

**SUMTER COUNTY  
(CLOSED) LANDFILL  
QUARTERLY GROUNDWATER  
MONITORING REPORT  
Quarter III (August) 2011**

*Prepared for:*

**SUMTER COUNTY  
SOLID WASTE DEPARTMENT  
SUMTER COUNTY, FLORIDA**

*Prepared by:*

**THE COLINAS GROUP, INC.  
377 Maitland Avenue, Suite 2012  
Altamonte Springs, Florida 32701**



**September 2011**

# Florida Department of Environmental Protection

3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767

## Ground Water Monitoring Report Certification Form Rule 62-520.600(11)

### PART I GENERAL INFORMATION

(1) Facility Name Sumter County Closed Class I Landfill

Address 835 C.R. 529

City Lake Panasoffkee

Zip 33538

County Sumter

Telephone Number (352)-793-3368

E-mail address jackey.jackson@sumtercountyfl.gov

(2) WACS\_Facility 53008

(3) DEP Permit Number 22926-004-SF

(4) Authorized Representative's Name Jackey Jackson

Title Ass't Director Public Works

Address 319 E. Anderson Avenue

City Bushnell

Zip 33513

County Sumter

Telephone Number (352)-793-0240

E-mail address jackey.jackson@sumtercountyfl.gov

(5) Type of Discharge NA

(6) Method of Discharge NA

### CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

10-11-11

Date

Owner or Authorized Representative's Signature

### PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Name & DOH # The Colinas Group, Inc. / 870148G/3

Analytical Lab Organization DOH # E53076 E84589 E82574

Lab Name Advanced Environmental Laboratories, Inc.

Address 6601 Southport Parkway, Jacksonville, Florida 32216

Phone Number (904)-363-9350

E-mail Address msantiago@aellab.com

DIER Form 62-520.900(2)

Effective April 14, 1994

1/13/2009m

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**THE COLINAS GROUP, INC.**  
HYDROGEOLOGISTS & ENGINEERS

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September 29, 2011

**Mr. John Morris, P.G.**  
Florida Department of Environmental Protection  
13051 N. Telecom Parkway  
Temple Terrace, Florida 33637

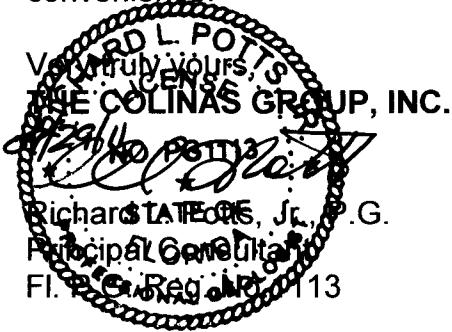
Subj: **Quarter III (August) 2011 Groundwater Monitoring Report**  
**Sumter County Closed Class I Landfill**  
**Sumter County, Florida**  
**FDEP Permit No. 22926-003-SF**

Dear Mr. Morris:

On behalf of Sumter County Board of County Commissioners, The Colinas Group, Inc. (TCG) herewith submits one Electronic Data Deliverable and one (1) bound paper copy of the report prepared by TCG entitled:

**Sumter County (Closed) Landfill Quarterly Groundwater Monitoring Report,  
Quarter III (August) 2011**

The report was prepared and is submitted in satisfaction of part of the requirements of the Sumter County Closed Landfill Long-Term Care Permit. If you have any questions concerning the contents of the report please do not hesitate to contact me at your convenience.



cc: Mr. Jackey Jackson (Sumter County)  
Ms. Denise Warnock (Sumter County)

**SUMTER COUNTY (CLOSED) LANDFILL  
GROUNDWATER MONITORING REPORT,  
SUMTER COUNTY, FLORIDA  
Quarter III (August) 2011**

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2. Laboratory Analytical Report
3. Field Data and Testing Logs
4. Chain-of-Custody Forms
5. Laboratory/Field Quality Control Reports
6. FDEP ADaPT/EDD Disc - (In Pocket)

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**Sumter County (Closed) Landfill  
Quarterly Groundwater Monitoring Report  
Quarter III (August) 2011**

**INTRODUCTION**

The Colinas Group, Inc. (TCG) has reviewed the groundwater monitoring well sampling and analytical results for the Quarter III (August) 2011 sampling event at the Sumter County (Closed) Landfill near Lake Panasoffkee in Sumter County. The sampling event was completed in accordance with the quarterly water quality monitoring and reporting requirements of the closed landfill Long -Term Care Permit #22926-003-SF.

The Groundwater Monitoring Plan for the closed landfill was amended in 2004 to replace three (3) existing monitoring wells deemed unsuitably located with respect to closed solid waste disposal areas. Existing wells MW-1, MW-7 and MW-9 were replaced by installation of new wells MW-11, MW-10 and MW-9A, respectively. The existing wells continue to be used as water level measuring points (piezometers).

New monitoring wells MW-4A and MW-4B, installed as part of a Preliminary Contamination Assessment completed at the landfill in January 2006, were added by the Florida Department of Environmental Protection (FDEP) to the facility groundwater monitoring network in May 2006. Groundwater sample analytical results for these new wells are included in this report. The current array of groundwater monitoring wells and piezometers at the facility is shown on Figure 1 (Attachment 1).

In accordance with Specific Condition 16d of the facility Long-Term Care Permit, sampling and analytical chemical parameters for this sampling event included the normal list of quarterly monitoring parameters. The Long-Term Care Permit requires an expanded parameter list, to include *40 CFR Appendix II* parameters, during Quarter IV of each year.

**SAMPLING EVENT**

The Quarter III 2011 sampling event at the Sumter County Landfill occurred over the two-day period August 29 and 30, 2011. Sampling was performed by TCG personnel in accordance with the FDEP Standard Operating Procedures (SOP) for Field Activities. Water samples collected from the facility groundwater monitoring wells were tested for the required field parameters. Monitoring wells were purged and the groundwater discharge allowed to stabilize prior to sample collection. The results of field testing were recorded on

Groundwater Sampling Logs (Attachment 3) and are listed in Table I. All samples were preserved and stored as required prior to shipment to the analytical laboratory.

Laboratory analytical services were provided by Advanced Environmental Laboratories, Inc. (AEL) in accordance with the laboratory's NELAC and FDHRS Certification No. E53076, E84589, and E82574. The original analytical reports prepared by AEL are presented in Attachment 2 to this report.

Water table depth measurements in each facility groundwater monitoring well and piezometer were recorded on August 30, 2011. These measurements were used to develop the Groundwater Contour Map shown on Figure 1 (Attachment 1) for the uppermost receiving groundwater aquifer beneath the site. Depth to water table measurements and corresponding groundwater elevations are listed in Table II.

## RESULTS

### Field Tested Parameters

Results of field testing completed at groundwater monitoring wells for the Quarter III (August) 2011 sampling event are summarized in Table I. Field tests were completed by TCG sampling personnel in strict accordance with the FDEP SOP requirements using properly calibrated field instruments (see Attachment 5).

#### pH

The field testing results indicate pH of groundwater in the uppermost aquifer was within the FDEP secondary standard (6.5 - 8.5 pH units) at six (6) of the nine (9) groundwater monitoring wells sampled. The nearly neutral to slightly basic pH values measured are consistent across the landfill property and appear normal considering the monitoring well screen intervals at and near the top of carbonate rocks and sediments. One well (**MW-4B**) produced water with a pH above the upper FDEP range at 8.61 pH units. This well has consistently produced pH values above 8.5 since sampling of the well began in Quarter II of 2006. Wells **MW-9A** and **MW-11** reported pH just below the range at 6.47 and 6.32, respectively.

#### Fluid Temperature

Temperature of each water sample was measured in the field immediately following discharge into the flow cell used to accept flow from the purging pump. Reported groundwater temperatures from the monitoring wells varied through a relatively small range from a low of 24.12 C at well **MW-8** to 27.76 C at **MW-2**.

### **Dissolved Oxygen**

Dissolved oxygen (DO) exceeded the FDEP sampling guidance level of 20% saturation at four (4) of the nine (9) monitoring wells sampled, including the facility background monitoring well **MW-6A**. These wells consistently produce groundwater with elevated DO concentrations.

### **Specific Conductance**

Specific conductance of groundwater samples collected during this sampling event are included in Table I. Specific conductance values varied through a relatively narrow range of 129 umhos/cm at well **MW-4B** to 895 umhos/cm at detection well **MW-9A**.

### **Turbidity**

The FDEP recommends attainment of turbidity values less than 10 to 20 NTUs in groundwater samples obtained from monitoring wells. As shown in Table I, groundwater samples collected at all wells had measured turbidity values less than 20 NTUs. Fluid turbidity at most wells was less than 10 NTUs.

### **Regulatory Exceedances**

A summary of groundwater laboratory analytical results for the August 2011 sample set is presented in Table III. As shown, six (6) analytical parameters were reported for certain monitoring wells at concentrations that exceed applicable regulatory levels. Exceeded parameters reported are aluminum, gross alpha, iron, manganese, nitrate nitrogen and total dissolved solids (TDS).

### **Aluminum**

Aluminum was detected at concentrations above the Florida Secondary Drinking Water Standards (FSDWS) MCL (200 ug/l) in samples from four (4) monitoring wells: **MW-4B** (340 ug/l), **MW-9A** (260 ug/l), **MW-10** (250 ug/l), and **MW-11** (720 ug/l).

### **Gross Alpha**

Gross alpha particle activity was reported just above the Florida Primary Drinking Water Standards (FPDWS) MCL of 15 pCi/l at detection well **MW-11**. The laboratory reports gross alpha for the sample from the well at 15.8 pCi/l when corrected for negative uncertainty in the measurement result.

### **Iron**

Dissolved iron was detected in two (2) monitoring wells at concentrations above the FSDWS MCL of 300 ug/l. Iron was reported at 1,200 ug/l at well **MW-9A** and 470 ug/l at **MW-10**. Iron was detected at concentrations less than 300 ug/l at two (2) other wells, and was below the laboratory method detection limit (MDL) at the remaining monitoring wells.

### **Manganese**

Manganese was reported above the FSDWS MCL of 50 ug/l in monitoring well **MW-9A** at 96 ug/l. Manganese was detected in most of the other wells at concentrations below the 50 ug/l MCL and was below the laboratory MDL at well **MW-4B**.

### **Nitrate Nitrogen**

Nitrate was reported above the 10 mg/l FPDWS MCL at monitoring well **MW-4A** at 13 mg/l. Elevated nitrate levels less than the MCL are noted in well **MW-4** ( 7.0 mg/l), **MW-11** (5.5 mg/l) and the facility background monitoring well **MW-6A** (6.1 mg/l). Nitrate was detected by the laboratory at lower concentrations in the remaining monitoring wells.

### **Total Dissolved solids (TDS)**

TDS was reported at 540 mg/l in groundwater samples from well **MW-9A**. The FSDWS provisional MCL for TDS is 500 mg/l. TDS at others wells ranged from 88 mg/l at **MW-4B** to 470 mg/l at **MW-4A**.

No other exceedance of a parameter regulatory concentration level was reported in the laboratory analytical results for samples from groundwater monitoring wells at the Sumter County Closed Landfill.

### **Other Detected Parameters**

**Antimony** was detected in groundwater samples from most of the monitoring wells at trace concentrations ranging from 0.077 ug/l to 0.82 ug/l, well below the FPDWS MCL of 6 ug/l.

