ground Water	SM 2540C	
LCS 660-139250/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 660-139250/1	Method Blank	Total/NA	Water	SM 2540C	

Analysis Batch: 283694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-76910-C-2 MS	Matrix Spike	Total/NA	Water	350.1	
400-76910-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	350.1	
400-76927-E-1 DU	Duplicate	Total/NA	Water	350.1	
660-55277-1	BLANK EQUIPMENT	Total/NA	Ground Water	350.1	
660-55277-2	TH-77	Total/NA	Ground Water	350.1	
660-55277-3	TH-76	Total/NA	Ground Water	350.1	
660-55277-4	TH-72	Total/NA	Ground Water	350.1	
LCS 680-283694/11	Lab Control Sample	Total/NA	Water	350.1	
MB 680-283694/28	Method Blank	Total/NA	Water	350.1	

Field Service / Mobile Lab

Analysis Batch: 139162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-55277-2	TH-77	Total/NA	Ground Water	Field Sampling	
660-55277-3	TH-76	Total/NA	Ground Water	Field Sampling	
660-55277-4	TH-72	Total/NA	Ground Water	Field Sampling	

Client Sample ID: BLANK EQUIPMENT

Lab Sample ID: 660-55277-1

Date Collected: 07/03/13 10:15

Matrix: Ground Water

Date Received: 07/03/13 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	284150	07/10/13 22:14	PAT	TAL SAV
Total Recoverable	Prep	3005A			139189	07/09/13 09:13	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	139195	07/09/13 15:16	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	139250	07/10/13 11:43	TKO	TAL TAM
Total/NA	Analysis	350.1		1	283694	07/08/13 15:30	JME	TAL SAV

Client Sample ID: TH-77

Lab Sample ID: 660-55277-2

Date Collected: 07/03/13 11:09

Matrix: Ground Water

Date Received: 07/03/13 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	284142	07/10/13 21:19	PAT	TAL SAV
Total Recoverable	Prep	3005A			139189	07/09/13 09:13	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	139195	07/09/13 15:20	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	139250	07/10/13 11:43	TKO	TAL TAM
Total/NA	Analysis	350.1		1	283694	07/08/13 15:30	JME	TAL SAV
Total/NA	Analysis	Field Sampling		1	139162	07/03/13 11:09		TAL TAM

Client Sample ID: TH-76

Lab Sample ID: 660-55277-3

Date Collected: 07/03/13 12:06

Matrix: Ground Water

Date Received: 07/03/13 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	284142	07/10/13 21:57	PAT	TAL SAV
Total Recoverable	Prep	3005A			139189	07/09/13 09:13	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	139195	07/09/13 15:23	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	139250	07/10/13 11:43	TKO	TAL TAM
Total/NA	Analysis	350.1		1	283694	07/08/13 15:30	JME	TAL SAV
Total/NA	Analysis	Field Sampling		1	139162	07/03/13 12:06		TAL TAM

Client Sample ID: TH-72

Lab Sample ID: 660-55277-4

Date Collected: 07/03/13 13:22

Matrix: Ground Water

Date Received: 07/03/13 15:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	284142	07/10/13 22:21	PAT	TAL SAV
Total Recoverable	Prep	3005A			139189	07/09/13 09:13	GAF	TAL TAM
Total Recoverable	Analysis	6010B		1	139195	07/09/13 15:26	GAF	TAL TAM
Total/NA	Analysis	SM 2540C		1	139250	07/10/13 11:43	TKO	TAL TAM
Total/NA	Analysis	350.1		5	283694	07/08/13 17:11	JME	TAL SAV
Total/NA	Analysis	Field Sampling		1	139162	07/03/13 13:22		TAL TAM

Lab Chronicle

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Method Summary

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL SAV
6010B	Metals (ICP)	SW846	TAL TAM
350.1	Nitrogen, Ammonia	MCAWW	TAL SAV
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL TAM
Field Sampling	Field Sampling	EPA	TAL TAM

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Certification Summary

Client: Hillsborough County Public Utilities Dep
Project/Site: SELF IAMP Monitoring Wells

TestAmerica Job ID: 660-55277-1

Laboratory: TestAmerica Tampa

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40610	06-30-13 *
Florida	NELAP	4	E84282	06-30-14
Georgia	State Program	4	905	06-30-13 *
USDA	Federal		P330-11-00177	04-20-14

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		399.01	07-31-13
A2LA	ISO/IEC 17025		399.01	02-28-15
Arkansas DEQ	State Program	6	88-0692	02-01-14 *
California	NELAP	9	3217CA	07-31-13
Colorado	State Program	8	N/A	12-31-13
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13
Georgia	State Program	4	N/A	06-30-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13
Iowa	State Program	7	353	07-01-13 *
Kentucky	State Program	4	90084	12-31-13
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Louisiana	NELAP	6	LA100015	12-31-13
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13
Montana	State Program	8	CERT0081	01-01-14
Nebraska	State Program	7	TestAmerica-Savannah	06-30-13 *
New Jersey	NELAP	2	GA769	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13
North Carolina DHHS	State Program	4	13701	07-31-13
Oklahoma	State Program	6	9984	08-31-13
Puerto Rico	State Program	2	GA00006	01-01-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13
West Virginia DEP	State Program	3	94	09-30-13
Wisconsin	State Program	5	999819810	08-31-13

