

**SUMTER COUNTY
(CLOSED) LANDFILL
QUARTERLY GROUNDWATER
MONITORING REPORT
Quarter II (May) 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**

July 2011

THE COLINAS GROUP, INC.
HYDROGEOLOGISTS & ENGINEERS

July 11, 2011

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

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

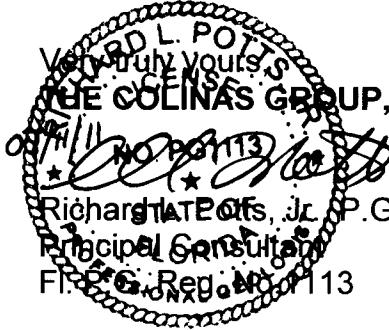
Dear Mr. Morris:

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

**Sumter County (Closed) Landfill Quarterly Groundwater Monitoring Report,
Quarter II (May) 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.

Very truly yours,
THE COLINAS GROUP, INC.
Richard L. Pois, Jr., P.G.
Principal Consultant
FL P.G. Reg. No. 113



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

**SUMTER COUNTY (CLOSED) LANDFILL
GROUNDWATER MONITORING REPORT,
SUMTER COUNTY, FLORIDA
Quarter II (May) 2011**

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**Sumter County (Closed) Landfill
Quarterly Groundwater Monitoring Report
Quarter II (May) 2011**

INTRODUCTION

The Colinas Group, Inc. (TCG) has reviewed the groundwater monitoring well sampling and analytical results for the Quarter II (May) 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 II 2011 sampling event at the Sumter County Landfill occurred over a two day period, May 17 and 18, 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 May 17, 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 II (May) 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 eight (8) 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 8.69 pH units. This well has consistently produced pH values above 8.5 since sampling of the well began in Quarter II of 2006.

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. Temperature measurements of groundwater from the monitoring wells ranged from a low of 23.8 C at well **MW-8** to 25.87 C at **MW-4**.

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 126 umhos/cm at well **MW-4B** to 898 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 May 2011 sample set is presented in Table III. As shown, five (5) analytical parameters were reported for certain monitoring wells at concentrations that exceed applicable regulatory levels. Exceeded parameters reported are aluminum, 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 five (5) monitoring wells: **MW-4** (280 ug/l), **MW-4B** (460 ug/l), **MW-9A** (550 ug/l), **MW-10** (610 ug/l), and **MW-11** (420 ug/l).

Iron

Dissolved iron was detected in two (2) monitoring wells at concentrations above the FSDWS MCL of 300 ug/l. Iron was reported at 940 ug/l at well **MW-9A** and 570 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 MDL at the remaining monitoring wells.

Manganese

Manganese was reported above the FSDWS MCL of 50 ug/l in monitoring well **MW-9A** at 91 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 14 mg/l. Elevated nitrate levels less than the MCL are noted in well **MW-4** (7.7 mg/l) and the facility background monitoring well **MW-6A** (6.6 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 72 mg/l at **MW-4B** to 420 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 concentrations ranging from 0.073 ug/l to 0.47 ug/l, well below the FPDWS MCL of 6 ug/l.

Cadmium was detected in groundwater samples from two (2) monitoring wells (**MW-9A** 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. Chloride ranged from 4.2 mg/l to 27 mg/l.

Chromium was detected at concentrations ranging from 1.5 ug/l to 17 ug/l (**MW-4**). The FPDWS MCL for chromium is 100 ug/l.

Fluoride was detected at trace concentrations, well below the FPDWS MCL (4 mg/l), at three (3) 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 0.26 ug/l to 0.67 ug/l. Lead was reported below the laboratory MDL in remaining monitoring wells.

Mercury was detected at very low concentrations at seven (7) monitoring wells, including background well **MW-6A**. Reported 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 above concentrations measured in samples from other monitoring wells.

Thallium was reported at low concentrations in three (3) wells: **MW-4A** (0.17 ug/l), **MW-9A** (0.13 ug/l) and **MW-11** (0.14 ug/l). The FPDWS MCL for thallium is 2 ug/l. Remaining wells were reported below the laboratory MDL.

SUMMARY

Chemical characteristics of groundwater monitored at the Sumter County Landfill are reported for the Quarter II (May) 2011 sampling event. Exceedances of specific constituent regulatory levels and MCLs are reported at specific monitoring wells for **aluminum, 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 five wells (**MW-4, 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 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.

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** (14 mg/l). As shown on the groundwater contour map for the May 2011 sampling event (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 II (May) 2011

Sampling Point	Temp. (C)	Dissolved Oxygen (mg/l)	pH	Specific Conductance (umhos/cm)	Turbidity (NTU)
MW-2	25.54	5.02	6.94	210	0.55
MW-4	25.87	1.26	7.07	587	8.21
MW-4A	26.27	0.89	6.88	673	4.45
MW-4B	25.77	5.67	8.69	126	6.07
MW-6A	24.76	7.54	7.57	257	9.20
MW-8	23.80	4.78	7.00	345	2.44
MW-9A	25.06	0.67	6.39	898	14.1
MW-10	25.09	1.47	6.84	540	18.2
MW-11	25.59	1.56	6.28	532	12.8

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 II (May) 2011
SUMMARY OF GROUNDWATER LEVELS
SUMTER COUNTY (CLOSED) LANDFILL
SUMTER COUNTY, FLORIDA
(May 17, 2011)

Well No.	Measuring Point Elevation ^{1/} (ft. +NGVD)	Depth to Water (ft. - MP) ^{2/}	Groundwater Elevation (ft. +NGVD)
MW-1	70.17	25.74	44.43
MW-2	69.13	24.41	44.72
MW-2A	72.11	27.47	44.64
MW-4	70.36	25.88	44.48
MW-4A	75.73	31.07	44.66
MW-4B	73.83	29.14	44.69
MW-6A	77.54	32.59	44.95
MW-7	73.14	28.44	44.7
MW-8	69.26	23.40	45.86
MW-9	71.95	28.08	43.87
MW-9A	72.80	30.53	42.27
MW-10	68.28	23.46	44.82
MW-11	70.21	25.64	44.57

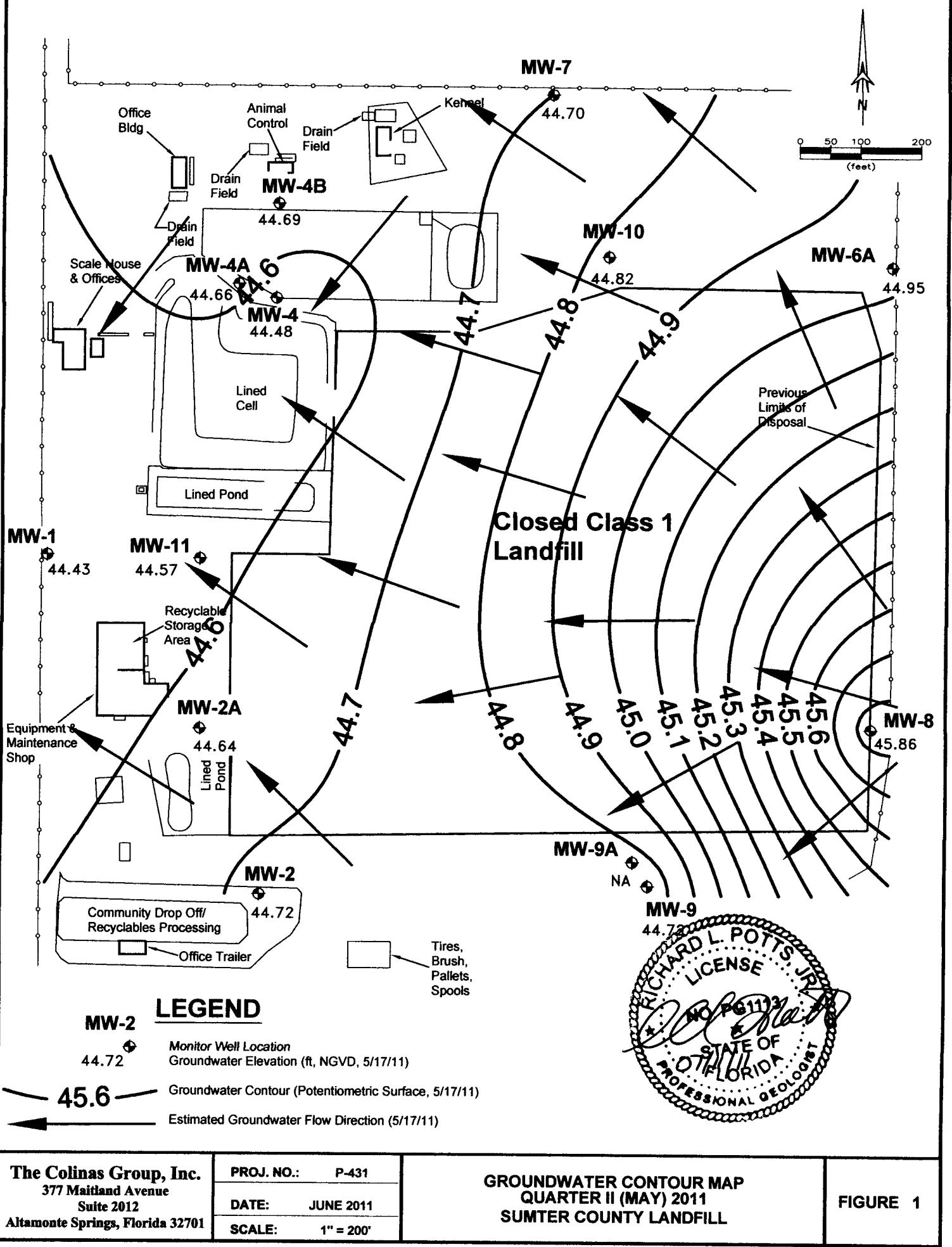
Notes: 1/ Measuring Point is top of PVC well casing.