**Cadmium** was detected in groundwater samples from four (4) monitoring wells (**MW-4**, **MW-9A**, **MW-10** and **MW-11**) at concentrations less than the FPDWS MCL. Cadmium was reported below the laboratory MDL in remaining monitoring wells.

**Chloride** was detected in groundwater samples from all monitoring wells at levels well below the FPDWS MCL of 250 mg/l. Reported chloride values ranged from 3.9 mg/l to 27 mg/l.

**Chromium** was detected at concentrations reported from 1.3 ug/l to 10 ug/l (**MW-4**). Chromium was also detected in the laboratory method blanks for the analytical runs. The FPDWS MCL for chromium is 100 ug/l.

**Fluoride** was detected at trace concentrations, well below the FPDWS MCL of 4 mg/l, at six (6) monitoring wells.

**Lead** was detected in five (5) monitoring wells at levels well below the FPDWS MCL of 15 ug/l. Lead concentrations at these wells ranged from 0.20 ug/l to 1.2 ug/l. Lead was reported below the laboratory MDL in remaining monitoring wells.

**Mercury** was detected at low concentrations at two (2) monitoring wells. Reported mercury concentrations are well below the FPDWS MCL of 2 ug/l and were less than the laboratory MDL in samples from remaining wells.

**Sodium** and **chloride** concentrations reported for six (6) of the nine (9) monitoring wells appear consistent between individual wells and typical for natural shallow groundwaters in Florida. Although significantly below respective regulatory MCLs, sodium/chloride concentrations at monitoring wells **MW-4**, **MW-4A**, and **MW-9A** are somewhat elevated compared to samples from the other monitoring wells.

**Thallium** was detected at trace concentrations in samples from five (5) monitoring wells. Reported concentrations ranged from 0.11 ug/l to 0.26 ug/l. The FPDWS MCL for thallium is 2 ug/l. Remaining wells reported thallium below the laboratory MDL.

## **SUMMARY**

Chemical characteristics of groundwater monitored at the Sumter County Landfill are reported for the Quarter III (August) 2011 sampling event. Exceedances of specific constituent regulatory levels and MCLs are reported at specific monitoring wells for **aluminum**, **gross alpha**, **iron**, **manganese**, **nitrate nitrogen**, and **total dissolved solids (TDS)**.

Elevated **dissolved oxygen (DO)** levels were measured in four of the nine groundwater monitoring wells, including the facility background monitoring well. Prior sampling data indicate that elevated DO levels occur frequently and in many of the same monitoring wells, suggesting that high DO in groundwater at these locations is likely a natural condition.

**Aluminum** was detected in samples from four wells (**MW-4B**, **MW-9A**, **MW-10**, and **MW-11**) at concentrations above the FSDWS MCL of 200 ug/l. Aluminum was reported below the laboratory method detection limit (MDL) in four of the five remaining monitoring wells, including facility background well **MW-6A**. The most likely source of aluminum measured in groundwater samples is natural deposits of aluminum-silicate clay minerals present within and near the groundwater monitoring zone tapped by wells at the landfill.

**Gross alpha** was reported just above the FPDWS MCL at a laboratory error-corrected range of 15.5 pCi/l to 19.6 pCi/l at detection well **MW-11**. Gross alpha was reported at lower concentrations at five monitoring wells and was not detected at three others. A potential natural source of gross alpha particle activity is reworked Miocene phosphate mineral deposits known to occur in sediments above the top of rock in Sumter County.

**Iron** was reported slightly above the FSDWS MCL at two detection wells (**MW-9A** and **MW-10**). **Manganese** was reported above the FSDWS MCL in the sample from **MW-9A**, one

of the more recently-constructed monitoring wells. Both of these elements occur naturally in sediments and carbonate rocks penetrated by the monitoring wells.

**Nitrate nitrogen** dissolved in groundwater was reported above the FPDWS MCL of 10 mg/l at well **MW-4A** (13 mg/l). As depicted on the sampling event groundwater contour map (Figure 1), well **MW-4A** was upgradient of well **MW-4** and the closed landfill waste disposal areas. Elevated concentrations of nitrate nitrogen were also reported at background well **MW-6A** and at all but one of the remaining monitoring wells at levels considered above naturally-occurring nitrate concentrations typical of Florida groundwaters.

**Total dissolved solids (TDS)** was reported slightly above the FSDWS provisional MCL of 500 mg/l at monitoring well **MW-9A** (540 mg/l). Historical analytical lab data for this well indicates that dissolved calcium carbonate accounts for a large part of the TDS load.

\* \* \* \* \*

**TABLE I**  
**FIELD PARAMETER RESULTS SUMMARY,**  
**SUMTER COUNTY (CLOSED) LANDFILL**  
**SUMTER COUNTY, FLORIDA**  
**Quarter III (August) 2011**

Sampling Point	Temp. (C)	Dissolved Oxygen (mg/l)	pH	Specific Conductance (umhos/cm)	Turbidity (NTU)
<b>MW-2</b>	27.76	<b>5.00</b>	6.74	243	1.00
<b>MW-4</b>	26.42	0.89	7.13	583	5.51
<b>MW-4A</b>	26.24	0.44	6.91	662	3.03
<b>MW-4B</b>	25.83	<b>6.30</b>	<b>8.61</b>	129	8.01
<b>MW-6A</b>	24.23	<b>7.64</b>	7.47	254	5.14
<b>MW-8</b>	24.12	<b>4.78</b>	7.04	339	1.51
<b>MW-9A</b>	25.20	0.44	<b>6.47</b>	895	10.1
<b>MW-10</b>	24.70	1.47	6.53	536	5.66
<b>MW-11</b>	26.81	1.68	<b>6.32</b>	513	15.0

Notes: **Bold** lettering indicates:  
 Exceedance of FDEP 20% saturation dissolved oxygen limit  
 Exceedance of pH range (6.5 - 8.5)  
 Exceedance of FDEP-recommended turbidity (20 NTU)

**TABLE II**  
**QUARTER III (August) 2011**  
**SUMMARY OF GROUNDWATER LEVELS**  
**SUMTER COUNTY (CLOSED) LANDFILL**  
**SUMTER COUNTY, FLORIDA**  
**(August 30, 2011)**

<b>Well No.</b>	<b>Measuring Point Elevation <sup>1/</sup> (ft. +NGVD)</b>	<b>Depth to Water (ft. - MP) <sup>2/</sup></b>	<b>Groundwater Elevation (ft. +NGVD)</b>
<b>MW-1</b>	70.17	25.01	45.16
<b>MW-2</b>	69.13	23.67	45.46
<b>MW-2A</b>	72.11	26.74	45.37
<b>MW-4</b>	70.36	25.12	45.24
<b>MW-4A</b>	75.73	30.32	45.41
<b>MW-4B</b>	73.83	28.39	45.44
<b>MW-6A</b>	77.54	31.72	45.82
<b>MW-7</b>	73.14	27.64	45.50
<b>MW-8</b>	69.26	22.44	46.82
<b>MW-9</b>	71.95	27.27	44.68
<b>MW-9A</b>	72.80	29.75	43.05
<b>MW-10</b>	68.28	22.66	45.62
<b>MW-11</b>	70.21	24.89	45.32

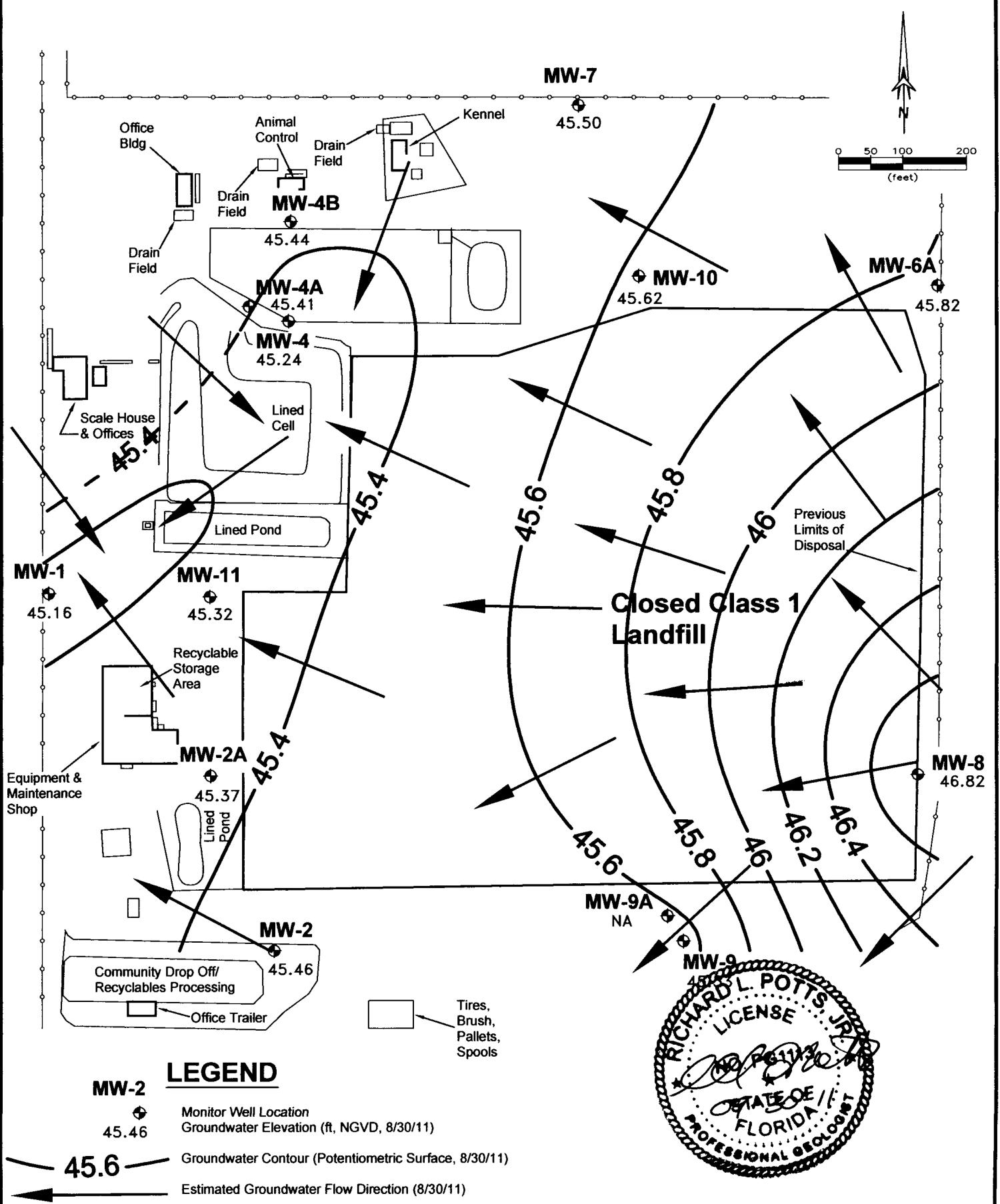
Notes: <sup>1/</sup> Measuring Point is top of PVC well casing.

<sup>2/</sup> Water levels recorded on August 30, 2011.