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Tampa
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427 Fax (813) 885-7049

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

7/16/2013

Client Information	Sampler:	Lab PM: Robertson, Nancy	Carrier Tracking No(s).	COC No: 660-49216-16005 1
Client Contact: Michael Townsel	Phone:	E-Mail: nancy.robertson@testamericainc.com		Page: Page 1 of 1
Company: Hillsborough County Public Utilities Dep				Job #:

Address: Solid Waste Management Group Brandon Support Operations Co	Due Date Requested:	
City: Tampa	TAT Requested (days):	
State, Zip: FL, 33619		
Phone:	PO #: DPSW11616001	
Email: townselm@hillsboroughcounty.org	WO #:	
Project Name: SELF	Project #: 66003915	
Site: Florida	SSOW#:	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6010B - AS,FE,NA	2540C - Total Dissolved Solids	300.0_28D - Chloride	350.1 - Ammonia as N	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	S		
EqBlnk	7/3/13	1015	S	Water			1	1	1	1		
TA77		1109		Water								
TA76 = 1106		[illegible]		Water								
TA72		1322		Water								

660-55277 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by: [illegible]	Date: 6/27/13	Time: 1000	Method of Shipment:		
Relinquished by:	Date/Time: 7/3/13 1545	Company: TATPA	Received by: Carol McMullen	Date/Time: 7/3/13 1545	Company: TAtampa
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.3° C IR07

TestAmerica Tampa
6712 Benjamin Road Suite 100
Tampa, FL 33634
Phone (813) 885-7427 Fax (813) 885-7049

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Robertson, Nancy	Carrier Tracking No(s):	COC No: 660-57566.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: nancy.robertson@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 660-55277-1

Address: 5102 LaRoche Avenue, ,	Due Date Requested: 7/11/2013
City: Savannah	TAT Requested (days):
State, Zip: GA, 31404	PO #
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	WO #:
Email:	Project #: 66003915
Project Name: SELF MWs,SS,Private Wells,NPDES	SSOW#:
Site: Southeast Landfill	

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D/ Chloride	350.1/ Nitrogen, Ammonia	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Eq Blank (660-55277-1)	7/3/13	10:15 Eastern		Water			X	X	2	
TH 77 (660-55277-2)	7/3/13	11:09 Eastern		Water			X	X	2	
TH 76 (660-55277-3)	7/3/13	12:06 Eastern		Water			X	X	2	
TH 72 (660-55277-4)	7/3/13	13:22 Eastern		Water			X	X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment

Relinquished by:	Date/Time: 7-5-13 @ 1530	Company: TAT	Received by	Date/Time: 07/05/13 1530	Company: TAT
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.0/3.0°C

Page 22 of 27

7/16/2013

1BI556 / 129104 180
DO2on 4500 / 003 4/4

TestAmerica 6712 Benjamin Rd., Ste. 100, Tampa, FL 33634
DEP-SOP-001/01
FS 2200 Groundwater Sampling

GROUNDWATER SAMPLING LOG SET C

COC#: 660492161600051

Meters:

SITE NAME: AcSw/ SELF		SITE LOCATION: Citra Fl	
WELL NO:	SAMPLE ID: TH 77		DATE: 7/3/13

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 87.48	PURGE PUMP TYPE OR BAILER: BP

Measuring Point Elevation (ft/msl) - Water Level = Water Level Elevation
MP Elevation =

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= 169.20 feet – 87.48 (81.72 feet) X .16 gallons/foot = 13.07 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 168.20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 168.20	PURGING INITIATED AT: 1028	PURGING ENDED AT: 1109	TOTAL VOLUME PURGED (gallons): 20.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)		COLOR describe	ODOR
1055	13.50	13.50	.50	87.75	7.80	23.8	388	.38	35.0		cloudy	yes
1102	3.50	17.0	.50	87.75	7.80	23.7	388	.46	36.3		cloudy	yes
1109	3.50	20.5	.50	87.75	7.80	23.7	388	.41	38.4		cloudy	yes

JP 7/3/13

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Jason Fine / TAFPD	SAMPLER(S) SIGNATURE(S): Jason Fine	SAMPLING INITIATED AT: 1032	SAMPLING ENDED AT: 1116
PUMP OR TUBING DEPTH IN WELL (feet): 168.20	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y ~~N (replaced)~~ N	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
TH77	1	PE	250mL	HNO3	Ø	<2	6010B	BP/T	
↓	↓	↓	500mL	ICE	↓	7.80	2540C	↓	
			125mL	↓		↓	CL		
			250mL	H2SO4		<2	350.1		