2/ Water levels recorded on May 17, 2011.

TABLE III
SUMTER COUNTY (CLOSED) LANDFILL, QUARTER II (May) 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	BDL	BDL	BDL	BDL	0.40	BDL	BDL	2.8
Aluminum	ug/l	BDL	280	BDL	460	BDL	550	610	420	200	
Antimony	ug/l	0.47	0.22	0.11	0.13	BDL	0.073	0.11	0.22	0.10	6
Cadmium	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	1.4	BDL	1.7	5
Chloride	mg/l	6.8	20	27	4.2	8.6	8.7	24	7.4	3.8	250
Chromium	ug/l	BDL	17	1.5	3.9	8.2	3.6	9.4	7.7	7.5	100
Fluoride	mg/l	BDL	0.04	BDL	BDL	BDL	BDL	0.090	BDL	0.090	4
Gross Alpha	pCi/l	<1.4 ± 0.9	7.11 ± 1.1	3.5 ± 1.3	1.6 ± 0.9	<1.1 ± 0.9	1.7 ± 1.2	10.7 ± 1.8	10.3 ± 1.3	13.1 ± 1.5	15
Iron	ug/l	BDL	130	BDL	BDL	BDL	BDL	940	570	100	300
Lead	ug/l	BDL	0.52	BDL	0.26	BDL	BDL	0.55	0.67	0.62	15
Manganese	ug/l	0.26	5.2	2.1	BDL	0.89	0.57	91	23	3.6	50
Mercury	ug/l	BDL	BDL	0.033	0.040	0.028	0.019	0.55	0.033	0.084	2
Nitrate, as N	mg/l	2.8	7.7	14	3.3	6.6	2.1	0.24	2.5	4.8	10
Radium 226	pCi/l	0.4 ± 0.1	1.1 ± 0.2	1.0 ± 0.2	0.4 ± 0.1	0.4 ± 0.2	0.9 ± 0.3	3.1 ± 0.5	2.0 ± 0.4	3.3 ± 0.5	---
Radium 228	pCi/l	1.3 ± 0.6	<0.9 ± 0.6	<0.8 ± 0.5	<0.9 ± 0.6	<0.9 ± 0.6	<0.8 ± 0.5	0.9 ± 0.5	<0.8 ± 0.5	0.7 ± 0.5	---
Silver	ug/l	BDL	100								
Sodium	mg/l	0.085	40	26	9.6	3.0	5.2	20	6.9	9.1	160
TDS	mg/l	120	350	420	72	190	210	540	300	300	500
Thallium	ug/l	BDL	BDL	0.17	BDL	BDL	0.13	0.14	BDL	2	

Notes: 1). BDL means below laboratory method detection limit 2). **Bold lettering** indicates result exceeds MCL/Guidance concentration





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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556002	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-2	Date Collected:	05/18/11 12:05		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: FIELD - Conductance								
Conductance	210	umhos/cm		1			5/18/2011 12:05	A^
Dissolved Oxygen	5.02	mg/L		1			5/18/2011 12:05	A^
Groundwater Elevation	44.67	feet		1			5/18/2011 12:05	A^
Temperature	25.54	°C		1			5/18/2011 12:05	A^
Turbidity	0.55	NTU		1			5/18/2011 12:05	A^
pH	6.94	pH unit		1			5/18/2011 12:05	A^
METALS								
Analysis Desc: Ammonia,E350.1,Water								
Ammonia (N)	0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T
Analysis Desc: SW846 6010B								
Analysis,Water								
Preparation Method: SW-846 3010A								
Analytical Method: SW-846 6010								
Aluminum	61	ug/L	U	1	200	61	5/20/2011 12:53	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 12:53	J
Chromium	0.50	ug/L	U	1	4.0	0.50	5/20/2011 12:53	J
Iron	38	ug/L	U	1	200	38	5/20/2011 12:53	J
Manganese	0.26	ug/L	I	1	1.0	0.24	5/20/2011 12:53	J
Sodium	0.085	mg/L	I	1	0.20	0.026	5/20/2011 12:53	J
Analysis Desc: SW846 6020B								
Analysis,Total								
Preparation Method: SW-846 3010A								
Analytical Method: SW-846 6020								
Antimony	0.47	ug/L	I	1	0.60	0.073	5/26/2011 02:08	J
Lead	0.076	ug/L	U	1	0.70	0.076	5/26/2011 02:08	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 02:08	J
Thallium	0.067	ug/L	U	1	0.20	0.067	5/26/2011 02:08	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	5/19/2011 16:16	J
WET CHEMISTRY								
Analysis Desc: IC,E300.0,Water								
Analytical Method: EPA 300.0								
Chloride	6.8	mg/L	I	1	10	1.2	5/19/2011 15:52	A
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	5/19/2011 15:52	A
Nitrate	2.8	mg/L		1	0.20	0.053	5/19/2011 15:52	A

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556002	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-2	Date Collected:	05/18/11 12:05		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540C							
Total Dissolved Solids	120	mg/L		1	10	10	5/23/2011 09:28	T

Lab ID:	A1103556003	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-4	Date Collected:	05/17/11 13:20		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: FIELD - Conductance	Analytical Method: DISRES							
Conductance	587	umhos/cm		1			5/17/2011 13:20	A^
Dissolved Oxygen	1.26	mg/L		1			5/17/2011 13:20	A^
Groundwater Elevation	44.48	feet		1			5/17/2011 13:20	A^
Temperature	25.87	°C		1			5/17/2011 13:20	A^
Turbidity	8.21	NTU		1			5/17/2011 13:20	A^
pH	7.07	pH unit		1			5/17/2011 13:20	A^

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	280	ug/L		1	200	61	5/20/2011 12:58	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 12:58	J
Chromium	17	ug/L		1	4.0	0.50	5/20/2011 12:58	J
Iron	130	ug/L	I	1	200	38	5/20/2011 12:58	J
Manganese	5.2	ug/L		1	1.0	0.24	5/20/2011 12:58	J
Sodium	40	mg/L		1	0.20	0.026	5/20/2011 12:58	J
Analysis Desc: SW846 6020B	Preparation Method: SW-846 3010A							
Analysis,Total	Analytical Method: SW-846 6020							
Antimony	0.22	ug/L	I	1	0.60	0.073	5/26/2011 02:18	J
Lead	0.52	ug/L	I	1	0.70	0.076	5/26/2011 02:18	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 02:18	J
Thallium	0.067	ug/L	U	1	0.20	0.067	5/26/2011 02:18	J