**TABLE III**  
**SUMMERT COUNTY (CLOSED) LANDFILL**  
**QUARTER III (August) 2011**

Parameter	units	MW-2	MW-4	MW-4A	MW-4B	MW-6A	MW-8	MW-9A	MW-10	MW-11	MCL
Ammonia	mg/l	BDL	BDL	0.032	BDL	BDL	BDL	0.361	BDL	BDL	2.8
Aluminum	ug/l	BDL	190	BDL	<b>340</b>	BDL	BDL	<b>260</b>	<b>250</b>	<b>720</b>	200
Antimony	ug/l	0.43	0.25	0.10	0.16	BDL	0.077	0.13	0.44	0.82	6
Cadmium	ug/l	BDL	0.36	BDL	BDL	BDL	BDL	2.0	0.51	2.8	5
Chloride	mg/l	5.4	19	27	3.9	8.3	8.2	24	6.9	3.0	250
Chromium	ug/l	1.3 (v)	10 (v)	2.1 (v)	4.5 (v)	8.9 (v)	4.1 (v)	5.4 (v)	4.8 (v)	8.6 (v)	100
Fluoride	mg/l	0.24	0.26	BDL	0.28	BDL	BDL	0.30	0.27	0.30	4
Gross Alpha	pCi/l	<1.4 ± 1.0	<b>5.5 ± 2.3</b>	<b>3.5 ± 0.9</b>	<b>1.7 ± 0.9</b>	<1.2 ± 0.9	<1.7 ± 1.0	<b>8.3 ± 2.0</b>	<b>8.4 ± 1.3</b>	<b>17.7 ± 1.9</b>	<b>15</b>
Iron	ug/l	BDL	87	BDL	BDL	BDL	BDL	<b>1,200</b>	<b>470</b>	220	300
Lead	ug/l	BDL	0.20	BDL	0.30	BDL	BDL	0.36	0.30	1.2	15
Manganese	ug/l	1.7	6.0	3.8	BDL	0.87	0.46	<b>96</b>	20	4.0	50
Mercury	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	0.31	BDL	0.096	2
Nitrate, as N	mg/l	3.3	7.0	<b>13</b>	3.2	6.1	2.0	0.28	2.3	5.5	10
Radium 226	pCi/l	0.5 ± 0.1	<b>2.4 ± 0.2</b>	<b>1.0 ± 0.2</b>	<b>0.2 ± 0.1</b>	<b>0.6 ± 0.1</b>	<b>0.4 ± 0.1</b>	<b>3.0 ± 0.3</b>	<b>1.6 ± 0.2</b>	<b>3.2 ± 0.3</b>	---
Radium 228	pCi/l	<1.0 ± 0.6	<0.9 ± 0.6	<1.0 ± 0.6	<0.9 ± 0.6	0.9 ± 0.6	<0.9 ± 0.6	1.8 ± 0.7	<1.0 ± 0.7	1.2 ± 0.7	---
Silver	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.082	100
Sodium	mg/l	3.4 (v)	41 (v)	26 (v)	9.2 (v)	3.2 (v)	5.3 (v)	21 (v)	6.9 (v)	8.3 (v)	160
TDS	mg/l	140	340	470	88	200	210	<b>540</b>	320	250	500
Thallium	ug/l	BDL	0.11	0.26	BDL	BDL	BDL	0.21	0.11	0.14	2

Notes: 1). BDL means below laboratory method detection limit 2). **Bold lettering** indicates result exceeds MCL/Guidance concentration  
 3). (v) indicates constituent was detected in the laboratory method blank.





**Advanced  
Environmental Laboratories, Inc.**

Advanced Environmental Laboratories, Inc

528 S. North Lake Blvd, Suite 1016

Altamonte Springs, FL 32701

Phone: (407)937-1594

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID: **A1106405001**

Date Received: 08/30/11 15:10 Matrix: Water

Sample ID: **MW-10**

Date Collected: 08/30/11 09:05

Sample Description:

Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
<b>FIELD PARAMETERS</b>								
Analysis Desc: FIELD - Conductance								
Conductance	536	umhos/cm		1			8/30/2011 08:54	A^
Dissolved Oxygen	1.47	mg/L		1			8/30/2011 08:54	A^
Groundwater Elevation	45.62	feet		1			8/30/2011 08:54	A^
Temperature	24.7	°C		1			8/30/2011 08:54	A^
Turbidity	5.66	NTU		1			8/30/2011 08:54	A^
pH	6.53	pH unit		1			8/30/2011 08:54	A^
<b>METALS</b>								
Analysis Desc: SW846 6010B								
Analysis, Water								
Preparation Method: SW-846 3010A								
Analytical Method: SW-846 6010								
Aluminum	250	ug/L		1	200	61	9/7/2011 14:24	J
Cadmium	0.51	ug/L	I	1	0.60	0.32	9/7/2011 14:24	J
Chromium	4.8	ug/L	V	1	4.0	0.50	9/7/2011 14:24	J
Iron	470	ug/L		1	200	38	9/7/2011 14:24	J
Manganese	20	ug/L		1	1.0	0.24	9/7/2011 14:24	J
Sodium	6.9	mg/L	V	1	0.20	0.026	9/7/2011 14:24	J
Analysis Desc: SW846 6020B								
Analysis, Total								
Preparation Method: SW-846 3010A								
Analytical Method: SW-846 6020								
Antimony	0.44	ug/L	I	1	0.60	0.073	9/7/2011 22:05	J
Lead	0.30	ug/L	I	1	0.70	0.076	9/7/2011 22:05	J
Silver	0.059	ug/L	U	1	0.30	0.059	9/7/2011 22:05	J
Thallium	0.11	ug/L	I	1	0.20	0.067	9/7/2011 22:05	J
Analysis Desc: SW846 7470A								
Analysis, Water								
Preparation Method: SW-846 7470A								
Analytical Method: SW-846 7470A								
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:04	J
<b>WET CHEMISTRY</b>								
Analysis Desc: IC,E300.0,Water								
Analytical Method: EPA 300.0								
Chloride	6.9	mg/L	I	1	10	1.2	8/30/2011 18:45	A
Fluoride	0.27	mg/L		1	0.20	0.0098	9/7/2011 11:04	A
Nitrate	2.3	mg/L		1	0.20	0.053	8/30/2011 18:45	A
Analysis Desc: Tot Dissolved Solids,SM2540C								
Analytical Method: SM 2540C								

Report ID: 179169 - 3922594

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### CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,  
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Advanced  
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Advanced Environmental Laboratories, Inc

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID: **A1106405001** Date Received: 08/30/11 15:10 Matrix: Water  
Sample ID: **MW-10** Date Collected: 08/30/11 09:05

Sample Description:	Location:							
Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Total Dissolved Solids	320	mg/L		1.25	12	12	9/1/2011 08:47	T

Lab ID: **A1106405002** Date Received: 08/30/11 15:10 Matrix: Water  
Sample ID: **MW-11** Date Collected: 08/29/11 11:20

Sample Description:	Location:							
Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab

### FIELD PARAMETERS

Analysis Desc: FIELD - Conductance	Analytical Method: DISRES							
Conductance	513	umhos/cm		1			8/29/2011 11:11	A^
Dissolved Oxygen	1.68	mg/L		1			8/29/2011 11:11	A^
Groundwater Elevation	45.33	feet		1			8/29/2011 11:11	A^
Temperature	26.81	°C		1			8/29/2011 11:11	A^
Turbidity	15	NTU		1			8/29/2011 11:11	A^
pH	6.32	pH unit		1			8/29/2011 11:11	A^

### METALS

Analysis Desc: SW846 6010B	Preparation Method: SW-846 3010A							
Analysis,Water	Analytical Method: SW-846 6010							
Aluminum	720	ug/L		1	200	61	9/7/2011 16:18	J
Cadmium	2.8	ug/L		1	0.60	0.32	9/7/2011 16:18	J
Chromium	8.6	ug/L	V	1	4.0	0.50	9/7/2011 16:18	J
Iron	220	ug/L		1	200	38	9/7/2011 16:18	J
Manganese	4.0	ug/L		1	1.0	0.24	9/7/2011 16:18	J
Sodium	8.3	mg/L	V	1	0.20	0.026	9/7/2011 16:18	J

Analysis Desc: SW846 6020B	Preparation Method: SW-846 3010A							
Analysis,Total	Analytical Method: SW-846 6020							
Antimony	0.82	ug/L		1	0.60	0.073	9/7/2011 23:10	J
Lead	1.2	ug/L		1	0.70	0.076	9/7/2011 23:10	J
Silver	0.082	ug/L	I	1	0.30	0.059	9/7/2011 23:10	J
Thallium	0.14	ug/L	I	1	0.20	0.067	9/7/2011 23:10	J

Analysis Desc: SW846 7470A	Preparation Method: SW-846 7470A						
Analysis,Water	Analytical Method: SW-846 7470A						

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405002</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-11</b>	Date Collected:	08/29/11 11:20		

Sample Description:			Location:			Adjusted PQL	Adjusted MDL	Analyzed	Lab
Parameters	Results	Units	Qual	DF					
Mercury	<b>0.096</b>	ug/L	I	1		0.10	0.014	9/6/2011 12:14	J

### **WET CHEMISTRY**

Analysis Desc: IC,E300.0,Water	Analytical Method: EPA 300.0							
Chloride	3.0	mg/L	I	1	10	1.2	8/30/2011 19:02	A
Fluoride	0.30	mg/L		1	0.20	0.0098	9/7/2011 11:22	A
Nitrate	5.5	mg/L		1	0.20	0.053	8/30/2011 19:02	A
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540C							
Total Dissolved Solids	250	mg/L		1.25	12	12	9/1/2011 08:39	T

Lab ID:	<b>A1106405003</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-2</b>	Date Collected:	08/30/11 12:00		

Sample Description:			Location:			Adjusted PQL	Adjusted MDL	Analyzed	Lab
Parameters	Results	Units	Qual	DF					
FIELD PARAMETERS									

Analysis Desc: FIELD - Conductance	Analytical Method: DISRES								
Conductance	243	umhos/cm	I					8/30/2011 11:49	A^
Dissolved Oxygen	5	mg/L	I					8/30/2011 11:49	A^
Groundwater Elevation	45.46	feet	I					8/30/2011 11:49	A^
Temperature	27.76	°C	I					8/30/2011 11:49	A^
Turbidity	1	NTU	I					8/30/2011 11:49	A^
pH	6.74	pH unit	I					8/30/2011 11:49	A^

### **METALS**

Analysis Desc: SW846 6010B Analysis,Water	Preparation Method: SW-846 3010A							
	Analytical Method: SW-846 6010							
Aluminum	61	ug/L	U	1	200	61	9/7/2011 15:16	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	9/7/2011 15:16	J
Chromium	1.3	ug/L	I,V	1	4.0	0.50	9/7/2011 15:16	J
Iron	38	ug/L	U	1	200	38	9/7/2011 15:16	J
Manganese	1.7	ug/L	I	1	1.0	0.24	9/7/2011 15:16	J
Sodium	3.4	mg/L	V	1	0.20	0.026	9/7/2011 15:16	J

