

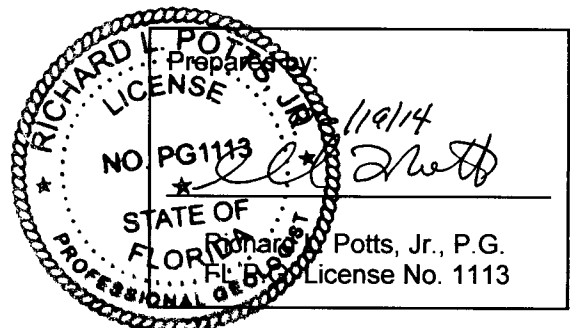
**SUMTER COUNTY
(CLOSED) LANDFILL
QUARTERLY GROUNDWATER
MONITORING REPORT
Quarter II (May) 2014**

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



June 2014

Florida Department of Environmental Protection

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

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

PART I GENERAL INFORMATION

- (1) Facility Name Sumter County Closed Class I Landfill
Address 835 C.R. 529
City Lake Panasoffkee Zip 33538 County Sumter
Telephone Number (352)-793-3368 E-mail address jackey.jackson@sumtercountyfl.gov
- (2) WACS Facility 53008
- (3) DEP Permit Number 22926-004-SF
- (4) Authorized Representative's Name Jackey Jackson Title Ass't. Director Public Works
Address 319 E. Anderson Avenue
City Bushnell Zip 33513 County Sumter
Telephone Number (352)-793-0240 E-mail address jackey.jackson@sumtercountyfl.gov
- (5) Type of Discharge NA
- (6) Method of Discharge NA

CERTIFICATION

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

6-19-14

Date


Owner or Authorized Representative's Signature

PART II QUALITY ASSURANCE REQUIREMENTS

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

Analytical Lab Organization DOH # E83182

Lab Name Environmental Conservation Laboratories, Inc.

Address 10775 Central Port Drive, Orlando, FL 32824

Phone Number (407) 826-5314

E-mail Address mcolon@encolabs.com

THE COLINAS GROUP, INC.
HYDROGEOLOGISTS & ENGINEERS

June 18, 2014

Mr. F. Thomas Lubozynski, P.E.
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Subj: Quarter II (May) 2014 Groundwater Monitoring Report
Sumter County Closed Class I Landfill
Sumter County, Florida
WACS_Facility ID #53008
FDEP Permit No. 22926-003-SF

Dear Mr. Lubozynski:


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

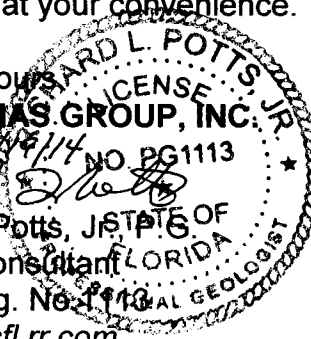
**Sumter County (Closed) Landfill Quarterly Groundwater Monitoring Report,
Quarter II (May) 2014**

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.E.
Principal Consultant
Fl. P.G. Reg. No. 1113
rickpotts@cfl.rr.com



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

**SUMTER COUNTY (CLOSED) LANDFILL
GROUNDWATER MONITORING REPORT
SUMTER COUNTY, FLORIDA
Quarter II (May) 2014**

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6. FDEP ADaPT/EDD Disc - (In Pocket)

**SUMTER COUNTY (CLOSED) LANDFILL
QUARTERLY GROUNDWATER MONITORING REPORT
QUARTER II (MAY) 2014**

INTRODUCTION

The Colinas Group, Inc. (TCG) has reviewed the groundwater monitoring well sampling and analytical results for the Quarter II (May) 2014 sampling event at the Sumter County (Closed) Class I 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's Long-Term Care Permit #22926-003-SF.

SAMPLING EVENT

The Quarter II 2014 sampling event at the Sumter County Landfill was completed during the period May 28 - 29, 2014. Sampling was performed by TCG in accordance with the Florida Department of Environmental Protection (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 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 28, 2014. These measurements were used to construct 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.

The closed landfill's Long-Term Care Permit (Permit No.22926-003-SF) was modified by the FDEP on December 20, 2013. Modifications to the facility monitoring plan included:

1. Monitoring Well MW-4A was designated as a Detection Well (Specific Condition No.15);
2. MW-4C and MW-4D were designated as new Compliance Wells (Specific Condition No.15);
3. MW-4 and MW-4B were designated as Piezometers (Specific Condition No. 15);
4. The lateral Zone of Discharge boundary is expanded to the western and northern landfill property boundaries (Specific Condition No.14.a), and;
5. Identifies the Sumter County Closed Class I Landfill as an existing installation in accordance with Rule 62-520.520(1),F.A.C. (Specific Condition No. 14.b).

RESULTS

Field Tested Parameters

Results of field testing completed at groundwater monitoring wells for the Quarter II 2014 sampling event are summarized in Table I. Field tests were completed in strict accordance with the FDEP SOP requirements.

pH

The field testing results indicate pH of groundwater in the uppermost aquifer was within the Florida Secondary Drinking Water Standards (SDWS) range (6.5 - 8.5 pH units) at seven (7) 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-4D**) produced groundwater with a pH above the upper FDEP range at 9.05 pH units. One well (**MW-11**) reported pH slightly below the range at 6.22 pH units.

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 varied through a relatively narrow range of 24.16 C to 27.46 C.

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 Well **MW-6A** and up-gradient well **MW-8**.

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 242 umhos/cm to 979 umhos/cm.