REMARKS:
Orion meters used dedicated Pump + Tubing EqBlank 1015. cloudy 80°

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

(55277)

YSI 556 / 12G104180
Orion 4500 / 003414

TestAmerica 6712 Benjamin Rd., Ste. 100, Tampa, FL 33634
DEP-SOP-001/01
FS 2200 Groundwater Sampling

GROUNDWATER SAMPLING LOG SET C

60004921660051

COC#: ____________

Meters:

SITE NAME: ACSW/SECF		SITE LOCATION: Lithia FL
WELL NO:	SAMPLE ID: TH76	DATE: 7/3/13

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 79.0	PURGE PUMP TYPE OR BAILER: BP

Measuring Point Elevation (ft/msl) - **Water Level** = **Water Level Elevation**
MP Elevation =

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (178.35 feet – 79.0 (99.35) feet) X .16 gallons/foot = 15.89 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 177.35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 177.35	PURGING INITIATED AT: 1118	PURGING ENDED AT: 1206	TOTAL VOLUME PURGED (gallons): 24.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) μmhos/cm or (μS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)		COLOR describe	ODOR
1150	16.0	16.0	.150	80.55	8.03	23.0	397	.19	27.2		cloudy	yes
1158	4.0	20.0	.150	80.55	8.01	23.0	398	.19	27.0		cloudy	yes
1206	4.0	24.0	.150	80.55	8.00	23.0	398	.19	26.6		cloudy	yes

JR 7/3/13

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT)/ AFFILIATION: Jason Fine TATPA	SAMPLER(S) SIGNATURE(S): Jason Fine	SAMPLING INITIATED AT: 1116	SAMPLING ENDED AT: 1212
PUMP OR TUBING DEPTH IN WELL (feet): 177.35	TUBING MATERIAL CODE:	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ μm
FIELD DECONTAMINATION: PUMP Y (N)	TUBING Y ~~N (replaced)~~ (N)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
TH76	1	PE	250mL	HNO_3	Ø	≤2	6010B	BP/T	
↓	↓	↓	500mL	cool	↓		2540C	↓	
			125mL	↓			CL		
			250mL	H_2SO_4		≤2	350.1		

REMARKS:
Tests meters used dedicated Pump + Tubing . Cloudy 82°F

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form #: FFD016:03.24.10:03

Logbook ID#: NFD120:06.5.13:0

660492166005

TestAmerica 6712 Benjamin Rd., Ste. 100, Tampa, FL 33634
DEP-SOP-001/01
FS 2200 Groundwater Sampling

GROUNDWATER SAMPLING LOG SET C

1/SI556/12310418D
Meters: 0[illegible]/003414

COC#:

SITE NAME: HCSW/SELF		SITE LOCATION: Citra Fl	
WELL NO:	SAMPLE ID: TA72		DATE: 7/3/13

PURGING DATA

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 1/2"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 98.67	PURGE PUMP TYPE OR BAILER: BP

Measuring Point Elevation (ft/msl) - Water Level = Water Level Elevation
MP Elevation =

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (190.0 feet – 98.67 (91.33) feet) X .16 gallons/foot = 14.61 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 189.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 189.0	PURGING INITIATED AT: 1236	PURGING ENDED AT: 1322	TOTAL VOLUME PURGED (gallons): 23.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)		COLOR describe	ODOR
1306	15.0	15.0	.50	98.68	7.03	23.5	1452	.20	1.30		clear	yes
1314	4.0	19.0	.50	98.68	7.03	23.5	1448	.19	.47		clear	yes
1322	4.0	23.0	.50	98.68	7.03	23.5	1450	.18	.41		clear	yes

[initials] 7/3/13

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Jasmine TATPA	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING INITIATED AT: 1236	SAMPLING ENDED AT: 1333
PUMP OR TUBING DEPTH IN WELL (feet): 189.0	TUBING MATERIAL CODE: T	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: ___ µm
FIELD DECONTAMINATION: PUMP Y N	TUBING Y N (replaced)	DUPLICATE: Y N	

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	1	PE	250ml	HNO3	0	≤2	6010B	BP/T	
	↓	↓	500ml	Cool	↓		TDS	↓	
	↓	↓	125ml	↓	↓		Cl	↓	
	↓	↓	250ml	H2SO4	↓	≤2	350.1	↓	

REMARKS:
Clients meters used dedicated pump + tubing   cloudy 86°F

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Form #: FFD016:03.24.10:03
Logbook ID#: NFD120:06.5.13:0

Login Sample Receipt Checklist

Client: Hillsborough County Public Utilities Dep

Job Number: 660-55277-1

Login Number: 55277

List Source: TestAmerica Tampa

List Number: 1

Creator: Redding, Charles S

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Hillsborough County Public Utilities Dep

Job Number: 660-55277-1

Login Number: 55277
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah
List Creation: 07/06/13 09:39 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	