SUMTER COUNTY
(CLOSED) LANDFILL
QUARTERLY GROUNDWATER
MONITORING REPORT
Quarter II (May) 2010

Prepared for:

SUMTER COUNTY
SOLID WASTE DEPARTMENT
SUMTER COUNTY, FLORIDA

Prepared by:

THE COLINAS GROUP, INC.
509 N. Virginia Avenue
Winter Park, Florida 32789

July 2010

THE COLINAS GROUP, INC.
HYDROGEOLOGISTS & ENGINEERS

July 7, 2010

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

Subj: **Quarter II 2010 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 (1) copy of the report prepared by TCG entitled:

Sumter County (Closed) Landfill Quarterly Groundwater Monitoring Report, Quarter II (May) 2010

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. Potts, Jr., P.G.
Principal Consultant
Fl. P.G. No. 1113

cc: Ms. Denise Warnock (Sumter County)
Mr. Jimmy Wise (Sumter County)

509 N. VIRGINIA AVENUE, WINTER PARK, FL 32789 • (407) 622-8176 • FAX: (407) 622-8196

SUMTER COUNTY (CLOSED) LANDFILL GROUNDWATER MONITORING REPORT, SUMTER COUNTY, FLORIDA Quarter II (May) 2010

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Sumter County (Closed) Landfill
Quarterly Groundwater Monitoring Report
Quarter II (May) 2010

INTRODUCTION

The Colinas Group, Inc. (TCG) has reviewed the groundwater monitoring well sampling and analytical results for the Quarter II 2010 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.

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 2010 sampling event at the Sumter County Landfill occurred on May 11 and 12, 2010. 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 as part of the Field Reports (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 Environmental Conservation Laboratories, Inc. (ENCO) in accordance with the laboratory's NELAP and FDHRS Certification No. E83182. The original analytical reports prepared by ENCO are presented in Attachment 2 to this report.

Water table depth measurements in each facility groundwater monitoring well and piezometer were recorded on May 12, 2010. 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 May 2010 sampling event are summarized in Table I. Field tests were completed by TCG sampling personnel in strict accordance with the FDEP SOP requirements.

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 8.95 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 24.70 C at well **MW-8** to 27.36 C at **MW-4B**.

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 142 umhos/cm to 898 umhos/cm. Lowest specific conductance was measured at well **MW-4B**. Highest specific conductance was measured 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 exceeded 10 NTUs at three (3) wells.

Regulatory Exceedances

A summary of groundwater laboratory analytical results that were either equal to or exceeded the regulatory level for the particular parameter in the May 2010 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 were aluminum, iron, manganese, nitrate nitrogen, radionucleides and total dissolved solids.

Aluminum
Aluminum was detected at concentrations above the Florida Secondary Drinking Water Standards (FSDWS) MCL (200 ug/l) in samples from three (3) monitoring wells: **MW-4B** (312 ug/l), **MW-9A** (217 ug/l) and **MW-11** (388 ug/l). Aluminum was detected by the laboratory at concentrations below the MCL at three other monitoring wells.

Iron
Dissolved iron was detected in two (2) monitoring wells at concentrations above the FSDWS MCL of 300 ug/l. Iron was reported at 390 ug/l at well **MW-9A** and 666 ug/l at **MW-10**. Iron was detected at concentrations less than 300 ug/l at four other wells, and was below the laboratory method detection limit at the remaining monitoring wells.

Manganese
Manganese was reported above the FSDWS MCL of 50 ug/l in monitoring well **MW-9A** at 79.2 ug/l. Manganese was detected in four other wells at concentrations below 50 ug/l.

Nitrate Nitrogen
Nitrate was reported slightly above the 10 mg/l FPDWS MCL at monitoring well **MW-4A** at 12 mg/l. Elevated nitrate levels less than the MCL are noted in the facility background monitoring well **MW-6A** at 6.2 mg/l and in remaining monitoring wells at lesser values.

Radionucleides
The sum of gross alpha plus radium 226/228 (corrected for the negative error range) reported for **MW-11** (18.50 pCi/l) exceeded the drinking water standard MCL of 15 pCi/l.

Total dissolved Solids (TDS)
TDS is reported at **MW-9A** just above the 500 mg/l MCL at 520 mg/l. TDS in other wells ranged from 90 mg/l to 420 mg/l.

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

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

Chromium was detected at three wells (**MW-6A, -10** and **-11**), including the facility background well, at low concentrations below the MCL for this constituent.

Mercury was detected at 0.478 ug/l in monitoring well **MW-9A** and at 0.0719 ug/l in **MW-11**, well below the FPDWS MCL of 2 ug/l, and was less than the laboratory method detection limit in samples from remaining wells.

Silver was detected at trace concentrations in three wells, ranging from 0.223 ug/l to 0.257 ug/l. The MCL for silver is 100 ug/l.

Sodium and **chloride** concentrations reported for seven (7) 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** and **MW-4A** are somewhat elevated above concentrations measured in samples from other monitoring wells.

Thallium was reported at low concentrations in three wells: **MW-4** (0.331 ug/l), **MW-4A** (0.401 ug/l) and **MW-9A** (0.303 ug/l). The FPDWS MCL for thallium is 2 ug/l.

SUMMARY

Chemical characteristics of groundwater monitored at the Sumter County Landfill are reported for the Quarter II 2010 sampling event. Exceedances of specific constituent regulatory levels and MCLs are reported at specific monitoring wells for **aluminum, iron, manganese**, **nitrate nitrogen**, **radionucleides** and **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 three wells (**MW-4B**, **MW-9A** and **MW-11**) at concentrations above the FSDWS MCL of 200 ug/l. Aluminum was also detected below the MCL in four other monitoring wells, including the facility background well **MW-6A**. The most likely source of aluminum measured in groundwater samples is natural deposits of aluminum-silicate clay minerals within and near the groundwater monitoring zone tapped by wells at the landfill.

Gross alpha radioactivity, including the sum of radium 226/228, exceeded the 15 pCi/l MCL in a groundwater sample from well **MW-11**, reported at a range of 18.5 - 23.7 pCi/l. Gross alpha individually is reported to range from 15.2 - 18.6 pCi/l in the groundwater sample.

Manganese was reported above the FSDWS MCL in the sample from **MW-9A**, one of the more recently-constructed monitoring wells. **Iron** was detected slightly above the FSDWS MCL in wells **MW-9A** and **MW-10**. 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** (12 mg/l). As shown on the groundwater contour map for the May 2010 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 well above naturally-occurring nitrate concentrations typically found in groundwater in Florida.