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 had measured turbidity values less than 20 NTUs at eight (8) of the nine (9) wells. New monitoring well **MW-4D**, sampled for the second time this quarter, produced groundwater with turbidity slightly exceeding 20 NTUs.

Regulatory Exceedances

A summary of groundwater laboratory analytical results that exceeded the regulatory level for a particular parameter in the Quarter II 2014 sample set is presented in Table III. As shown, five (5) constituents were reported at specific monitoring wells at concentrations that exceed applicable regulatory levels. Exceeding parameters were: Aluminum, iron, manganese, nitrate nitrogen and total dissolved solids (TDS).

Aluminum

Aluminum was reported above the 200 ug/l SDWS MCL at new monitoring well **MW-4D** at 2,540 ug/l and well **MW-9A** at 210 ug/l.

Iron

Dissolved iron was detected at a concentration above the SDWS MCL of 300 ug/l at monitoring well **MW-9A** at 1,500 ug/l. Iron was not detected above the laboratory minimum detection limit of 38 ug/l at six (6) wells.

Manganese

Manganese was reported at a concentration above the SDWS MCL of 50 ug/l at monitoring well **MW-9A** at 200 ug/l. Manganese was detected at one other monitoring well (**MW-10**) at 12.0 ug/l.

Nitrate Nitrogen

Nitrate was reported above the Florida Primary Drinking Water Standards (PDWS) MCL (10 mg/l) at monitoring well **MW-4A** at 11 mg/l. Remaining monitoring wells reported nitrate values ranging from 0.55 mg/l (**MW-9A**) to 6.7 mg/l at new Compliance Well **MW-4C**.

Total Dissolved Solids (TDS)

TDS concentration was reported nominally above the 500 mg/l SDWS MCL at monitoring well **MW-9A** at 530 mg/l.

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

Other Significant Detected Parameters

Chloride concentrations reported for seven (7) of the nine (9) monitoring wells, including facility background monitoring well **MW-6A**, appear consistent between individual wells and typical for natural shallow groundwaters in Florida. Chloride concentrations at monitoring wells **MW-4A** and **MW-9A** (20 mg/l - 21 mg/l) appear slightly elevated compared to the other wells. The SDWS MCL for chloride in groundwater is 250 mg/l.

Gross alpha and/or **Radium 226+228** are reported at concentrations elevated above background levels and somewhat approaching PDWS MCLs (15 pCi/l and 5 pCi/l, respectively) at monitoring wells **MW-9A**, **MW-10** and **MW-11**.

Sodium appears slightly elevated at monitoring wells **MW-4A** and **MW-9A** (20.1 mg/l - 22.5 mg/l) as compared to background and other downgradient monitoring wells. The PDWS MCL for sodium is 160 mg/l.

SUMMARY AND CONCLUSIONS

Chemical characteristics of groundwater monitored at the Sumter County Closed Landfill are reported for the Quarter II (May) 2014 sampling event. Exceedances of constituent regulatory maximum contaminant levels (MCLs) are reported at specific monitoring wells for the Secondary Drinking Water Standards (SDWS) parameters: **Aluminum**, **Iron**, **manganese** and **total dissolved solids (TDS)**. One well reported an exceedance of the Primary Drinking Water Standards (PDWS) MCL for **nitrate nitrogen** in groundwater,

Elevated **dissolved oxygen (DO)** levels were measured at four of the nine groundwater monitoring wells sampled, including background monitoring well **MW-6A** and up-gradient well **MW-8**. These wells routinely produce groundwater with elevated DO levels and are considered to represent natural groundwater conditions. An elevated (alkaline) groundwater **pH** outside the SDWS pH range is reported at new Compliance Well **MW-4D**.

Aluminum was reported well above the SDWS at new Compliance Well **MW-4D**. Recently added to the landfill monitoring plan in December 2013, this quarter is the second sampling event at this well. Aluminum concentrations, considered a likely artifact of well construction and elevated turbidity, are expected to decline over time with continued well development by pumping to collect water samples.

Dissolved **iron** above the SDWS MCL was reported at detection monitoring well **MW-9A**. **Manganese** was also reported above the SDWS MCL at **MW-9A**. Both iron and manganese occur naturally in sediments and carbonate rocks penetrated by the monitoring wells.

Nitrate nitrogen was reported slightly above the PDWS MCL at Detection Well **MW-4A** at 11 mg/l. The MCL for nitrate in groundwater is 10 mg/l. Compliance wells **MW-4C** and **MW-4D**, positioned down-gradient from **MW-4A**, report nitrate below the MCL and slightly above elevated background levels consistently reported at Background Well **MW-6A**.

TDS was reported slightly above the SDWS provisional MCL (500 mg/l) at well **MW-9A** at 530 mg/l. Past analytical data from the monitoring network indicates that dissolved calcium carbonate accounts for a large part of the TDS load in groundwater at the landfill. Calcium carbonate is not a regulated compound in groundwaters.

Considering water quality results from this and prior routine monitoring events and corrective actions investigations at the landfill, we offer the following conclusions regarding compliance with regulatory requirements in accordance with the closed landfill's long-term-care permit:

1. With the lone exception of **nitrate-nitrogen** at Detection Well **MW-4A**, monitoring parameters exceeding respective MCLs are solely constituents regulated under the Florida Secondary Drinking Water Standards in Chapter 62-550, F.A.C. Monitoring parameters that have historically, from time to time, exceeded secondary drinking water standards and are reported above standards in the current quarterly sampling event include aluminum, iron, manganese and total dissolved solids.
2. The Sumter County Closed Class I Landfill is an "existing installation" as defined in Rule 62-520.200(10), F.A.C. and is exempt from compliance with secondary drinking water standards parameters at the facility's property boundary in accordance with the provisions of rule 62-520.520(1), F.A.C. and Specific Condition No.14b of the landfill's long-term care permit.
3. **Nitrate** concentrations in samples from Detection Well **MW-4A** continue to be reported nominally above the Florida Primary Drinking Water Standards MCL. Down-gradient Compliance Wells **MW-4C** and **MW-4D** continue to report nitrate below the MCL and only slightly above elevated nitrate values consistently reported for Background Well **MW-6A**.