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405003</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-2</b>	Date Collected:	08/30/11 12:00		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
<b>Analysis Desc: SW846 6020B</b>								
<b>Analysis,Total</b>								
Preparation Method: SW-846 3010A								
Antimony	0.43	ug/L	I	1	0.60	0.073	9/7/2011 23:19	J
Lead	0.076	ug/L	U	1	0.70	0.076	9/7/2011 23:19	J
Silver	0.059	ug/L	U	1	0.30	0.059	9/7/2011 23:19	J
Thallium	0.067	ug/L	U	1	0.20	0.067	9/7/2011 23:19	J
<b>Analysis Desc: SW846 7470A</b>								
<b>Analysis,Water</b>								
Preparation Method: SW-846 7470A								
Analytical Method: SW-846 7470A								
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:20	J
<b>WET CHEMISTRY</b>								
<b>Analysis Desc: IC,E300.0,Water</b>								
Analytical Method: EPA 300.0								
Chloride	5.4	mg/L	I	1	10	1.2	8/30/2011 17:07	A
Fluoride	0.24	mg/L	1		0.20	0.0098	9/7/2011 11:39	A
Nitrate	3.3	mg/L	1		0.20	0.053	8/30/2011 17:07	A
<b>Analysis Desc: Tot Dissolved Solids,SM2540C</b>								
Analytical Method: SM 2540C								
Total Dissolved Solids	140	mg/L		1.25		12	12	9/1/2011 08:47
								T

Lab ID:	<b>A1106405004</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-4</b>	Date Collected:	08/29/11 13:45		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
<b>FIELD PARAMETERS</b>								
<b>Analysis Desc: FIELD - Conductance</b>								
Analytical Method: DISRES								
Conductance	583	umhos/cm	I			8/29/2011 13:33	A^	
Dissolved Oxygen	0.89	mg/L	1			8/29/2011 13:33	A^	
Groundwater Elevation	45.26	feet	1			8/29/2011 13:33	A^	
Temperature	26.42	°C	1			8/29/2011 13:33	A^	
Turbidity	5.51	NTU	1			8/29/2011 13:33	A^	
pH	7.13	pH unit	1			8/29/2011 13:33	A^	

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405004</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-4</b>	Date Collected:	08/29/11 13:45		

Parameters	Results	Units	Qual	DF	Adjusted	Adjusted	Analyzed	Lab						
					PQL	MDL								
<b>METALS</b>														
Analysis Desc: SW846 6010B														
Analysis, Water														
Aluminum	190	ug/L	I	1	200	61	9/7/2011 15:21	J						
Cadmium	0.36	ug/L	I	1	0.60	0.32	9/7/2011 15:21	J						
Chromium	10	ug/L	V	1	4.0	0.50	9/7/2011 15:21	J						
Iron	87	ug/L	I	1	200	38	9/7/2011 15:21	J						
Manganese	6.0	ug/L		1	1.0	0.24	9/7/2011 15:21	J						
Sodium	41	mg/L	V	1	0.20	0.026	9/7/2011 15:21	J						
Analysis Desc: SW846 6020B														
Analysis, Total														
Antimony	0.25	ug/L	I	1	0.60	0.073	9/7/2011 23:28	J						
Lead	0.20	ug/L	I	1	0.70	0.076	9/7/2011 23:28	J						
Silver	0.059	ug/L	U	1	0.30	0.059	9/7/2011 23:28	J						
Thallium	0.11	ug/L	I	1	0.20	0.067	9/7/2011 23:28	J						
Analysis Desc: SW846 7470A														
Analysis, Water														
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:21	J						
<b>WET CHEMISTRY</b>														
Analysis Desc: IC,E300.0,Water														
Chloride	19	mg/L		1	10	1.2	8/30/2011 17:56	A						
Fluoride	0.26	mg/L		1	0.20	0.0098	9/7/2011 11:56	A						
Nitrate	7.0	mg/L		1	0.20	0.053	8/30/2011 17:56	A						
Analysis Desc: Tot Dissolved Solids,SM2540C														
Total Dissolved Solids	340	mg/L		1.25	12	12	9/1/2011 08:47	T						

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID: **A1106405005**

Date Received: 08/30/11 15:10 Matrix: Water

Sample ID: **MW-4A**

Date Collected: 08/29/11 12:50

Sample Description:

Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
<b>FIELD PARAMETERS</b>								
Analysis Desc: FIELD - Conductance								
Conductance	662	umhos/cm		1			8/29/2011 12:37	A^
Dissolved Oxygen	0.44	mg/L		1			8/29/2011 12:37	A^
Groundwater Elevation	45.41	feet		1			8/29/2011 12:37	A^
Temperature	26.24	°C		1			8/29/2011 12:37	A^
Turbidity	3.03	NTU		1			8/29/2011 12:37	A^
pH	6.91	pH unit		1			8/29/2011 12:37	A^
<b>METALS</b>								
Analysis Desc: Tot Dissolved Solids,SM2540C								
Total Dissolved Solids	470	mg/L		1.25		12	12	9/1/2011 08:47
Analysis Desc: SW846 6010B								
Analysis,Water								
Analytical Method: SW-846 6010								
Aluminum	61	ug/L	U	1	200	61	9/7/2011 15:25	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	9/7/2011 15:25	J
Chromium	2.1	ug/L	I,V	1	4.0	0.50	9/7/2011 15:25	J
Iron	38	ug/L	U	1	200	38	9/7/2011 15:25	J
Manganese	3.8	ug/L		1	1.0	0.24	9/7/2011 15:25	J
Sodium	26	mg/L	V	1	0.20	0.026	9/7/2011 15:25	J
Analysis Desc: SW846 6020B								
Analysis,Total								
Preparation Method: SW-846 3010A								
Analytical Method: SW-846 6020								
Antimony	0.10	ug/L	I	1	0.60	0.073	9/7/2011 23:38	J
Lead	0.076	ug/L	U	1	0.70	0.076	9/7/2011 23:38	J
Silver	0.059	ug/L	U	1	0.30	0.059	9/7/2011 23:38	J
Thallium	0.26	ug/L		1	0.20	0.067	9/7/2011 23:38	J
Analysis Desc: SW846 7470A								
Analysis,Water								
Analytical Method: SW-846 7470A								
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:23	J
<b>METALS</b>								
Analysis Desc: IC,E300.0,Water								
Analytical Method: EPA 300.0								
Chloride	27	mg/L		1	10	1.2	8/30/2011 19:18	A
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	9/7/2011 12:14	A

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405005</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-4A</b>	Date Collected:	08/29/11 12:50		

Sample Description:			Location:					
Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Nitrate	13	mg/L		2	0.40	0.11	8/30/2011 19:34	A

Lab ID:	<b>A1106405006</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-4B</b>	Date Collected:	08/29/11 14:35		

Sample Description:			Location:					
Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab

### FIELD PARAMETERS

Analysis Desc: FIELD - Conductance	Analytical Method: DISRES							
Conductance	129	umhos/cm		1			8/29/2011 14:24	A^
Dissolved Oxygen	6.3	mg/L		1			8/29/2011 14:24	A^
Groundwater Elevation	45.46	feet		1			8/29/2011 14:24	A^
Temperature	25.83	°C		1			8/29/2011 14:24	A^
Turbidity	8.01	NTU		1			8/29/2011 14:24	A^
pH	8.61	pH unit		1			8/29/2011 14:24	A^

### METALS

Analysis Desc: SW846 6010B	Preparation Method: SW-846 3010A							
Analysis, Water	Analytical Method: SW-846 6010							
Aluminum	340	ug/L		1	200	61	9/7/2011 15:28	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	9/7/2011 15:28	J
Chromium	4.5	ug/L	V	1	4.0	0.50	9/7/2011 15:28	J
Iron	38	ug/L	U	1	200	38	9/7/2011 15:28	J
Manganese	0.24	ug/L	U	1	1.0	0.24	9/7/2011 15:28	J
Sodium	9.2	mg/L	V	1	0.20	0.026	9/7/2011 15:28	J

Analysis Desc: SW846 6020B	Preparation Method: SW-846 3010A							
Analysis, Total	Analytical Method: SW-846 6020							
Antimony	0.16	ug/L	I	1	0.60	0.073	9/7/2011 23:47	J
Lead	0.30	ug/L	I	1	0.70	0.076	9/7/2011 23:47	J
Silver	0.059	ug/L	U	1	0.30	0.059	9/7/2011 23:47	J
Thallium	0.067	ug/L	U	1	0.20	0.067	9/7/2011 23:47	J

Analysis Desc: SW846 7470A	Preparation Method: SW-846 7470A						
Analysis, Water	Analytical Method: SW-846 7470A						

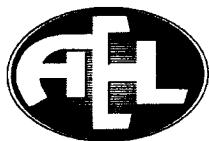
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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID: **A1106405006** Date Received: 08/30/11 15:10 Matrix: Water  
Sample ID: **MW-4B** Date Collected: 08/29/11 14:35

Sample Description:

Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:24	J

### **WET CHEMISTRY**

Analysis Desc: IC,E300.0,Water

Analytical Method: EPA 300.0

Chloride	3.9	mg/L	I	1	10	1.2	8/30/2011 19:51	A
Fluoride	0.28	mg/L		1	0.20	0.0098	9/7/2011 12:31	A
Nitrate	3.2	mg/L		1	0.20	0.053	8/30/2011 19:51	A
Total Dissolved Solids,SM2540C								
Total Dissolved Solids	88	mg/L		1.25	12	12	9/1/2011 08:47	T

Lab ID: **A1106405007**

Date Received: 08/30/11 15:10 Matrix: Water

Sample ID: **MW-6A**

Date Collected: 08/30/11 13:30

Sample Description:

Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
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### **FIELD PARAMETERS**

Analysis Desc: FIELD - Conductance

Analytical Method: DISRES

Conductance	254	umhos/cm		1			8/30/2011 13:20	A^
Dissolved Oxygen	7.64	mg/L		1			8/30/2011 13:20	A^
Groundwater Elevation	45.82	feet		1			8/30/2011 13:20	A^
Temperature	24.23	°C		1			8/30/2011 13:20	A^
Turbidity	5.14	NTU		1			8/30/2011 13:20	A^
pH	7.47	pH unit		1			8/30/2011 13:20	A^

### **METALS**

Analysis Desc: SW846 6010B  
Analysis,Water

Preparation Method: SW-846 3010A

Analytical Method: SW-846 6010

Aluminum	61	ug/L	U	1	200	61	9/7/2011 15:34	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	9/7/2011 15:34	J
Chromium	8.9	ug/L	V	1	4.0	0.50	9/7/2011 15:34	J
Iron	38	ug/L	U	1	200	38	9/7/2011 15:34	J
Manganese	0.87	ug/L	I	1	1.0	0.24	9/7/2011 15:34	J
Sodium	3.2	mg/L	V	1	0.20	0.026	9/7/2011 15:34	J

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405007</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-6A</b>	Date Collected:	08/30/11 13:30		

Sample Description:	Location:
---------------------	-----------

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
<b>Analysis Desc: SW846 6020B</b> Preparation Method: SW-846 3010A								
<b>Analysis,Total</b> Analytical Method: SW-846 6020								
Antimony	0.073	ug/L	U	1	0.60	0.073	9/7/2011 23:56	J
Lead	0.076	ug/L	U	1	0.70	0.076	9/7/2011 23:56	J
Silver	0.059	ug/L	U	1	0.30	0.059	9/7/2011 23:56	J
Thallium	0.067	ug/L	U	1	0.20	0.067	9/7/2011 23:56	J
<b>Analysis Desc: SW846 7470A</b> Preparation Method: SW-846 7470A								
<b>Analysis,Water</b> Analytical Method: SW-846 7470A								
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:26	J

### **WET CHEMISTRY**

Analysis Desc: IC,E300.0,Water	Analytical Method: EPA 300.0
Chloride	8.3 mg/L
Fluoride	0.0098 mg/L
Nitrate	6.1 mg/L
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540C
Total Dissolved Solids	200 mg/L
	1.25
	12
	12
	9/1/2011 08:47
	T