* * * * *

TABLE I
FIELD PARAMETER RESULTS SUMMARY,
SUMTER COUNTY (CLOSED) LANDFILL
SUMTER COUNTY, FLORIDA
Quarter II (May) 2010

Sampling Point	Temp. (C)	Dissolved Oxygen (mg/l)	pH	Specific Conductance (umhos/cm)	Turbidity (NTU)
MW-2	26.51	**3.92**	7.09	236	3.82
MW-4	25.92	0.71	7.25	602	7.10
MW-4A	26.98	0.23	7.37	682	13.3
MW-4B	27.36	**5.40**	**8.95**	142	1.38
MW-6A	25.99	**5.32**	7.79	261	13.3
MW-8	24.70	**3.27**	7.37	411	5.01
MW-9A	25.76	0.05	6.80	898	6.33
MW-10	25.20	1.11	7.21	570	9.47
MW-11	25.59	1.31	6.73	437	17.8

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 2010
SUMMARY OF GROUNDWATER LEVELS
SUMTER COUNTY (CLOSED) LANDFILL
SUMTER COUNTY, FLORIDA
(May 12, 2010)

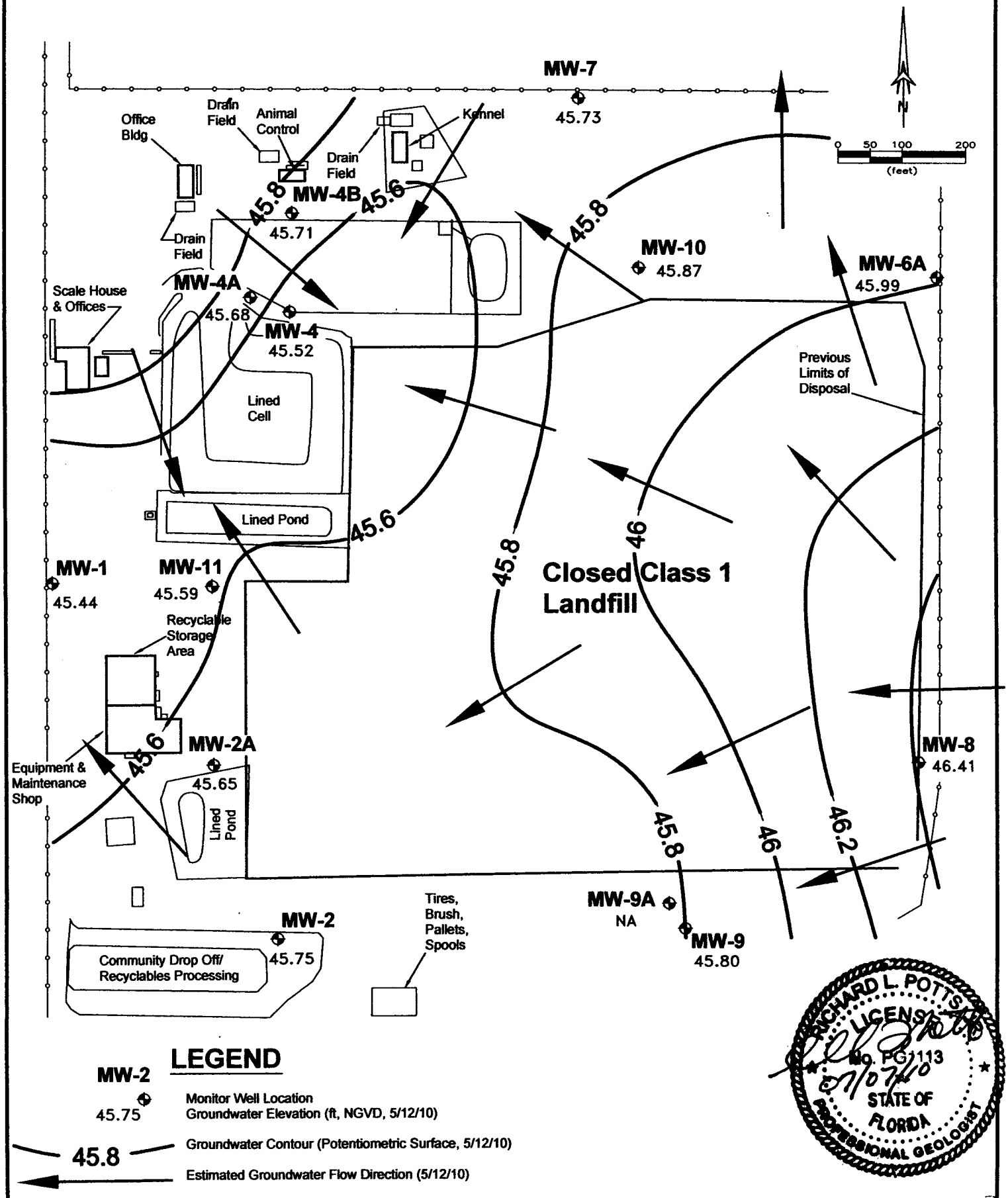
Well No.	Measuring Point Elevation (ft. +NGVD)	Depth to Water (ft. - MP)	Groundwater Elevation (ft. +NGVD)
MW-1	70.17	24.73	45.44
MW-2	69.13	23.38	45.75
MW-2A	72.11	26.46	45.65
MW-4	70.36	24.84	45.52
MW-4A	75.73	30.05	45.68
MW-4B	73.83	28.12	45.71
MW-6A	77.54	31.55	45.99
MW-7	73.14	27.41	45.73
MW-8	69.26	22.25	47.01
MW-9	71.95	26.15	45.80
MW-9A	74.26	29.47	44.79
MW-10	68.28	22.41	45.87
MW-11	70.21	24.62	45.59

Notes: 1. Measuring Point is top of PVC well casing.
2. Water levels recorded on May 12, 2010.