* * * * *

TABLE I
FIELD PARAMETER RESULTS SUMMARY
SUMTER COUNTY (CLOSED) LANDFILL
SUMTER COUNTY, FLORIDA
Quarter II (May) 2014

Sampling Point	Temp. (C)	Dissolved Oxygen (mg/l)	pH	Specific Conductance (umhos/cm)	Turbidity (NTU)
MW-2	26.48	6.25	6.87	242	0.42
MW-4A	26.63	0.91	7.14	646	3.67
MW-4C	27.46	1.32	7.35	489	6.14
MW-4D	26.14	2.79	9.05	371	21.4
MW-6A	24.57	7.23	7.86	317	12.0
MW-8	24.16	5.31	7.46	336	0.31
MW-9A	25.11	0.63	6.50	979	10.8
MW-10	24.74	0.74	6.99	556	2.52
MW-11	26.11	1.53	6.22	358	3.92

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

TABLE II

SUMMARY OF GROUNDWATER LEVELS
SUMTER COUNTY (CLOSED) LANDFILL
SUMTER COUNTY, FLORIDA
Quarter II (May) 2014

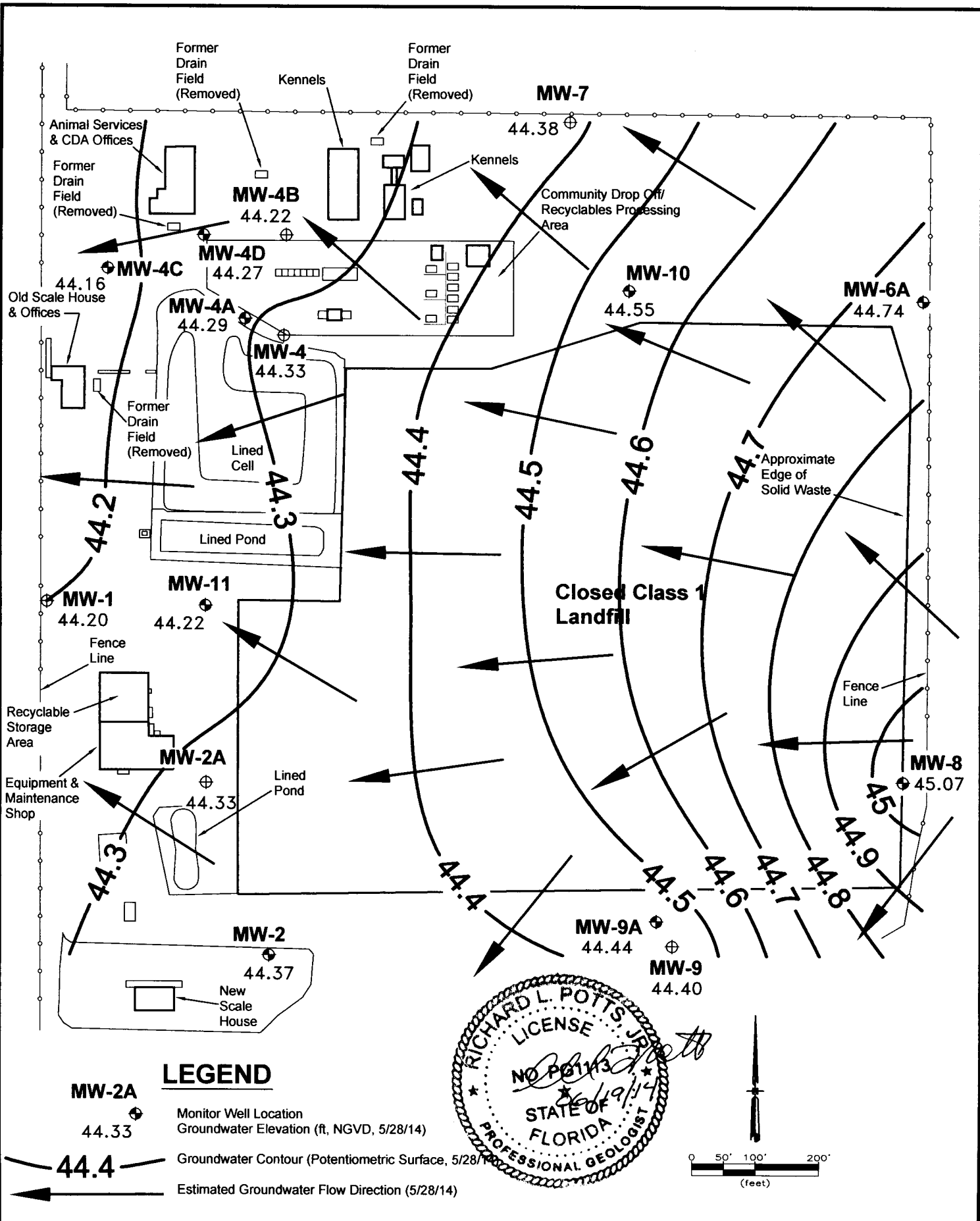
Well No.	MP Elev. ^{1/} (ft. +NGVD)	Depth to Water ^{2/} (ft. - MP)	Groundwater Elevation (ft. +NGVD)
MW-1	70.10	25.90	44.20
MW-2	68.96	24.59	44.37
MW-2A	71.98	27.65	44.33
MW-4	70.33	26.00	44.33
MW-4A	75.49	31.20	44.29
MW-4B	73.49	29.27	44.22
MW-4C	70.64	26.48	44.16
MW-4D	70.20	25.93	44.27
MW-6A	77.48	32.74	44.74
MW-7	72.93	28.55	44.38
MW-8	68.63	23.56	45.07
MW-9	72.62	28.22	44.40
MW-9A	75.14	30.70	44.44
MW-10	68.14	23.59	44.55
MW-11	70.02	25.80	44.22

