Board of County
Commissioners
Kevin Beckner
Victor D. Crist
Ken Hagan
Al Higginbotham
Lesley "Les" Miller, Jr.
Sandra L. Murman

County Administrator Michael S. Merrill

Stacy R. White

County Administrator
Executive Team
Lucia E. Garsys
Carl S. Harness
Gregory S. Horwedel
Ramin Kouzehkanani
Liana Lopez
Bonnie M. Wise

Interim Internal Auditor
Peggy Caskey

County Attorney
Chip Fletcher



**Dept.** Of Environmental Protection

**Hillsborough County** 

JUN 0 1 2015

Southwest District

April 28, 2015

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. 55 – March 2015

Dear Mr. Morris:

The Hillsborough County Public Utilities Department (County) is pleased to provide the analytical results from the March 2015 sampling event conducted as part of the continuation of the Initial Assessment Monitoring Plan (IAMP). The IAMP was developed to address the potential impacts to groundwater from the sinkhole on the edge of Phase 6 at the Southeast County Landfill (SCLF), which was discovered on December 14, 2010.

As part of the agreement between the County and Florida Department of Environmental Protection (Department) Southwest District Office, four (4) upper Floridan/Limestone aquifer monitoring wells, designated as TH-72, TH-76, TH-77, and TH-78 are sampled on a monthly schedule. Representative samples were collected from each of these four (4) monitoring wells on March 4-5, 2015 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, Advanced Environmental Laboratories, Inc. The following paragraphs summarize the parameter specific results pertinent to the evaluation of potential water quality impacts from the sinkhole at the SCLF.

Mr. John Morris, P.G. April 28, 2015 Page 2

#### pH

pH was observed within the Secondary Drinking Water Standard (SDWS) acceptable range of 6.5-8.5 pH units in each of the four (4) upper Floridan/Limestone aquifer monitoring wells. The pH values in monitoring wells, TH-72, TH-76, TH-77, and TH-78 were recorded at 6.87, 7.58, 7.56, and 8.23 pH units, respectively, and the values are consistent with the historical data set.

#### **Turbidity**

Turbidity values in the upper Floridan/Limestone aquifer monitoring wells TH-72, TH-76, TH-77, and TH-78 were recorded at 0.66, 0.68, 0.63, and 0.62 Nephelometric Turbidity Units (NTUs), respectively, and these values are consistent with the historical data set.

#### Conductivity

The conductivity values in TH-72, TH-76, TH-77, and TH-78 were recorded at 2,486, 500, 490, and 605 umhos/cm, respectively. Monitoring well TH-72 is the closest upper Floridan/Limestone aquifer monitoring well to the sinkhole, and it continues to exhibit groundwater impacts similar to those observed over the past year. Conductivity values in TH-76, TH-77, and TH-78 are relatively low and consistent with the other unaffected deep wells across the site.

#### **Total Dissolved Solids (TDS)**

The TDS in monitoring well TH-72 was observed at 1,300 mg/l, which continues to be above the SDWS of 500 mg/l. The remaining three (3) down gradient upper Floridan/Limestone aquifer monitoring wells, TH-76, TH-77, and TH-78 exhibited TDS values of 270, 250, and 300 mg/l, respectively. These values are consistent with the water quality of the unaffected deep wells across the site.

#### Chloride

Chloride was observed at 450 mg/l in monitoring well TH-72, which is above the SDWS of 250 mg/l. Chloride values in the down gradient upper Floridan/Limestone aquifer monitoring wells TH-76, TH-77, and TH-78 were observed at 13, 7.6, and 28 mg/l. These values are consistent with the unaffected deep wells across the site.

#### Iron

The total iron concentration in the upper Floridan/Limestone aquifer monitoring well TH-72 was 0.65 mg/l, which is above the SDWS of 0.3 mg/l. The remaining three monitoring wells, TH-76, TH-77, and TH-78 exhibited iron below the SDWS at 0.095, 0.11, and 0.24 mg/l, respectively. The concentrations of iron observed are consistent with the historical data sets for these wells.

Mr. John Morris, P.G. April 28, 2015 Page 3

#### **Sodium**

Sodium was observed at a concentration of 190 mg/l in monitoring well TH-72, which is above the Primary Drinking Water Standard (PDWS) of 160 mg/l. Sodium values in down gradient monitoring wells TH-76, TH-77, and TH-78 were observed at 21, 18, and 36 mg/l, which is consistent with the unaffected deep wells across the site.

#### **Groundwater Elevations and Direction of Flow**

On March, 2015, the County collected groundwater elevation data at eleven (11) locations along the western portion of Phases 1-6 at the landfill site, including seven (7) surficial aquifer wells and four (4) upper Floridan (limestone) aquifer wells. No significant changes to the patterns of flow in the surficial aquifer were noted in the data set, and the flow diagram for the surficial aquifer is provided. The elevations observed within the wells closest to the sinkhole indicate that the flow pattern continues to be affected by the feature, which has not been unexpected. However, the overall direction of flow within the surficial aquifer remains toward the west/northwest.

A contour diagram of the upper Floridan / Limestone aquifer has been prepared for the west side of the landfill around the sinkhole, and it is provided with this submittal. This diagram was generated manually in AutoCad <sup>TM</sup> utilizing the four data points closest to the sinkhole. During this sampling event, the changes in elevations between TH-72 and TH-76 is - 0.04 ft., and TH-72 and TH-77 is + 0.14 ft. Elevation of newly installed monitor well TH-78 indicated an elevation of approximately 8 feet higher than those elevations recorded at TH-72, TH-76, and TH-77. This anomaly in the groundwater elevation indicates that TH-78 may be influenced by the surface water body in this area, or some other geologic formation anomaly may be creating this potentiometric high. Based on the significant difference in elevations, the data from TH-78 was not utilized to prepare the contour diagram. However, the County maintains the position that the configuration of the three down gradient deep monitoring wells adequately addresses the potential for migration of the contamination observed in TH-72, and the three wells have not exhibited any impact to date.

#### **Conclusions**

The water quality observed in the March 2015 IAMP sampling event indicates that the monitoring well TH-72 continues to exhibit impacts to water quality in the upper Floridan / Limestone aquifer. The impacts observed include elevated conductivity, TDS, chloride, iron, and sodium. The values have remained relatively stable, and do not appear to be migrating to any of the down gradient deep monitoring wells. Down gradient wells, TH-76 and TH-77, and TH-78 exhibit good water quality consistent with the unaffected deep wells at the site.

Mr. John Morris, P.G. April 28, 2015 Page 4

#### Recommendations

The County has submitted information to the FDEP Southwest District office that supports the discontinuation of the IAMP. Two select IAMP wells, TH-72 and TH-78, shall be included in the semi-annual sampling events conducted in accordance with the Landfill Operations Permit No. 35435-022-SO/01. The application for modification of that permit will be submitted to the FDEP in Tallahassee.

Enclosed for your review please find a site location map depicting the location of the monitoring wells sampled, the water quality data summary table for this sampling event, a groundwater elevation data table, groundwater contour and flow diagrams for the surficial and upper Floridan / Limestone aquifers, the historical data summary tables for the wells sampled this month, and the complete analytical data report from our contracted laboratory, Advanced Environmental Laboratories, 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, P.G

**Environmental Manager** 

Public Utilities Department

xc: John Lyons, Director, Public Works Department

Kim Byer, Director, Solid Waste Division, Public Works

Larry Ruiz, Landfill Manager, Solid Waste Division, Public Works

Jeff Greenwell, GMIII, Environmental Services, Public Utilities

Richard Tedder, FDEP Tallahassee

Clark Moore, FDEP Tallahassee

Steve Morgan, FDEP, Southwest District

Andy Schipfer, EPC

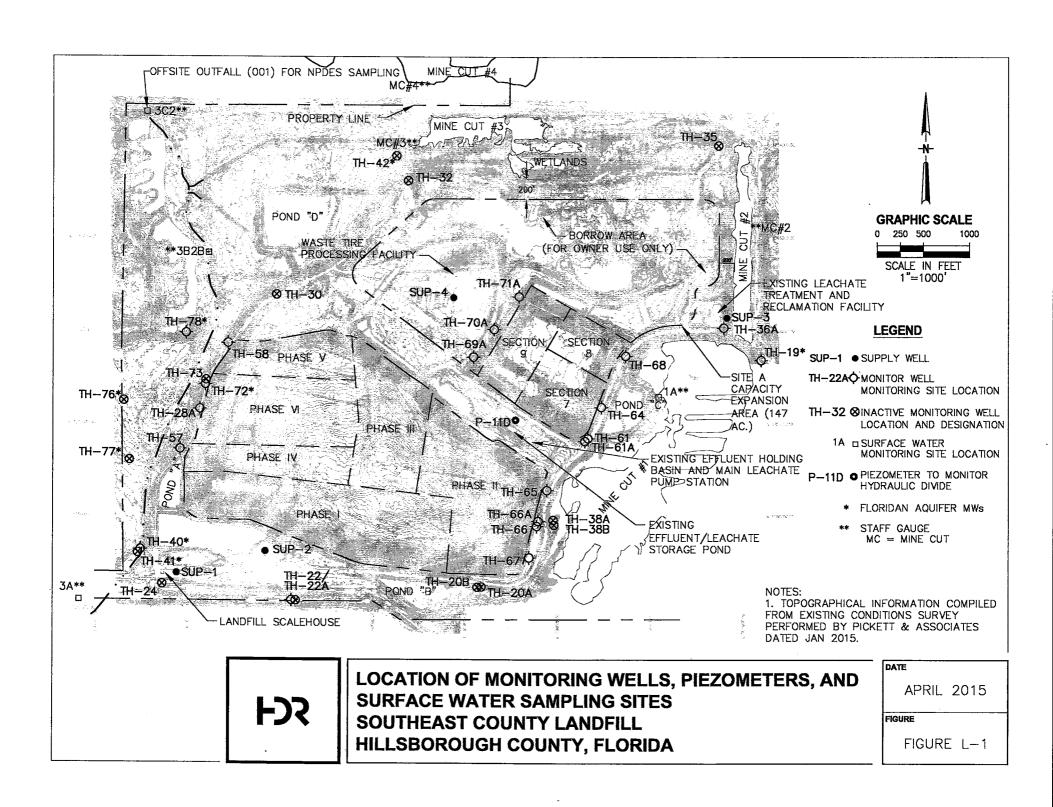
Ernest Ely, WMI

Brian Miller, DOH

Rich Siemering, HDR

Bob Curtis, HDR

Joe O'Neill, CDS



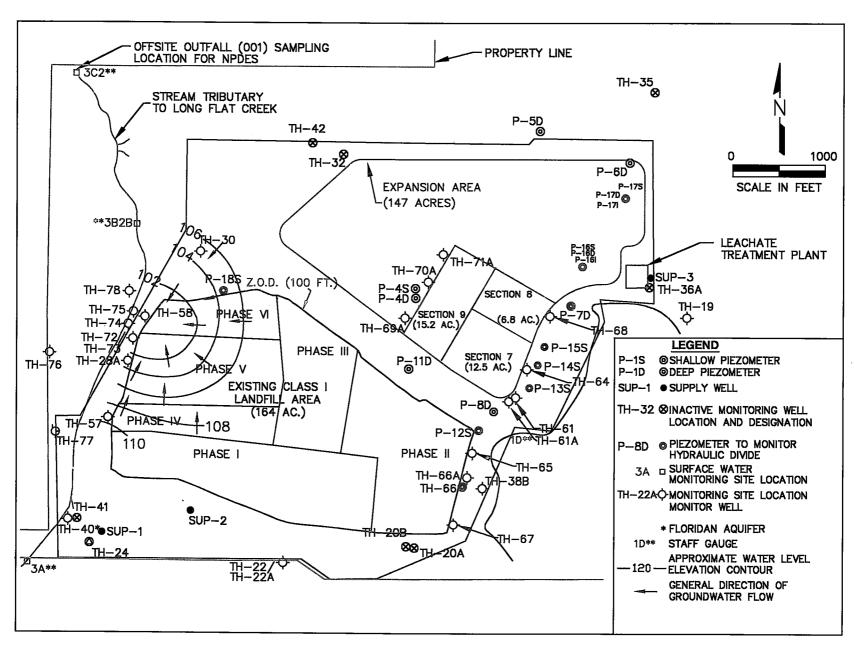
# Southeast County Landfill Laboratory Analytical Data Upper Floridan Aquifer Groundwater Monitoring Wells March 4-5, 2015