Lab ID:	<b>A1106405008</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-8</b>	Date Collected:	08/30/11 10:00		

Sample Description:	Location:
---------------------	-----------

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
<b>FIELD PARAMETERS</b>								
Analysis Desc: FIELD - Conductance Analytical Method: DISRES								
Conductance	339	umhos/cm		1		8/30/2011 09:49	A^	
Dissolved Oxygen	4.58	mg/L		1		8/30/2011 09:49	A^	
Groundwater Elevation	46.82	feet		1		8/30/2011 09:49	A^	
Temperature	24.12	°C		1		8/30/2011 09:49	A^	
Turbidity	1.51	NTU		1		8/30/2011 09:49	A^	
pH	7.04	pH unit		1		8/30/2011 09:49	A^	

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405008</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-8</b>	Date Collected:	08/30/11 10:00		

Parameters	Results	Units	Qual	DF	Adjusted	Adjusted	Analyzed	Lab						
					PQL	MDL								
<b>METALS</b>														
Analysis Desc: SW846 6010B														
Analysis, Water														
Aluminum	61	ug/L	U	1	200	61	9/7/2011 15:39	J						
Cadmium	0.32	ug/L	U	1	0.60	0.32	9/7/2011 15:39	J						
Chromium	4.1	ug/L	V	1	4.0	0.50	9/7/2011 15:39	J						
Iron	38	ug/L	U	1	200	38	9/7/2011 15:39	J						
Manganese	0.46	ug/L	I	1	1.0	0.24	9/7/2011 15:39	J						
Sodium	5.3	mg/L	V	1	0.20	0.026	9/7/2011 15:39	J						
Analysis Desc: SW846 6020B														
Analysis, Total														
Antimony	0.077	ug/L	I	1	0.60	0.073	9/8/2011 00:06	J						
Lead	0.076	ug/L	U	1	0.70	0.076	9/8/2011 00:06	J						
Silver	0.059	ug/L	U	1	0.30	0.059	9/8/2011 00:06	J						
Thallium	0.067	ug/L	U	1	0.20	0.067	9/8/2011 00:06	J						
Analysis Desc: SW846 7470A														
Analysis, Water														
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:28	J						
<b>WET CHEMISTRY</b>														
Analysis Desc: IC,E300.0,Water														
Analytical Method: EPA 300.0														
Chloride	8.2	mg/L	I	1	10	1.2	8/30/2011 20:24	A						
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	9/7/2011 13:06	A						
Nitrate	2.0	mg/L		1	0.20	0.053	8/30/2011 20:24	A						
Analysis Desc: Tot Dissolved Solids,SM2540C														
Total Dissolved Solids	210	mg/L		1.25	12	12	9/1/2011 08:47	T						

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Advanced Environmental Laboratories, Inc.  
528 S. North Lake Blvd, Suite 1016  
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Phone: (407)937-1594  
Fax: (407)937-1597

## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405009</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-9A</b>	Date Collected:	08/30/11 11:15		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
<b>FIELD PARAMETERS</b>								
Analysis Desc: FIELD - Conductance								
Conductance	895	umhos/cm		1			8/30/2011 11:04	A^
Dissolved Oxygen	0.44	mg/L		1			8/30/2011 11:04	A^
Groundwater Elevation	44.51	feet		1			8/30/2011 11:04	A^
Temperature	25.2	°C		1			8/30/2011 11:04	A^
Turbidity	10.1	NTU		1			8/30/2011 11:04	A^
pH	6.47	pH unit		1			8/30/2011 11:04	A^
<b>METALS</b>								
Analysis Desc: SW846 6010B								
Analysis, Water								
Preparation Method: SW-846 3010A								
Analytical Method: SW-846 6010								
Aluminum	260	ug/L		1	200	61	9/7/2011 15:44	J
Cadmium	2.0	ug/L		1	0.60	0.32	9/7/2011 15:44	J
Chromium	5.4	ug/L	V	1	4.0	0.50	9/7/2011 15:44	J
Iron	1200	ug/L		1	200	38	9/7/2011 15:44	J
Manganese	96	ug/L		1	1.0	0.24	9/7/2011 15:44	J
Sodium	21	mg/L	V	1	0.20	0.026	9/7/2011 15:44	J
Analysis Desc: SW846 6020B								
Analysis, Total								
Preparation Method: SW-846 3010A								
Analytical Method: SW-846 6020								
Antimony	0.13	ug/L	I	1	0.60	0.073	9/8/2011 00:15	J
Lead	0.36	ug/L	I	1	0.70	0.076	9/8/2011 00:15	J
Silver	0.059	ug/L	U	1	0.30	0.059	9/8/2011 00:15	J
Thallium	0.21	ug/L		1	0.20	0.067	9/8/2011 00:15	J
Analysis Desc: SW846 7470A								
Analysis, Water								
Preparation Method: SW-846 7470A								
Analytical Method: SW-846 7470A								
Mercury	0.31	ug/L		1	0.10	0.014	9/6/2011 12:29	J
<b>WET CHEMISTRY</b>								
Analysis Desc: IC,E300.0,Water								
Analytical Method: EPA 300.0								
Chloride	24	mg/L		1	10	1.2	8/30/2011 20:40	A
Fluoride	0.30	mg/L		1	0.20	0.0098	9/7/2011 13:58	A
Nitrate	0.28	mg/L		1	0.20	0.053	8/30/2011 20:40	A
Analysis Desc: Tot Dissolved Solids,SM2540C								
Analytical Method: SM 2540C								

Report ID: 179169 - 3922594

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID:	<b>A1106405009</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>MW-9A</b>	Date Collected:	08/30/11 11:15		

Sample Description:	Location:							
Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Total Dissolved Solids	540	mg/L		1.25	12	12	9/1/2011 08:47	T

Lab ID:	<b>A1106405010</b>	Date Received:	08/30/11 15:10	Matrix:	Water
Sample ID:	<b>EQUIP BLANK</b>	Date Collected:	08/29/11 10:35		

Sample Description:	Location:							
Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab

### **METALS**

Analysis Desc: SW846 6010B	Preparation Method: SW-846 3010A							
Analysis,Water	Analytical Method: SW-846 6010							
Aluminum	61	ug/L	U	1	200	61	9/7/2011 16:13	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	9/7/2011 16:13	J
Chromium	1.0	ug/L	I,V	1	4.0	0.50	9/7/2011 16:13	J
Iron	38	ug/L	U	1	200	38	9/7/2011 16:13	J
Manganese	0.39	ug/L	I	1	1.0	0.24	9/7/2011 16:13	J
Sodium	0.039	mg/L	I,V	1	0.20	0.026	9/7/2011 16:13	J

Analysis Desc: SW846 6020B	Preparation Method: SW-846 3010A							
Analysis,Total	Analytical Method: SW-846 6020							
Antimony	0.38	ug/L	I	1	0.60	0.073	9/8/2011 00:43	J
Lead	0.076	ug/L	U	1	0.70	0.076	9/8/2011 00:43	J
Silver	0.059	ug/L	U	1	0.30	0.059	9/8/2011 00:43	J
Thallium	0.067	ug/L	U	1	0.20	0.067	9/8/2011 00:43	J

Analysis Desc: SW846 7470A	Preparation Method: SW-846 7470A							
Analysis,Water	Analytical Method: SW-846 7470A							
Mercury	0.014	ug/L	U	1	0.10	0.014	9/6/2011 12:32	J

### **WET CHEMISTRY**

Analysis Desc: IC,E300.0,Water	Analytical Method: EPA 300.0							
Chloride	1.2	mg/L	U	1	10	1.2	8/30/2011 21:13	A
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	9/7/2011 14:34	A
Nitrate	0.053	mg/L	U	1	0.20	0.053	8/30/2011 21:13	A

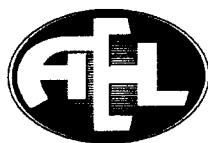
Report ID: 179169 - 3922594

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## ANALYTICAL RESULTS

Workorder: A1106405 Sumter Co Landfill GW Sampling

Lab ID: **A1106405010** Date Received: 08/30/11 15:10 Matrix: Water  
Sample ID: **EQUIP BLANK** Date Collected: 08/29/11 10:35

Sample Description:	Location:							
Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540C							
Total Dissolved Solids	12	mg/L	U	1.25	12	12	9/1/2011 08:39	T

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Advanced Environmental Laboratories, Inc.  
528 S. North Lake Blvd. Suite 1016  
Altamonte Springs, FL 32701

Project: Orlando  
Project Manager: Myrna Santiago

Reported:  
09/08/11 09:04

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A1106405001	1109071-01	Water	08/30/11 09:05	09/01/11 09:00
A1106405002	1109071-02	Water	08/29/11 11:20	09/01/11 09:00
A1106405003	1109071-03	Water	08/30/11 12:00	09/01/11 09:00
A1106405004	1109071-04	Water	08/29/11 13:45	09/01/11 09:00
A1106405005	1109071-05	Water	08/29/11 12:50	09/01/11 09:00
A1106405006	1109071-06	Water	08/29/11 14:35	09/01/11 09:00
A1106405007	1109071-07	Water	08/30/11 13:30	09/01/11 09:00
A1106405008	1109071-08	Water	08/30/11 10:00	09/01/11 09:00
A1106405009	1109071-09	Water	08/30/11 11:15	09/01/11 09:00
A1106405010	1109071-10	Water	08/29/11 10:35	09/01/11 09:00



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Altamonte Springs, FL 32701

Project: Orlando  
Project Manager: Myrna Santiago

Reported:  
09/08/11 09:04

## REPORT OF RESULTS

A1106405001

1109071-01 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:02	

A1106405002

1109071-02 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:03	

A1106405003

1109071-03 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 12:57	

A1106405004

1109071-04 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 12:58	

A1106405005

1109071-05 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.032 I	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:04	

A1106405006

1109071-06 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:05	

Serial: LAB-11098 90728

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Altamonte Springs, FL 32701

Project: Orlando  
Project Manager: Myrna Santiago

Reported:  
09/08/11 09:04

A1106405007

1109071-07 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:06	

A1106405008

1109071-08 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:07	

A1106405009

1109071-09 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.361	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:17	

A1106405010

1109071-10 (Water)

Analysis	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
Ammonia, Total (as N) EPA 350.1	0.009 U	0.009	mg/L	1	1090705	09/07/11	09/07/11 13:09	

## QUALITY CONTROL FOR SAMPLES

### Nutrients - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1090705 = Ammonia, Total (as N) EPA 350.1

Blank (1090705-BLK1)

Ammonia, Total (as N) EPA 350.1

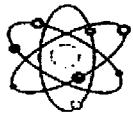
0.009 U    0.009    mg/L

Reference (1090705-SRM1)