Notes: ^{1/} Measuring Point is top of PVC well casing.
^{2/} Water levels recorded on May 28, 2014.

TABLE III
SUMMARY OF LABORATORY RESULTS
SUMTER COUNTY (CLOSED) LANDFILL
QUARTER II (May) 2014

Parameter	units	MW-2	MW-4A	MW-4C	MW-4D	MW-6A	MW-8	MW-9A	MW-10	MW-11	MCL
Ammonia	mg/l	BDL	BDL	BDL	BDL	BDL	BDL	0.72	BDL	BDL	2.8
Aluminum	ug/l	BDL	BDL	90.3	2,540*	BDL	BDL	359*	BDL	126	200
Antimony	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	6
Cadmium	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2.28	5
Chloride	mg/l	2.7	20	11	5.9	7.0	6.0	21	5.7	1.6	250
Chromium	ug/l	BDL	BDL	BDL	6.86	BDL	BDL	BDL	BDL	BDL	100
Fluoride	mg/l	0.10	BDL	0.10	0.09	0.04	0.04	0.13	0.09	0.09	4
Gross Alpha	pCi/l	2.3 ± 1.1	1.9 ± 1.0	6.4 ± 1.1	2.8 ± 1.4	1.1 ± 0.9	1.7 ± 1.3	8.3 ± 2.0	9.6 ± 1.2	5.9 ± 1.8	15
Iron	ug/l	BDL	BDL	BDL	87.1	BDL	BDL	1,520*	BDL	BDL	300
Lead	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	15
Manganese	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	200*	12.0	BDL	50
Mercury	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	0.0933	BDL	BDL	2
Nitrate, as N	mg/l	1.2	11	6.7	5.5	5.1	1.6	0.55	2.1	4.8	10
Ra226+Ra228	pCi/l	1.0 ± 0.3	0.7 ± 0.3	0.9 ± 0.3	0.2 ± 0.2	0.4 ± 0.2	0.7 ± 0.2	3.3 ± 1.1	1.9 ± 0.9	3.7 ± 1.0	5
Silver	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	100
Sodium	mg/l	2.26	20.1	12.1	14.7	3.08	4.59	22.5	6.25	7.33	160
TDS	mg/l	130	350	250	220	170	170	530*	290	190	500
Thallium	ug/l	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	2

Notes: 1/. BDL means below laboratory minimum detection limit 2/ **BDL lettering** indicates result exceeds MCL / 62-777 F.A.C. GCTL 3/. * Sumter County Closed Landfill is exempt from compliance with Florida Secondary Drinking Water Standards MCLs



The Colinas Group, Inc.
377 Maitland Avenue
Suite 2012
Altamonte Springs, Florida 32701

PROJ. NO.: P-468
DATE: JUNE 2014
SCALE: 1" = 200'

**GROUNDWATER CONTOUR MAP
QUARTER II (MAY) 2014
SUMTER COUNTY LANDFILL**

FIGURE 1

Sumterville, Fe

[illegible]

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL	
WELL NO: MW-2	SAMPLE ID: MW-2	DATE: 5/28/14	

PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 24.59'	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 Well Vol = (31.92' feet - 24.59' feet) X .16 gallons/foot = 1.1728 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 = 0.0026 gallons + (0.0026 gallons/foot X 26 feet) + .125 gallons = 0.0715 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~26'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~26'	PURGING INITIATED AT: 1035	PURGING ENDED AT: 1106	TOTAL VOLUME PURGED (gallons): 2.29							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1102	2.43	2.43	.09	24.74'	6.89	26.42	245	6.27	0.45	Clear	None
1104	.18	2.61	.09	24.74'	6.88	26.44	244	6.26	0.39	Clear	None
1106	.18	2.79	.09	24.74'	6.87	26.48	242	6.25	0.42	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; 6" = 1.02; 8" = 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: Dale Clayton, Colinas Group, Inc.		SAMPLER(S) SIGNATURES: <i>[Signature]</i>		SAMPLING INITIATED AT: 1107	SAMPLING ENDED AT: 1122			
PUMP OR TUBING DEPTH IN WELL (feet): ~26'		FLOW RATE (mL per minute): < 250 mL		TUBING MATERIAL CODE: PE				
FIELD DECONTAMINATION: Y		FIELD FILTERED: Y FILTER SIZE: 0.45 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-2	2	PE	1 Ltr	HN03	None	---	GrossAlpha, RA228RA228	APP
"	1	PE	250 mL	H2S04	None	---	Total Ammonia	APP
"	1	PE	250 mL	HN03	None	---	Metals	APP
"	1	PE	500 mL	None	None	---	Chloride, Fluoride, Nitrate, TDS	APP

REMARKS:

1035: Set dedicated 1/4" PE tubing at ~26' b/c and started pump at .09 gpm.