GENERAL	Į	Jpper Flori	dan Wells		MCL STANDARD
PARAMETERS	TH-72	TH-76	TH-77	TH-78	
conductivity (umhos/cm) (field)	2,486	500	490	605	NS
dissolved oxygen (mg/l) (field)	0.57	0.39	0.49	0.46	NS
pH (field)	6.87	7.58	7.56	8.23	(6.5 - 8.5)**
temperature (°C) (field)	23.50	22.99	23.52	23.50	NS
turbidity (NTU) (field)	0.66	0.68	0.63	0.62	NS
total dissolved solids (mg/l)	1,500	320	330	410	500**
chloride (mg/l)	450	13	7.6	28	250**
ammonia nitrogen (mg/l as N)	21	0.33	0.37	0.33	NS
METALS (mg/l)					MCL STANDARD
arsenic	0.0021 u	0.0021 u	0.0021 u	0.0021 u	0.01*
iron	0.65	0.095 i	0.11 i	0.24	0.3**
sodium	190	21	18	36	160*
Note: Ref. Groundwater Guidance Co.	ncentration	s, FDEP 20	12		
MCL = Maximum Contaminant Level					
NTU = Nephelometric Turbidity Units					
NS = No Standard					
u = parameter was analyzed but not d					
i = value was detected between the la	boratory me	ethod detec	tion limit and	practical qua	ntitation limit.
* = Primary Drinking Water Standard					
** = Secondary Drinking Water Standa	ard				
300					
ug/l = micrograms per liter					
mg/l = milligrams per liter					

## Southeast County Landfill Groundwater Elevations March 4, 2015

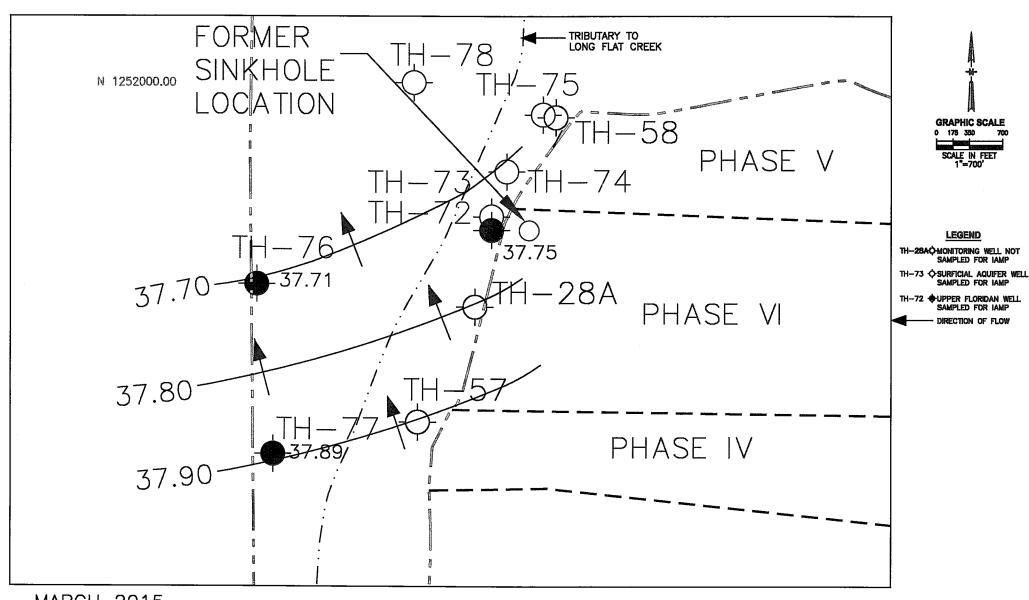
Measuring	T.O.C.			
Point	Elevations	W.L.	W.L.	Time
I.D.	(NGVD)	B.T.O.C.	(NGVD)	
TH-28A	131.10	27.64	103.46	10:03 AM
TH-30	128.88	23.63	105.25	9:55 AM
TH-57	128.36	18.59	109.77	10:06 AM
TH-58	127.88	27.44	100.44	9:58 AM
TH-72*	130.96	93.21	37.75	10:01 AM
TH-73	131.07	30.15	100.92	10:00 AM
TH-74	109.08	8.82	100.26	9:48 AM
TH-75	106.92	7.41	99.51	9:50 AM
TH-76*	111.21	73.50	37.71	10:14 AM
TH-77*	119.88	81.99	37.89	10:11 AM
TH-78*	120.75	75.16	45.59	10:20 AM
NGVD	= National Geode	tic Vertical Datum		
T.O.C.	= Top of Casing			
B.T.O.C.	= Below Top of Ca	asing		
*	= Floridan Well			

W.L. = Water Level



Southeast County Landfill

Groundwater Elevation Contour Diagram — March 4, 2015



MARCH 2015
UPPER FLORIDAN / LIMESTONE AQUIFER CONTOUR DIAGRAM
IN THE VICINITY OF THE FORMER SINKHOLE
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

	Depth to Water	Water Table	conductivity	dissolved oxygen	<u> </u>	temperature	turbidity (NITLI)	total dissolved solids	oblorido	emmenie nitrogen	oroonio		
Date	(feet)	Elevation (NGVD)	(umhos/cm) (field)	(mg/l) (field)	pH (field)	(°C) (field)	turbidity (NTU) (field)	(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	and the second of the second of the second		22.88	3.2	1.203.0012 T		0.22	0.004 u	0.52	32
02/03/2011	112.18	18.78	565			22.95	9.9		32	0.21	0.004 u	0.62	27
02/10/2011	109.80	21.16	514			22.65	3.2		31	0.28	0.004 u	0.54	31
02/14/2011	108.18	22.78	483			22.7	3.5		32	0.24	0.0013 u	0.58	32
02/24/2011	111.71	19.25	513			22.85	1		32	0.22	0.004 u	0.53	31
03/03/2011	111.88	19.08	579		7.35	22.8	0.8		31	0.23	0.004 u	0.43	32
03/10/2011	113.65	17.31	551			22.73	0.9		30	0.18	0.004 u	0.35	31
03/17/2011 03/24/2011	112.85	18.11	388			22.9	0.9		30	0.31	0.004 u	0.25	31
04/01/2011	114.33 115.70	16.63 15.26	1192 928			23.1 22.8	1.5 3.6	The second of th	350 110	9	0.004 u 0.004 u	0.64 0.24	130 59
04/08/2011	112.10	18.86	810			23.13	6.1	COLUMN TO THE PROPERTY OF THE		1.9	0.004 u	0.24	59
05/05/2011	116.21	14.75	609		7.67	23.01	6.6		33	0.3	0.004 u	0.22	37
06/08/2011	119.19	11.77	607	0.71	7.65	23.35	4.51			0.57	0.004 u	0.2	34
07/07/2011	113.30	17.66	606			23.25	3.94		64	2.1	0.004 u	7.9	27
08/04/2011	103.31	27.65	564			23.18	0.4		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		31	0.3	0.004 u	0.14 i	34
11/03/2011	103.37	27.59	550			23.04	1.51		32	0.29	0.004 u	0.15 i	34
12/08/2011	106.80	24.16	528			22.9	0.73		29	0.32	0.004 u	0.13 i	33
01/05/2012	113.08	17.88	535			22.74	0.44		32	0.29	0.004 u	0.097 i	31
02/10/2012	113.86	17.10	511		7.3	22.89	1.39		28	0.28	0.004 u	0.13 i	30
03/07/2012	121.00	9.96	575		7.15	23.23	0.5		25	0.22	0.004 u	0.11 i	31
04/05/2012 05/03/2012	124.96 126.55	6.00 4.41	522 746			23.18	0.65	I .	28	0.41	0.004 u	0.11 i	29
06/07/2012	120.46	10.50	641	0.72		23.46 23.4	0.81 0.26		72 46	2.3	0.004 u 0.004 u	0.54 0.23	49 37
07/05/2012	104.95	26.01	900	0.72		23.52	0.28		190	2.9 j3	0.004 u	0.23	70
08/03/2012	98.26	32.70	843			23.6	2.23		210	2.9]3	0.004 u	0.48	78
09/06/2012	91.18	39.66	2,357	0.2		23.62	1.05	**************************************	570	12	0.004 u	1.1	170
10/04/2012	90.19	40.77	1,654	0.6		23.22	0.46		650	25	0.004 u	1.9	210
11/07/2012	99.29	31.67	2,488	0.76	SUCCESSION CONTRACTOR OF THE PROPERTY OF THE P	23.03	0.74		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		540	13	0.004 u	1.3	180 j3
01/03/2013	100.65	30.31	2,430		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			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		22.85	0.41		290	11	0.004 u	1.1	110
04/04/2013	111.35	19.61	1,252			23.15	9.9	The second secon	260	10	0.004 u	1	100
05/02/2013	109.56	21.40	1,615			23.16	0.45		300	8.6	0.004 u	0.87	110
06/04/2013 07/03/2013	109.62	21.34	1,440		7.13	23.3	0.27		290	8.4	0.004 u	0.82	120
08/02/2013	98.72 ND	32.24 ND	1,450 1,256		7.03 6.88	23.5 23.43	0.41	Annual Control of the	280 290	8.8	0.004 u	0.79	120 120
09/05/2013	87.92	43.04	1,001	0.48	6.98	23.45	1.17		290	6.8 7.6	0.004 u 0.004 u	0.72 0.71	110
10/02/2013	87.39	43.57	1,566			23.53	12.6				0.004 u	0.79	120
11/06/2013	97.90	33.06	2,145			23.36	0.8		Processing and Property of the Control of the Contr	12	0.004 u	0.73	170
12/05/2013	98.50	32.46	2,615			23.45	0.58		580	16	0.004 u	0.65	200
01/03/2014	99.02	31.94	2,220			22.88	1.64			25	0.004 u	0.67	230 j3
02/06/2014	99.50	31.46	2,452	0.13		23.13	2.07		580	23 j3	0.004 u	0.71	210
03/04/2014	97.91	33.05	2,173	0.24		23.4	1.33	1,500		22	0.004 u	0.74	220
04/03/2014	96.22	34.74	1,992		6.74	23.35	1.33		590	27	0.0013 u	0.71	220
05/06/2014	100.22	30.74	2,247	0.46		23.5	1.22		590	24	0.004 u	0.64	230
06/03/2014	102.58	28.38	2,771	0.34		23.46	0.96		570	27	0.004 u		220
07/03/2014	97.64	33.32	2,388		6.86	23.54	1.34		570	24	0.004 u		220
08/12/2014	90.40	40.56	2,375		6.87	23.55	0.81		540	23	0.004 u	0.62	200 j3
09/05/2014 10/07/2014	90.75 88.72	40.21 42.24	3,156			23.61	1.96		510 520	20	0.004 u	0.65	210
11/04/2014	95.50	42.24 35.46	2,300 2,511			23.59	0.79		530 460	23	0.004 u	0.61	200
12/03/2014	94.56	36.40	2,511	0.46 0.34	6.64 6.67	23.46 23.47	1.83 1.3		460 500	20 18	0.0016 u 0.0016 u	0.68 0.58	<b>200</b> 160
01/08/2015	93.10	37.86	2,637	0.98		23.47	1.69		450	18	0.0016 u	SCHOOL PROPERTY SEEDS AND SCHOOL SEEDS	190
02/04/2015	94.16	36.80	2,540			23.27	2.29						190
12/04/2015	94.16	36.80	2,540	0.57	წ./1	23.27	2.29	1,300	410	17	0.0016 u	0.62	

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.

ND = No Data - water levels collected during quarterly ADR.