Ammonia, Total (as N) EPA 350.1

0.471    0.009    mg/L    0.500

94    90-110



## Florida Radiochemistry Services, Inc.

### Analysis Report

Lab Sample I.D.	1109004-01	1109004-02	1109004-03	1109004-04	1109004-05
Client I.D.	MW-10	MW-11	MW-2	MW-4	MW-4A
Gross Alpha	8.4	17.7	1.4	5.5	2.4
Error +/-	1.3	1.9	1.0	2.3	0.9
MDL	1.0	1.3	1.1	2.1	1.1
EPA Method	900.0	900.0	900.0	900.0	900.0
Prep Date	09/06/11	09/06/11	09/06/11	09/06/11	09/06/11
Prep Time	06:25	06:25	06:25	06:25	06:25
Analysis Date	09/07/11	09/07/11	09/07/11	09/07/11	09/07/11
Analysis Time	13:11	13:11	07:11	09:49	13:11
Analyst	MJN	MJN	MJN	MJN	MJN
Radium 226	1.6	3.2	0.5	1.8	1.0
Error +/-	0.2	0.3	0.1	0.2	0.2
MDL	0.2	0.1	0.1	0.1	0.2
EPA Method	903.1	903.1	903.1	903.1	903.1
Prep Date	09/04/11	09/04/11	09/04/11	09/04/11	09/04/11
Prep Time	09:35	09:35	09:35	09:35	09:35
Analysis Date	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11
Analysis Time	10:10	10:10	10:10	10:10	10:10
Analyst	MJN	MJN	MJN	MJN	MJN
Radium 228	1.0U	1.2	1.0U	0.9U	1.0U
Error +/-	0.7	0.7	0.6	0.6	0.6
MDL	1.0	1.0	1.0	0.9	1.0
EPA Method	Ra-05	Ra-05	Ra-05	Ra-05	Ra-05
Prep Date	09/04/11	09/04/11	09/04/11	09/04/11	09/04/11
Prep Time	09:35	09:35	09:35	09:35	09:35
Analysis Date	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11
Analysis Time	11:17	11:17	11:17	11:17	11:17
Analyst	SN	SN	SN	SN	SN
Units	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l

Page 3 of 5



## Florida Radiochemistry Services, Inc.

### Analysis Report

Lab Sample I.D.	1109004-06	1109004-07	1109004-08	1109004-09	1109004-10
-----------------	------------	------------	------------	------------	------------

Client I.D.	MW-4B	MW-6A	MW-8	MW-9A	EQUIP BLANK
Gross Alpha	1.7	1.2U	1.7U	8.3	0.9U
Error +/-	0.9	0.9	1.0	2.0	0.5
MDL	0.9	1.2	1.7	2.0	0.9
EPA Method	900.0	900.0	900.0	900.0	900.0
Prep Date	09/06/11	09/06/11	09/06/11	09/06/11	09/06/11
Prep Time	06:25	06:25	06:25	06:25	06:25
Analysis Date	09/07/11	09/07/11	09/07/11	09/07/11	09/07/11
Analysis Time	09:49	09:49	09:49	13:09	09:51
Analyst	MJN	MJN	MJN	MJN	MJN
Radium 226	0.2	0.6	0.4	3.0	0.1
Error +/-	0.1	0.1	0.1	0.3	0.1
MDL	0.2	0.1	0.1	0.1	0.1
EPA Method	903.1	903.1	903.1	903.1	903.1
Prep Date	09/04/11	09/04/11	09/04/11	09/04/11	09/04/11
Prep Time	09:35	09:35	09:35	09:35	09:35
Analysis Date	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11
Analysis Time	11:12	11:12	11:12	11:12	11:12
Analyst	MJN	MJN	MJN	MJN	MJN
Radium 228	0.9U	0.9	0.9U	1.8	0.9U
Error +/-	0.6	0.6	0.6	0.7	0.5
MDL	0.9	0.9	0.9	1.0	0.9
EPA Method	Ra-05	Ra-05	Ra-05	Ra-05	Ra-05
Prep Date	09/04/11	09/04/11	09/04/11	09/04/11	09/04/11
Prep Time	09:35	09:35	09:35	09:35	09:35
Analysis Date	09/13/11	09/13/11	09/13/11	09/13/11	09/13/11
Analysis Time	11:17	11:17	12:19	12:19	12:19
Analyst	SN	SN	SN	SN	SN
Units	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l

## **FIELD LOG**

**FIELD LOG**  
Wed Water Levels

**PROJ #** P-453

**NAME:** Dale Claytor

## PROJECT

**NAME:** Somerset County Landfill  
**PROJECT:**

**DATE:** 8/30/11

## PROJECT

## **LOCATION:**

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-2	SAMPLE ID: MW-2	DATE: 8/30/11

## PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER: PP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)											
$Well\ 11/01 = (31.92' \text{ feet} - 23.67' \text{ feet}) \times .16 \text{ gallons/foot} = 1.32 \text{ gallons}$											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)											
1 Equip Vol = .02 gallons + (.006 gallons/foot X feet) + .125 gallons = gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~26'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~26'	PURGING INITIATED AT: 1134	PURGING ENDED AT: 1149	TOTAL VOLUME PURGED (gallons): 1.80							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1145	1.32	1.32	.12	23.80	6.86	27.68	248	5.38	1.32	Clear	None
1147	1.24	1.56	.12	23.80	6.79	27.74	246	5.03	0.95	Clear	None
1149	1.24	1.80	.12	23.80	6.74	27.76	243	5.00	1.00	Clear	None
No shear											

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

## SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: H. L. Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1150	SAMPLING ENDED AT: 1200					
PUMP OR TUBING DEPTH IN WELL (feet): ~26'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE						
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N Filtration Equipment Type: _____	FILTER SIZE: _____ μm	DUPPLICATE: Y N					
SAMPLE CONTAINER SPECIFICATION								
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-2	2	PE	1 Ltr	HN03	None	--	GrossAlpha, RA226RA228	APP
"	1	PE	250 mL	H2S04	None	--	Total Ammonia	APP
"	1	PE	250 mL	HN03	None	--	Metals	APP
"	set 2	PE	250 mL	None	None	--	Chloride, Fluoride, Nitrate, TDS	APP

## REMARKS:

1134: Set dedicated 114" PE tubing @ ~26' static and began purging @ 12 gpm with a pump.

1139: WL 23.80' @ 12 gpm, GW is clear. DO is high @ 5.14 mg/L, but is typical for this well. Will use optional stabilization criteria below.

1143: WL 23.80' @ 12 gpm, drawdown is stable. GW is clear.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
 2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING APP = After Peristaltic Pump; B = Baile; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump  
 EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

2.5

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-4	SAMPLE ID: MW-4	DATE: 8/29/11

## PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 25.16	PURGE PUMP TYPE OR BAILER: ESP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)											
= ( 36.35' feet - 25.16' feet ) X gallons/foot = 1.083 gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X 3: 1.925											
1 Equip Vol	= .02 gallons + (.006 gallons/foot X 36' feet) + .125 gallons = .361 gallons										
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~31'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~31'	PURGING INITIATED AT: 1318	PURGING ENDED AT: 1333	TOTAL VOLUME PURGED (gallons): 4.50							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1329	3.70	3.70	.2	25.48	7.22	26.26	585	1.02	7.22	Clear - None	
1331	.4	4.10	.2	25.48	7.16	26.30	583	1.83	6.60	Clear	None
1333	.4	4.50	.2	25.48	7.13	26.42	583	1.89	5.51	Clear	None
No shown											

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

## SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: H. L. Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1334	SAMPLING ENDED AT: 1345					
PUMP OR TUBING DEPTH IN WELL (feet): ~31'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE						
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ μm	DUPLICATE: Y N					
SAMPLE CONTAINER SPECIFICATION	SAMPLE PRESERVATION							
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
MW-4	2	PE	1 Ltr	HN03	None	--	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	--	Ammonia	ESP
"	1	PE	250 mL	HN03	None	--	Metals	ESP
"	1002	PE	250 mL	None	None	--	Chloride, Fluoride, Nitrate, TDS	ESP

## REMARKS:

1318: Inserted SS ESP and dedicated 3(8" PE tubing to ~31' Gw and began purging @ 1.5 gpm. GW in this well is first at beginning of purge. Requires over purging at a high flow rate to clean it up.

1323: Turbidity is @ 18 NTUs, reduced flow to 0.9 gpm.

1325: WL 25.47' @ 0.2 gpm, GW is clear.

1327: WL 25.48' @ 0.2 gpm, drawdown is stable. GW is clear.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
2) Packed samples on ice immediately upon collection

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3): ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

45

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL
WELL NO: MW-4A	SAMPLE ID: MW-4A

DATE: 8/29/11

## PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH: 30.32' TO WATER (feet):	PURGE PUMP TYPE OR BAILER: ESP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY only fill out if applicable											
= ( 45.23' feet - feet) X gallons/foot = gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X 3 = 1.045 (only fill out if applicable)											
1 Equip Vol = .02 gallons + (.006 gallons/foot X 45' feet) + .125 gallons = .415 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	PURGING INITIATED AT: 1219	PURGING ENDED AT: 1237	TOTAL VOLUME PURGED (gallons): 6.30							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1233	5.50	5.50	.2	30.43'	6.94	26.24	6663	.72	5.22	Clear	None
1235	.4	5.90	.0	30.43'	6.91	26.23	6663	.54	4.28	Clear	None
1237	.4	6.30	.2	30.43'	6.91	26.24	6664	.44	3.03	Clear	None
No shear											

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

## SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: H. L. Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1238	SAMPLING ENDED AT: 1250					
PUMP OR TUBING DEPTH IN WELL (feet): ~40'	SAMPLE PUMP FLOW RATE (ml per minute): < 250 mL	TUBING MATERIAL CODE: PE						
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ μm	DUPLICATE: Y (N)					
SAMPLE CONTAINER SPECIFICATION								
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-4A	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia Metals	ESP
"	1	PE	250 mL	HN03	None	—		ESP
"	nd	PE	250 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

## REMARKS:

1219: Inserted SS ESP and dedicated 3/8" PE tubing to ~40' Gtac and began purging @ 5 gpm. ~~Water~~ GW is extremely turbid and is typical for this well. Requires a high flowrate and over-purging to clean it up.

1226: Turbidity is @ 26 NTUs, continuing purge.

1228: Turbidity is @ 15 NTUs, reduced flow to ~2.9 gpm.

1230: WL 30.43' @ ~2.9 gpm, GW is clear.

1232: WL 30.43' @ ~2.9 gpm, drawdown is stable. GW is clear.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes

2) Packed samples on ice immediately upon collection

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailier; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3): H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL
WELL NO: MW-4B	SAMPLE ID: MW-4B

## PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 28.37	PURGE PUMP TYPE OR BAILER: ESP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY only fill out if applicable)											
= ( 38.49' feet - 28.37' feet ) X gallons/foot = gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X 3 = 1.19											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~33'											
FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~33'											
PURGING INITIATED AT: 1405 PURGING ENDED AT: 1420 TOTAL VOLUME PURGED (gallons): 5.20											
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1420	4.40	4.40	.2	28.45	8.23	65.84	124	6.58	10.5	clear	None
1422	.4	4.80	.2	28.45	8.68	65.83	125	6.47	9.66	clear	None
1424	.4	5.20	.2	28.45	8.61	65.83	129	6.30	8.01	clear	None
No shear											
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.26" = 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											

## SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: H. L. Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1425	SAMPLING ENDED AT: 1435
PUMP OR TUBING DEPTH IN WELL (feet): ~33'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ μm	DUPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
MW-4B	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	2	PE	250 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

## REMARKS:

1405: Inserted 55 ESP and dedicated 3/8" PE tube to ~33' 6ft to and began purging @ .3 gpm with no drawdown.

1410: GW is turbid, but is typical for this well at beginning of purge. Increased flow to .5 gpm.