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556003	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-4	Date Collected:	05/17/11 13:20		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
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	5/19/2011 16:27	J
WET CHEMISTRY								
Analysis Desc: IC,E300.0,Water		Analytical Method: EPA 300.0						
Chloride	20	mg/L		1	10	1.2	5/19/2011 16:41	A
Fluoride	0.040	mg/L	I	1	0.20	0.0098	5/19/2011 16:41	A
Nitrate	7.7	mg/L		1	0.20	0.053	5/19/2011 16:41	A
Analysis Desc: Ammonia,E350.1,Water		Analytical Method: EPA 350.1						
Ammonia (N)	0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T
Analysis Desc: Tot Dissolved Solids,SM2540C		Analytical Method: SM 2540C						
Total Dissolved Solids	350	mg/L		1	10	10	5/23/2011 09:28	T

Lab ID:	A1103556004	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-4A	Date Collected:	05/17/11 12:30		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: FIELD - Conductance		Analytical Method: DISRES						
Conductance	673	umhos/cm		1			5/17/2011 12:30	A^
Dissolved Oxygen	0.89	mg/L		1			5/17/2011 12:30	A^
Groundwater Elevation	44.66	feet		1			5/17/2011 12:30	A^
Temperature	26.27	°C		1			5/17/2011 12:30	A^
Turbidity	4.45	NTU		1			5/17/2011 12:30	A^
pH	6.88	pH unit		1			5/17/2011 12:30	A^
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	5/20/2011 13:03	J

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556004	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-4A	Date Collected:	05/17/11 12:30		

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

Parameters	Results	Units	Qual	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 13:03	J
Chromium	1.5	ug/L	I	1	4.0	0.50	5/20/2011 13:03	J
Iron	38	ug/L	U	1	200	38	5/20/2011 13:03	J
Manganese	2.1	ug/L		1	1.0	0.24	5/20/2011 13:03	J
Sodium	26	mg/L		1	0.20	0.026	5/20/2011 13:03	J

Analysis Desc: SW846 6020B

Preparation Method: SW-846 3010A

Analysis, Total

Analytical Method: SW-846 6020

Antimony

0.11	ug/L	I	1	0.60	0.073	5/26/2011 02:27	J
------	------	---	---	------	-------	-----------------	---

Lead

0.076	ug/L	U	1	0.70	0.076	5/26/2011 02:27	J
-------	------	---	---	------	-------	-----------------	---

Silver

0.059	ug/L	U	1	0.30	0.059	5/26/2011 02:27	J
-------	------	---	---	------	-------	-----------------	---

Thallium

0.17	ug/L	I	1	0.20	0.067	5/26/2011 02:27	J
------	------	---	---	------	-------	-----------------	---

Analysis Desc: SW846 7470A

Preparation Method: SW-846 7470A

Analysis, Water

Analytical Method: SW-846 7470A

Mercury

0.033	ug/L	I	1	0.10	0.014	5/19/2011 16:29	J
-------	------	---	---	------	-------	-----------------	---

WET CHEMISTRY

Analysis Desc: IC,E300.0,Water

Analytical Method: EPA 300.0

Chloride

27	mg/L		1	10	1.2	5/19/2011 16:58	A
----	------	--	---	----	-----	-----------------	---

Fluoride

0.0098	mg/L	U	1	0.20	0.0098	5/19/2011 16:58	A
--------	------	---	---	------	--------	-----------------	---

Nitrate

14	mg/L		2	0.40	0.11	5/19/2011 17:14	A
----	------	--	---	------	------	-----------------	---

Analysis Desc: Ammonia,E350.1,Water

Analytical Method: EPA 350.1

Ammonia (N)

0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T
-------	------	---	---	------	-------	-----------------	---

Analysis Desc: Tot Dissolved Solids,SM2540C

Analytical Method: SM 2540C

Total Dissolved Solids

420	mg/L		1	10	10	5/23/2011 09:28	T
-----	------	--	---	----	----	-----------------	---

Lab ID:

A1103556005

Date Received:

05/18/11 14:46

Matrix:

Water

Sample ID:

MW-4B

Date Collected:

05/17/11 14:15

Sample Description:

Location:

Parameters	Results	Units	Qual	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		

FIELD PARAMETERS

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampl

Lab ID:	A1103556005	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-4B	Date Collected:	05/17/11 14:15		

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

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: FIELD - Conductance	Analytical Method: DISRES							
Conductance	126	umhos/cm		1			5/17/2011 14:15	A^
Dissolved Oxygen	5.67	mg/L		1			5/17/2011 14:15	A^
Groundwater Elevation	44.69	feet		1			5/17/2011 14:15	A^
Temperature	25.77	°C		1			5/17/2011 14:15	A^
Turbidity	6.07	NTU		1			5/17/2011 14:15	A^
pH	8.69	pH unit		1			5/17/2011 14:15	A^
METALS								
Analysis Desc: SW846 6010B	Preparation Method: SW-846 3010A							
Analysis,Water	Analytical Method: SW-846 6010							
Aluminum	460	ug/L		1	200	61	5/20/2011 13:09	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 13:09	J
Chromium	3.9	ug/L	I	1	4.0	0.50	5/20/2011 13:09	J
Iron	38	ug/L	U	1	200	38	5/20/2011 13:09	J
Manganese	0.24	ug/L	U	1	1.0	0.24	5/20/2011 13:09	J
Sodium	9.6	mg/L		1	0.20	0.026	5/20/2011 13:09	J
Analysis Desc: SW846 6020B	Preparation Method: SW-846 3010A							
Analysis,Total	Analytical Method: SW-846 6020							
Antimony	0.13	ug/L	I	1	0.60	0.073	5/26/2011 02:36	J
Lead	0.26	ug/L	I	1	0.70	0.076	5/26/2011 02:36	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 02:36	J
Thallium	0.067	ug/L	U	1	0.20	0.067	5/26/2011 02:36	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	5/19/2011 16:34	J
WET CHEMISTRY								
Analysis Desc: IC,E300.0,Water	Analytical Method: EPA 300.0							
Chloride	4.2	mg/L	I	1	10	1.2	5/19/2011 17:31	A
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	5/19/2011 17:31	A
Nitrate	3.3	mg/L		1	0.20	0.053	5/19/2011 17:31	A
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556005	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-4B	Date Collected:	05/17/11 14:15		

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	72	mg/L		1	10	10	5/23/2011 09:28	T

Lab ID:	A1103556006	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-6A	Date Collected:	05/18/11 13:20		

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

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
------------	---------	-------	------	----	--------------	--------------	----------	-----

FIELD PARAMETERS

Analysis Desc: FIELD - Conductance	Analytical Method: DISRES
------------------------------------	---------------------------

Conductance	257	umhos/cm	1		5/18/2011 13:20	A^
Dissolved Oxygen	7.54	mg/L	1		5/18/2011 13:20	A^
Groundwater Elevation	44.89	feet	1		5/18/2011 13:20	A^
Temperature	24.76	°C	1		5/18/2011 13:20	A^
Turbidity	9.2	NTU	1		5/18/2011 13:20	A^
pH	7.57	pH unit	1		5/18/2011 13:20	A^

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	5/20/2011 13:14	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 13:14	J
Chromium	8.2	ug/L		1	4.0	0.50	5/20/2011 13:14	J
Iron	38	ug/L	U	1	200	38	5/20/2011 13:14	J
Manganese	0.89	ug/L	I	1	1.0	0.24	5/20/2011 13:14	J
Sodium	3.0	mg/L		1	0.20	0.026	5/20/2011 13:14	J

Analysis Desc: SW846 6020B	Preparation Method: SW-846 3010A
----------------------------	----------------------------------

Analysis, Total

Analytical Method: SW-846 6020

Antimony	0.073	ug/L	U	1	0.60	0.073	5/26/2011 02:45	J
Lead	0.076	ug/L	U	1	0.70	0.076	5/26/2011 02:45	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 02:45	J
Thallium	0.067	ug/L	U	1	0.20	0.067	5/26/2011 02:45	J

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556006	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-6A	Date Collected:	05/18/11 13:20		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: SW846 7470A								
Analysis,Water								
Mercury	0.028	ug/L	I	1	0.10	0.014	5/19/2011 16:36	J
WET CHEMISTRY								
Analysis Desc: IC,E300.0,Water								
Chloride	8.6	mg/L	I	1	10	1.2	5/19/2011 17:47	A
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	5/19/2011 17:47	A
Nitrate	6.6	mg/L		1	0.20	0.053	5/19/2011 17:47	A
Analysis Desc: Ammonia,E350.1,Water								
Ammonia (N)	0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T
Analysis Desc: Tot Dissolved Solids,SM2540C								
Total Dissolved Solids	190	mg/L		1	10	10	5/23/2011 09:28	T