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
06/04/2013	89.91	21.30	401	0.27	7.86	22.9	16.2	240	13	0.4	0.004 u	0,66	22
07/03/2013	79.04	32.17	398	0.19	8	23	28.6	210	12	0.34	0.004 u	Albert Artist Control	22
08/02/2013	ND	ND	343	0.22	7.57	23.02	42.2	230	13	0.26	0.004 u		21
09/05/2013	68.22	42.99	278	0.21	7.74	22.97	46	240	12	0.32	0.004 u		20
10/02/2013	67.69	43.46	399	0.22	7.61	22.99	61.9	120	13	0.38	0.004 u	100000000000000000000000000000000000000	20
11/06/2013	78.19	33.02	446	0.64	7.54	22.84	29	260	13	0.36	0.004 u	1.1	20
12/05/2013	78.80	32.41	478	0.48	7.45	22.9	19.2		12	0.35	0.004 u	TOTAL SECTION AND DESCRIPTION OF THE PARTY O	20
01/03/2014	79.38	31.83	398	0.58	7.67	22.35	19.4	190	12	0.23 j3	0.004 u	THE RESERVE OF THE PROPERTY OF	20
02/06/2014	79.87	31.34	446	0.14	7.54	22.57	18.1	230	12	0.45	0.004 u		20
03/04/2014	78.20	33.01	434	0.18	7.36	22.7	26.2	230	12	0.33	0.004 u	Control of the Contro	20
04/03/2014	76.54	34.67	441	0.18	7.46	22.82	24.7	210	12	0.6	0.0013 u	0.000 (0.	19
05/06/2014	80.52	30.69	427	0.24	7.56	22.85	12.7	220	12	0.38	0.004 u		21
06/03/2014	82.85	28.36	423	0.3	7.47	22.82	16.8	240	12	0.47	0.004 u	A STATE OF THE PROPERTY OF THE	20
07/03/2014	77.98	33.23	421	0.3	7.46	22.83	19.5	230	12	0.49	0.004 u		20
08/13/2014	70.72	40.49	445	0.25	7.37	22.81	17	240	12	0.5	0.004 u		20
09/05/2014	71.05	40.16	596	0.2	7.28	22.92	19	240	12	0.72	0.004 u	0.61	20
10/07/2014	69.03	42.18	432	0.34	7.37	22.89	17.9	260	12	0.78	0.004 u		19
11/04/2014	75.84	35.37	502	0.27	7.19	22.9	16.4	280	11	0.37	0.0016 u		21
12/03/2014	74.87	36.34	517	0.27	7.34	22.82	18.7	250	8	0.34	0.0016 u		19
01/08/2015	73.38	37.83	516	0.54	7.4	22.49	0.84	270	8.4	0.18	0.0016 u		22
02/04/2015	74.46	36.75	525	0.27	7.44	22.65	0.67		9.8	0.34	0.0016 u		22

u = parameter was analyzed but not detected

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

ND = No Data - water levels collected during quarterly ADR.

1.1 EXCEEDS STANDARD

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
06/04/2013	98.38	21.50	384	0.56	7.86	23.59	35.4	230	8.9	0.42	0.004 u	0.89	18
07/03/2013	87.48	32.40	388	0.41	7.8	23.7	38.4	210	8.9	0.4	0.004 u	1.1	17
08/02/2013	ND	ND	334	0.47	7.44	23.66	42.9	230	9.2	0.36	0.004 u	1.1	18
09/05/2013	76.66	43.22	269	0.83	7.61	23.68	47.1	230	8.9	0.35	0.004 u	0,96	16
10/02/2013	76.14	43.72	383	0.69	7.5	23.59	52.7	240	9.1	0.39	0.004 u	1.3	17
11/06/2013	86.68	33.20	423	0.74	7.43	23.51	25.1	230	9.7	0.36 j3	0.004 u	0.68	17
12/05/2013	87.29	32.59	451	0.9	7.44	23.6	16.4	220	9	0.36	0.004 u	0.58	17
01/03/2014	87.87	32.01	371	0.85	7.65	23.18	16.5	160	9.1	0.39	0.004 u	0.63	17
02/06/2014	88.30	31.58	424	0.09	7.53	23.39	4.62	250	9.2	0.27	0.004 u	0.26	16
03/04/2014	86.70	33.18	418	0.36	7.34	23.38	1.12	230	9.3	0.32	0.004 u	0.21	16
04/03/2014	85.02	34.86	430	0.28	7.45	23.47	1.97	220	9.4	0.61	0.0013 u	0.18	15
05/06/2014	89.02	30.86	414	0.34	7.52	23.47	1.01	220	9.7	0.59	0.004 u	0.19	17
06/03/2014	91.34	28.54	464	0.27	7.47	23.49	0.88	230	9.7	0.75	0.004 u	0.19	17
07/03/2014	86.40	33.48	409	0.34	7.44	23.65	1.56	230	9.6	0.48	0.004 u	0.14 i	17
08/13/2014	79.19	40.69	436	0.36	7.39	23.76	0.61	260	9.5	0.49	0.004 u	0.16 i	16
09/05/2014	79.52	40.36	578	0.37	7.31	23.62	1.02	240	12	0.72	0.004 u		20
10/07/2014	77.55	42.33	416	0.22	7.36	23.64	0.71	240	9.3	1.4 j3	0.004 u	0.16 i	16
11/04/2014	84.27	35.61	469	0.27	7.26	23.66	1.28	280	10	0.38	0.0016 u		17
12/03/2014	83.33	36.55	490	0.46	7.24	23.43	0.5	270	12	0.38	0.0016 u	0.15	16
01/08/2015	81.86	38.02	504	0.5	7.41	23.12	0.42		11	0.42	0.0016 u		18
02/04/2015	82.94	36.94	492	0.2	7.39	23.2	0.51	280	7 j3	0.39	0.0016 u		18

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.

ND = No Data - water levels collected during quarterly ADR.

1.2 EXCEEDS STANDARD

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)
07/02/2014	ND	ND	363	0.41	9.08	23.89	19.3	210	43	0.44	0.0019 i	1 1 1	38
08/12/2014	75.51	45.24	467	0.4	9.55	23.56	7.37	240	38	0.42 j3	0.004 u	0.48	34
09/05/2014	75.12	45.63	680	0.15	8.18	23.46	3.86	270	36	0.40	0.004 u	0.27	35
10/07/2014	73.49	47.26	508	0.30	8.39	23.35	1.12	270	34	0.44	0.004 u	0.23	34
11/04/2014	77.73	43.02	555	0.44	7.92	23.33	1.58	320	37	0.3	0.0016 u	0.27	34
12/03/2014	79.04	41.71	584	0.49	7.86	23.3	0.5	290	29	0.31	0.0016 u	0.25	31
01/08/2015	76.39	44.36	595	0.76	7.98	22.81	1.25	300	31	0.34	0.0016 u	0.24	36
02/04/2015	76.21	44.54	601	0.32	8.25	22.95	0.96	310	29	0.32	0.0016 u	0.2	35

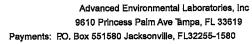
u = parameter was analyzed but not detected

ND = No Data - survey data was not complete.

1 EXCEEDS STANDARD

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.





March 20, 2015

David Adams Hillsborough Co Public Utilites 332 North Falkenburg Rd Tampa, FL 33619

RE:

Workorder:

T1503041 Southeast County Landfill IAMP

Dear David Adams:

Enclosed are the analytical results for sample(s) received by the laboratory between Wednesday, March 04, 2015 and Thursday, March 05, 2015. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

If you have any questions concerning this report, please feel free to contact me.

O Buch

Sincerely,

Heidi Brooks

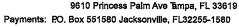
HBrooks@AELLab.com

Enclosures

Report ID: 357746 - 5218199

Page 1 of 15







#### **SAMPLE SUMMARY**

Workorder: T1503041 Southeast County Landfill IAMP

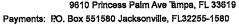
Lab ID	Sample ID	Matrix	Date Collected	Date Received
T1503041001	Field Blank	Water	3/4/2015 10:28	3/4/2015 15:15
T1503041002	TH-78	Water	3/4/2015 11:33	3/4/2015 15:15
T1503041003	TH-72	Water	3/4/2015 12:53	3/4/2015 15:15
T1503041004	Duplicate	Water	3/5/2015 00:00	3/5/2015 14:35
T1503041005	TH-76	Water	3/5/2015 11:52	3/5/2015 14:35
T1503041006	TH-77	Water	3/5/2015 10:37	3/5/2015 14:35

Report ID: 357746 - 5218199

Page 2 of 15







Advanced Environmental Laboratories, Inc.

Phone: (813)630-9616 Fax: (813)630-4327

#### **ANALYTICAL RESULTS**

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID:

T1503041001

Sample ID: Field Blank

Date Received: 03/04/15 15:15

Matrix:

Water

Date Collected: 03/04/15 10:28

Sample Description:

Location:

	<del></del>				Adjusted	Adjusted		
Parameters	Results	Qual	Units	DF	PQL	MDL	Analyzed	Lab
METALS								
Analysis Desc: SW846 6010B Analysis Water	A STATE OF THE STA		THE WALL BOTH	W-846 3010A #846 6010				
Arsenic	2.1	U	ug/L	1	10	2.1	3/16/2015 15:07	M
Iron	20	U	ug/L	1	200	20	3/16/2015 15:07	M
Sodium	0.10	U	mg/L	1	0.20	0.10	3/16/2015 15:07	M
WET CHEMISTRY Analysis Desc: Ammonia, E350.1; Water Ammonia (N)	n y Ana 0.02	ytical Me U	ethod: ER mg/L	A 350.11	0.10	0.02	3/5/2015 12:48	riiku iiku
Analysis Desc: Tot Dissolved Sollds,SM2540C Total Dissolved Solids	Ana 12	ytical Me U	etnod: SN mg/L	1.2540 C	12	12	3/9/2015 09:36	T
Analysis Desc: Chlorides, SM4500-CI- E, Water Chloride	Ana 1.1	ytical Me U	ethod: SN mg/L	1'4500-CHE ,	5.0	1.1	3/9/2015 13:35	Ť

Lab ID: Sample ID: T1503041002

Date Received: 03/04/15 15:15 Matrix: Water

TH-78

Date Collected: 03/04/15 11:33

Sample Description:

Location:

					Adjusted	Adjusted		
Parameters	Results	Qual	Units	DF	PQL	MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Anal	ytical Me	thod: Field M	easurement	ts.			
Conductivity	605		umhos/cm	1			3/4/2015 11:33	}
Dissolved Oxygen	0.46		mg/L	1			3/4/2015 11:33	}
Temperature	23.5		°C	1			3/4/2015 11:33	}
Turbidity	0.62		NTU	1			3/4/2015 11:33	}
На	8.23		SU	1			3/4/2015 11:33	}

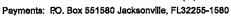
**METALS** 

Report ID: 357746 - 5218199

Page 3 of 15

#### **CERTIFICATE OF ANALYSIS**







#### **ANALYTICAL RESULTS**

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID: Sample ID: T1503041002

TH-78

Date Received: 03/04/15 15:15

Matrix:

Adjusted

Adjusted

Water

Date Collected: 03/04/15 11:33

Sample Description:

Location:

					Adjusted	Adjusted		
Parameters	Results	Qual	Units	DF	PQL	MDL	Analyzed	Lab
Analysis Desc: SW846 6010B Analysis Water			15.30(44.44)	V-846 3010A				
	Ana	ytical Me	thod. Svv.	846 6010				
Arsenic	2.1	U	ug/L	· 1	10	2.1	3/16/2015 15:26	
Iron	240		ug/L	1	200	20	3/16/2015 15:26	
Sodium	36		mg/L	1	0.20	0.10	3/16/2015 15:26	M
WET CHEMISTRY Analysis Desc: Ammonia,E350.1,Water Ammonia (N)	Anal 0.33	ytical Me	tinod: EPA mg/L	350.1 1	0.10	0.02	3/5/2015 12:46	T
Analysis Desc: Tot Dissolved Solids, SM2540C Total Dissolved Solids	410	ytical Me	thod: SM mg/L	2540 C 1.25	12	12	3/9/2015 09:36	T
Analysis Desc. Chlorides, SM4500-CI- E. Water Chloride	Anal 28	ytical Me	thod: SM mg/L	4500-CFE	5.0	1.1	3/9/2015 13:35	T

Lab ID:

Sample ID:

T1503041003

TH-72

Date Received: 03/04/15 15:15

Matrix:

Water

Sample Description:

Location:

Date Collected: 03/04/15 12:53

Lab

Parameters

Adjusted **PQL** 

MDL

Results

23.5

0.66

6.87

Qual

Units

°C

NTU

SU

DF

Adjusted

Analyzed

**FIELD PARAMETERS** 

Analysis Desc: Data entry of field measurements

Analytical Method: Field Measurements 2486 umhos/cm mg/L 0.57

1

1

1

3/4/2015 12:53

3/4/2015 12:53 3/4/2015 12:53

3/4/2015 12:53 3/4/2015 12:53

**METALS** 

рН

Turbidity

Conductivity

Temperature

Dissolved Oxygen

Analysis Desc: SW846 6010B Analysis,Water

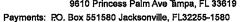
Preparation Method: SW-846 3010A Analytical Method: SW-846 6010

Report ID: 357746 - 5218199

Page 4 of 15

#### **CERTIFICATE OF ANALYSIS**







#### **ANALYTICAL RESULTS**

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID:

T1503041003

Sample ID: TH-72 Date Received: 03/04/15 15:15 Matrix:

Water

Date Collected: 03/04/15 12:53

Sample Description:

Location:

					Adjusted	Adjusted		
Parameters	Results	Qual	Units	DF	PQL	MDL	Analyzed	Lab
Arsenic	2.1	U	ug/L	1	10	2.1	3/16/2015 15:29	M
Iron	650		ug/L	1	200	20	3/16/2015 15:29	M
Sodium	190		mg/L	1	0.20	0.10	3/16/2015 15:29	M

**WET CHEMISTRY** 

Analysis Desc: Ammonia,E350.1,Water	Analytical Me	thod: EPA 350,			
Ammonia (N)	21	mg/L	10	1.00 0	.25 3/5/2015 12:46 T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Me	thod: SM 2540	Chi.		All houses in the same of the
Total Dissolved Solids	1300	mg/L	1.25	12	12 3/9/2015 09:36 T
Analysis Desc: Chlorides,SM4500-CI- E,Water	Analytical Me	thod: SM 4500-	CI-E		
Chloride	450	mg/L	10	50	11 3/9/2015 13:35 T

Lab ID:

T1503041004

Date Received: 03/05/15 14:35 Matrix: Water

Sample ID:

**Duplicate** 

Date Collected: 03/05/15 00:00

Sample Description:

I ocation:

Sample Description:				Location:				
					Adjusted	Adjusted		
Parameters	Results	Qual	Units	DF	PQL	MDL	Analyzed	Lab
METALS				, , , , , , ,				
Analysis Desc; SW846.6010B Analysis,Water			Method: S\ ethod: SW-	%-846-3010A -846-6010	19 (19 (19 (19 (19 (19 (19 (19 (19 (19 (			
Arsenic	2.1	U	ug/L	1	10	2.1	3/16/2015 15:3	3 M
Iron	110	1	ug/L	1	200	20	3/16/2015 15:3	3 M
Sodium	18		mg/L	1	0.20	0.10	3/16/2015 15:3:	3 M
WET CHEMISTRY								
Analysis Desc: Ammonia E350.1 Water	- Anal	ytical Me	ithodi EPA	350.1			Asc 1	
Ammonia (N)	0.38	uragas arrabilita	mg/L	1	0.10	0.02	3/10/2015 12:00	D T
Analysis Desc: Tot Dissolved Solids,SM2540C	, i Anal	ytical Me	thod: SM	2540 C				
Total Dissolved Solids	320	in terretorial for agency as and do	mg/L	1.25	12	12	3/9/2015 09:36	Т

Report ID: 357746 - 5218199

Page 5 of 15

#### **CERTIFICATE OF ANALYSIS**



Payments: PO. Box 551580 Jacksonville, FL32255-1580

Phone: (813)630-9616 Fax: (813)630-4327



#### **ANALYTICAL RESULTS**

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID: Sample ID: T1503041004

**Duplicate** 

Date Received: 03/05/15 14:35

Matrix:

Water

Date Collected: 03/05/15 00:00

Sample Description:

Location:

Adjusted

Adjusted

Matrix:

MDL Analyzed

Lab

**Parameters** 

Analysis Desc: Chlorides SM4500-Cl-

Results Analytical Method: SM 4500-01-2

Results

Qual

Qual Units DF

**PQL** 

Chloride

E,Water

12

mg/L

Units

Analytical Method: Field Measurements

mg/L

NTU

°C

SU

umhos/cm

1

5.0

3/9/2015 13:35

Lab ID:

T1503041005

Date Received: 03/05/15 14:35

Sample ID:

Date Collected: 03/05/15 11:52

Water

**Parameters** 

TH-76

М

M

Т

Sample Description:

**FIELD PARAMETERS** Analysis Desc: Data entry of field measurements

Conductivity 500 0.39

Dissolved Oxygen 22.99 Temperature Turbidity 0.68

рΗ **METALS** 

Analysis Desc: SW846 6010B Analysis, Water

Arsenic Iron Sodium

WET CHEMISTRY Analysis Desc: Ammonia, E350.1 Water

Ammonia (N) Analysis Desc: Tot Dissolved Solids, SM2540C

**Total Dissolved Solids** Analysis Desc: Chlorides SM4500-CI-E,Water

Chloride

Report ID: 357746 - 5218199

Location:

DF

1

1

1

1

1

1.25

1

Adjusted **PQL**  Adjusted MDL

Analyzed

Lab

3/5/2015 11:52 3/5/2015 11:52

3/5/2015 11:52 3/5/2015 11:52

3/5/2015 11:52

Preparation Method: SW-846 3010A

7.58

95

21

0.33

320

13

Analytical Method: SW-846 6010 2.1 U

Analytical Method: EPA 350.1

Analytical Method: SM 2540 C

mg/L

mg/L

mg/L

Analytical Method: SM 4500-CI-E

ug/L 1 ug/L 1 mg/L 1

10 200 0.20

0.10

12

5.0

3/16/2015 15:37 0.10

3/16/2015 15:37

3/16/2015 15:37

0.02 3/10/2015 12:00

3/9/2015 09:36

3/9/2015 13:35 1.1

Page 6 of 15

#### **CERTIFICATE OF ANALYSIS**





#### **ANALYTICAL RESULTS**

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID: Sample ID:

T1503041006

Date Received: 03/05/15 14:35 Matrix:

Water

TH-77

Date Collected: 03/05/15 10:37

Sample Description:				Location:				
					Adjusted	Adjusted		
Parameters	Results	Qual	Units	DF	PQL	MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: Data entry of field measurements	Ana	lytical Me	thed: Field N	Aeasurements.				
Conductivity	490		umhos/cn	1 1			3/5/2015 10:37	
Dissolved Oxygen	0.49		mg/L	1			3/5/2015 10:37	
Temperature	23.52		°C	1			3/5/2015 10:37	
Turbidity	0.63		NTU	1			3/5/2015 10:37	
pH	7.56		SU	1			3/5/2015 10:37	
METALS								
Analysis Desc: SW846 6010B Analysis Water			Method: SW- ethod: SW-84	\$3.5 Apr. 11 18 3/8/11	residente de la companya de la comp La companya de la companya della companya de la companya de la companya della companya de la companya de la companya della companya del			
Arsenic	2.1	U	ug/L	1	10	2.1	3/16/2015 15:41	1 M
Iron	110	I	ug/L	1	200	20	3/16/2015 15:41	1 M
Sodium	18		mg/L	1	0.20	0.10	3/16/2015 15:4	1 <b>M</b>
WET CHEMISTRY								
Analysis Desc: Ammonia,E350.1 Wate	ar A∩a	lytical Me	thod: EPA 3	50.1	and the state of t	e de la composiçõe de la c La composiçõe de la compo		
Ammonia (N)	0.37		mg/L	1	0.10	0.02	3/10/2015 12:00	
Analysis Desc: Tot Dissolved	AAO	raisenka.	thod: SM 25	200		LUXUU OTAALTI UUTE KA SARSIS		visional Make 7
Solids SM2540C		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,ca. c.m. 23					
Total Dissolved Solids	330	To the second	mg/L	1.25	12	12	3/9/2015 09:36	Т
Total Dissolved Solids			•		12	12	3/3/2013 09.30	
Analysis Desc: Chlorides SM4500-CI-	Ana	lytical Me	thod: SM 45	00-CI-E 1			The second section of the second	
El.Water								
Chloride	7.6		mg/L	1	5.0	1.1	3/9/2015 13:35	T

Report ID: 357746 - 5218199

Page 7 of 15

#### **CERTIFICATE OF ANALYSIS**





#### **ANALYTICAL RESULTS QUALIFIERS**

Workorder: T1503041 Southeast County Landfill IAMP

#### **PARAMETER QUALIFIERS**

- U The compound was analyzed for but not detected.
- The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

#### LAB QUALIFIERS

- M DOH Certification #E82535(AEL-M)(FL NELAC Certification)
- T DOH Certification #E84589(AEL-T)(FL NELAC Certification)
- T^ Not Certified

Report ID: 357746 - 5218199

Page 8 of 15

#### **CERTIFICATE OF ANALYSIS**





#### **QUALITY CONTROL DATA**

Workorder: T1503041 Southeast County Landfill IAMP

Advanced

QC Batch:

WCAt/2036

Analysis Method:

EPA 350.1

QC Batch Method:

EPA 350.1

Prepared:

Associated Lab Samples:

T1503041001, T1503041002, T1503041003

METHOD BLANK: 1695561

Reporting

Parameter

Units

Blank Result

Limit Qualifiers

WET CHEMISTRY

Ammonia (N)

mg/L

0.02

1

0.02 U

LABORATORY CONTROL SAMPLE: 1695562

Spike Conc.

Original

0.33

LCS Result

LCS % Rec

103

% Rec

Limits Qualifiers

WET CHEMISTRY

Ammonia (N)

Parameter

mg/L

Units

1.0

90-110

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1695563

1695564

MS

1.3

Original: T1503041002

Parameter

Spike Result Conc. Result

MSD MS Result % Rec

MSD % Rec % Rec

Max

Limit RPD RPD Qualifiers

WET CHEMISTRY

Ammonia (N)

mg/L

Units

1

1.3

100

99 90-110 1

10

QC Batch:

WCAt/2063

Analysis Method:

SM 2540 C

QC Batch Method:

SM 2540 C

Prepared:

T1503041001, T1503041002, T1503041003, T1503041004, T1503041005, T1503041006

METHOD BLANK: 1696038

Associated Lab Samples:

Reporting

Parameter

Units

Blank Result

Limit Qualifiers

WET CHEMISTRY

Total Dissolved Solids

mg/L

10

10 U

Report ID: 357746 - 5218199

Page 9 of 15

**CERTIFICATE OF ANALYSIS** 





#### **QUALITY CONTROL DATA**

LABORATORY CONTROL	L SAMPLE: 16	696039										
Parameter	Units	Spil Con		LCS Result	L: % F	CS		% Rec	Qualifiers			
WET CHEMISTRY Total Dissolved Solids	mg/L	66	30	620		94		75-125				
Total Dissolved College	mgr	0.	<b>.</b> •	020		<b>V</b> T		10 120				
SAMPLE DUPLICATE: 1	696040			Original: T1	502981001	]						
Parameter	Units	Origir Res		DUP Result	R	PD		Max RPD	Qualifiers			
WET CHEMISTRY Total Dissolved Solids	mg/L	6	<b>3</b> 0	650	,	1		10				
QC Batch: WC	At/2075			Analysis M	ethod:		SM 45	00-CI-E				
QC Batch Method: SM	4500-CI-E			Prepared:								
Associated Lab Samples:	T15030410	01, T15030410	02, T15	03041003, T	150304100	4, T	150304	1005, T1	50304100	6		
METHOD BLANK: 16968	94										•	
Parameter	Units		lank esult	Reporting Limit	Qualifiers							
WET CHEMISTRY Chloride	mg/L		1.1	1.1	U							
LABORATORY CONTRO	L SAMPLE: 10	696895				·				<del></del>		
Parameter	Units	Spi Cor		LCS Result	% F	CS lec		% Rec Limits	Qualifiers			
WET CHEMISTRY Chloride	mg/L	•	40	40		99		90-110				
MATRIX SPIKE & MATRIX	K SPIKE DUPLI	CATE: 16968	96	16968	397		Origin	al: T150	03041002			• • • • • • • • • • • • • • • • • • • •
Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	%	MS Rec	MSD % Rec	% Rec Limit		Max RPD	Qualifiers
WET CHEMISTRY Chloride	mg/L	28	40	69	69		103	102	90-110	1		

Report ID: 357746 - 5218199

Page 10 of 15

#### **CERTIFICATE OF ANALYSIS**





#### **QUALITY CONTROL DATA**

Workorder:	T1503041	Southeast Count	y Landfill IAMP
------------	----------	-----------------	-----------------

MATRIX SPIKE & MA	ATRIX SPIKE DUPLI	CATE: 1696	898	16968	99	Origi	nal: T1503	184003			
Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
WET CHEMISTRY Chloride	mg/L	94	40	140	140	102	103	90-110	0	10	
QC Batch;	WCAt/2082			Analysis Mo	ethod:	EPA 3	50.1				
QC Batch Method:	EPA 350.1			Prepared:							
Associated Lab Sam	ples: T15030410	04, T1503041	1005, T150	3041006							
METHOD BLANK: 1	697182			· · ·							
Parameter	Units		Blank Result	Reporting Limit	Qualifiers						
WET CHEMISTRY Ammonia (N)	mg/L		0.02	0.02	U						
LABORATORY CON	ITROL SAMPLE: 1	697183		· ···			<del></del>			•	
LABORATORY CON	ITROL SAMPLE: 1	s	pike onc.	LCS Result	L % F	CS Rec	% Rec Limits C	ualifiers			
		s			% F			ualifiers			
Parameter WET CHEMISTRY	Units mg/L	S <sub>i</sub>	onc. 1	Result	% F	Rec 100	Limits C			•	
Parameter WET CHEMISTRY Ammonia (N)	Units mg/L	S <sub>i</sub>	onc. 1	Result 1.0	% F	Rec 100	90-110	8041004 % Rec	RPD	Max	Qualifiers
Parameter WET CHEMISTRY Ammonia (N) MATRIX SPIKE & M.	Units mg/L ATRIX SPIKE DUPL	S Co ICATE: 169: Original	1 7184 Spike	1.0 16971 MS	% F	Origi	90-110 nal: T150	8041004 % Rec	RPD 0		Qualifiers
Parameter WET CHEMISTRY Ammonia (N)  MATRIX SPIKE & M.  Parameter  WET CHEMISTRY Ammonia (N)	Units  mg/L  ATRIX SPIKE DUPL  Units  mg/L	S C ICATE: 169 Original Result	1 7184 Spike Conc.	1.0 16971 MS Result	% F 85 MSD Result	Origi MS % Rec	90-110 nal: T150: MSD % Rec	8041004 % Rec Limit		RPD	Qualifiers
Parameter WET CHEMISTRY Ammonia (N)  MATRIX SPIKE & M. Parameter WET CHEMISTRY	Units mg/L ATRIX SPIKE DUPL Units	S C ICATE: 169 Original Result	1 7184 Spike Conc.	1.0 16971 MS Result	% F 85 MSD Result	Origi MS Rec 96	90-110 nal: T1503 MSD % Rec	3041004 % Rec Limit 90-110		RPD	Qualifiers

Report ID: 357746 - 5218199

Page 11 of 15





% Rec

75-125

75-125

75-125

% Rec

107

105

107

Max Limit RPD RPD Qualifiers

20

1 20

1

0 20



Units

ug/L

ug/L

mg/L

Result

-0.17

200

25

Conc.