1413: Turbidity is @ 14 NTUs, reduced flow to .2 gpm.

1416: WL 28.44 @ .2 gpm, GW is clear. DO is high @ 6.6 mg/L but is typical for this well. Will use optional stabilization criteria below.

1419: WL 28.45 @ .2 gpm, drawdown is stable. GW is clear.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
2) Packed samples on ice immediately upon collection

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING/PURGING APP = After Peristaltic Pump; B = Baile; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
EQUIPMENT CODES: RFFF = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3): H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

5.00  
L.00  
7.00  
7.00

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL
WELL NO: MW-6A	SAMPLE ID: MW-6A

DATE: 8/30/11

## PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH <u>31.72</u> TO WATER (feet):	PURGE PUMP TYPE OR BAILE: ESP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)											
= ( <u>50.84'</u> feet - <u>feet</u> ) X <u>gallons/foot</u> = <u>gallons</u>											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X 3 = <u>1,335</u> (only fill out if applicable)											
1 Equip Vol = .02 gallons + (.006 gallons/foot X <u>50'</u> feet) + .125 gallons = <u>.445</u> gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): <u>n45</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>n45</u>	PURGING INITIATED AT: <u>1055</u>	PURGING ENDED AT: <u>1320</u>	TOTAL VOLUME PURGED (gallons): <u>22.6</u>							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1314	18.60	18.60	1	31.85	7.48	24.23	253	2.66	7.04	Clear	None
1318	2	20.60	1	31.85	7.47	24.23	253	2.65	6.44	Clear	None
1320	2	22.60	1	31.85	7.47	24.23	254	2.64	5.14	Clear	None
<i>No stream</i>											
<b>WELL CAPACITY (Gallons Per Foot): 0.76" = 0.02; 1" = 0.04; 1.26" = 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</b>											

## SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <b>H. L. Claytor, Colinas Group, Inc.</b>	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: <u>1321</u>	SAMPLING ENDED AT: <u>1330</u>					
PUMP OR TUBING DEPTH IN WELL (feet): <u>n45</u>	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE						
FIELD DECONTAMINATION: <input checked="" type="radio"/> Y <input type="radio"/> N	FIELD-FILTERED: <input checked="" type="radio"/> Y <input type="radio"/> N Filtration Equipment Type: _____	FILTER SIZE: _____ μm	DUPLICATE: <input checked="" type="radio"/> Y <input type="radio"/> N					
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION						
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
MW-6A	2	PE	1 Ltr	HN03	None	--	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	--	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	--	Metals	ESP
"	<u>out 2</u>	PE	<u>250/100 mL</u>	None	None	--	Chloride, Fluoride, Nitrate, TDS	ESP
REMARKS:								
<p>1055: Inserted SS ESP and dedicated 3/8" PE tubing to n45' stock and began purging @ 1 gpm. This well typically has extremely high turbidity at beginning of purge requiring over purging at a high flow rate to clean it up.</p> <p>1300: Turbidity is @ 38 NTUs, reduced flow to 1.5 gpm.</p> <p>1302: Turbidity is going up at lower flow rate. Increased flow to 1 gpm.</p> <p>1307: Turbidity is @ 15 NTUs, draw down is stable @ 31.85'.</p> <p>1309: DO is high @ 7.70 mg/L, reduced flow to 1.3 gpm.</p>								
<p>Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes</p> <p>2) Packed samples on ice immediately upon collection</p>								
(over)								
MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)								
SAMPLING/PURGING APP = After Peristaltic Pump; B = Baile; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump								
EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)								

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

(MW-6A cont.)

- 1311: Turbidity is back up to 87 NTUs at lower flow rate.  
Increased flow to 19pm. Will use optional stabilization  
criteria for DO.
- 1314: Turbidity is @ 14 NTUs, DO is stable around 7.68 mg/l and  
is typical for this well.

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL									
WELL NO: MW-8	SAMPLE ID: MW-8	DATE: 8/30/11									
<b>PURGING DATA</b>											
WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 22.44 PURGE PUMP TYPE OR BAILER: ESP								
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY only fill out if applicable											
= ( 43.24' feet - feet) X gallons/foot = gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X 3 = 1.209 (only fill out if applicable)											
1 Equip Vol = .02 gallons + (.006 gallons/foot X 43' feet) + .125 gallons = 1.403											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	PURGING INITIATED AT: 0936	PURGING ENDED AT: 0949 TOTAL VOLUME PURGED (gallons): 3.90								
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (ft)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0945	2.70	2.70	.3	22.50	7.08	24.14	349	4.87	4.37	Clear -	None
0947	.6	3.30	.3	22.50	7.06	24.11	339	4.87	5.25	Clear	None
0949	.6	3.90	.3	22.50	7.04	24.10	339	4.38	1.51	Clear	None
No streaks											
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											

### SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <b>H. L. Claytor, Colinas Group, Inc.</b>		SAMPLE(S) SIGNATURES:		SAMPLING INITIATED AT: 0950	SAMPLING ENDED AT: 1000		
PUMP OR TUBING DEPTH IN WELL (feet): ~38'		SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL		TUBING MATERIAL CODE: PE			
FIELD DECONTAMINATION: Y N		FIELD-FILTERED: Y N FILTER SIZE: _____ μm Filtration Equipment Type: _____		DUPLICATE: Y N			
SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)		
MW-8	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228
"	1	PE	250 mL	H2S04	None	—	Total Ammonia
"	1	PE	250 mL	HN03	None	—	Metals
"	2x2	PE	250 mL None	None	None	—	Chloride, Fluoride, Nitrate, TDS

REMARKS:

0936: Inserted 55ESP and dedicated 318" PE tubing to ~38' G to and began purging @ .3 gpm.

0942: WL 22.50' @ .3 gpm, GW is clear.

0944: WL 22.50' @ .3 gpm, drawdown is stable. GW is clear. DO is high @ 4.92 mg/L, but is typical for this well. Will use optional stabilization criteria below.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump

EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3): H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

10  
6  
GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL									
WELL NO: MW-9A	SAMPLE ID: MW-9A	DATE: 8/30/11									
<b>PURGING DATA</b>											
WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 29.25 PURGE PUMP TYPE OR BAILER: ESP								
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY only fill out if applicable											
= ( 50.17' feet - feet) X gallons/foot = gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X 3 = 1,335 (only fill out if applicable)											
1 Equip Vol = .02 gallons + (.006 gallons/foot X 50 feet) + .125 gallons		gallons = .445 gallons									
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	PURGING INITIATED AT: 1026	PURGING ENDED AT: 1104 TOTAL VOLUME PURGED (gallons): 23.20								
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1000	22.00	22.00	.3	36.21	6.59	25.28	899	.66	11.1	Clear	None
1102	.6	22.40	.3	36.21	6.5	25.23	897	.55	9.94	Clear	None
1104	.6	23.20	.3	36.21	6.47	25.20	895	.44	20.1	Clear	None
No screen											
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											

**SAMPLING DATA**

SAMPLED BY (PRINT) / AFFILIATION: <b>H. L. Claytor, Colinas Group, Inc.</b>	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1005	SAMPLING ENDED AT: 1115					
PUMP OR TUBING DEPTH IN WELL (feet): ~45'	SAMPLE PUMP FLOW RATE (mL per minute)	TUBING	MATERIAL CODE: PE					
FIELD DECONTAMINATION: Y N	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: μm	DUPPLICATE: Y N					
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE		
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED			TOTAL VOL ADDED IN FIELD (mL)	FINAL pH
MW-9A	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	ac12	PE	300/100 mL	None	None	—	Chloride,Fluoride, Nitrate, TDS	ESP

## REMARKS:

1026: Inserted SS ESP and dedicated 3/8" PE tubing to ~45' static and began purging @ 1.9 gpm. This well typically is extremely turbid at beginning of purge requiring over pumping at a high flow rate.  
 1036: Turbidity is @ 328 NTUs, increased flow to 1.5 gpm.  
 1040: Reduced flow to .3 gpm, we drawdown to pump @ 1.5 gpm.  
 1050: Turbidity is at 23 NTUs, continuing purge.  
 1057: Turbidity is at 14 NTUs, we 36.21' b/c and stable.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
 2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump

EQUIPMENT CODES: RFFF = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3) H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

7.50

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL									
WELL NO: MW-10	SAMPLE ID: MW-10	DATE: 8/30/11									
PURGING DATA											
WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): <del>23.66</del> PURGE PUMP TYPE OR BAILER: ESP								
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)											
= ( 45.35' feet - feet) X gallons/foot = gallons											
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)											
1 Equip Vol = .02 gallons + (.006 gallons/foot X 45' feet) + .125 gallons = .415 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): <del>n40'</del>		FINAL PUMP OR TUBING DEPTH IN WELL (feet): <del>n40'</del>	PURGING INITIATED AT: 0831 PURGING ENDED AT: 0854 TOTAL VOLUME PURGED (gallons): 10.75								
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
0850	9.25	9.25	.25	24.15	6.50	24.23	532	1.45	9.18	Clear	None
0852	10.25	10.25	.25	24.14	6.52	24.21	536	1.45	6.61	Clear	None
0854	10.75	10.75	.25	24.14	6.53	24.20	536	1.47	5.46	Clear	None
<i>No stream</i>											
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											

## SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <b>H. L. Claytor, Colinas Group, Inc.</b>	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0855	SAMPLING ENDED AT: 0905				
PUMP OR TUBING DEPTH IN WELL (feet): <del>n40'</del>	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE					
FIELD DECONTAMINATION: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	FIELD-FILTERED: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Filtration Equipment Type: _____	FILTER SIZE: _____ μm	DUPLICATE: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N				
SAMPLE CONTAINER SPECIFICATION			SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)		
MW-10	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228
"	1	PE	250 mL	H2S04	None	—	Total Ammonia
"	1	PE	250 mL	HN03	None	—	Metals
"	not 2	PE	300/100 mL 800 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS

## REMARKS:

- 0831: Inserted SS ESP and dedicated 3/8" PE tubing to ~40 ft ec and began purging @ .75 gpm. This well typically has high turbidity at beginning of purge requiring high rate of flow and over purging to clean it up.
- 0841: Turbidity is @ 37 NTUs, reduced flow to .25 gpm.
- 0846: Turbidity has dropped to 16 NTUs, WL 24.15' and slowly recovering.
- 0849: WL 24.15 @ .25 gpm. GW is clear.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING APP = After Peristaltic Pump; B = Baile; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump

EQUIPMENT CODES: RPPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3): H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL
WELL NO: MW-11	SAMPLE ID: MW-11

### PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER: ESP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY  
(only fill out if applicable)

$$= (40.15' \text{ feet} - \text{feet}) \times \text{gallons/foot} = \text{gallons}$$

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME  $\times 3 = 1.155$   
(only fill out if applicable)

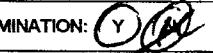
$$1 \text{ Equip Vol} = .02 \text{ gallons} + (.006 \text{ gallons/foot} \times 40' \text{ feet}) + .125 \text{ gallons} = .385 \text{ gallons}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	PURGING INITIATED AT: 1042	PURGING ENDED AT: 1111	TOTAL VOLUME PURGED (gallons): 10.90
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TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (mS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1042	6.50	6.50	.1	24.91	6.32	26.66	513	1.69	15.0	Clear	None
1049	.2	6.70	.1	24.91	6.32	26.25	514	1.64	15.0	Clear	None
1111	.2	6.90	.1	24.91	6.32	26.81	513	1.68	15.0	Clear	None