Lab ID:	A1103556007	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-8	Date Collected:	05/18/11 10:15		

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: FIELD - Conductance								
Conductance	345	umhos/cm	I				5/18/2011 10:15	A^
Dissolved Oxygen	4.78	mg/L	I				5/18/2011 10:15	A^
Groundwater Elevation	45.84	feet	I				5/18/2011 10:15	A^
Temperature	23.8	°C	I				5/18/2011 10:15	A^
Turbidity	2.44	NTU	I				5/18/2011 10:15	A^
pH	7	pH unit	I				5/18/2011 10:15	A^

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: SW846 6010B								
Analysis,Water								
Aluminum	61	ug/L	U	1	200	61	5/20/2011 13:19	J

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID: **A1103556007**

Date Received: 05/18/11 14:46 Matrix: Water

Sample ID: **MW-8**

Date Collected: 05/18/11 10:15

Sample Description:

Location:

Parameters	Results	Units	Qual	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 13:19	J
Chromium	3.6	ug/L	I	1	4.0	0.50	5/20/2011 13:19	J
Iron	38	ug/L	U	1	200	38	5/20/2011 13:19	J
Manganese	0.57	ug/L	I	1	1.0	0.24	5/20/2011 13:19	J
Sodium	5.2	mg/L		1	0.20	0.026	5/20/2011 13:19	J

Analysis Desc: SW846 6020B

Preparation Method: SW-846 3010A

Analysis, Total

Analytical Method: SW-846 6020

Antimony

0.073 ug/L

I

1

0.60

0.073

5/26/2011 02:55

J

Lead

0.076 ug/L

U

1

0.70

0.076

5/26/2011 02:55

J

Silver

0.059 ug/L

U

1

0.30

0.059

5/26/2011 02:55

J

Thallium

0.067 ug/L

U

1

0.20

0.067

5/26/2011 02:55

J

Analysis Desc: SW846 7470A

Preparation Method: SW-846 7470A

Analysis, Water

Analytical Method: SW-846 7470A

Mercury

0.019 ug/L

I

1

0.10

0.014

5/19/2011 16:38

J

WET CHEMISTRY

Analysis Desc: IC,E300.0,Water

Analytical Method: EPA 300.0

Chloride

8.7 mg/L

I

1

10

1.2

5/19/2011 18:03

A

Fluoride

0.0098 mg/L

U

1

0.20

0.0098

5/19/2011 18:03

A

Nitrate

2.1 mg/L

1

0.20

0.053

5/19/2011 18:03

A

Analysis Desc: Ammonia,E350.1,Water

Analytical Method: EPA 350.1

Ammonia (N)

0.025 mg/L

U

1

0.10

0.025

5/23/2011 11:56

T

Analysis Desc: Tot Dissolved Solids,SM2540C

Analytical Method: SM 2540C

Total Dissolved Solids

210 mg/L

1

10

10

5/23/2011 09:28

T

Lab ID: **A1103556008**

Date Received: 05/18/11 14:46 Matrix: Water

Sample ID: **MW-9A**

Date Collected: 05/18/11 09:35

Sample Description:

Location:

Parameters	Results	Units	Qual	DF	Adjusted	Adjusted	Analyzed	Lab
					PQL	MDL		

FIELD PARAMETERS

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556008	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-9A	Date Collected:	05/18/11 09:35		

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

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: FIELD - Conductance Analytical Method: DISRES								
Conductance	898	umhos/cm		1			5/18/2011 09:35	A^
Dissolved Oxygen	0.67	mg/L		1			5/18/2011 09:35	A^
Groundwater Elevation	43.67	feet		1			5/18/2011 09:35	A^
Temperature	25.06	°C		1			5/18/2011 09:35	A^
Turbidity	14.1	NTU		1			5/18/2011 09:35	A^
pH	6.39	pH unit		1			5/18/2011 09:35	A^
METALS								
Analysis Desc: SW846 6010B Preparation Method: SW-846 3010A								
Analysis,Water Analytical Method: SW-846 6010								
Aluminum	550	ug/L		1	200	61	5/20/2011 13:45	J
Cadmium	1.4	ug/L		1	0.60	0.32	5/20/2011 13:45	J
Chromium	9.4	ug/L		1	4.0	0.50	5/20/2011 13:45	J
Iron	940	ug/L		1	200	38	5/20/2011 13:45	J
Manganese	91	ug/L		1	1.0	0.24	5/20/2011 13:45	J
Sodium	20	mg/L		1	0.20	0.026	5/20/2011 13:45	J
Analysis Desc: SW846 6020B Preparation Method: SW-846 3010A								
Analysis,Total Analytical Method: SW-846 6020								
Antimony	0.11	ug/L	I	1	0.60	0.073	5/26/2011 03:04	J
Lead	0.55	ug/L	I	1	0.70	0.076	5/26/2011 03:04	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 03:04	J
Thallium	0.13	ug/L	I	1	0.20	0.067	5/26/2011 03:04	J
Analysis Desc: SW846 7470A Preparation Method: SW-846 7470A								
Analysis,Water Analytical Method: SW-846 7470A								
Mercury	0.55	ug/L		1	0.10	0.014	5/19/2011 16:39	J
WET CHEMISTRY								
Analysis Desc: IC,E300.0,Water Analytical Method: EPA 300.0								
Chloride	24	mg/L		1	10	1.2	5/19/2011 18:20	A
Fluoride	0.090	mg/L	I	1	0.20	0.0098	5/19/2011 18:20	A
Nitrate	0.24	mg/L		1	0.20	0.053	5/19/2011 18:20	A
Analysis Desc: Ammonia,E350.1,Water Analytical Method: EPA 350.1								
Ammonia (N)	0.40	mg/L		1	0.10	0.025	5/23/2011 11:56	T

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID:	A1103556008	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-9A	Date Collected:	05/18/11 09:35		

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	540	mg/L		1	10	10	5/23/2011 09:28	T

Lab ID:	A1103556009	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-10	Date Collected:	05/18/11 11:15		

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

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
------------	---------	-------	------	----	--------------	--------------	----------	-----

FIELD PARAMETERS

Analysis Desc: FIELD - Conductance Analytical Method: DISRES

Conductance	540	umhos/cm		1		5/18/2011 11:15	A^
Dissolved Oxygen	1.47	mg/L		1		5/18/2011 11:15	A^
Groundwater Elevation	44.78	feet		1		5/18/2011 11:15	A^
Temperature	25.09	°C		1		5/18/2011 11:15	A^
Turbidity	18.2	NTU		1		5/18/2011 11:15	A^
pH	6.84	pH unit		1		5/18/2011 11:15	A^

METALS

Analysis Desc: SW846 6010B Preparation Method: SW-846 3010A

Analysis, Water

Analytical Method: SW-846 6010

Aluminum	610	ug/L		1	200	61	5/20/2011 13:50	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 13:50	J
Chromium	7.7	ug/L		1	4.0	0.50	5/20/2011 13:50	J
Iron	570	ug/L		1	200	38	5/20/2011 13:50	J
Manganese	23	ug/L		1	1.0	0.24	5/20/2011 13:50	J
Sodium	6.9	mg/L		1	0.20	0.026	5/20/2011 13:50	J

Analysis Desc: SW846 6020B Preparation Method: SW-846 3010A

Analysis, Total

Analytical Method: SW-846 6020

Antimony	0.22	ug/L	I	1	0.60	0.073	5/26/2011 01:04	J
Lead	0.67	ug/L	I	1	0.70	0.076	5/26/2011 01:04	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 01:04	J
Thallium	0.14	ug/L	I	1	0.20	0.067	5/26/2011 01:04	J

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ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampl

Lab ID:	A1103556009	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-10	Date Collected:	05/18/11 11:15		

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

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Analysis Desc: SW846 7470A								
Analysis,Water								
Mercury	0.033	ug/L	I	1	0.10	0.014	5/19/2011 16:41	J