TABLE III
SUMMARY OF LABORATORY RESULTS
SUMTER COUNTY (CLOSED) LANDFILL, QUARTER II (MAY) 2010

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	0.29	BDL	BDL	**2.8**
Aluminum	ug/l	BDL	102	124	**312**	131	BDL	**217**	170	**388**	**200**
Antimony	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**6**
Cadmium	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	2.34	1.15	3.63	**5**
Chloride	mg/l	5.7	26	30	3.9	9.1	12	22	8.1	3.5	**250**
Chromium	ug/l	BDL	BDL	BDL	BDL	7.38	BDL	BDL	11.6	4.84	**100**
Fluoride	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.14	**4**
Gross Alpha	pCi/l	<1.0 ± 0.7	6.3 ± 1.3	< 0.6 ± 0.4	1.7 ± 0.8	<1.4 ± 1.0	<1.4 ± 1.2	6.9 ± 1.8	6.9 ± 1.4	**16.9 ± 1.7**	**15**
Iron	ug/l	BDL	47.7	BDL	BDL	39.0	49.7	**390**	**666**	129	**300**
Lead	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**15**
Manganese	ug/l	BDL	2.97	3.65	BDL	BDL	BDL	**79.2**	26.0	4.61	**50**
Mercury	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	0.478	BDL	0.0719	**2**
Nitrate, as N	mg/l	2.1	7.9	**12**	4.5	6.2	2.5	0.55	2.2	4.2	**10**
Radium 226	pCi/l	0.3 ± 0.1	1.2 ± 0.2	0.4 ± 0.1	1.0 ± 0.2	0.2 ± 0.1	0.5 ± 0.2	2.1 ± 0.3	1.6 ± 0.3	3.1 ± 0.3	**---**
Radium 228	pCi/l	<0.9 ± 0.6	1.6 ± 0.7	1.3 ± 0.6	<0.9 ± 0.6	<0.8 ± 0.5	0.7 ± 0.5	1.2 ± 0.6	< 0.8 ± 0.5	1.1 ± 0.6	**---**
Silver	ug/l	BDL	0.232	0.257	BDL	BDL	BDL	BDL	BDL	0.223	**100**
Sodium	mg/l	4.10	47.1	26.9	10.1	3.15	6.62	18.4	7.58	9.15	**160**
TDS	mg/l	150	360	420	90	200	250	**520**	340	290	**500**
Thallium	ug/l	BDL	0.331	0.401	BDL	BDL	BDL	0.303	BDL	BDL	**2**

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



LEGEND

MW-2
45.75 — Monitor Well Location, Groundwater Elevation (ft, NGVD, 5/12/10)

45.8 — Groundwater Contour (Potentiometric Surface, 5/12/10)

Estimated Groundwater Flow Direction (5/12/10)

RICHARD L. POTTS LICENSE No. PG1113 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

5/10/10

The Colinas Group, Inc. 509 N. Virginia Avenue Winter Park, Florida 32789	PROJ. NO.: P-421 DATE: MAY 2010 SCALE: 1" = 200'	GROUNDWATER CONTOUR MAP QUARTER 2 (MAY) 2010 SUMTER COUNTY LANDFILL	FIGURE 1

FIELD LOG

Well Water Levels

PROJ # P. 431 **NAME:** Dale Clayton

PROJECT NAME: Sumter Co. Landfill **DATE:** 5/12/10

PROJECT LOCATION: Sumterville, FL

TIME	COMMENTS	
	Well #	WL (ft, btoc)
	MW-1	24.73'
	MW-2	23.38'
	MW-2A	26.46'
	MW-4	24.84'
	MW-4A	30.05' Hinge broken
	MW-4B	28.12'
	MW-6A	31.55' Hinge broken
	MW-7	27.41 Hinge broken
	MW-8	22.25' Hinge broken
	MW-9	26.15'
	MW-9A	29.47
	MW-10	22.41'
	MW-11	24.62'

DEP-SOP-001/01
Form FD 9000-24

1.4

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-2	SAMPLE ID: MW-2	DATE: 5/12/10

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 23.38	PURGE PUMP TYPE OR BAILER: ~~ESP~~ PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1 Well Vol = (31.92' feet – 23.38' feet) X .16 gallons/foot = 1.3664 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 28' feet) + .125 gallons = .315 gallons~~

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~25'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~28'	PURGING INITIATED AT: 1100	PURGING ENDED AT: 1118	TOTAL VOLUME PURGED (gallons): 2.06

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)
1114	1.82	1.82	.06	23.43	7.10	26.45	.235	3.91	6.80	Clear	None
1116	.12	1.94	.06	23.43	7.09	26.49	.235	3.89	5.63	Clear	None
1118	.12	2.06	.06	23.43	7.09	26.51	.236	3.92	3.82	Clear	None
									No sheen		

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: 1120	SAMPLING ENDED AT: 1135
PUMP OR TUBING DEPTH IN WELL (feet): ~28'	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				
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-2	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	~~ESP~~ APP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	~~ESP~~ APP
"	1	PE	250 mL	HN03	None	—Metals	~~Al,Fe,Mn,Hg,Na~~	~~ESP~~ APP
"	1	PE	500 mL	None	None	—	Chloride,Fluoride, Nitrate, TDS	~~ESP~~ RFPP

REMARKS:
1100: Set dedicated 1/4" PE tubing @ ~ 25' btoc and ~~began~~ began purging @ .2 gpm with a PP.

1105: WL 23.54' @ .2 gpm, GW is clear. DO is high @ 4.16 mg/L.

1107: DO is still high @ 4.10 mg/L. Reduced flow to .06 gpm. Lowered tubing to ~ 28' btoc.

1112: WL 23.43' @ .06 gpm, drawdown is stable. GW is clear. DO has stabilized around 3.90 mg/L. Will use optional stabilization criteria for DO.

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 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)y

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

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-4	SAMPLE ID: MW-4	DATE: 5/12/10

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): .3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 24.84	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 – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME X3= 1.083
(only fill out if applicable)
1 Equip Vol = .02 gallons + (.006 gallons/foot X ~~38~~ 36 feet) + .125 gallons = ~~.375~~ .361 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~31'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~31'	PURGING INITIATED AT: 0905	PURGING ENDED AT: 0921	TOTAL VOLUME PURGED (gallons): 4.80

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)
0917	3.60	3.60	.3	25.25	7.29	25.92	.596	.71	12.3	Clear	None
0919	.60	4.20	.3	25.25	7.27	25.93	.600	.71	8.43	Clear	None
0921	.60	4.80	.3	25.25	7.25	25.92	.602	.71	7.10	Clear	None
								No sheen			

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: 0922	SAMPLING ENDED AT: 0935
PUMP OR TUBING DEPTH IN WELL (feet): ~31'	SAMPLE PUMP FLOW RATE (mL per minute): VOC's < 100mL < 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				
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	—	~~Al,Fe,Mn,Hg,Na~~ Metals	ESP
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:
0905: Inserted SS ESP and dedicated 3/8" PE tubing @ to ~ 31' btoc and began purging @ .3 gpm.
0910: WL 25.21' @ .3 gpm, GW is turbid. Will purge until clear.
0915: WL 25.25' @ .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 = 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)y

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

DEP-SOP-001/01
Form FD 9000-24

1200
5:00

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-4A	SAMPLE ID: MW-4A	DATE: 5/11/10