1040: WL 24.74' at .09 gpm, GW is clear.

1100: WL 24.74' at .09 gpm, drawdown is stable. DO is high at 6.30 mg/L. This well typically has high final DO readings. Will use optional stabilization criteria for DO. All other parameters are stable or in range.

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: RFPF = 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-4A	SAMPLE ID: MW-4A	DATE: 5/29/14	

PURGING DATA

WELL 2" PVC	TUBING 3/8"	WELL SCREEN INTERVAL	STATIC DEPTH 31.24	PURGE PUMP TYPE
DIAMETER (inches):	DIAMETER (inches):	DEPTH: feet to feet	TO WATER (feet):	OR BAILER: ESP
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY				
= (45.23' feet - feet) X gallons/foot = gallons				
EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME				
(only fill out if applicable) 1 Equip Vol = .02 gallons + (.006 gallons/foot X 45' feet) + .125 gallons = .415 gallons				
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	PURGING INITIATED AT: 1108	PURGING ENDED AT: 1126	TOTAL VOLUME PURGED (gallons): 4.50

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1122	3.50	3.50	.25	31.38	7.14	26.43	650	1.18	5.44	Clear	None
1124	.5	4.00	.25	31.38	7.14	26.58	648	1.02	4.08	Clear	None
1126	.5	4.50	.25	31.38	7.14	26.63	646	0.91	3.67	Clear	None
No screens											

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: Dale Claytor, Colinas Group, Inc.		SAMPLE(S) SIGNATURES: 		SAMPLING INITIATED AT: 1127	SAMPLING ENDED AT: 1142
PUMP OR TUBING DEPTH IN WELL (feet): ~40'		FLOW RATE (mL per minute): < 250 mL		MATERIAL CODE: PE	
FIELD DECONTAMINATION: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N		FIELD-FILTERED: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N FILTER SIZE: 0.45 µm		DUPLICATE: <input type="checkbox"/> 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		
MW-4A	2	PE	1 Ltr	HN03	None	---	Gross Alpha, 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:

1108: Inserted 55 ESP and dedicated 1/4" PE tubing to ~40' static and started pump at .25 gpm.

1114: WL 31.38' at .25 gpm, GW is turbid at 4.5 NTUs. Will purge until it clears up.

1120: WL 31.38' at .25 gpm, drawdown is stable. Turbidity has dropped to 1.3 NTUs. All other parameters are stable or in range.

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; RFPF = 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-4C	SAMPLE ID: MW-4C	DATE: 5/28/14	

PURGING DATA

WELL 2" PVC DIAMETER (inches):	TUBING 3/8" DIAMETER (inches):	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH TO WATER (feet): 26.48	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)											
= (42.14 feet - 26.48 feet) X 0.02 gallons/foot = 0.32 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 = 0.02 gallons + (0.006 gallons/foot X 54 feet) + .125 gallons = 0.45 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~37'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~37'	PURGING INITIATED AT: 1315	PURGING ENDED AT: 1335	TOTAL VOLUME PURGED (gallons): 1.60							
TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1331	1.28	1.28	0.08	26.69	7.36	27.29	495	1.40	9.26	Clear	None
1333	1.16	1.44	0.08	26.69	7.35	27.36	491	1.33	5.71	Clear	None
1335	1.16	1.60	0.08	26.69	7.35	27.46	489	1.32	6.14	Clear	None
No shown											
WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016											

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.		SAMPLER(S) SIGNATURES: 		SAMPLING INITIATED AT: 1336	SAMPLING ENDED AT: 1352
PUMP OR TUBING DEPTH IN WELL (feet): ~37'		SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL		TUBING MATERIAL CODE: PE	
FIELD DECONTAMINATION: Y N W P Probe entry		FIELD FILTERED: Y N W P Probe entry		FILTER SIZE: 0.45 µm	
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)
MW-4C	2	PE	1 Ltr	HN03	None
"	1	PE	250 mL	H2S04	None
"	1	PE	250 mL	HN03	None
"	1	PE	500 mL	None	None
				FINAL pH	
				GrossAlpha, RA226RA228	
				Ammonia	
				Metals	
				Chloride, Fluoride, Nitrate, TDS	

REMARKS:
1315: Set dedicated 1/4" PE tubing at **~37'** and started pump at **0.08 gpm**.
1321: WL **26.69'** at **0.08 gpm**, **GW** is turbid at **67 NTUs**. Will over purge to clear it up.
1330: WL **26.69'** at **0.08 gpm**, drawdown is stable. All parameters are stable or in range.

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; 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)

PURGING DATA

SAMPLING DATA

REMARKS:

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

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: $\pm 5\%$; 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 $\pm 10\%$ (whichever is greater)

MW-40 (cont.)

- 1518: Turbidity is at 21 NTUs. DO is still high at 3.06 mg/L, pH is at 9.03 s/u's. Will use optional stabilization criteria for DO and pH if ~~needed~~ necessary.
- 1528: WL 25-97' at .08 gpm. Turbidity is at 21 NTUs, DO is at 2.81 mg/L, and pH is at 9.08 s/u's. Falling back on optional stabilization criteria. Other parameters are stable or in range.


GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL	
WELL NO: MW-6A	SAMPLE ID: MW-6A	DATE: 5/29/14	

PURGING DATA

[illegible]

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dale Claytor, Colinas Group, Inc.				SIGNATURES: 			SAMPLING INITIATED AT: TUBING 1243		SAMPLING ENDED AT: 1258		
PUMP OR TUBING DEPTH IN WELL (feet): ~45				SAMPLE PUMP FLOW RATE (mL per minute): < 250 mL			MATERIAL CODE: PE				
FIELD DECONTAMINATION: (Y) N				FIELD-FILTERED: Y (N) 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-6A	2	PE	1 Ltr	HN03	None	---	Gross Alpha, RA226RA228		ESP		
"	1	PE	250 mL	H2SO4	None	---	Total Ammonia		ESP		
"	1	PE	250 mL	HN03	None	---	Metals		ESP		
"	1	PE	500 mL	None	None	---	Chloride, Fluoride, Nitrate, TDS		ESP		
REMARKS:											

REMARKS:

1208: ~~Set dedicated 3/4" PE~~ Inserted SS ESP and dedicated 3/8" PE tubing
to N 45'6 to C and started pump at 1 gpm. This well typically
requires purging at a high flow rate to clear up turbidity.
1212: WL 32-93' at 1 gpm, turbidity is at 43 NTUs. Reduced flow to
.4 gpm.
1218: WL 32-84' at .4 gpm, turbidity is at 28 NTUs. Continuing purge.
1228: WL 32-84', turbidity is at 25 NTUs. Reduced flow to .25 gpm.
DO is high at 7.25 mg/L, but is typical for this well. Will use
optical stabilization criteria for DO.

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

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)			

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: $\pm 5\%$; 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 $\pm 10\%$ (whichever is greater)

MW-6A (cont.)

1235: at 32.84' at .25 gpm, drawdown is stable. Turbidity has dropped to 17 NTUs. DO is still high at 7.22 mg/L. All other parameters are stable or in range.

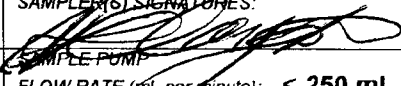
GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL	
WELL NO: MW-8	SAMPLE ID: MW-8	DATE: 5/28/14	

PURGING DATA

WELL 2" PVC	TUBING 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH 23.56' 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)											
= (43.24' feet - 23.56' feet) X 0.0026 gallons/foot = 0.052 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 = 0.052 gallons + (0.0026 gallons/foot X 48') + .125 gallons = 0.2498 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~38'	PURGING INITIATED AT: 0950	PURGING ENDED AT: 1006	TOTAL VOLUME PURGED (gallons): 1.44							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1002	1.08	1.08	.09	23.57'	7.50	24.16	332	5.40	0.25	Clear	None
1004	.18	1.26	.09	23.57'	7.48	24.18	337	5.42	0.26	Clear	None
1006	.18	1.44	.09	23.57'	7.46	24.16	336	5.31	0.31	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: Dale Claytor, Colinas Group, Inc.		SAMPLER(S) SIGNATURES: 		SAMPLING INITIATED AT: 1007	SAMPLING ENDED AT: 1022
PUMP OR TUBING DEPTH IN WELL (feet): ~38'		FLOW RATE (mL per minute): < 250 mL		MATERIAL CODE: PE	
FIELD DECONTAMINATION: (Y) N		FIELD-FILTERED: Y (N)		DUPLICATE: Y (N)	
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)
MW-8	2	PE	1 Ltr	HN03	None
"	1	PE	250 mL	H2S04	None
"	1	PE	250 mL	HN03	None
"	1	PE	500 mL	None	None
				FINAL pH	
				Gross Alpha, RA226RA228	
				Total Ammonia	
				Metals	
				Chloride, Fluoride, Nitrate, TDS	

REMARKS:
0950: Set dedicated 1/4" PE tubing at ~38' btoe and started pump at 0950am.
0954: WL 23.57' at .09 gpm, GW is Clear.
0956: WL 23.57' at .09 gpm, drawdown is stable. DO is high at 5.50 mg/L, but is slowly dropping. This well typically has high final DO readings. Will use optional stabilization criteria for DO if necessary. All other parameters are stable or in range.

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: RFPF = 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)

4-00
4-20

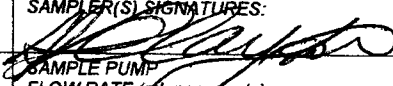
GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL	
WELL NO: MW-9A	SAMPLE ID: MW-9A	DATE: 5/29/14	

PURGING DATA

WELL 2" PVC	TUBING 3/8"	WELL SCREEN INTERVAL DEPTH: feet to feet	STATIC DEPTH 32.73 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 (only fill out if applicable) 1 Equip Vol = .02 gallons + (.006 gallons/foot X 50' feet) + .125 gallons = 445 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~42'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~42'	PURGING INITIATED AT: 0955	PURGING ENDED AT: 1031	TOTAL VOLUME PURGED (gallons): 23.20							
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (uS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	COLOR (describe)	ODOR (describe)
1027	20.80	20.80	.6	36.32	6.50	25.12	979	0.77	13.8	Clear	Slight
1029	1.20	22.00	.6	36.32	6.56	25.13	978	0.69	13.4	Clear	Sulfur
1031	1.20	23.20	.6	36.32	6.50	25.11	979	0.63	10.8	Clear	Same
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: Dale Claytor, Colinas Group, Inc.		SAMPLER(S) SIGNATURES: 		SAMPLING INITIATED AT: 1032	SAMPLING ENDED AT: 1045
PUMP OR TUBING DEPTH IN WELL (feet): ~42'		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: N		FILTER SIZE: _____ µm	
SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION	
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)
MW-9A	2	PE	1 Ltr	HN03	None
"	1	PE	250 mL	H2S04	None
"	1	PE	250 mL	HN03	None
"	1	PE	500 mL	None	None
INTENDED ANALYSIS AND/OR METHOD				SAMPLING EQUIPMENT CODE	
GrossAlpha, RA226RA228				ESP	
Total Ammonia				ESP	
Metals				ESP	
Chloride, Fluoride, Nitrate, TDS				ESP	

REMARKS:

0955: Inserted SS ESP and dedicated 3/8" PE tubing to ~42' btoe and started pump at .8 gpm.