WET CHEMISTRY

Analysis Desc: IC,E300.0,Water	Analytical Method: EPA 300.0							
Chloride	7.4	mg/L	I	1	10	1.2	5/19/2011 19:09	A
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	5/19/2011 19:09	A
Nitrate	2.5	mg/L		1	0.20	0.053	5/19/2011 19:09	A
Analysis Desc: Ammonia,E350.1,Water								
Ammonia (N)	0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T
Analysis Desc: Tot Dissolved Solids,SM2540C								
Total Dissolved Solids	300	mg/L		1	10	10	5/23/2011 09:28	T

Lab ID:	A1103556010	Date Received:	05/18/11 14:46	Matrix:	Water
Sample ID:	MW-11	Date Collected:	05/17/11 11:45		

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

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
FIELD PARAMETERS								
Analysis Desc: FIELD - Conductance								
Conductance	532	umhos/cm	I				5/17/2011 11:45	A^
Dissolved Oxygen	1.56	mg/L	I				5/17/2011 11:45	A^
Groundwater Elevation	44.57	feet	I				5/17/2011 11:45	A^
Temperature	25.59	°C	I				5/17/2011 11:45	A^
Turbidity	12.8	NTU	I				5/17/2011 11:45	A^
pH	6.28	pH unit	I				5/17/2011 11:45	A^

METALS

Analysis Desc: SW846 6010B	Preparation Method: SW-846 3010A							
Analysis,Water								
Aluminum	420	ug/L	I		200	61	5/20/2011 12:04	J

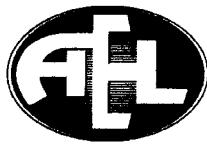
Report ID: 167193 - 3632493

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CERTIFICATE OF ANALYSIS

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Advanced
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Phone: (407)937-1594
Fax: (407)937-1597

ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sample

Lab ID: **A1103556010** Date Received: 05/18/11 14:46 Matrix: Water
Sample ID: **MW-11** Date Collected: 05/17/11 11:45

Sample Description: Location:

Parameters	Results	Units	Qual	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Cadmium	1.7	ug/L		1	0.60	0.32	5/20/2011 12:04	J
Chromium	7.5	ug/L		1	4.0	0.50	5/20/2011 12:04	J
Iron	100	ug/L	I	1	200	38	5/20/2011 12:04	J
Manganese	3.6	ug/L		1	1.0	0.24	5/20/2011 12:04	J
Sodium	9.1	mg/L		1	0.20	0.026	5/20/2011 12:04	J

Analysis Desc: SW846 6020B Preparation Method: SW-846 3010A
Analysis, Total Analytical Method: SW-846 6020

Antimony	0.10	ug/L	I	1	0.60	0.073	5/26/2011 03:13	J
Lead	0.62	ug/L	I	1	0.70	0.076	5/26/2011 03:13	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 03:13	J
Thallium	0.067	ug/L	U	1	0.20	0.067	5/26/2011 03:13	J

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

Mercury	0.084	ug/L	I	1	0.10	0.014	5/19/2011 16:43	J
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WET CHEMISTRY

Analysis Desc: IC,E300.0,Water	Analytical Method: EPA 300.0							
Chloride	3.8	mg/L	I	1	10	1.2	5/19/2011 20:15	A
Fluoride	0.090	mg/L	I	1	0.20	0.0098	5/19/2011 20:15	A
Nitrate	4.8	mg/L		1	0.20	0.053	5/19/2011 20:15	A
Analysis Desc: Ammonia,E350.1,Water	Analytical Method: EPA 350.1							
Ammonia (N)	0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T
Analysis Desc: Tot Dissolved Solids,SM2540C	Analytical Method: SM 2540C							
Total Dissolved Solids	300	mg/L		1	10	10	5/23/2011 09:28	T

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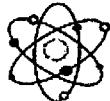


Florida Radiochemistry Services, Inc.

Analysis Report

	EQ BLANK	MW-2	MW-4	MW-4A	MW-4B	MW-4A
Lab Sample I.D.	1105154-01	1105154-02	1105154-03	1105154-04	1105154-05	1105154-06
Client I.D.	A1103556001	A1103556002	A1103556003	A1103556004	A1103556005	A1103556006
Gross Alpha	0.7U	1.4U	7.1	3.5	1.6	1.1U
Error +/-	0.5	0.9	1.1	1.3	0.9	0.9
MDL	0.7	1.4	0.8	1.5	0.9	1.1
EPA Method	900.0	900.0	900.0	900.0	900.0	900.0
Prep Date	05/23/11	05/23/11	05/23/11	05/23/11	05/23/11	05/23/11
Prep Time	06:22	06:22	06:22	06:22	06:22	06:22
Analysis Date	05/24/11	05/24/11	05/24/11	05/24/11	05/24/11	05/24/11
Analysis Time	10:30	10:30	13:29	17:03	10:30	10:32
Analyst	MJN	MJN	MJN	MJN	MJN	MJN
Radium 226	0.2U	0.4	1.1	1.0	0.4	0.4
Error +/-	0.1	0.1	0.2	0.2	0.1	0.2
MDL	0.2	0.2	0.2	0.1	0.2	0.2
EPA Method	903.1	903.1	903.1	903.1	903.1	903.1
Prep Date	05/23/11	05/23/11	05/23/11	05/23/11	05/23/11	05/23/11
Prep Time	10:20	10:20	10:20	10:20	10:20	10:20
Analysis Date	05/31/11	05/31/11	05/31/11	05/31/11	05/31/11	05/31/11
Analysis Time	10:18	11:21	11:21	11:21	11:21	11:21
Analyst	MJN	MJN	MJN	MJN	MJN	MJN
Radium 228	0.9U	1.3	0.9U	0.8U	0.9U	0.9U
Error +/-	0.6	0.6	0.6	0.5	0.6	0.6
MDL	0.9	0.9	0.9	0.8	0.9	0.9
EPA Method	Ra-05	Ra-05	Ra-05	Ra-05	Ra-05	Ra-05
Prep Date	05/23/11	05/23/11	05/23/11	05/23/11	05/23/11	05/23/11
Prep Time	10:20	10:20	10:20	10:20	10:20	10:20
Analysis Date	05/31/11	05/31/11	05/31/11	05/31/11	05/31/11	05/31/11
Analysis Time	11:27	11:27	11:27	12:38	12:38	12:38
Analyst	PJ	PJ	PJ	PJ	PJ	PJ
Units	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l	pCi/l

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Florida Radiochemistry Services, Inc.

Analysis Report

	MW-8	MW-9A	MW-10	MW-11
Lab Sample I.D.	1105154-07	1105154-08	1105154-09	1105154-10

Client I.D.	A1103556007	A1103556008	A1103556009	A1103556010
-------------	-------------	-------------	-------------	-------------

Gross Alpha	1.7	10.7	10.3	13.1
Error +/-	1.2	1.8	1.3	1.5
MDL	1.4	1.5	1.0	1.1
EPA Method	900.0	900.0	900.0	900.0
Prep Date	05/23/11	05/23/11	05/23/11	05/23/11
Prep Time	06:22	06:22	06:22	06:22
Analysis Date	05/24/11	05/24/11	05/24/11	05/24/11
Analysis Time	10:32	13:32	13:32	13:29
Analyst	MJN	MJN	MJN	MJN
Radium 226	0.9	3.1	2.0	3.3
Error +/-	0.3	0.5	0.4	0.5
MDL	0.2	0.2	0.2	0.3
EPA Method	903.1	903.1	903.1	903.1
Prep Date	05/23/11	05/23/11	05/23/11	05/23/11
Prep Time	10:20	10:20	10:20	10:20
Analysis Date	06/01/11	06/01/11	06/01/11	06/01/11
Analysis Time	13:31	13:31	13:31	13:31
Analyst	MJN	MJN	MJN	MJN
Radium 228	0.8U	0.9	0.8U	0.7
Error +/-	0.5	0.5	0.5	0.5
MDL	0.8	0.8	0.8	0.7
EPA Method	Ra-05	Ra-05	Ra-05	Ra-05
Prep Date	05/23/11	05/23/11	05/23/11	05/23/11
Prep Time	14:19	14:19	14:19	14:19
Analysis Date	05/31/11	05/31/11	05/31/11	05/31/11
Analysis Time	13:57	13:57	13:57	15:01
Analyst	PJ	PJ	PJ	PJ
Units	pCi/l	pCi/l	pCi/l	pCi/l