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

### SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <b>H. L. Claytor, Colinas Group, Inc.</b>	SAMPLER/S SIGNATURES: 	SAMPLING INITIATED AT: 1042	SAMPLING ENDED AT: 1120
PUMP OR TUBING DEPTH IN WELL (feet): ~35'	SAMPLE PUMP FLOW RATE (ml per minute): < 250 mL	TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: 	FIELD-FILTERED: Y N Filtration Equipment Type:	FILTER SIZE: _____ μm	DUPPLICATE: Y N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
MW-11	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA228, RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	1042	PE	250 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:  
 1042: Inserted SS ESP and dedicated 3/8" PE tubing to ~35' to c and began purging @ 5 gpm. GW is extremely turbid in this well and requires over purging @ a high flowrate to clean it up.  
 1049: Turbidity is @ 21 NTUs, continuing purge.  
 1049: Turbidity is @ 10 NTUs, reduced flow to .2 gpm. we 25-07 bto c.  
 1052: WL 25.08' @ .2 gpm, drawdown is stable. GW is clear.  
 Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
 2) Packed samples on ice immediately upon collection

MATERIAL CODES:	AG = Amber Glass;	CG = Clear Glass;	PE = Polyethylene;	PP = Polypropylene;	S = Silicone;	T = Teflon;	O = Other (Specify)
SAMPLING/PURGING	APP = After Peristaltic Pump;	B = Bailer;	BP = Bladder Pump;	ESP = Electric Submersible Pump;	PP = Peristaltic Pump		
EQUIPMENT CODES:	RFP = Reverse Flow Peristaltic Pump;	SM = Straw Method (Tubing Gravity Drain);	VT = Vacuum Trap;	O = Other (Specify)			

Notes: 1. The above do not constitute all the information required by Chapter 62-160, F.A.C.  
 2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3):  $\pm 0.2$  units; Temperature:  $\pm 0.2$  degrees C; Specific Conductance:  $\pm 5\%$ ; Dissolved Oxygen: all readings  $\leq 20\%$  saturation (see Table FS 2200-2), optionally,  $\pm .02$  mg/L or  $\pm 10\%$  (whichever is greater); Turbidity: all readings  $\leq 20$  NTU, optionally  $\pm 5$  NTU or  $\pm 10\%$  (whichever is greater)

(MW-II Cont.)

to .15 gpm in effort to lower DO.

1102: DO is @ 1.85 mg/l, reduced flow to .1 gpm. w/e 24.91' Gloc  
and stable.

## GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: NA	SAMPLE ID: EQB	DATE: 8/29/11

## PURGING DATA

WELL DIAMETER (inches)	TUBING DIAMETER (inches)	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet):	PURGE PUMP TYPE OR BAILER: ESP
<b>WELL VOLUME PURGE:</b> 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)				
<i>NA</i> = (      feet -      feet ) X      gallons/foot =      gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)	<i>NA</i>	<i>gallons + (      gallons/foot X      feet ) +      gallons</i>		
INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	<i>NA</i>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <i>NA</i>	PURGING INITIATED AT: <i>NA</i>	PURGING ENDED AT: <i>NA</i>
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)
				pH (standard units)
				TEMP. (°C)
				COND. (mS/cm)
				DISSOLVED OXYGEN (mg/L)
				TURBIDITY (NTUs)
				COLOR (describe)
				ODOR (describe)
<b>WELL CAPACITY (Gallons Per Foot):</b> 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 <b>TUBING INSIDE DIA. CAPACITY (Gal./Ft.):</b> 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				

## SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: <b>H. L. Claytor, Colinas Group, Inc.</b>	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: <i>1025</i>	SAMPLING ENDED AT: <i>1035</i>					
PUMP OR TUBING DEPTH IN WELL (feet): <i>NA</i>	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING MATERIAL CODE: PE						
FIELD DECONTAMINATION: <i>Y</i> <i>N</i>	FIELD-FILTERED: <i>Y</i> <i>N</i> FILTER SIZE: _____ μm Filtration Equipment Type: _____	DUPLICATE: <i>Y</i> <i>N</i>						
SAMPLE CONTAINER SPECIFICATION	SAMPLE PRESERVATION	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE					
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
EQB	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	<i>102</i>	PE	<i>1000 mL</i>	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP
<i>102</i>	<i>Various</i>	<i>Various</i>	<i>Various</i>	<i>Various</i>	<i>None</i>	—	<i>Appendix I</i> Parameters	<i>ESP</i>

## REMARKS:

Field decorated 5 gallon PE bucket and 55 ESP/WL probe IAW DEP-SOP-001/01, EC 1000. Poured 2 gallons of DI Water into PE bucket, inserted 55 ESP and WL probe, and circulated DI Water through pump and over WL probe for several minutes. Collected EQB samples with an intermediate container.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes  
2) Packed samples on ice immediately upon collection

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

SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump

EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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

2. STABILIZATION CRITERIA FOR RANGE VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)H: ± 0.2 units; Temperature: ± 0.2 degrees C; Specific Conductance: ± 5%; Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2), optionally, ± .02 mg/L or ± 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU, optionally ± 5 NTU or ± 10% (whichever is greater)



Environmental

Laboratories, Inc.

Page - 1

LAB NUMBER:

A1106405

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## Sumter Co. Landfill - GW Sampling

CLIENT NAME: The Colinas Group, Inc.  
 ADDRESS: 808 North Virginia Ave  
 CITY: Winter Park, Florida 32789  
 STATE: FL  
 PHONE: 407-622-8176  
 FAX: 407-622-8198  
 CONTACT: Dele Claytor  
 SAMPLE BY: Dele Claytor  
 TURN AROUND TIME: Turn around time \_\_\_\_\_  
 STANDARD \_\_\_\_\_

P.O. NUMBER/QUALITY NUMBER: P-49  
 INVESTIGATION NUMBER: \_\_\_\_\_

## ANALYTICAL INSTRUCTIONS

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	Sampling DATE	Matrix	No. COUNT	ANALYSIS REQUIRED									
						WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
MW-10	Grab	0805	0805	W	8	X	X	X	X	X	X	X	X	X	X
MW-11	Grab	0805011	1020	W	6	X	X	X	X	X	X	X	X	X	X
MW-2	Grab	0805011	1030	W	6	X	X	X	X	X	X	X	X	X	X
MW-4	Grab	0805011	1045	W	6	X	X	X	X	X	X	X	X	X	X
MW-4A	Grab	0805011	1050	W	6	X	X	X	X	X	X	X	X	X	X
MW-4B	Grab	0805011	1055	W	6	X	X	X	X	X	X	X	X	X	X
MW-6A	Grab	0805011	1120	W	6	X	X	X	X	X	X	X	X	X	X
MW-8	Grab	0805011	1030	W	6	X	X	X	X	X	X	X	X	X	X
MW-9A	Grab	0805011	1115	W	6	X	X	X	X	X	X	X	X	X	X
EQUIPMENT BLANK	Grab	0805011	1035	W	6	X	X	X	X	X	X	X	X	X	X

Received on ice  Yes  No  Temperature from sample  Temperature blank  Sample received, pH checked

Centrifuge used for preserving  Time by unique identifier (date or step pen used)

Temperature when received  (In degrees celsius)

Date \_\_\_\_\_ Time \_\_\_\_\_ Received by \_\_\_\_\_

J: JA G: GA L: LA A: SA

Printed on 2008

Other Print Information and date/time required \_\_\_\_\_

Contact Person: \_\_\_\_\_

Signature: \_\_\_\_\_

FOR DRINKING WATER USE:

Received by:	Date	Time	Received by:	Date	Time
1 <i>C. J. Taylor</i>	0805011	1010	2		
3			4		

Scouter Co. LF

## **Field Instrument Calibration Records**

**INSTRUMENT (MAKE/MODEL#) YSI 556/Hanna INSTRUMENT #**

## **PARAMETERS:**

TEMPERATURE       CONDUCTIVITY       SALINITY       pH  
 TURBIDITY       RESIDUAL CL       DO       ORP  
 OTHER \_\_\_\_\_

**STANDARDS:** [Bracket calibrated meters pH 4.01 – 7 and Turbidity 0.1 – 15 NTU's ]

Standard A Oakton pH Standard 4.01 Units Exp: 6/2012

Standard B Oakton pH Standard 7.00 Units Exp: 5/20/21

Standard C Oakton Conductivity Standard 1500 uS/cm Exp: 9/2011

Standard D Hanna 0.1 NTU Standard Exp: 4/2013

Standard E Hanna 15 NTU Standard Exp: 4/12/013

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
8/29/11	0940	A	4.01	4.01		Yes	IC	JK	pH
		B	7.00	7.00					pH
		C	1500	1605 @ 28.312 ok					Cond
		--	--	7.79					DO
		--	--	28.28					Temp
		D	0.1	0.1					Turb
		E	15	15.0					Turb
8/29/11	0955	A	4.01	4.07		Yes	ICV	JK	pH
		B	7.00	7.00					pH
		C	1500	1606 @ 28.312 ok					Cond
		--	--	7.78					DO
		--	--	28.46					Temp
		D	0.1	0.29					Turb
		E	15	15.0					Turb
8/29/11	1500	A	4.01	4.08		Yes	CC	JK	pH
		B	7.00	7.01					pH
		C	1500	1580 @ 22.53 ok					Cond
		--	--	7.84					DO
		--	--	28.02					Temp
		D	0.1	0.28					Turb
		E	15	14.6					Turb

Scammon Co. Ltd

## **Field Instrument Calibration Records**

**INSTRUMENT (MAKE/MODEL#) YSI 556/Hanna    INSTRUMENT #**

## PARAMETERS:

TEMPERATURE       CONDUCTIVITY       SALINITY       pH       ORP  
 TURBIDITY       RESIDUAL CL       DO       OTHER \_\_\_\_\_

**STANDARDS:** [Bracket calibrated meters pH 4.01 - 7 and Turbidity 0.1 - 15 NTU's]

Standard A Oakton pH Standard 4.01 Units Exp: 6/2012

Standard B Oakton pH Standard 7.00 Units Exp: 5/2012

Standard C Oakton Conductivity Standard 1500 uS/cm Exp: 4/2012

Standard D Hanna 0.1 NTU Standard Exp: 4/2013

Standard E Hanna 15 NTU Standard Exp: 4/2013

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
8/30/11	0755	A	4.01	4.01		Yes	IC	KL	pH
		B	7.00	7.00					pH
		C	1500	1555 <sup>6</sup> <del>26.55</del> ok					Cond
		--	--	8.09					DO
		--	--	26.15					Temp
		D	0.1	0.1					Turb
		E	15	15.0					Turb
8/30/11	0810	A	4.01	4.03		Yes	ILV	KL	pH
		B	7.00	7.00					pH
		C	1500	1552 <sup>6</sup> <del>26.60</del> ok					Cond
		--	--	8.05					DO
		--	--	26.21					Temp
		D	0.1	0.28					Turb
		E	15	14.9					Turb
8/30/11	1345	A	4.01	4.02		Yes	CC	KL	pH
		B	7.00	6.99					pH
		C	1500	1556 <sup>6</sup> <del>26.84</del> ok					Cond
		--	--	7.91					DO
		--	--	27.52					Temp
		D	0.1	0.29					Turb
		E	15	15.01					Turb