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 30.00'	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 x3= 1.185
(only fill out if applicable)
1 Equip Vol = .02 gallons + (.006 gallons/foot X 45' feet) + .125 gallons = .395 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	PURGING INITIATED AT: 1409	PURGING ENDED AT: 1428	TOTAL VOLUME PURGED (gallons): 8.20

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)
1422	6.40	6.40	.3	30.09	7.46	27.03	.685	.24	24.7	Clear	None
1424	.6	7.00	.3	30.09	7.41	27.03	.683	.27	20.1	Clear	None
1426	.6	7.60	.3	30.09	7.40	26.90	.680	.26	18.2	Clear	None
1428	.6	8.20	.3	30.08	7.37	26.98	.682	.23	13.3	Clear	None
								No sheen			

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: 1430	SAMPLING ENDED AT: 1445
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				
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-4A	2	PE	1 Ltr	HN03	None	—	GrossAlpha, RA226RA228	ESP
"	1	PE	250 mL	H2S04	None	—	Total Ammonia	ESP
"	1	PE	250 mL	HN03	None	—	~~Al,Fe,Mn,Hg,Na~~ metals	ESP
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:
1409: Inserted SS ESP and dedicated 3/8" PE tubing to ~40' btoc and began purging @ .3 gpm.

1413: GW is extremely turbid; increased flow to 1 gpm to clean out well.

1418: GW has cleared up nicely, decreased flow to .3 gpm.

1420: WL 30.08' @ .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 = 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)y

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

480
,40

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Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-4B	SAMPLE ID: MW-4B	DATE: 5/11/10

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 28.07	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 – feet) X gallons/foot = gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME x3= 1.119
(only fill out if applicable)
1 Equip Vol = .02 gallons + (.006 gallons/foot X 38' feet) + 1.125 gallons = 1.373 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~33'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~33'	PURGING INITIATED AT: 1307	PURGING ENDED AT: 1335	TOTAL VOLUME PURGED (gallons): 5.44

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)
1316	3.60	3.60	.4	28.17	8.84	25.89	.136	6.97	2.68	Clear	None
1331	1.52	5.12	.08	28.10	8.96	27.13	.140	5.29	1.34	Clear	None
1333	.16	5.28	.08	28.10	8.95	27.23	.140	5.36	1.52	Clear	None
1335	.16	5.44	.08	28.10	8.95	27.36	.142	5.40	1.38	Clear	None
									No Sheen		

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: 1316	SAMPLING ENDED AT: 1353
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) FILTER SIZE: ____ µm Filtration Equipment Type:	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-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 Al,Fe,Mn,Hg,Na~~	ESP
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:
1307: Inserted SS ESP and dedicated 3/8" PE tubing to ~ 33' btoc and began purging @ .4 gpm ~~dirty~~.
1312: WL 28.17' @ .4 gpm, GW is clear.
1315: WL 28.18' @ .4 gpm, drawdown is stable. GW is clear.
1317: DO is extremely high @ 6.97 mg/L. Reduced flow to .08 gpm.
1320: DO is slowly dropping, is @ 5.32 mg/L. Continuing to purge.
1325: WL 28.10' @ .08 gpm, DO is @ 5.16 mg/L and still slowly dropping.
1330: DO is back up to 5.41 mg/L. Will use optional stabilization criteria for DO.

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 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)y

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

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Form FD 9000-24

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GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-6A	SAMPLE ID: MW-6A	DATE: 5/12/10

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 31.55	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 x3 = 1.335
(only fill out if applicable)
1 Equip Vol = .02 gallons + (.006 gallons/foot X ~~38'~~ 50' feet) + .125 gallons = ~~.375~~ .445 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	PURGING INITIATED AT: 1355	PURGING ENDED AT: 1426	TOTAL VOLUME PURGED (gallons): 12.96

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)
1422	12.64	12.64	.08	31.55	7.79	25.93	.260	5.30	20.2	Clear	None
1424	.16	12.80	.08	31.55	7.78	25.98	.261	5.29	19.2	Clear	None
1426	.16	12.96	.08	31.55	7.79	25.99	.261	5.32	13.3	Clear	None
								No sheen			

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: 1427	SAMPLING ENDED AT: 1442
PUMP OR TUBING DEPTH IN WELL (feet): ~45'	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				
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	—	Al,Fe,Mn,Hg,Na	ESP
"	1	PE	500 mL	None	None	—	Chloride,Fluoride, Nitrate, TDS	ESP

REMARKS:
1355: Inserted SS ESP and dedicated 3/8" PE tubing to ~45' stoc and began purging @ 1 gpm. This well has a history of high turbidity @ beginning of purge requiring over purging to clean it up.
1410: GW has cleared up nicely, @ 13 NTU's, reduced flow to .5 gpm.
1414: WL 31.59' @ .5 gpm, DO is high @ 7.15 mg/L. Reduced flow to .08 gpm.
1417: DO is dropping, continuing to purge.
1420: DO appears to be stable @ around 5.29 mg/L. Will use optional stabilization criteria for DO.

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 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)y

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

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Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: MW-8	SAMPLE ID: MW-8	DATE: 5/11/10

PURGING DATA

WELL DIAMETER (inches): 2" PVC	TUBING DIAMETER (inches): 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 22.21	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/feet~~ x3 = 1.209 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME .403
(only fill out if applicable)
1 Equip Vol = .02 gallons + (.006 gallons/foot X 43' ~~38'~~ feet) + .125 gallons = ~~.50~~ gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	PURGING INITIATED AT: 1054	PURGING ENDED AT: 1112	TOTAL VOLUME PURGED (gallons): 2.20

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)
1108	5.60	5.60	.40	~~22.24~~	7.39	24.56	.411	3.42	13.0	Clear	None
1110	.80	6.40	.40	22.24	7.38	24.64	.411	3.34	6.38	Clear	None
1112	.80	7.20	.40	22.24	7.37	24.70	.411	3.27	5.01	Clear	None
									No Sheen		

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: 1113	SAMPLING ENDED AT: 1125
PUMP OR TUBING DEPTH IN WELL (feet): ~38'	SAMPLE PUMP FLOW RATE (mL per minute): VOC's < 100 mL; < 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-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	—	~~Al,Fe,Mn,Hg,Na~~ metals	ESP
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP

REMARKS:
1054: Set dedicated 3/8" PE tubing and SS ~~ESP~~ ESP @ ~38' btoc and began purging @ .4 gpm with a PP.
1059: WL 22.25' @ .4 gpm, GW is clear. Turbidity is @ 24 NTUs.
1105: WL 22.24' @ .4 gpm, drawdown is stable. GW is clear.
1107: WL 22.24' @ .4 gpm. DO is high @ 3.46 mg/L, will use optional stabilization criteria for DO.