FIELD LOG

~~FIELD LOG~~ Well Water Levels

PROJ # P-453

NAME: Sole Claytor

PROJECT

NAME: Sumter County Landfill
PROJECT:

PROJECT

LOCATION: Sainterville, NC

DATE: 5/17/11

TIME	COMMENTS
Well #	WL (FL, 6loc)
MW-1	25.74'
MW-2	24.41'
MW-3A	27.47'
MW-4	25.88'
MW-4A	31.07'
MW-4B	29.14'
MW-6A	32.59'
MW-7	28.44'
MW-8	23.40'
MW-9R	28.08'
MW-9A	30.53'
MW-10	23.46'
MW-11	25.64'

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: NA	SAMPLE ID: EQB	DATE: 5/12/11

PURGING DATA

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. Clayton, Colinas Group, Inc.		SAMPLE(S) SIGNATURES			SAMPLING INITIATED AT: 1040	SAMPLING ENDED AT: 1045		
PUMP OR TUBING DEPTH IN WELL (feet): NA		SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL			TUBING MATERIAL CODE: PE			
FIELD DECONTAMINATION: Y <input checked="" type="checkbox"/> N		FIELD-FILTERED: Y <input checked="" type="checkbox"/> N Filtration Equipment Type:			FILTER SIZE: _____ μm	DUPLICATE: Y <input checked="" type="checkbox"/> 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		
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
"	1	PE	500 mL	None	None	--	Chloride, Fluoride, Nitrate, TDS	ESP
"		Various	Various	Various	None	--	Appendix I Parameters	ESP

REMARKS:

Field decontaminated 5 gal PE bucket, SS ESP, and WL probe IAW DEP-508-001/01, FC 1000. Poured 2 gallons of DI water into PE bucket, inserted SS ESP and WL probe and circulated DI water thru pump and over WL probe for ~5 minutes. Collected EOB 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/FLUSHING **APP = After Peristaltic Pump:** **B = Bailer:** **BP = Bladder Pump:** **ESP = Electric Submersible Pump:** **PP = Peristaltic Pump:**

EQUIPMENT CODES: APP = Asten Peristaltic Pump; B = Barrier; BP = Backflow Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
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 62-180.

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: $\pm 5\%$; Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2), optionally, $\pm .02$ mg/L or $\pm 10\%$ (whichever is greater);

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL
WELL NO: MW-2	SAMPLE ID: MW-2

DATE: 5/18/11

PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH <u>24.46</u> 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)

$$1 \text{ Well Vol} = (31.92' \text{ feet} - 24.46' \text{ feet}) \times 1.6 \text{ gallons/foot} = 11.936 \text{ gallons}$$

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

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

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): <u>~26'</u>	FINAL PUMP OR TUBING DEPTH IN WELL (feet): <u>~26'</u>	PURGING INITIATED AT: <u>1135</u>	PURGING ENDED AT: <u>1153</u>	TOTAL VOLUME PURGED (gallons): <u>1.62</u>
---	---	--------------------------------------	----------------------------------	---

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1149	1.22	1.22	.1	24.52	6.96	25.53	269	5.11	100	Clear	None
1151	1.2	1.42	.1	24.52	6.96	25.53	209	5.02	0.29	Clear	None
1153	1.2	1.62	.1	24.57	6.94	25.54	210	5.02	0.55	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.): 18" = 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: <u>1154</u>	SAMPLING ENDED AT: <u>1205</u>					
PUMP OR TUBING DEPTH IN WELL (feet): <u>~26'</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 <i>probe only</i>	FIELD-FILTERED: Y N Filtration Equipment Type: _____	FILTER SIZE: _____ µm	DUPLICATE: Y <input type="radio"/> N					
SAMPLE CONTAINER SPECIFICATION	SAMPLE PRESERVATION							
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	H2SO4	None	—	Total Ammonia	APP
"	1	PE	250 mL	HN03	None	—	Metals	APP
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	APP

REMARKS:

1135: Set dedicated 1/4" PE tubing @ ~26' GWT and began purging @ .07 gpm with a PP.

1141: WL 24.52' @ .07 gpm, GW is clear. Increased flow to 1.0 gpm.

1145: WL 24.56' @ .1 gpm. DO is high @ 5.19 mg/L, but is typical for this well. Will use optional stabilization criteria below.

1148: WL 24.57' @ .1 gpm, drawdown is stable. GW is clear. DO is still high @ 5.15 mg/L.

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)

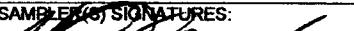
SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailier; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

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): ± 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

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: H. L. Claytor, Colinas Group, Inc.		SAMPLE(S) SIGNATURES: 	SAMPLING INITIATED AT: 1309	SAMPLING ENDED AT: 1320				
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) 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	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)			FINAL pH
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
"	1	PE	500 mL	None	None	--	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:

1246: Inserted SS ESP and 318' dedicated PE tubing to ~31' BHC
and began purging @ 30 gpm. GW is turbid and is typical
for this well at beginning of purge. Will over purge to clean it up.
1256: Turbidity is @ 18.5 NTUs, WL 26.25' @ 3 gpm.
1258: WL 26.25' @ 3 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 = Polymyrrylene; S = Silicone; T = Teflon; O = Other (Specify)

MATERIAL CODES: AC = Amber Class; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)
SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump
 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: $\pm 5\%$; Dissolved Oxygen: all readings < 20 NTU, optionally ± 5 NTU or $\pm 10\%$ (whichever is greater); Turbidity: all readings < 20 NTU, optionally ± 5 NTU or $\pm 10\%$ (whichever is greater).

GROUNDWATER SAMPLING LOG

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

DATE: 5/17/11

PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 31.07	PURGE PUMP TYPE OR BAIRER: 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 = 1.245 (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: 1202	PURGING ENDED AT: 1221	TOTAL VOLUME PURGED (gallons): > 100							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1217	6.00	6.00	.4	31.21	6.86	26.22	623	1.16	6.87	Clear	None
1219	.8	6.80	.4	31.20	6.87	26.27	673	1.00	5.21	Clear	None
1221	.8	7.60	.4	31.20	6.88	26.27	673	.89	4.45	Clear	None
No screen											

WELL CAPACITY (Gallons Per Foot): 0.76" = 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: 1202	SAMPLING ENDED AT: 1230				
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 PRESERVATION		INTENDED ANALYSIS AND/OR METHOD				
SAMPLE ID CODE	# CONTAINERS	MATERI AL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	SAMPLING EQUIPMENT CODE
MW-4A	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228
"	1	PE	250 mL	H2S04	None	—	Total Ammonia
"	1	PE	250 mL	HN03	None	—	Metals
"	1	PE	600 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS

REMARKS:

1202: ~~Set~~ Inserted SS ESP and dedicated 3/8" PE tubing to ~40' to screen and began purging @ .4 gpm. GW is extremely turbid, but is typical for this well. Requires higher flow rate and over purging to clean it up.

1214: Turbidity is @ 13 NTUs, WL 31.21' @ .4 gpm.

1216: WL 31.21' @ .4 gpm, drawdown is static. 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: RPP = 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)

2.00

GROUNDWATER SAMPLING LOG

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

DATE: 5/17/11

PURGING DATA

29.14

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)

$$1 \text{ Well Vol} = (38.49 \text{ feet} - 29.14 \text{ feet}) \times .16 \text{ gallons/foot} = 1.496 \text{ gallons}$$

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

$$1 \text{ Equip Vol} = .02 \text{ gallons} + (.006 \text{ gallons/foot} \times 28 \text{ feet}) + .125 \text{ gallons} = .303 \text{ gallons}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
~33'	~33'	1342	1404	6.50

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)
1400	5.50	5.50	.25	29.01	8.65	25.26	127	6.46	6.86	clear	None
1402	.5	6.00	.25	29.02	8.67	25.24	126	6.03	6.39	Clear	None
1404	.5	6.50	.25	29.19	8.69	25.25	126	5.63	6.07	Clear	None
No shear											

WELL CAPACITY (Gallons Per Foot): 0.78" = 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: 1405	SAMPLING ENDED AT: 1415					
PUMP OR TUBING DEPTH IN WELL (feet): ~33'	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-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
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:

- 1342: Inserted SS ESP and dedicated 3/8" PE tubing to ~33' to c and began purging @ .50 gpm.
- 1346: Reduced flow to .25 gpm. Water is clear. DO is high @ 6.80 mg/L, but is typical for this well. Will purge until stable. pH is at 8.60 but also is typical for this well. WL 29.19 @ .25 gpm.
- 1359: WL 29.20 @ .25 gpm, DO is @ 6.37 mg/L and fluctuating. 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: 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)

10.00

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL	
WELL NO: MW-6A	SAMPLE ID: MW-6A	DATE: 5/18/11	

PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH <u>30.65</u> 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)											
		= (50.84' 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)			X 3 = 1.335								
1 Equip Vol	= .02 gallons + (.006 gallons/foot X 50 feet) + .125 gallons = .615 gallons										
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	PURGING INITIATED AT: 1240	PURGING ENDED AT: 1310	TOTAL VOLUME PURGED (gallons): 18.40							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1258	12.40	12.40	.3	32.68	7.48	25.48	260	6.52	28.8	Clear	None
1306	12.40	16.40	.5	32.68	7.56	24.79	257	7.40	12.6	Clear	None
1308	12.40	17.40	.5	32.68	7.59	24.80	257	7.53	6.1	Clear	None
1310	18.40	18.40	.5	32.68	257	24.76	257	7.54	6.20	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: H. L. Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1311	SAMPLING ENDED AT: 1320					
PUMP OR TUBING DEPTH IN WELL (feet): ~45'	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"/> N Filtration Equipment Type:	FILTER SIZE: _____ µm	DUPPLICATE: <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)	FINAL pH
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
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:

1240: Inserted SS ESP and dedicated 3/8" PE tubing to ~45' to see if it would purge. It did, but water is extremely turbid (milky white), but is typical for this well. Requires high rate of flow and over purging to clean it up.

1300: Turbidity is at 22 NTU's, continuing purge - reduced flow to .3 gpm.

1253: Turbidity is at 17 NTU's, w/ 32.68' @ 3 gpm. 0.0 is high @ 6-70 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 (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: 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) 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.)

1258: Turbidity is going back up slowly at lower flow rate
of .3 gpm. Increased flow to ~~.4~~ .5 gpm.

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL
WELL NO: MW-8	SAMPLE ID: MW-8

DATE: 5/18/11

PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 23.40	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 = 403 gallons										
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	PURGING INITIATED AT: 0952	PURGING ENDED AT: 1005	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. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1001	3.60	3.60	.4	23.48	6.99	23.79	346	4.99	5.27	Clear	None
1003	.8	4.40	.4	23.48	6.99	23.80	346	4.82	3.32	Clear	None
1005	.8	5.20	.4	23.48	7.00	23.80	345	4.78	2.44	Clear	None
No shear											
WELL CAPACITY (Gallons Per Foot): 0.78" = 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; 6/16" = 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: 1006	SAMPLING ENDED AT: 1015					
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)	FINAL pH
MW-8	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
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:

0952: Inserted SS ESP and dedicated 3/8" PE tubing to ~38' boc and began purging @ .4 gpm.

0958: WL 23.48' @ .4 gpm, GW is clear.

1000: WL 23.48' @ .4 gpm, drawdown is stable. GW is clear. DO is high @ 4.98 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 = Baile; 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) 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-9A	SAMPLE ID: MW-9A	DATE: 5/18/11

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							
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)											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	PURGING INITIATED AT: 0852	PURGING ENDED AT: 0925	TOTAL VOLUME PURGED (gallons): 21.70							
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)
0921	20.10	20.10	.4	34.69	6.43	25.07	901	.29	15.5	Clear	None
0923	.8	20.90	.4	34.67	6.40	25.07	899	.29	16.2	Clear	None
0925	.8	21.70	.4	34.69	6.39	25.06	898	.67	14.1	Clear	None
No Screen											
WELL CAPACITY (Gallons Per Foot): 0.76" = 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: 0926	SAMPLING ENDED AT: 0935					
PUMP OR TUBING DEPTH IN WELL (feet): ~45'	SAMPLE PUMP FLOW RATE (mL per minute):	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	DUPPLICATE: <input checked="" type="radio"/> Y <input type="radio"/> 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
"	1	PE	600 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS: 0850d: Inserted 55 ESP and dedicated 318" 02 tubing from 45' to and began purging @ 1.25 gpm. GW is extremely turbid and is typical for this well, requiring a high rate of flow to clean it up. Will over purge until clear.

0902: Reduced flow to .4 gpm. Turbidity is @ 25 NTU's. Continuing purge.

0907: Turbidity is @ 32 NTU's, continuing purge.

0912: Turbidity is @ 25 NTU's, continuing purge.

0916: Turbidity is @ 17 NTU's, WL 34.69 @ .4 gpm

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes 0919: WL 34.69 @ .4 gpm, drawdown is ~~shallow~~.

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)

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill				SITE LOCATION: Sumterville, FL							
WELL NO: MW-10		SAMPLE ID: MW-10		DATE: 5/18/11							
PURGING DATA											
WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 23.50	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 x 3 = 1.245 (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: 1032	PURGING ENDED AT: 1105	TOTAL VOLUME PURGED (gallons): 25.35							
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)
101	24.55	24.55	.2	24.06	6.82	24.82	536	1.56	15-6	Clear	None
103	.4	24.95	.2	24.06	6.82	24.92	537	1.54	17-9	Clear	None
105	.4	25.35	.2	24.06	6.84	25.07	540	1.47	18-2	Clear	None
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											
SAMPLING DATA											
SAMPLED BY (PRINT) / AFFILIATION: H. L. Clayton, Colinas Group, Inc.				SAMPLER(S) SIGNATURES:				SAMPLING INITIATED AT: 106		SAMPLING ENDED AT: 1115	
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 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)		FINAL pH				
MW-10	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	
"	1	PE	500 mL	None	None		—	Chloride,Fluoride, Nitrate, TDS		ESP	
REMARKS: 1032: Inserted 55 ESP and dedicated 3/8" PE tube to ~40' to bottom and began purging @ 1.25 gpm. GW is extremely turbid at beginning of purge requiring a high rate of flow and over purge to clean it up. Is typical for this well. 1042: Turbidity is @ 50 NTUs, continuing purge. 1052: Turbidity is @ 17 NTUs, reduced flow to .5 gpm. DO is high @ 3.60 mg/L but dropping. Continuing purge. 1057: DO is @ 1.74 mg/L, WL 24.80' @ .5 gpm, reduced flow to .2 gpm											
Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes to get DO to drop. 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): ± 0.2 units; Temperature: ± 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 < 20 NTU, optionally $+ 5$ NTU or $+ 10\%$ (whichever is greater)

7-5
10-5
GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-11	SAMPLE ID: MW-11	DATE: 5/12/11

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							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY only fill out if applicable											
= (40.15' 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 40' feet) + .125 gallons = .285 gallons										
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	PURGING INITIATED AT: 1055	PURGING ENDED AT: 1132	TOTAL VOLUME PURGED (gallons): 22.75							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1121	20.00	20.00	.5	25.85	5.99	25.32	533	1.94	11.0	Clear	Above
1128	1.25	21.25	.25	25.71	6.21	25.48	532	1.58	12.9	Clear	Above
1130	.5	22.25	.25	25.71	6.25	25.52	531	1.58	13.3	Clear	Above
1132	.5	22.75	.25	25.71	6.28	25.59	532	1.56	12.8	Clear	Above
<i>No sheen</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: H. L. Claytor, Colinas Group, Inc.	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1133	SAMPLING ENDED AT: 1145					
PUMP OR TUBING DEPTH IN WELL (feet): ~35'	SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL	TUBING	MATERIAL CODE: PE					
FIELD DECONTAMINATION: <input checked="" type="radio"/> N	FIELD-FILTERED: <input checked="" type="radio"/> N Filtration Equipment Type:	FILTER SIZE: _____ µm	DUPLICATE: <input checked="" type="radio"/> 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, RA226.RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	Metals	ESP
"	1	PE	500 mL	None	None	—	Chloride,Fluoride, Nitrate, TDS	ESP

REMARKS:

1055: Set SS ESP and dedicated 3/8" PE tubing @ ~35' to c and began purging @ .5 gpm. Water is extremely turbid requiring higher rate of flow during purging to clean it up, is typical for this well.