400

50

25000

Result

420

79

27000

Result

430

79

27000

% Rec

106

105

106

Phone: (813)630-9616 Fax: (813)630-4327

#### **QUALITY CONTROL DATA**

Workorder: T1503041 Southeast County Landfill IAMP METHOD BLANK: 1701699 Reporting Blank Limit Qualifiers Parameter Units Result **METALS** 2.1 U Arsenic ug/L 2.1 Iron ug/L 20 20 U Blank Reporting Parameter Units Result Limit Qualifiers **METALS** Sodium mg/L 0.10 0.10 U LABORATORY CONTROL SAMPLE: 1701700 Spike LCS LCS % Rec Parameter Units Conc. Result % Rec Limits Qualifiers **METALS** 420 106 80-120 400 Arsenic ug/L ug/L 25000 27000 106 80-120 Iron Sodium mg/L 50 54 107 80-120 Original: T1502914001 MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1701701 1701702 Original Spike MS MSD MS MSD

Report ID: 357746 - 5218199

Parameter

**METALS** Arsenic

Sodium

Iron

Page 12 of 15

#### **CERTIFICATE OF ANALYSIS**





#### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: T1503041 Southeast County Landfill IAMP

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
T1503041001	Field Blank			EPA 350.1	WCAt/2036
T1503041002	TH-78			EPA 350.1	WCAt/2036
T1503041003	TH-72			EPA 350.1	WCAt/2036
T1503041001	Field Blank			SM 2540 C	WCAt/2063
T1503041002	TH-78			SM 2540 C	WCAt/2063
T1503041003	TH-72			SM 2540 C	WCAt/2063
T1503041004	Duplicate			SM 2540 C	WCAt/2063
T1503041005	TH-76			SM 2540 C	WCAt/2063
T1503041006	TH-77			SM 2540 C	WCAt/2063
T1503041001	Field Blank			SM 4500-CI-E	WCAt/2075
T1503041002	TH-78			SM 4500-CI-E	WCAt/2075
T1503041003	TH-72			SM 4500-CI-E	WCAt/2075
T1503041004	Duplicate			SM 4500-CI-E	WCAt/2075
T1503041005	TH-76			SM 4500-CI-E	WCAt/2075
T1503041006	TH-77			SM 4500-CI-E	WCAt/2075
T1503041004	Duplicate			EPA 350.1	WCAt/2082
T1503041005	TH-76			EPA 350.1	WCAt/2082
T1503041006	TH-77			EPA 350.1	WCAt/2082
T1503041001	Field Blank	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041002	TH-78	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041003	TH-72	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041004	Duplicate	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041005	TH-76	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041006	TH-77	SW-846 3010A	DGMm/1073	SW-846 6010	ICPm/1073
T1503041002	TH-78	Field Measurements	FLDt/	Field Measurements	FLDt/
T1503041003	TH-72	Field Measurements	FLDt/	Field Measurements	FLDt/
T1503041005	TH-76	Field Measurements	FLDt/	Field Measurements	FLDt/
T1503041006	TH-77	Field Measurements	FLDt/	Field Measurements	FLDt/

Report ID: 357746 - 5218199 Page 13 of 15

#### **CERTIFICATE OF ANALYSIS**



	Advanced Environmental Labora	tories, Inc.
Client Name:	Hills. Co. Public Utilities	Project Name:

	Altamon  Gainesvi Gainesvi Glackson  Invironmental Laboratories, Inc.  Inc.  Altamon Gainesvi Glackson Miramar Tallahas Tampa;  t Name: Hills, Co. Public Utilities  Project Name: Southeast County Landfill - IA							5 SW 41s 161 South ISA Toda 68 Cedar	t Blvd. • Ga point Pkwy y Way, Min Center On	sinesville, • Jackso emar, FL ve, Tallah	, FL 32801 onville, FL 33025 • 9 lassee, Fl	3 • 352.37 32216 • 6 54.889.22 . 32301 •	7,2349 • 1 104,363.9 168 • Fax: 850.219.	·ax 352.3 350 • Fax 954.889.3 5274 • Fa	95 6639 904.363 281 x 650.21	.9354	TS(	BOV	<i>y</i>
	Hills. Co. Public Utilities 2 North Falkenburg Rd.	P.O. Ni	inher Project	Southeas N/A	t County L	.andfill - 14	MP	BOTTLE SIZE & TYPE			•								띴
Tampa, Flor		Numbe Project	Location:		it County L	andfill		-		- 10.12									\ <u>≅</u>
	13) 663-3222			**************************************	IAL INSTRU														₹
	13) 274-6801							3						ı					ø
	chael Townsel	-						2	Z	in diagram and									\$
Sampled By: 2. P	~ **							88	ig.		0	罗							뜅
	STANDARD TRUSH	-						15	ğ		Ž	T.							3
Page: (	of: L							ANALYSIS REQUIRED	Ammonia-N	100 E	Chloride	As,							ABORATORY I.D. NUMBER
SAMPLE ID	SAMPLE DESCRIPT	ON	Grab Comp	SAM DATE	PLING TIME	MATŘÍX	NO. COUNT	PRESER.		or the state of th									3
001	FIELD BLAN	ĸ	4	3/4/15	10:27	44	3		/	<b>/</b>	/					±			$\mathcal{U}$
೮೦೩	TH-78			1	11:33						/			Z					WL
0.03	TH-72		V	4	12:53	4	V		<b>/</b>	/	/	<		age and					W
				- 1 //20					P										
					-					1									
						E.									and the second	-			
													Other Editor		account like	4			
Matrin Cades USA	/= wastewater SW = surface water GI	د د الاحم زهینی سو		Hartifan 14.44	ne.	& significant	llong as (f)	S) de obra		Drocory	atlon Co-	for take	e H=MC	n S=#	2504) N	= (HNO)	3) T=(Si	odium Thi	osidfate)
Received on ice	Yes No Demptaken from		Temp fo	m blank						(equièc	, pH chec	ked	Temp	erature w	hen rece	ived 1-2		in degree	s celclus).
Form revised 09/19	9/2012 Inquisited by: Date Ti	DB.	Rec	ceived by:	Device used	for measuri Dale	ng Temp t Time	7	nemmer (c	OR DE	amp gun (	G WA	TER U	SE pro	m PWS In	formation	not other	dea suppl	lad)
1 /11	Allow 3/4/15 15		nu	ررم	<b>.</b>	13411	1515	1	PW	S ID:		=							
2						1	<u> </u>	4		t Person		,,			Phone				
3	1 · · · · · · · · · · · · · · · · · · ·	l				1	I	,	<b>H2nbble</b>	of Water	<u> </u>								

Site Address:

	Advanced Environme	ental Laborato	ries, li	C.			Altamo Gaines Jackso Mirama Tallaha Tarnpa:	<u>ville:</u> 496 n <u>ville;</u> 66 <u>Ir:</u> 10200 ( <b>5866</b> : 12	5 SW 416 561 South JSA Toda 88 Cedar	it Bivd. • G point Pkw y Way, Mil Center Dri	ainesville V. • Jacks ramar, FL ive, Tallal	FL 3280 onville, F 33025 • 1 185566, F	8 - 352.3 . 32216 - 354.889.2 L 32301	77.2349 • 804.363: 288 • Fap • 850.219	Fax 352, 9350 • Fa • 954,889 1,6274 • F	395.6636 x 904.36 2281 ax 850.2	3,9354	94 • Fax 4		
Client Name:	Hills. Co. Public	Utilities	Project N	lame:	Southea	st County	Landfill - (	AMP	SIZE A							; P .				
	2 North Falkenb	ourg Rd.	P.O. Num Kumber	noer/Project	NA				<b>T</b> S% ≥								s			监
Tampa, Flo			Project L	ocation;	Southea	st County	Landfill		8	-										Z
	13) 663-3222			RE	MARKSISPE	CIAL INSTRA	ICTIONS:		ANALYSIS REQUIRED											ž
	13) 274-6801		]						Ø											Q
	chael Townsel								2	7			ď							≿
	PATTERSON / A.	BALLOON)							ĕ	Ammonia-N		e	Fe, Na							Ö
	STANDARD   ROSH		1						₹	Ĕ	တ	Chloride								Z
Page:	ւ of: լ								¥	Ę	108	5	A.s.				-			ğ
SAMPLE ID	SAMPLE D	ESCRIPTION		Grab Comp	SAM DATE	PLING THE	MATRIX	NO. COUNT	PREBER- VATION						4					LABORATORY I.D. NUMBER
	Du	plicate		G	3/5/15	4/4	GW	3		1	1	/	/						T.	034
		t-76	-:			11:52				\	1	/								our
,	TH	-77		V	1	10:37	4	4		\	/	<b>V</b>								1)6
																Hillian				
											,							-		
	=			ļ			<u> </u>						<del>;</del>							-
				ļ	<u>.</u>											· 				
		· · · · · ·										,	,			· · · · · ·	2			
-		·	<del></del>	-	-	<u> </u>	ļ		-							<u> </u>				
												1				±	100		ı	
			,	Ĭ .													3			
	-		-	1		<u> </u>										<del></del>			-	
Malriy Carles WAN	=wastawater SW ≓syrfa	An Limbas English	e and a second	1 min - 1							-			45.000	5 ES - 044					- 48.3
	Zives Divo Zivem			Temp fro			A=BY S	₩ # 500 ÷		e ZWhere					) 5 = (H2 erature W			) T = (So	degrees	-
Form revised 09/18		· dar and and a be an a treatment of the	- <u>L</u>	T remb so		evice used	for measuri	na Tema tiv								Santa Santa	v	A NE 1A	7.	
Rati	pquishey by	Vate Time	<del> </del>	Atec	eired by:		Date	Time	1									ret etherw		
1 /11		\$15 1435	17	11			3/5/10		1	PW		o.; − 1: <b>176 ¥</b> :		• <del></del> -	- in Assessi					***
2 2			/				77		1		Person:					Phone:				

سحم				Detine used	di cenderi	
	Religquished by	Date	Time	Received by:	Date	Time
1	Will falle	3/5/15	1435	1/M	3/1/15	1425
2					77	
3						
4						

FOR DRI	NKING WATER USE (When Piris information not otherwise ecopiled)
PWS ID:	and the second s
Contact Person:	Phone:
Supplier of Weler.	
Site Address	