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 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)y

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

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GROUNDWATER SAMPLING LOG

SITE NAME: **Sumter County Landfill**	SITE LOCATION: **Sumterville, FL**	
WELL NO: **MW-9A**	SAMPLE ID: **MW-9A**	DATE: 5/12/10

PURGING DATA

WELL DIAMETER (inches): **2" PVC**	TUBING DIAMETER (inches): **3/8"**	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 29.47	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 x3 = 1.335
(only fill out if applicable)
1 Equip Vol = **.02** gallons + (**.006** gallons/foot X 50 ~~82~~ feet) + .125 .445 gallons = ~~58~~ gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~45'	PURGING INITIATED AT: 1150	PURGING ENDED AT: 1245	TOTAL VOLUME PURGED (gallons): 40.96

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)
1236	40.60	40.60	.04	31.80'	6.82	25.85	.904	.07	16.10	Clear	V Slight Sulfur
1238	.08	40.68	.04	31.79'	6.81	25.89	.906	.66	22.0	Clear	Same
1241	.12	40.80	.04	31.79'	6.82	25.76	.895	.12	17.1	Clear	Same
1243	.08	40.88	.04	31.79'	6.81	25.65	.892	.07	9.37	Clear	Same
1245	.08	40.96	.04	31.79	6.80	25.76	.898	.05	6.33	Clear	Same
								No Sheen			

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: 1246	SAMPLING ENDED AT: 1300
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) FILTER SIZE: ____ µm Filtration Equipment Type:	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-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 Al,Fe,Mn,Hg,Na~~	**ESP**
"	**1**	**PE**	**500 mL**	**None**	**None**	—	**Chloride,Fluoride, Nitrate, TDS**	**ESP**

REMARKS:
1150: Inserted SS ESP and dedicated 3/8" PE tubing to ~45' BTOC and began purging @ 1 gpm. This well historically has high turbidity at beginning of purge requiring over purging to clean it up. Will Purge until Clear.
1227: GW has cleared apnicely, reduced flow to .4 gpm.
1230: Turbidity @ 32 NTU's, continuing to purge. WL 31.80' and Stable.
1235: WL 31.80', GW is Clear.
1238: Turbidity is slowly going up again, continuing to purge.

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 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)y

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

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: **Sumter County Landfill**	SITE LOCATION: **Sumterville, FL**	
WELL NO: **MW-10**	SAMPLE ID: **MW-10**	DATE: 5/11/10

PURGING DATA

WELL DIAMETER (inches): **2" PVC**	TUBING DIAMETER (inches): **3/8"**	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 22.38	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 ~~47'~~ 45' feet) + **.125** gallons = ~~.425~~ gallons

.415 X3 = 1.245

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	PURGING INITIATED AT: 1157	PURGING ENDED AT: 1230	TOTAL VOLUME PURGED (gallons): 24.75

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)
1224	21.75	21.75	.75	24.10'	7.30	25.25	.522	1.10	11.9	Clear	None
1228	1.50	23.25	.75	24.10'	7.23	25.22	.521	1.09	10.8	Clear	None
1230	1.50	24.75	.75	24.10'	7.21	25.20	.520	1.11	9.47	Clear	None
								No sheen			

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: 1231	SAMPLING ENDED AT: 1245
PUMP OR TUBING DEPTH IN WELL (feet): ~40'	SAMPLE PUMP FLOW RATE (mL per minute): VOC's < 100 mL **< 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				
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-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 Al,Fe,Mn,Hg,Na**~~	**ESP**
"	**1**	**PE**	**500 mL**	**None**	**None**	—	**Chloride, Fluoride, Nitrate, TDS**	**ESP**

REMARKS:

1157: Inserted SS ESP and dedicated 3/8" PE tubing to ~40' btoc and began purging @ .75 gpm.

1200: WL 24.00' @ .75 gpm, GW is extremely turbid. This well historically requires over pusing to clean up turbidity.

1210: GW is still turbid, but cleaning up. Continuing to purge.

1225: WL 24.10' @ .75 gpm, GW has cleared up to 15 NTUs. Drawdown is 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 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)y

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

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: **Sumter County Landfill**	SITE LOCATION: **Sumterville, FL**	
WELL NO: **MW-11**	SAMPLE ID: **MW-11**	DATE: 5/12/10

PURGING DATA

WELL DIAMETER (inches): **2" PVC**	TUBING DIAMETER (inches): **3/8"**	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 24.62	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' ~~43'~~ feet) + **.125** gallons = ~~.405~~ gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	PURGING INITIATED AT: 0957	PURGING ENDED AT: 1016	TOTAL VOLUME PURGED (gallons): 6.80

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)
1010	5.20	5.20	.4	24.72	6.83	25.49	.416	1.39	12.9	Clear	None
1012	.80	6.00	.4	24.71	6.77	25.55	.422	1.47	16.5	Clear	None
1014	.80	6.80	.4	24.72	6.73	25.59	.437	1.31	19.2	Clear	None
1016									17.8	Clear	None
									No Sheen		

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: 1017	SAMPLING ENDED AT: 1030
PUMP OR TUBING DEPTH IN WELL (feet): ~35'	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				
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-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 ~~Al,Fe,Mn,Hg,Na~~	**ESP**
"	**1**	**PE**	**500 mL**	**None**	**None**	—	**Chloride,Fluoride, Nitrate, TDS**	**ESP**

REMARKS:
0957: Inserted SS ESP and dedicated 5/8" PE tubing to ~35' btoc and began purging @ .4 gpm.
1001: WL 24.78' @ .4 gpm, GW is slightly turbid. Will over purge to clean up.
1008: WL 24.72' @ .4 gpm, GW is clear. Drawdown is 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 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)y

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

DEP-SOP-001/01
Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill	SITE LOCATION: Sumterville, FL	
WELL NO: NA	SAMPLE ID: EQB	DATE: 5/11/10

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

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (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)
= gallons + (gallons/foot X feet) + gallons = 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):

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)
~~NA~~											

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: 1015	SAMPLING ENDED AT: 1030
PUMP OR TUBING DEPTH IN WELL (feet):	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		
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	—	~~Metal Al,Fe,Mn,Hg,Na~~	ESP
"	1	PE	500 mL	None	None	—	Chloride, Fluoride, Nitrate, TDS	ESP
"		Various	Various	Various	None	—	Appendix I Parameters	ESP