1000: WL 37.15', well is drawing down. GW is extremely turbid, but is typical for this well at beginning of purge. Reduced flow to .7 gpm.

1006: WL 37.07 at .7 gpm, turbidity is at 81 NTUs. Adjusted flow to .6 gpm.

1015: WL 36.32' at .6 gpm, turbidity is at 35 NTUs. Continuing purge.

1025: WL 36.32' at .6 gpm, drawdown is stable. Turbidity is at 18 NTUs.

Notes: 1) Used a graduated 5 gallon bucket and timed to measure purge volumes. All other parameters are stable or in range.
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; RFPF = 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: 5/28/14	

PURGING DATA

WELL 2" PVC	TUBING 3/4" 1/4"	WELL SCREEN INTERVAL	STATIC DEPTH 23.59'	PURGE PUMP TYPE							
DIAMETER (inches):	DIAMETER (inches):	DEPTH: feet to feet	TO WATER (feet):	OR BAILER: ESPDC PP							
WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY											
= (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 = 0.0026 gallons + (0.008 gallons/foot X 45' feet) + .125 gallons = 0.242 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~40'	PURGING INITIATED AT: 0910	PURGING ENDED AT: 0921	TOTAL VOLUME PURGED (gallons): 1.21							
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)
0917	.77	.77	.11	24.14	6.98	24.76	553	0.86	4.30	Clear	None
0919	.22	.99	.11	24.14	6.97	24.74	556	0.77	3.40	Clear	None
0921	.22	1.21	.11	24.14	6.99	24.74	556	0.74	2.52	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: Dale Clayton, Colinas Group, Inc.		SAMPLE(S) SIGNATURES: 		SAMPLING INITIATED AT: 0922	SAMPLING ENDED AT: 0940			
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				
SAMPLE CONTAINER SPECIFICATION		SAMPLE PRESERVATION			DUPLICATE: Y (N)			
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
MW-10	2	PE	1 Ltr	HN03	None	---	GrossAlpha, RA226RA228	APP -ESPDC
"	1	PE	250 mL	H2SO4	None	---	Total Ammonia	APP -ESPDC
"	1	PE	250 mL	HN03	None	---	Metals	APP -ESPDC
"	1	PE	500 mL	None	None	---	Chloride, Fluoride, Nitrate, TDS	APP -ESPDC

REMARKS:

0910: Set dedicated 1/4" PE tubing at ~40' bto c and started pump at .11 gpm.
0914: WL 24.14' at .11 gpm, GW is clear.
0916: WL 24.14' at .11 gpm, drawdown is stable. All parameters are stable or in range.

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

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

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

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

GROUNDWATER SAMPLING LOG

SITE NAME: Sumter County Landfill		SITE LOCATION: Sumterville, FL	
WELL NO: MW-11	SAMPLE ID: MW-11	DATE: 5/28/14	

PURGING DATA

WELL 2" PVC	TUBING 3/8"	WELL SCREEN INTERVAL	STATIC DEPTH 25.80	PURGE PUMP TYPE							
DIAMETER (Inches):	DIAMETER (Inches):	DEPTH: feet to feet	TO WATER (feet):	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 = 0 gallons + (0.026 gallons/foot X 40' feet) + .125 gallons = 1.229 gallons											
INITIAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): ~35'	PURGING INITIATED AT: 1152	PURGING ENDED AT: 1223	TOTAL VOLUME PURGED (gallons): 2.17							
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)
1219	1.89	1.89	.07	25.84	6.22	26.12	3.58	1.56	4.49	Clear	None
1221	.14	2.03	.07	25.83	6.21	26.14	3.58	1.56	4.04	Clear	None
1223	.14	2.17	.07	25.83	6.22	26.11	3.58	1.53	3.92	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: Dale Claytor, Colinas Group, Inc.		SAMPLER(S) SIGNATURES: 		SAMPLING INITIATED AT: 1224	SAMPLING ENDED AT: 1245			
PUMP OR TUBING DEPTH IN WELL (feet): ~35'		FLOW RATE (mL per minute): < 250 mL		TUBING MATERIAL CODE: PE				
FIELD DECONTAMINATION: (Y) NWL probe only		FIELD FILTERED: Y N 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-11	2	PE	1 Ltr	HN03	None	---	GrossAlpha, RA226, RA228	APP-ESP-OC
"	1	PE	250 mL	H2SO4	None	---	Total Ammonia	APP-ESP-OC
"	1	PE	250 mL	HN03	None	---	Metals	APP-ESP-OC
"	1	PE	500 mL	None	None	---	Chloride, Fluoride, Nitrate, TDS	APP-ESP-OC

REMARKS:

1152: Set dedicated 1/4" PE tubing at ~35' b/c and started pump at .07 gpm.

1156: WL 25-84' at .07 gpm, GW is clear.

1159: WL 25-84' at .07 gpm, drawdown is stable. DO is high at 2.30 mg/L, but is very slowly dropping. All other parameters are stable or in range. Continuing purge until DO drops into range or stabilizes.