#### Form FD 9000-24 **GROUNDWATER SAMPLING LOG**

SITE NAME:	4	ELF I	CAMP				TE CATION:							
WELL NO			BLANK	SAM	PLE ID:		FIEL	5	BLAN	sik.	DATE:	<i>'</i> Ø ·	3/4/	15
L		- No 62 F3	10411014		·	PURG	ING DA		- O 100 ( V	~1~			<i>f</i> - <i>t</i> -	
		A DIAN	METER (inches)	: //	DEPTH:	= fe		eet	STATIC I	ER (feet):	<b>A</b>	PURGE OR BA	PUMP TYPE	N/A
	DLUME PURGE ut if applicable)	: 1 WELL V	OLUME = (TO	TAL WELL	DEPTH	- STA	TIC DEPTH T	O WA	ATER) X	WELL CAPAC	YTI			,
	ENT VOLUME P	URGE: 1 E	QUIPMENT VO	L. = PUMP	feet /OLUM	E + (TUB	ING CAPACI	NY.	feet) X	UBINGLENGTH		N CELL		gallons
(only fill o	ot if applicable				gallon	•		ns/foo		fee	•		gallons =	gallons
	UMP OR TUBIN	IG N/		MP OR TUE	ING ,	N/	PURGIN	IG	. 11	PURGING	1.1/		OTAL VOLUM	E N/
DEPTH II	N WELL (feet):	A CHANN		I WELL (fee	<del> , -</del> -	/A	INITIATE	1	: MA	ENDED AT DISSOLVED	: "/A	;   P	URGED (gallo	ns): / (%
TIME	VOLUME PURGED (gallons)	VOLUMI PURGEI (gallons)	E PURGE RATE	DEPTI TO WATE (feet)	R (si	pH andard units)	TEMP. (°C)	(circ	cle units) hos/cm µS/cm	OXYGEN (circle units) mg/L or % saturation		BIDITY TUs)	COLOR (describe)	ODOR (describe)
	/		7_				7				$\mathcal{D}_{-}$			
		_	<del>/</del>	<del>ا                                    </del>	4	/				/	/	<del> </del>		+
1			8	/		$-\!\!\!/-$		•		$\overline{}$	<u> </u>	<del></del>	/	<del>                                     </del>
		1		4-	$\dashv$	<i></i>	•		1-1	/		···		<del>                                     </del>
			- 10	1	1	1			14	//	A A	1/	7	1/
				1-/	7					)		IK		
				1	4	4		ı	1-/	7 - 7	1		\	
ļ	+/			<i>_</i> /	-				_/_		1	-		1
ļ	+			$\leftarrow$	4				-	_/_	<del></del> -		<del></del>	
WELL CA	PACITY (Gallor NSIDE DIA. CA	l ns Per Foot): PACITY (Gal	0.75" = 0.02; l./Ft.): 1/8" = 0	1" = 0.04 .0006; 3/		5" = 0.06 0014;	3; 2" = 0.11 1/4" = 0.002		3" = 0.37; 5/16" = 0.0		5" = 1.0 0.006:	2; 6" : 1/2" = 0		= 5.88 = 0.016
	EQUIPMENT (		B = Bailer;	BP = Bladd	<del></del>	<del> </del>	SP = Electric		ersible Pur	mp; PP = P	eristaltic	Pump;	O = Other	(Specify)
SAMPLE	BY (PRINT) / A	AFFILIATION	:	SAMPLER			LING DA	TA	//	T				
	BALLOON / Z				(-,		Josh J	M	Ulsten	SAMPLING INITIATED A	T: 10!	28	SAMPLING ENDED AT:	0:34
PUMP OF DEPTH IN	TUBING WELL (feet):	N	A	TUBING MATERIAL	CODE	L	T			FILTERED: Y			FILTER SIZE:	µm
FIELD DE	CONTAMINATI	ON: PUN	r Y N	Dedicated	L_	TUBIN	G Y	A De	edicated	DUPLICATE:	Y		Ñ	
	PLE CONTAINE		CATION				ESERVATIO	٧		INTEND ANALYSIS A				MPLE PUMP LOW RATE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERV USE			OTAL VOL ) IN FIELD (n	nL)	FINAL pH	METHO				per minute)
							····				<u></u>			
				·						<del></del>				
				····				+				***************************************		
				<del> </del>	-			+						
	OC FOR													
MATERIA	L CODES:	AG = Amber	Glass; CG =	Clear Glass	<u> </u>	E = Polye B = Baile			olypropyle r Pump:	ene; S = Silico ESP = Electri	<u> </u>		O = Other	(Specify)
OVAIL FIM	C ESCULNICIA I		RFPP = Revers							Gravity Drain);		ther (Spe		1

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)

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)

#### DEP-SOP-001/01 FS 2200 Groundwater Sampling

## Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE NAME:		SELF IAM	iP			TE DCATION:.	Lit	hia, Florida			
WELL NO		TH-78	·····	SAMPLE	ID: TH-7	<del></del>			DATE: 3	14/15	ø
L		<del> </del>	<del> </del>	L	PURG	ING DA	TA			1.7.0	
WELL		TUBIN			LL SCREEN		STATIC D		P #	RGE PUMP TYPE	
	R (inches): 2	: 1 WELL VO	TER (inches): DLUME = (TOT	AL WELL DEP			eet TOWATE	WELL CAPACI	J OK	BAILER: DBP	
(only fill o	ut if applicable)		= ( 178.1	14 feet	_ : -	5.16	feet) X	.16 ga	allons/foot	16.48	gallons
	NT VOLUME P							JBING LENGTH)	+ FLOW CE	LL VOLUME	gallotis
(Only fill of	ut if applicable)		······	= ga	allons + (	gallo	ns/foot X	feet)	+	gallons =	gallons
	UMP OR TUBIN I WELL (feet):	NG 177.14		IP OR TUBING WELL (feet):	} 177.14	PURGIN	G ED AT: 16:33	PURGING ENDED AT:	11:33	TOTAL VOLUME PURGED (gallor	
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. μS/cm	DISSOLVED OXYGEN mg/L	TURBIDIT (NTUs)		ODOR (describe)
11:06		16.5	.50	75.18	8.49	23.41	597	.51	.60	None	None
11:15	4.5	21,0		75.18	<del>_</del>	23.46	600	.51	.86		11
11:24		25.5	.50	75.18	8.28	23.46	604	.47	.77	<del></del>	<del>  _/</del>
11:33	4.5	30.0	.50	75.18	8.23	23.50	605	.46	.62		+V-
	1		/			/					7
				1/	, 			/			
WELL CA	PACITY (Gallor	ns Per Foot):	0.75" = 0.02:	1" = 0.04;	1.25" = 0.06	; 2" = 0.16	3" = 0.37;	₩=0.65; 5	i" = 1.02;	6" = 1.47; 12" :	= 5.88
TUBING II	NSIDE DÍA. CA EQUIPMENT (	PACITY (Gal.	Ft.): 1/8" = 0.0	0006; 3/16" BP = Bladder P	= 0.0014;	1/4" = 0.0026	5, 5/16" = 0.0	004; 3/8" = 0.0	006; 1/2"	= 0.010; 5/8"	= 0.016
PURGING	EQUIPMENT	JODES: E	o - baller, E	P = Bladdel P		LING DA	Submersible Pun	ip; PP = Pei	ristaltic Pump	; O = Other (	Specify
	BY (PRINT) / A BALLOON / ZA		ON	SAMPLER(S)	SIGNATURE	Took V	Mers	SAMPLING INITIATED AT:	11:33	SAMPLING ENDED AT:	11: 39
PUMP OR	TUBING WELL (feet):	177.14	1	TUBING MATERIAL CO	DE:	T	FIELD-F	FILTERED: Y	N	FILTER SIZE:	µm
	CONTAMINATION		<del></del>	gedicated	TUBING		edicated	DUPLICATE:	Υ ,	(R)	
SAM	PLE CONTAINE	R SPECIFICA	ATION		SAMPLE PRI	ESERVATION	1	INTENDE			IPLE PUMP
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATI USED		OTAL VOL IN FIELD (m	FINAL L) pH	ANALYSIS AN METHOD			OW RATE per minute)
					_						
		<u> </u>									
						/		······································			
					1		<del></del>	·			
	CODES:					dicated Blad	<del></del>	- 0 . O'''-		0.00	D
SAMPLING	EQUIPMENT	AG = Amber (	.PP = After Peris	Clear Glass; staltic Pump;	PE = Polye B = Balle	<del></del>	P = Polypropyler	ne; S = Silicone ESP = Electric	. <u></u>		эреспу)
			FPP = Reverse				lethod (Tubing G		O = Other (		

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

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)

<sup>2.</sup> STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

#### DEP-SOP-001/01 FS 2200 Groundwater Sampling

## Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE NAME:	,	SELF IAN	ИP		1 1	ITE OCATION:.	l i	thia, Florida			
WELL NO		TH-72	***	SAMPLE	<del> </del>	TH-72		110, 1101100	DATE: 3/	4/15	
L		·····	···		PUR	SING DA	TA			77.0	***************************************
	ER (inches): 2		ETER (inches):	: 0.5 DEI	LL SCREEN TH: 180 f	INTERVAL eet to 190 fe	STATIC I	DEPTH ER (feet): 73. WELL CAPAC	21 ORB	GE PUMP TYPE AILER: DBP	
	ut if applicable)		= (	400	eet -	93.2	•	4.0		ot = 15.49	gallons
	ENT VOLUME F ut if applicable)	URGE: 1 EC	QUIPMENT VO		•		TY X Tons/foot X	UBING LENGTH)	+ FLOW CEL	L VOLUME:	
	UMP OR TUBIN		<b>I</b>	MP OR TUBING		DUDON		feet) PURGING	12.52	gallons = TOTAL VOLUME	gallons
TIME	VOLUME PURGED (gallons)	189 CUMUL VOLUME PURGET (gallons)	PURGE RATE	DEPTH TO WATER (feet)	pH (standard units)	TEMP.	COND. µS/cm	DISSOLVED OXYGEN mg/L	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
12:37		15.50		93.21	6.89	23.63	2484	. 50	1.06	NONE	NUAR
12:45	4.0	19.50		93.21		23.49	2487	.56	. 84	1	1
12:53	4.0	23.50	0 .50	93.21	G.87	23.50	2486	.57_	.66	L	¥
<b>-</b>			7-			7—		7		·	-
-	+ -		4	+						+//	
								/·			/
ļ			4					!			·
	+			+-							
	  PACITY (Gallor			1" = 0.04;						" = 1.47; 12" =	
	NSIDE DIA. CA EQUIPMENT (		<del></del>	.0006; 3/16" BP = Bladder P	= 0.0014; ump: E		6; <b>5/16"</b> = 0.0 Submersible Pur		006; 1/2" = ristaltic Pump;	0.010; 5/8" = O = Other (S	
				***************************************	SAMP	LING DA					F-50,/
	BY (PRINT) / A BALLOON / ZA			SAMPLER(S)	SIGNATURE	(S) Joseph	Ster	SAMPLING INITIATED AT	12:53	SAMPLING ENDED AT: (	3:00
PUMP OR DEPTH IN	TUBING WELL (feet):	189		TUBING MATERIAL CO	DDE:	T	FIELD- Filtratio	FILTERED: Y	e:	FILTER SIZE: _	μm
FIELD DE	CONTAMINATIO	ON: PUMI	PYN	dedicated	TUBING	Y N 🗹	edicated	DUPLICATE:		N	
	PLE CONTAINE		ATION			ESERVATION		INTENDE			PLE PUMP DW RATE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATI USED	VE TO ADDE	OTAL VOL ) IN FIELD (m	FINAL pH	METHOD			per minute)
				·							
						· · · · · · · · · · · · · · · · · · ·					
	<u> </u>										
										· · · · · · · · · · · · · · · · · · ·	
SEE C	.o.c. Fo	R SAMI	PLE ANA	LYSIS	DBP =De	dicated Blade	der Pump				
MATERIAL	<del></del>	AG = Amber	Glass; CG =	Clear Glass;	PE = Polye		P = Polypropyle	ne; S = Silicon	e; T = Teflor	n; O = Other (S	pecify)
	S EQUIPMENT	F		Flow Peristalti	• •	SM = Straw M	ladder Pump; lethod (Tubing G		Submersible F O = Other (Sp		

IOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

pH:  $\pm$  0.2 units Temperature:  $\pm$  0.2 °C Specific Conductance:  $\pm$  5% Dissolved Oxygen: all readings  $\leq$  20% saturation (see Table FS 2200-2); optionally,  $\pm$  0.2 mg/L or  $\pm$  10% (whichever is greater) Turbidity: all readings  $\leq$  20 NTU; optionally  $\pm$  5 NTU or  $\pm$  10% (whichever is greater)