REMARKS:
Field decon'ed 5 gal PE bucket, SS ESP and WL Probe. Poured 1 gallon of distilled water over Pump/WL probe and started pump. Ran pump for ~1 minute circulating water through pump and over ~~wet~~ WL Probe. Collected samples using 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 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)y

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

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ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr. Orlando, FL 32824 (407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210

1015 Passport Way Cary, NC 27513 (919) 677-1669 Fax (919) 677-9846

Client Name	Project Number
The Colinas Group (CO016)	53008
Address	**Project Name/Desc**
509 N. Virginia Ave.	SUMTER COUNTY VOL. RED. & LANDFILL
City/ST/Zip	**PO # / Billing Info**
Winter Park, FL 32789	
Tel (407) 622-8176 **Fax** (407) 622-8196	**Reporting Contact** Rick Potts
Sampler(s) Name, Affiliation (Print)	**Billing Contact** Rick Potts
Sampler(s) Signature	**Facility # (if required)**

Requested Analyses

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8011	8260B Appendix 1 FL	Ag,Al,As,Ba,Be,Cd,Co,Cr,Cu,Fe,Mn,Hg,Ni,N,Pb,Sb,Se,Tl,V,Zn	Ammonia 350.1	Chloride 300.1,Fluoride 300,Nitrate as N 300,TDS SM2540C	Gross Alpha,Radium 226,Radium 228	Field Parameters	Sample Comments
						Preservation (See Codes) (Combine as necessary)		H	I	N	S	I	N	
	MW-2	5/12/10	1135	G	GW	9 5	X	X	X	X	X	X	X	
	MW-4	5/12/10	0935	G	GW	9 5	X	X	X	X	X	X	X	
	MW-4B	5/11/10	1353	G	GW	9 5	X	X	X	X	X	X	X	
	MW-4A	5/11/10	1445	G	GW	9 5	X	X	X	X	X	X	X	
	MW-6A	5/12/10	1442	G	GW	9 5	X	X	X	X	X	X	X	
	MW-8	5/11/10	1125	G	GW	9 5	X	X	X	X	X	X	X	
	MW-9A	5/12/10	1300	G	GW	9 5	X	X	X	X	X	X	X	
	MW-10	5/11/10	1245	G	GW	9 5	X	X	X	X	X	X	X	
	MW-11	5/12/10	1030	G	GW	9 5	X	X	X	X	X	X	X	
	EQUIPMENT BLANK	5/11/10	1030	G	0 ~~GW~~	9 5	X	X	X	X	X	X		
	TRIP BLANK				0	2		X						O = DI WATER

<-- Total # of Containers

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

X Standard

___ Expedited

Due ___/___/___

Lab Workorder

A002462

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time	Received By	Date/Time
SP	5/7/10 1230		5/7/10 1230		5/7/10 1230
Comments		Relinquished By	Date/Time	Received By	Date/Time
No Appendix I parameters this event.			5/12/10 1620		5/12/10 1620
		Relinquished By	Date/Time	Received By	Date/Time
					5/12/10 1620

Cooler #'s & Temps on Receipt SW-4 0°C C-290 0°C

Condition Upon Receipt X Acceptable ___ Unacceptable

Matrix: GW-Groundwater SO-Soil SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments)

Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions noted on the reverse of this form, unless prior written agreements exist

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) **YSI 556/Lamotte 2020e** **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: 7/2011

Standard B Oakton pH Standard 7.00 Units Exp: 7/2011

Standard C Oakton Conductivity Standard .447 mS/cm Exp: 8/2010

Standard D Lamotte 1 NTU Standard Exp: 3/2011

Standard E Lamotte 10 NTU Standard Exp: 1/2011

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
5/11/10	0850	A	4.01	4.01		Yes	IC	[illegible]	pH
		B	7.00	7.00					pH
		C	.447	.447					Cond
		--	--	8.67					DO
		--	--	22.43					Temp
		D	1	1.00					Turb
		E	10	10.02					Turb
5/11/10	0910	A	4.01	4.01		Yes	ICV	[illegible]	pH
		B	7.00	7.01					pH
		C	.447	.443					Cond
		--	--	8.33					DO
		--	--	24.56					Temp
		D	1	1.00					Turb
		E	10	10.04					Turb
		A	4.01						pH
		B	7.00						pH
		C	.447						Cond
		--	--						DO
		--	--						Temp
		D	1						Turb
		E	10						Turb

Field Instrument Calibration Records

INSTRUMENT (MAKE/MODEL#) **YSI 556/Lamotte 2020e** **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: 7/2011

Standard B Oakton pH Standard 7.00 Units Exp: 7/2011

Standard C Oakton Conductivity Standard .447 mS/cm Exp: 8/2010

Standard D Lamotte 1 NTU Standard Exp: 3/2011

Standard E Lamotte 10 NTU Standard Exp: 1/2011

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
5/12/10	0830	A	4.01	4.01		Yes	IC	[illegible]	pH
		B	7.00	7.00					pH
		C	.447	.447					Cond
		--	--	8.61					DO
		--	--	22.81					Temp
		D	1	1.00					Turb
		E	10	10.00					Turb
5/12/10	0845	A	4.01	4.01		Yes	ICV	[illegible]	pH
		B	7.00	6.99					pH
		C	.447	.447					Cond
		--	--	8.61					DO
		--	--	22.78					Temp
		D	1	1.00					Turb
		E	10	9.98					Turb
		A	4.01						pH
		B	7.00						pH
		C	.447						Cond
		--	--						DO
		--	--						Temp
		D	1						Turb
		E	10						Turb

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Description: EQUIPMENT BLANK
Matrix: Ground Water
Project: SUMTER COUNTY VOL. RED. & LANDFILL

Lab Sample ID: A002462-10
Sampled: 05/11/10 10:30
Sampled By: Dale Claytor

Received: 05/12/10 16:20
Work Order: A002462

Metals by EPA 6000/7000 Series Methods

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	POL	Batch	Method	Analyzed	By	Notes
Mercury [7439-97-6] ^	0.0240	U	ug/L	1	0.0240	0.200	0E12042	EPA 7470A	05/19/10 08:31	JMA	

Description: EQUIPMENT BLANK
Matrix: Ground Water
Project: SUMTER COUNTY VOL. RED. & LANDFILL