1105: WL 25.71 @ .5 gpm, turbidity is @ 24 NTU's, continuing purge.

1110: WL 25.80 @ .5 gpm, turbidity is @ 25 NTU's, increased flow to 1.5 gpm.

1117: Turbidity is @ 16 NTU's, reduced flow to approx. .5 gpm. WL 25.85'. Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes
2) Packed samples on ice immediately upon collection *bottle and straddle. (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: 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)

MW-11 (cont.)

1121: Reduced flow to .05 gpm. DO is slightly high @ 1.94 mg/l, but slowly dropping. Will purge until it drops/stabilizes.



Page_1

LAB NUMBER:

6601 Southpoint Pkwy. • Jacksonville, FL 32216 • 904.363.9350 • Fax 904.363.9354 • E#2574
 9610 Princess Palm Ave. • Tampa, FL 33619 • 813.620.8616 • Fax 813.620.4227 • E#4589
 6815 SW Archer Road • Gainesville, FL 32608 • 362.336.6639 • Fax 362.377.2349 • E#2004
 528 S. North Lake Blvd., Site 1013 - Altonorte Springs, FL 32701 • 407.837.7159 • E#3076

CLIENT NAME:	Sumter Co. Landfill - GW Sampling											
ADDRESS:	509 North Virginia Ave Winter Park, Florida 32789											
PHONE:	407-622-8176											
FAX:	407-622-8196											
CONTACT:	Dale Clayton											
SAMPLED BY:	<i>Dale Clayton</i>											
<input checked="" type="checkbox"/> STANDARD	<input type="checkbox"/> RUSH _____											
SAMPLE ID	SAMPLE DESCRIPTION			Grab Comp	SAMPLING DATE	TIME	MATRIX	NO. COUNT	PERIOD	VATION	BOTTLE TYPE	
	Equipment Blank			5/7/11	1045	W	6	X	X	X	1LP	
MW-2				5/7/11	1205	W	6	X	X	X	1LP	
MW-4				5/7/11	1320	W	6	X	X	X	1LP	
MW-4A				5/7/11	1230	W	6	X	X	X	1LP	
MW-4B				5/7/11	1415	W	6	X	X	X	1LP	
MW-6A				5/7/11	1320	W	6	X	X	X	1LP	
MW-8				5/7/11	1015	W	6	X	X	X	1LP	
MW-9A				5/7/11	0935	W	6	X	X	X	1LP	
MW-10				5/7/11	1115	W	6	X	X	X	1LP	
MW-11				5/7/11	1145	W	6	X	X	X	1LP	
Matrix Code: WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SI = sludge												
Received on ice <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Temp taken from sample			<input type="checkbox"/> Temp from temp blank			<input type="checkbox"/> Where required, pH checked			Temperature when received		
Form revised 2/8/08										Device used for measuring Temp by unique identifier (circle IR temp gun used)		
1	Requisitioned by:		Date	Time		Received by:		Time		FOR DRINKING WATER USE:		
2										(When PWS information not otherwise supplied)		
3										J: 8A G: LT-1 LT-2 T: 10A A: 3A		
4										Phone _____		
Supplier of Water _____												
Site Address _____												

Preservation Code: I = ice H=(HCl) S = (H₂SO₄) N = (HNO₃) T = (Sodium Thiosulfate)

30 (In degrees Celsius)

(When PWS information not otherwise supplied)

J: 8A G: LT-1 LT-2 T: 10A A: 3A

PWS ID: _____

Contact Person: _____

Supplier of Water: _____

Site Address: _____

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 - 7 and Turbidity 1 - 10 NTU's]

Standard A Oakton pH Standard 4.01 Units Exp: 3/201d

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

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

Standard D Hanna 0.1 NTU Standard Exp: 4/1/2013

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
5/17/11	1015	A	4.01	4.01		Yes	IC	KC
		B	7.00	7.00				pH
		C	1500	1477.6 24.19% ok				Cond
		-	-	8.40				DO
		-	-	24.13				Temp
		D	0.1	0.1				Turb
		E	15	15.0				Turb
5/17/11	1035	A	4.01	3.96		Yes	ICV	KC
		B	7.00	7.01				pH
		C	1500	1480.6 24.08% ok				Cond
		--	-	8.51				DO
		-	-	23.52				Temp
		D	0.1	0.24				Turb
		E	15	15.0				Turb
5/17/11	1430	A	4.01	3.98		Yes	CC	KC
		B	7.00	6.97				pH
		C	1500	1468.8 23.87% ok				Cond
		-	-	8.45				DO
		-	-	24.26				Temp
		D	0.1	0.27				Turb
		E	15	15.0				Turb

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 - 7 and Turbidity 1 - 10 NTU's]

Standard A Oakton pH Standard 4.01 Units Exp: 3/2012Standard B Oakton pH Standard 7.00 Units Exp: 5/2012Standard C Oakton Conductivity Standard 1500 uS/cm Exp: 9/2011Standard D Hanna 0.1 NTU Standard Exp: 4/2013Standard 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	
5/18/11	0800	A	4.01	4.01		Yes	IC	JL	pH
		B	7.00	7.00					pH
		C	1500	1482.2446% OK					Cond
		--	--	8.62					DO
		--	--	22.76					Temp
		D	0.1	0.1					Turb
		E	15	15.0					Turb
<hr/>									
5/18/11	0815	A	4.01	3.98		Yes	ICV	JL	pH
		B	7.00	6.95		✓			pH
		C	1500	1462.2362% OK					Cond
		--	--	8.22					DO
		--	--	21.84					Temp
		D	0.1	0.30					Turb
		E	15	15.0					Turb
<hr/>									
5/18/11	1330	A	4.01	3.99		Yes	CC	JL	pH
		B	7.00	7.00					pH
		C	1500	1496.22196% OK					Cond
		--	--	8.24					DO
		--	--	25.27					Temp
		D	0.1						Turb
		E	15						Turb
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Advanced
Environmental Laboratories, Inc.

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

ANALYTICAL RESULTS

Workorder: A1103556 Sumter Co Landfill - GW Sampli

Lab ID: **A1103556001** Date Received: 05/18/11 14:46 Matrix: Water
Sample ID: **EQ Blank** Date Collected: 05/17/11 10:45

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	210	ug/L		1	200	61	5/20/2011 17:32	J
Cadmium	0.32	ug/L	U	1	0.60	0.32	5/20/2011 17:32	J
Chromium	0.76	ug/L	I	1	4.0	0.50	5/20/2011 17:32	J
Iron	38	ug/L	U	1	200	38	5/20/2011 17:32	J
Manganese	0.62	ug/L	I	1	1.0	0.24	5/20/2011 17:32	J
Sodium	0.032	mg/L	I	1	0.20	0.026	5/20/2011 17:32	J
Analysis Desc: SW846 6020B Preparation Method: SW-846 3010A								
Analysis,Total Analytical Method: SW-846 6020								
Antimony	0.51	ug/L	I	1	0.60	0.073	5/26/2011 01:59	J
Lead	0.076	ug/L	U	1	0.70	0.076	5/26/2011 01:59	J
Silver	0.059	ug/L	U	1	0.30	0.059	5/26/2011 01:59	J
Thallium	0.067	ug/L	U	1	0.20	0.067	5/26/2011 01:59	J
Analysis Desc: SW846 7470A Preparation Method: SW-846 7470A								
Analysis,Water Analytical Method: SW-846 7470A								
Mercury	0.040	ug/L	I	1	0.10	0.014	5/19/2011 16:26	J
WET CHEMISTRY								
Analysis Desc: IC,E300.0,Water Analytical Method: EPA 300.0								
Chloride	1.2	mg/L	U	1	10	1.2	5/19/2011 15:36	A
Fluoride	0.0098	mg/L	U	1	0.20	0.0098	5/19/2011 15:36	A
Nitrate	0.053	mg/L	U	1	0.20	0.053	5/19/2011 15:36	A
Analysis Desc: Ammonia,E350.1,Water Analytical Method: EPA 350.1								
Ammonia (N)	0.025	mg/L	U	1	0.10	0.025	5/23/2011 11:56	T
Analysis Desc: Tot Dissolved Solids,SM2540C Analytical Method: SM 2540C								
Total Dissolved Solids	10	mg/L	U	1	10	10	5/23/2011 09:28	T

Report ID: 167193 - 3632493

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