<sup>2.</sup> STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

# Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE NAME:	±	SELF	TAMP				ITE OCATION:							
WELL N	0:	Duplice	.te	SA	MPLE ID:		Suplica	.He	<del></del>		DATE	3/	5/15	
						PURC	SING DA	ATA			<del></del>			
	ER (inches):	7/4 DV	BING METER (inch	es): N/A	WELL S	CREEN	INTERVAL	feet	STATIC TO WAT	ER (feet):	]/ <sub>A</sub>	PURG OR BA	SE PUMP TYPE AILER:	N/A
(only fill	OLUME PURG	e: 1 WELL	VOLUME = (	TOTAL WEL		- STA	TIC DEPTH	TO WA		WELL CAP				
EQUIPM	ENT VOLUME	PURGE: 1	EQUIPMENT	OL. = PUM	feet P VOLUM	THUE	ING CAPAC	ΤΥ	feet) X	UBING LENG	gallo TH) + FLO	ons/foot	VOLUME	gallons
(only fill	out it applicable	)		-	gallon			ns/foo			et) +		gallons =	gollana
Į.	PUMP OR TUB N WELL (feet):	ING N	FINAL	PUMP OR T	UBING	NA	PURGIN	IG	NI.	PURGINO	i N		TOTAL VOLUME	gallons s): <b>1/A</b>
	<u> </u>	CUML	<del></del>	DEP			1		OND.	ENDED A		* A	PURGED (gallons	s): /A
TIME	VOLUME PURGED (gallons)	VOLUI PURGi (gailon	ME PURC	E WAT	ER (st	pH andard inits)	TEMP. (°C)	(circ	cle units) hos/cm μS/cm	OXYGEN (circle units mg/L_or	i) (101 1) (1	RBIDITY VTUs)	COLOR (describe)	ODOR (describe)
	/		1						•	% saturatio	<u>"  </u>	$\overline{}$	<del> </del>	
			1									$-\!$	<del> </del>	
												/		
											1/			
		1							/		$\overline{}$			
				11	18		1			1/-		7		<del>/</del>
		1							1	X	$\neg$		<b> </b>	/
			/	7		1	7 1				1/			
											$\nearrow$		/	
												·····	<del></del>	1
														/ (-
WELL CA	PACITY (Gallo NSIDE DIA, CA	ns Per Foot) \PACITY (G:	: 0.75" = 0.02 ai./Ft.); 1/8" =		)4;	" = 0.06;	2" = 0.16 1/4" = 0.0026		" = 0.37; 5/16" = 0.0	4" = 0.65;	5" = 1.0 0.006;		= 1.47; 12" =	
	EQUIPMENT		B = Bailer;	BP = Blad			P = Electric S				Peristaltic	1/2" = 0 Pumo:	0.010; 5/8" = O = Other (S <sub>1</sub>	******
							ING DA	JA.		· · · · · · · · · · · · · · · · · · ·				,,
ANDREW	BY (PRINT) / A BALLOON / A	AFFILIATION ZACK PATTI	N: ERSON	SAMPLE	R(S) SIGN	ATURĘ	Took N	Hi	den	SAMPLING INITIATED	NT:	/4	SAMPLING	N/a
PUMP OR	TUBING WELL (feet):	N/	4	TUBING		-6	1000		FIELD-	FILTERED: `			ENDED AT: FILTER SIZE:	<b>//,τ</b> μm
	CONTAMINATI	ON: PU	VP-Y-N	MATERIA Dedicate		TUBING	>	- Pool	Filtratio	n Equipment T				
SAM	PLE CONTAINE	ER SPECIFIC	CATION	1	<del></del>		SERVATION		roareu			<del>/</del>	N 	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERV USE	VATIVE	TO	TAL VOL IN FIELD (mi	$\neg$	FINAL pH	INTENE ANALYSIS / METHO	AND/OR	SAMP EQUIP CO	MENT FLO	LE PUMP W RATE er minute)
	· · · · · · · · · · · · · · · · · · ·													
		ļ												
				ļ				1						
			ļ											
								1						
		<del></del>	l											
SEE C	OC FOR	ANAL'	YSIS -											
NATERIAL	<del></del>	AG = Ambe		= Clear Glas	s; PE=	Polyeth	nylene; PF	) = Po!	lypropyler	ne; S = Silico	ne: T=	Teflon;	0 = Other (Sp	ecify)
SAMPLING	EQUIPMENT (	CODES:	APP = After P RFPP = Rever	eristaltic Pun se Flow Peri	np; B staitic Purr	= Bailer; np; Si	BP = Bk	adder I	Pumo:	ESP = Electrravity Drain);	ic Subme		mp;	

pH:  $\pm$  0.2 units Temperature:  $\pm$  0.2 °C Specific Conductance:  $\pm$  5% Dissolved Oxygen: all readings  $\leq$  20% saturation (see Table FS 2200-2); optionally,  $\pm$  0.2 mg/L or  $\pm$  10% (whichever is greater) Turbidity: all readings  $\leq$  20 NTU; optionally  $\pm$  5 NTU or  $\pm$  10% (whichever is greater)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

<sup>2.</sup> STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

## Form FD 9000-24 GROUNDWATER SAMPLING LOG

SITE		SELF IAN	#D		· ·	ITE OCATION:.	Lithia, Flo	rida			
NAME:		TH-76	VII	SAMPLE	······································	TH-7			DATE: 3/	5/15	
WELL NO	-	111-70		Orani EE		GING DA	·		<u> </u>		
WELL		TUBING		WELL SO		ERVAL DEPTH	+ STATIC	DEPTH	PURG	SE PUMP TYPE	
DIAMETE	R (inches): 2	DIAMETER	(inches): 0.5	163.35	feet to	178.35 fee	t TO WA	TER (feet): 73.	48 ORB	AILER: DBP	
(only fill ou	LUME PURGE: ut if applicable)	1 WELL VOL	UME = (TOTA		TH - STA			WELL CAPACI		11 1000	
	NT VOLUME P	URGE: 1 FOU	= (	178.35 = PUMP VOL	feet UME + (TUI	73.48 BING CAPACI		.16 UBING LENGTH)	gallons/foo + FLOW CEL	t = <b>16.80</b> LVOLUME	gallons
	ut if applicable)	0.102. 7240.			illons + (		ons/foot-X	feet)		gallons =	gallons
	UMP OR TUBIN	IG 177.35	FINAL PUMI DEPTH IN V	P OR TUBING	177.35	PURGIN	G DAT: 11:01	PURGING ENDED AT:	11:52	TOTAL VOLUME PURGED (gailons	
DEPTHIN	WELL (feet):	CUMUL.	<u> </u>	DEPTH	pH			DISSOLVED		T	1
TIME	VOLUME PURGED	VOLUME PURGED	PURGE RATE	TO WATER	(standard units)	TEMP. (°C)	COND. μS/cm	OXYGEN mg/L	TURBIDITY (NTUs)	(describe)	ODOR (describe)
11:34	(gallons)	(gallons)	(gpm) .50	(feet) 74.23	·	22.97	500	.40	.32	NONE	NONE
11:43	4.5	@2H.5 2L		74.24	7.57	22.99	500	. ५०	1.01	1	,
11:52		26	.50	74.24	7.58	22.99	500	. 39	.68	1	L
						1					
					/						)
									<b>[</b>		
										4	
		/			_/_						/
ļ			<del> </del>	<b> </b>	/			/		<del>                                     </del>	<del></del>
ļ	+				—						
WELL CA	PACITY (Gallor	l ns Per Foot): 0.	75" = 0.02;	1" = 0.04;	1.25" = 0.0						5.88
	NSIDE DIA. CA EQUIPMENT (		<del></del>	006; 3/16" P = Bladder P	= 0.0014;	<del></del>	6; 5/16" = 0. Submersible Pu	<del> </del>	instaltic Pump;	<del></del>	: 0.016 Specify)
PORGING	EQUIPMENT	JODES. B	- Daller, D	r - Diadder i		LING DA		mp, 11-10	notanie i ump,	O - Other (C	specify.
	BY (PRINT) / A BALLOON / ZA		N S	SAMPLER(S)			Mr.	SAMPLING INITIATED AT	11:52	SAMPLING ENDED AT:	1:58
PUMP OR	TUBING			TUBING		1000	FIFI D-F	<u></u>	(N)	FILTER SIZE:	
DEPTH IN	WELL (feet):	177.35		MATERIAL CO	DDE:	<u> </u>	Filtration	Equipment Type	<u>:</u>		p
FIELD DE	CONTAMINATIO	ON: PUMP	Y N 🗯	edicated	TUBING	YN	Cedicated	DUPLICATE:	Y	<u> </u>	
·	PLE CONTAINE					RESERVATION		INTENDE ANALYSIS AN			IPLE PUMP OW RATE
SAMPLE ID CODE	# CONTAINERS	MATERIAL , CODE	VOLUME '	PRESERVATI USED		TOTAL VOL ED IN FIELD (I	mL) FINAL	METHOD			per minute)
								Ţ			
						_/_					
<u> </u>			<u></u>	Z				L		·	
	.O.C. FO		· · · · · · · · · · · · · · · · · · ·			cated bladder	<del></del>			<del> </del>	
MATERIAL	<del></del>	AG = Amber Gi		Clear Glass;	PE = Poly		PP = Polypropyle		e; T = Teflo	·····	Specify)
SAMPLING	3 EQUIPMENT		P = After Peris PP = Reverse		B = Bail ic Pump;		Bladder Pump; Method (Tubing	ESP = Electric Gravity Drain);	O = Other (S		

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

pH:  $\pm$  0.2 units Temperature:  $\pm$  0.2 °C Specific Conductance:  $\pm$  5% Dissolved Oxygen: all readings  $\leq$  20% saturation (see Table FS 2200-2); optionally,  $\pm$  0.2 mg/L or  $\pm$  10% (whichever is greater) Turbidity: all readings  $\leq$  20 NTU; optionally  $\pm$  5 NTU or  $\pm$  10% (whichever is greater)