Lab Sample ID: A002462-10
Sampled: 05/11/10 10:30
Sampled By: Dale Claytor

Received: 05/12/10 16:20
Work Order: A002462

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Aluminum [7429-90-5] ^	68.0	U	ug/L	1	68.0	100	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Antimony [7440-36-0] ^	0.700	U	ug/L	1	0.700	20.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Arsenic [7440-38-2] ^	4.00	U	ug/L	1	4.00	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Barium [7440-39-3] ^	11.0	U	ug/L	1	11.0	100	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Beryllium [7440-41-7] ^	0.740	U	ug/L	1	0.740	1.00	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Cadmium [7440-43-9] ^	1.10	U	ug/L	1	1.10	3.00	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Chromium [7440-47-3] ^	4.50	U	ug/L	1	4.50	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Cobalt [7440-48-4] ^	1.20	U	ug/L	1	1.20	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Copper [7440-50-8] ^	2.20	U	ug/L	1	2.20	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Iron [7439-89-6] ^	38.0	U	ug/L	1	38.0	50.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	QV-01
Lead [7439-92-1] ^	1.20	U	ug/L	1	1.20	5.00	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Manganese [7439-96-5] ^	2.00	U	ug/L	1	2.00	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Nickel [7440-02-0] ^	2.30	U	ug/L	1	2.30	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Selenium [7782-49-2] ^	5.20	U	ug/L	1	5.20	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	QV-01
Silver [7440-22-4] ^	0.200	U	ug/L	1	0.200	1.00	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Sodium [7440-23-5] ^	0.320	U	mg/L	1	0.320	1.00	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Thallium [7440-28-0] ^	0.260	U	ug/L	1	0.260	1.00	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Vanadium [7440-62-2] ^	0.960	U	ug/L	1	0.960	10.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	
Zinc [7440-66-6] ^	16.0	U	ug/L	1	16.0	50.0	0E13010	EPA 6020A	05/18/10 15:23	JAY	

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Description: EQUIPMENT BLANK
Matrix: Ground Water
Project: SUMTER COUNTY VOL. RED. & LANDFILL

Lab Sample ID: A002462-10
Sampled: 05/11/10 10:30
Sampled By: Dale Claytor

Received: 05/12/10 16:20
Work Order: A002462

Classical Chemistry Parameters

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	POL	Batch	Method	Analyzed	By	Notes
Ammonia as N [7664-41-7] ^	0.010	U	mg/L	1	0.010	0.020	0E14019	EPA 350.1	05/14/10 14:48	KG	
Chloride [16887-00-6] ^	**1.6**	I	mg/L	1	0.24	5.0	0E12035	EPA 300.0	05/13/10 00:50	RSA	
Fluoride [16984-48-8] ^	0.03	U	mg/L	1	0.03	0.20	0E12035	EPA 300.0	05/13/10 00:50	RSA	
Nitrate as N [14797-55-8] ^	**0.12**	I	mg/L	1	0.10	1.0	0E12035	EPA 300.0	05/13/10 00:50	RSA	
Total Dissolved Solids [ECL-0156] ^	**28**		mg/L	1	10	10	0E12043	SM18 2540C	05/13/10 23:35	AH	

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	05/14/10	11:35			05/12/10	16:54	5/12/2010 22:26
EPA 300.0	06/09/10				05/12/10	16:54	5/12/2010 22:26
EPA 350.1	06/09/10				05/14/10	12:15	5/14/2010 14:35
EPA 6020A	11/08/10				05/13/10	17:25	5/17/2010 14:35
EPA 7470A	06/09/10				05/18/10	13:08	5/19/2010 07:13
Field	05/12/10	11:49			05/12/10	11:35	5/14/2010 13:34
Field	05/13/10	11:35	05/13/10	11:35	05/12/10	11:35	5/14/2010 13:34
Field	05/14/10	11:35			05/12/10	11:35	5/14/2010 13:34
SM18 2540C	05/19/10				05/12/10	19:05	5/13/2010 23:35

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	05/14/10	09:35			05/12/10	16:54	5/12/2010 22:44
EPA 300.0	06/09/10				05/12/10	16:54	5/12/2010 22:44
EPA 350.1	06/09/10				05/14/10	12:15	5/14/2010 14:36
EPA 6020A	11/08/10				05/13/10	17:25	5/18/2010 14:27
EPA 7470A	06/09/10				05/18/10	13:08	5/19/2010 08:00
Field	05/12/10	09:49			05/12/10	09:35	5/14/2010 13:34
Field	05/13/10	09:35	05/13/10	09:35	05/12/10	09:35	5/14/2010 13:34
Field	05/14/10	09:35			05/12/10	09:35	5/14/2010 13:34
SM18 2540C	05/19/10				05/12/10	19:05	5/13/2010 23:35

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	05/13/10	13:53			05/12/10	16:54	5/12/2010 22:08
EPA 300.0	06/08/10				05/12/10	16:54	5/12/2010 22:08
EPA 350.1	06/08/10				05/14/10	12:15	5/14/2010 14:40
EPA 6020A	11/07/10				05/13/10	17:25	5/18/2010 14:34
EPA 7470A	06/08/10				05/18/10	13:08	5/19/2010 08:03
Field	05/11/10	14:07			05/11/10	13:53	5/14/2010 13:34
Field	05/12/10	13:53	05/12/10	13:53	05/11/10	13:53	5/14/2010 13:34
Field	05/13/10	13:53			05/11/10	13:53	5/14/2010 13:34
SM18 2540C	05/18/10				05/12/10	19:05	5/13/2010 23:35

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Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	05/13/10	14:45			05/12/10	16:54	5/12/2010 23:02
EPA 300.0	06/08/10				05/12/10	16:54	5/12/2010 23:02
EPA 350.1	06/08/10				05/14/10	12:15	5/14/2010 14:41
EPA 6020A	11/07/10				05/13/10	17:25	5/18/2010 15:30
EPA 7470A	06/08/10				05/18/10	13:08	5/19/2010 08:06
Field	05/11/10	14:59			05/11/10	14:45	5/14/2010 13:34
Field	05/12/10	14:45	05/12/10	14:45	05/11/10	14:45	5/14/2010 13:34
Field	05/13/10	14:45			05/11/10	14:45	5/14/2010 13:34
SM18 2540C	05/18/10				05/12/10	19:05	5/13/2010 23:35

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	05/14/10	14:42			05/12/10	16:54	5/12/2010 23:20
EPA 300.0	06/09/10				05/12/10	16:54	5/12/2010 23:20
EPA 350.1	06/09/10				05/14/10	12:15	5/14/2010 14:42
EPA 6020A	11/08/10				05/13/10	17:25	5/18/2010 15:37
EPA 7470A	06/09/10				05/18/10	13:08	5/19/2010 08:09
Field	05/12/10	14:56			05/12/10	14:42	5/14/2010 13:34
Field	05/13/10	14:42	05/13/10	14:42	05/12/10	14:42	5/14/2010 13:34
Field	05/14/10	14:42			05/12/10	14:42	5/14/2010 13:34
SM18 2540C	05/19/10				05/12/10	19:05	5/13/2010 23:35