<sup>2.</sup> STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

#### DEP-SOP-001/01 FS 2200 Groundwater Sampling

# Form FD 9000-24 GROUNDWATER SAMPLING LOG

	S	ELF IAMP			ı	SITE		····		· · · · ·	· · · ·	<del></del>	
WELL NO:		TH-77				LOCATION:			Lithia, Flor	rida			
		111-77		SAMPL		TH:				DATE:	3/5/1	5	
WELL		TUBING	<del></del>	1 14/51	PUR	GING D					1-/-		
DIAMETER	(inches): 2	DIAMETER	R (inches): (	0.5   154.	SCREEN IN	TERVAL DE	PTH: STA	TIC D	EPTH C.	Om PI	JRGE PUM	P TYPE	
(only fill out	.UME PURGI	: 1 WELL VO	LUME = (TO	TAL WELL DE	PTH - ST.	ATIC DEPTH	TO WATER	VATE	R (feet): 51.	70 0	R BAILER:	DBP	
			_	4000		45 e	^			2111			_
(only fill out	IT VOLUME I if applicable)	PURGE: 1 EQL	JIPMENT VO	L. = PUMP VO	LUME + (TU	BING CAPAC	ITY X	X	.16 BING LENGTH	gallons/foo	ot = gallo	ns / a	5.97
	•			.== g	alions + (		ns/foot X						
DEPTH IN V	MP OR TUBII	ng 168.2		MP OR TUBIN	G	BUDCU	VIO.		PURGING	·	gallor		ga
		CUMUL.	1	WELL (feet):	168.2	INITIAT	ED AT: 9:	<u>55</u>	ENDED AT:	10:37	TOTAL V	OLUME) (galion:	s): 2
TIME	VOLUME PURGED	VOLUME PURGED	PURGE RATE	TO WATER	pH (standard	TEMP.	COND.		DISSOLVED	TURBIDIT		· · · · · · · · · · · · · · · · · · ·	<del>                                     </del>
200	(galions)	(gallons)	(gpm)	(feet)	units)	(°C)	μS/cm		OXYGEN mg/L	(NTUs)		LOR cribe)	OD (desc
0:23	14.00	14.00	.50	82.08	7.55	23.50	489		· So	.61		· · · · ·	-
0:30	3.5	17.5	.50	82.08	7.55	23.53	481	_	.50	. 68	No:	26	Mol
v:37	3.5	21.0	. 50	82.08	7.56	23.52	490		.43	. 63		-	-1
			<del></del>					7		. 603			V
-/-			/	<u> </u>				_		/	<del></del>		/
$\leftarrow$											<del></del>	$\overline{}$	/
			ļ						/	······································	+/		-/-
<del></del>		-/		1				7	/				/
				1		7		_	/			/	′
		7 1	_					Ţ			ļ	/	~
								+-	1-	/	-	-A	-
ELL CAPAC	CITY (Gallons	Per Foot): 0.7	5" = 0.02	1" = 0.04;								1	_
JOHN HIGID	JE DIA. CAP.	Per Foot): 0.7 ACITY (Gal./Ft.)	: 1/8" = 0.00	006; 3/16" =	1.25" = 0.06; 0.0014;	2" = 0.16; 1/4" = 0.0026;			"= 0.65; 5"	7=1.02; 6	" = 1.47;	124 = 5	
JOHN HIGID	CITY (Gallons DE DIA, CAP, UIPMENT CO	ACTIY (Gal./Ft.)	: 1/8" = 0.00	006; 3/16" = P = Bladder Pui	0.0014; mp; ES	1/4" = 0.0026 P = Electric S	5/16" = ubmersible P	0.004;	3/8" = 0.0	06; 1/2" :	= 0.010;	5/8" = 0	0.016
URGING EQU	UIPMENT CO	DDES: B = [	: 1/8" = 0.00 Bailer; BI	006; 3/16" = P = Bladder Pui	0.0014; mp; ESI SAMPI	1/4" = 0.0026 P = Electric S ING DΔ	5/16" = ubmersible P	0.004;	3/8" = 0.0	2 = 1.02; 6 06; 1/2" = staltic Pump;	= 0.010;		.016
JRGING EQU AMPLED BY NDREW BALL	UIPMENT CO (PRINT) / AF LOON / ZACI	DDES: B = [	: 1/8" = 0.00 Bailer; BI	006; 3/16" = P = Bladder Pui	0.0014; mp; ESI SAMPI	1/4" = 0.0026 P = Electric S ING DA	5/16" = ubmersible P	0.004; ump;	3/8" = 0.00 PP = Peris	06; 1/2" : staltic Pump;	= 0.010; O = 0	5/8" = 0 ther (Sp	0.016 ecify)
JRGING EQU MPLED BY IDREW BALI	UIPMENT CO (PRINT) / AF LOON / ZACI	DDES: B = I	: 1/8" = 0.00 Bailer; BI	D06; 3/16" = P = Bladder Put  AMPLER(S) SI  UBING	mp; ESI SAMPL	1/4" = 0.0026 P = Electric S ING DA	5/16" = ubmersible P	0.004; ump; S/ IN	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:	06; 1/2": staltic Pump;	= 0.010;	5/8" = 0 ther (Sp	0.016 ecify)
URGING EQUAMPLED BY INDREW BALINIMP OR TUB	(PRINT) / AF LOON / ZACI BING LL (feet):	FILIATION: K PATTERSON  168.2	: 1/8" = 0.00 Bailer; Bi	D06; 3/16" = P = Bladder Pui AMPLER(S) SI UBING ATERIAL COD	mp; ESI SAMPL	1/4" = 0.0026 P = Electric S ING DA	5/16" = ubmersible P	0.004; lump; SA	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:	06; 1/2": staltic Pump;	= 0.010; O = 0	5/8" = 0 ther (Sp	0.016 ecify)
URGING EQUAMPLED BY NOREW BALINIMP OR TUBERTH IN WEL	(PRINT) / AF LOON / ZACI BING LL (feet): TAMINATION	FILIATION: K PATTERSON  168.2 I: PUMP	: 1/8" = 0.00  Bailer; BI  T  M  Y N   Q	D06; 3/16" = P = Bladder Put  AMPLER(S) SI  UBING	mp; ESI SAMPL	1/4" = 0.0026 P = Electric S ING DA	5/16" = ubmersible P	0.004; lump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:	06; 1/2": staltic Pump;	= 0.010; O = 0 SAMPLIN ENDED A	5/8" = 0 ther (Sp	0.016 ecify)
URGING EQUAMPLED BY NOREW BALINIMP OR TUBERTH IN WEL	UPMENT CO (PRINT) / AF LOON / ZACI BING LL (feet): TAMINATION CONTAINER	PUMP  SPECIFICATION  FILIATION: K PATTERSON  168.2  PUMP  SPECIFICATIO	S S T M V N Q	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD  edicate  SA	O.0014; mp; ESI SAMPL GNATURE(S) E: TUBING	IM" = 0.0026 P = Electric S ING DAT  T Y N SERVATION	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y uipment Type:  IPLICATE:  INTENDED	06; 1/2": staltic Pump;	SAMPLIN ENDED A	5/8" = 0 ther (Sp	0.016 ecify) ): <b>4</b> 4 μm
JRGING EQUI MPLED BY IDREW BALI MP OR TUB PTH IN WEL ELD DECONT SAMPLE (	UPMENT CO (PRINT) / AF LOON / ZACI BING LL (feet): TAMINATION CONTAINER	FILIATION: K PATTERSON  168.2 I: PUMP  SPECIFICATIO	S S T M V N Q	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION TAL VOL	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  JPLICATE:  INTENDED IALYSIS AND/	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) ): Υ μm E PUM / RATE
IRGING EQUI IMPLED BY IDREW BALL IMP OR TUB IMP OR TUB	(PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER	PECIFICATION  THE PROPERTY OF	S 1/8" = 0.0( Bailer; BI	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD  Edicate  SA  RESERVATIVE	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES	IM" = 0.0026 P = Electric S ING DAT  T Y N SERVATION	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y uipment Type:  IPLICATE:  INTENDED	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	ther (Sp GT: IC ZE:	0.016 ecify) ): Υ μm E PUM / RATE
JRGING EQUI MPLED BY IDREW BALI IMP OR TUB PTH IN WEL ELD DECONT SAMPLE (	(PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER	PECIFICATION  THE PROPERTY OF	S 1/8" = 0.0( Bailer; BI	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD  Edicate  SA  RESERVATIVE	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION TAL VOL	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  JPLICATE:  INTENDED IALYSIS AND/	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) ): <b>4</b> 4 μm E PUM / RATE
JRGING EQUI MPLED BY IDREW BALI MP OR TUB PTH IN WEL ELD DECONT SAMPLE (	(PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER	PECIFICATION  THE PROPERTY OF	S 1/8" = 0.0( Bailer; BI	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD  Edicate  SA  RESERVATIVE	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION TAL VOL	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  JPLICATE:  INTENDED IALYSIS AND/	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) ): Υ μm E PUM / RATE
JRGING EQUI MPLED BY IDREW BALI IMP OR TUB PTH IN WEL ELD DECONT SAMPLE (	(PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER	PECIFICATION  THE PROPERTY OF	S 1/8" = 0.0( Bailer; Bi	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD  Edicate  SA  RESERVATIVE	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION TAL VOL	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  JPLICATE:  INTENDED IALYSIS AND/	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) ): Υ μm E PUM / RATE
JRGING EQUALIFIED BY AMPLED BY ADREW BALLIFOR TUBERTH IN WELLED DECONTON SAMPLE (MPLE)	(PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER	PECIFICATION  THE PROPERTY OF	S 1/8" = 0.0( Bailer; Bi	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD  Edicate  SA  RESERVATIVE	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION TAL VOL	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  JPLICATE:  INTENDED IALYSIS AND/	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) ): <b>4</b> 4 μm E PUM / RATE
JRGING EQUALIFIED BY AMPLED BY ADREW BALLIFOR TUBERTH IN WELLED DECONTON SAMPLE (MPLE)	(PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER	PECIFICATION  THE PROPERTY OF	S 1/8" = 0.0( Bailer; Bi	D06; 3/16" = P = Bladder Pui  AMPLER(S) SI  UBING  ATERIAL COD  Edicate  SA  RESERVATIVE	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION TAL VOL	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  JPLICATE:  INTENDED IALYSIS AND/	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) D: Ψω μm E PUMi
JRGING EQUAMPLED BY SIDREW BALLI MP OR TUB PTH IN WELL CONTROL	UPMENT CC  (PRINT) / AF LOON / ZACI  BING  LL (feet):  TAMINATION  CONTAINER  #  JIAINERS	PUMP SPECIFICATION ATTERIAL VO	S S S N N N N N N N N N N N N N N N N N	DOG; 3/16" = P = Bladder Pur  AMPLER(S) SI  UBING ATERIAL COD  Edicated  SA  RESERVATIVE USED	E: TUBING MPLE PRES TOTA ADDED	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION AL VOL N FIELD (mL)	5/16" = ubmersible P	0.004; Pump; Sin D-FILT ion Eq	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  JPLICATE:  INTENDED IALYSIS AND/	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) ): Υ μm E PUM / RATE
JRGING EQI  MPLED BY  NDREW BALI  JMP OR TUB  PTH IN WEL  ELD DECONT  SAMPLE CON  MPLE  CODE CON  ERIAL CODE	(PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER # INTAINERS	FILIATION: K PATTERSON  168.2 I: PUMP SPECIFICATIO MATERIAL CODE  SAMPLE  = Amber Glass;	I: 1/8" = 0.0( Bailer; BI  S  TI  M  Y  N  DLUME  PF	P = Bladder Pui  AMPLER(S) SI  AMPLER(S) SI  UBING  ATERIAL COD  SA  RESERVATIVE  USED	O.0014; mp; ESI SAMPL GNATURE() E: TUBING MPLE PRES ADDED II	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION AL VOL N FIELD (mL)	FIELL Filtrat	SAN DO-FILT	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y ulipment Type:  IPLICATE:  INTENDED IALYSIS AND/ METHOD	06; 1/2": staltic Pump;  10:37  N SAM OR EQUI	SAMPLIN ENDED A FILTER SI	5/8" = 0 ther (Sp  G T: I C  ZE:  SAMPL FLOW	0.016 ecify) ): Υ μm E PUM / RATE
JRGING EQI  MPLED BY  NDREW BALI  JMP OR TUB  PTH IN WEL  ELD DECONT  SAMPLE CON  MPLE  CODE CON  ERIAL CODE	UIPMENT CO (PRINT) / AF LOON / ZACI SING LL (feet): TAMINATION CONTAINER  # IN VITAINERS	FILIATION: K PATTERSON  168.2 I: PUMP SPECIFICATIO MATERIAL CODE  SAMPLE = Amber Glass; DES: APP =	I: 1/8" = 0.0( Bailer; BI  S  TI  M  Y N D  N  PF  EANAL'  CG = Clea	P = Bladder Pull AMPLER(S) Si  AMPLER(S) Si  UBING ATERIAL COD  Galicate  SA  RESERVATIVE  USED  YSIS  ar Glass; Pi	E: TUBING MPLE PRES ADDED I	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION AL VOL N FIELD (mL) ated bladder ene; PP =	FIELL Filtrat  Padicate  FINAL pH  Pump  Pump  Polypropyle	Solution Equation in Equation	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y uipment Type:  JPLICATE:  INTENDED IALYSIS AND/ METHOD  S = Silicone;	06; 1/2": staltic Pump;  10:37  N OR SAN EQUICA  T = Teflon;	SAMPLIN ENDED A FILTER SI. PHENT DODE	5/8" = 0 ther (Sp  GT: IC  ZE:  SAMPL FLOW (mL per	D.016 ecify)  μm E PUM / RATE
JRGING EQUI	UIPMENT CO  (PRINT) / AF LOON / ZACI BING LL (feet): TAMINATION CONTAINER  # NTAINERS  C. FOR ES: AG IPMENT COE	FILIATION: K PATTERSON  168.2 I: PUMP SPECIFICATIO MATERIAL CODE  SAMPLE = Amber Glass; DES: APP =	I: 1/8" = 0.0( Bailer; BI  S  T  M  Y N   PIUME  PF  CG = Cler  After Perioral	P = Bladder Pui  AMPLER(S) SI  AMPLER(S) SI  UBING  ATERIAL COD  SA  RESERVATIVE  USED  YSIS  ar Glass; Pi  tic Pump;	E: TUBING MPLE PRES ADDED II  DBP= Dedic E = Polyethyl B = Bailer;	IM" = 0.0026 P = Electric S ING DAT T Y N SERVATION AL VOL N FIELD (mL) ated bladder ene; PP = BP = Blad	FIELT Filtrat  FINAL pH  Pump  Polypropyle  der Pump:	Solution Equation Inc.	3/8" = 0.00 PP = Peris  AMPLING ITIATED AT:  ERED: Y uipment Type:  JPLICATE:  INTENDED IALYSIS AND/ METHOD  S = Silicone; P = Electric Sut	06; 1/2": staltic Pump;  10:37  N OR SAN EQUICA  T = Teflon;	SAMPLIN ENDED A FILTER SI PLING PMENT ODE	5/8" = 0 ther (Sp  GT: IC  ZE:  SAMPL FLOW (mL per	D.016 ecify)  μm E PUMI/RATE

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)

Revision Date: February 2009