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6020A	11/08/10				05/13/10	17:25	5/19/2010 15:01

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)
EPA 300.0	05/13/10	11:25			05/12/10	16:54	5/12/2010 23:38
EPA 300.0	06/08/10				05/12/10	16:54	5/12/2010 23:38
EPA 350.1	06/08/10				05/14/10	12:15	5/14/2010 14:43
EPA 6020A	11/07/10				05/13/10	17:25	5/18/2010 15:47
EPA 7470A	06/08/10				05/18/10	13:08	5/19/2010 08:18
Field	05/11/10	11:39			05/11/10	11:25	5/14/2010 13:34
Field	05/12/10	11:25	05/12/10	11:25	05/11/10	11:25	5/14/2010 13:34
Field	05/13/10	11:25			05/11/10	11:25	5/14/2010 13:34
SM18 2540C	05/18/10				05/12/10	19:05	5/13/2010 23:35

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)
EPA 6020A	11/07/10		05/13/10	17:25	5/19/2010 15:51

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Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)	
EPA 300.0	05/14/10	13:00			05/12/10	16:54	5/13/2010	01:08
EPA 300.0	06/09/10				05/12/10	16:54	5/13/2010	01:08
EPA 350.1	06/09/10				05/14/10	12:15	5/14/2010	14:45
EPA 6020A	11/08/10				05/13/10	17:25	5/18/2010	15:54
EPA 7470A	06/09/10				05/18/10	13:08	5/19/2010	08:21
Field	05/12/10	13:14			05/12/10	13:00	5/14/2010	13:34
Field	05/13/10	13:00	05/13/10	13:00	05/12/10	13:00	5/14/2010	13:34
Field	05/14/10	13:00			05/12/10	13:00	5/14/2010	13:34
SM18 2540C	05/19/10				05/12/10	19:05	5/13/2010	23:35

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)	
EPA 6020A	11/08/10		05/13/10	17:25	5/19/2010	15:58

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)	
EPA 300.0	05/13/10	12:45			05/12/10	16:54	5/13/2010	01:26
EPA 300.0	06/08/10				05/12/10	16:54	5/13/2010	01:26
EPA 350.1	06/08/10				05/14/10	12:15	5/14/2010	14:46
EPA 6020A	11/07/10				05/13/10	17:25	5/18/2010	16:01
EPA 7470A	06/08/10				05/18/10	13:08	5/19/2010	08:24
Field	05/11/10	12:59			05/11/10	12:45	5/14/2010	13:34
Field	05/12/10	12:45	05/12/10	12:45	05/11/10	12:45	5/14/2010	13:34
Field	05/13/10	12:45			05/11/10	12:45	5/14/2010	13:34
SM18 2540C	05/18/10				05/12/10	19:05	5/13/2010	23:35

Parameter	Hold Date/Time(s)		Prep Date/Time(s)		Analysis Date/Time(s)	
EPA 6020A	11/07/10		05/13/10	17:25	5/19/2010	16:05

Parameter	Hold Date/Time(s)				Prep Date/Time(s)		Analysis Date/Time(s)	
EPA 300.0	05/14/10	10:30			05/12/10	16:54	5/13/2010	01:44
EPA 300.0	06/09/10				05/12/10	16:54	5/13/2010	01:44
EPA 350.1	06/09/10				05/14/10	12:15	5/14/2010	14:47
EPA 6020A	11/08/10				05/13/10	17:25	5/18/2010	16:11
EPA 7470A	06/09/10				05/18/10	13:08	5/19/2010	08:27
Field	05/12/10	10:44			05/12/10	10:30	5/14/2010	13:34
Field	05/13/10	10:30	05/13/10	10:30	05/12/10	10:30	5/14/2010	13:34
Field	05/14/10	10:30			05/12/10	10:30	5/14/2010	13:34
SM18 2540C	05/19/10				05/12/10	19:05	5/13/2010	23:35

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6020A	11/08/10	05/13/10 17:25	5/19/2010 16:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 300.0	05/13/10 10:30	05/12/10 16:54	5/13/2010 00:50
EPA 300.0	06/08/10	05/12/10 16:54	5/13/2010 00:50
EPA 350.1	06/08/10	05/14/10 12:15	5/14/2010 14:48
EPA 6020A	11/07/10	05/13/10 17:25	5/18/2010 15:23
EPA 7470A	06/08/10	05/18/10 13:08	5/19/2010 08:31
SM18 2540C	05/18/10	05/12/10 19:05	5/13/2010 23:35

Florida Radiochemistry Services, Inc.

Sample Login

Client:	**Enco-Orlando**	**Date / Time Received**	**Work order #**
		05/13/10 08:28	**1005115**
Client Contact:	**Marcia Colon**		
Client P.O.			
Project I.D.	**A002462**		

Lab Sample I.D.	Client Sample I.D.	Sample Date/Time	Analysis Requested
1005115-01	MW-2	05/12/10 11:35	Ga, Ra226, Ra228
1005115-02	MW-4	05/12/10 09:35	Ga, Ra226, Ra228
1005115-03	MW-4B	5/11/2010 13:53	Ga, Ra226, Ra228
1005115-04	MW-4A	05/11/10 14:45	Ga, Ra226, Ra228
1005115-05	MW-6A	05/12/10 14:42	Ga, Ra226, Ra228
1005115-06	MW-8	05/11/10 11:25	Ga, Ra226, Ra228
1005115-07	MW-9A	05/12/10 13:00	Ga, Ra226, Ra228
1005115-08	MW-10	05/11/10 12:45	Ga, Ra226, Ra228
1005115-09	MW-11	05/12/10 10:30	Ga, Ra226, Ra228
1005115-10	EQUIPMENT BLANK	05/11/10 10:30	Ga, Ra226, Ra228

Florida Radiochemistry Services, Inc.

QA Page

Analyte	Sample #	Date Analyzed	Sample Result	Amount Spiked	Spike Result	Spike /Dup Result	Spike % Rec.	Spike Dup % Rpd
Gross Alpha	1005115-01	05/24/10	<1.0	10.2	10.8	10.0	106	7.7
Radium 226	1005115-08	05/28/10	1.6	25.2	25.9	24.4	96	6.0
Radium 228	1005115-08	05/28/10	<0.8	4.9	4.6	5.3	94	14.1

	Quality Control Limits	
	% RPD	% Rec.
Gross Alpha	25.0	60-125
Radium 226	23.4	78-125
Radium 228	23.9	67-125