1218: WL 25-84' at .07 gpm. DO has dropped to within range at 1.58 mg/L. All other parameters are stable or in range.

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)

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)



Client Name: The Collins Group (COO16)
Address: 377 Matland Ave., Suite 2012
City/ST/Zip: Altamonte Springs, FL 32701
Tel: (407) 622-8176 Fax: (407) 622-8196
Sample(s) Name: Attribution (Print): Dale Clayton, Collins Group
Sample(s) Signature: [Signature]
Project Number: P-468
Project Number Desc: SUMTER COUNTY CLOSED LANDFILL
PG #, Being Info: Rick Potts
Reporting Contact: Rick Potts
Bailing Contact: Rick Potts
Site Location / Env Zone: Sumterville, FL/EST

Item #	Sample ID (Serial Identification)	Collection Date	Collection Time	Comp. / Grab	Matrix (see codes)	Total # of Containers	Ag, Al, Cd, Cr, Fe, Hg, Mn, Na, Pb, Sb, Ti	SI	I	IN	IN	Gross Alpha	Radium 226, Radium 228	Field Parameters	Requested Analytes	Requested Turnaround Times	Lab Workorder
	MW-2	5/28/14	1132	G	GW	5	X	X	X	X	X	X	X	X		Standard	A402887
	MW-4A	5/29/14	1142	G	GW	5	X	X	X	X	X	X	X	X			
	MW-4C	5/28/14	1352	G	GW	5	X	X	X	X	X	X	X	X			
	MW-4D	5/29/14	1552	G	GW	5	X	X	X	X	X	X	X	X			
	MW-6A	5/29/14	1258	G	GW	5	X	X	X	X	X	X	X	X			
	MW-8	5/28/14	1022	G	GW	5	X	X	X	X	X	X	X	X			
	MW-9A	5/29/14	1045	G	GW	5	X	X	X	X	X	X	X	X			
	MW-10	5/28/14	0940	G	GW	5	X	X	X	X	X	X	X	X			
	MW-11	5/28/14	1245	G	GW	5	X	X	X	X	X	X	X	X			

Sample Kit Preparation: [Signature]
Date/Time: 5/20/14 1535
Comments: [Signature]
Date/Time: 5/20/14 1430
Date/Time: 5/29/14 1430
Date/Time: 5/29/14 1430
Condition Upon Receipt: [Signature]
Accceptable: [Signature]
Unacceptable: [Signature]

Matrix: GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Oil (detail in comments)
Preservation: I-Ice H-HCl M-HNO3 S-H2SO4 MO-NaOH O-Other (detail in comments)
Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreement exist.

Field Instrument Calibration Records

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

PARAMETERS:

☒ TEMPERATURE☒ CONDUCTIVITY☐ SALINITY☒ pH☐ ORP☒ TURBIDITY☐ RESIDUAL CL☒ DO☐ OTHER _____

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

Standard A Oakton pH Standard 4.01 Units Exp: 3/2015Standard B Oakton pH Standard 7.00 Units Exp: 1/2016Standard C Oakton Conductivity Standard 1500 uS/cm Exp: 8/2014Standard D Hanna 0.1 NTU Standard Exp: 4/2016Standard E Hanna 15 NTU Standard Exp: 4/2016

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
5/28/14	0820	A	4.01	4.01		Yes	IC	HR	pH
		B	7.00	7.00					pH
		C	1500	1500					Cond
		--	--	8.30					DO
		--	--	24.77					Temp
		D	0.1	0.1					Turb
		E	15	15.0					Turb
5/28/14	0900	A	4.01	4.03		Yes	ICV	HR	pH
		B	7.00	7.02					pH
		C	1500	1500					Cond
		--	--	8.28					DO
		--	--	24.98					Temp
		D	0.1	0.08					Turb
		E	15	15.0					Turb
5/28/14	1610	A	4.01	4.01		Yes	CC	HR	pH
		B	7.00	6.98					pH
		C	1500	1494					Cond
		--	--	8.32					DO
		--	--	26.22					Temp
		D	0.1	0.10					Turb
		E	15	15.1					Turb
		A	4.01						pH
		B	7.00						pH
		C	1500						Cond
		--	--						DO
		--	--						Temp
		D	0.1						Turb
		E	15						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 4.01 – 7 and Turbidity 0.1 – 15 NTU's]

Standard A Oakton pH Standard 4.01 Units Exp: 3/2015Standard B Oakton pH Standard 7.00 Units Exp: 1/2016Standard C Oakton Conductivity Standard 1500 uS/cm Exp: 3/2015Standard D Hanna 0.1 NTU Standard Exp: 4/2016Standard E Hanna 15 NTU Standard Exp: 4/2016

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE	INSTRUMENT RESPONSE	% DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS	
5/29/14	0905	A	4.01	4.01		Yes	IC	HR	pH
		B	7.00	7.00					pH
		C	1500	1500					Cond
		--	--	8.20					DO
		--	--	25.42					Temp
		D	0.1	0.1					Turb
		E	15	15.0					Turb
5/29/14	0930	A	4.01	4.01		Yes	ICV	HR	pH
		B	7.00	6.99					pH
		C	1500	1500					Cond
		--	--	8.17					DO
		--	--	25.89					Temp
		D	0.1	0.10					Turb
		E	15	15.0					Turb
5/29/14	1300	A	4.01	4.05		Yes	CC	HR	pH
		B	7.00	7.02					pH
		C	1500	1503					Cond
		--	--	7.32					DO
		--	--	29.49					Temp
		D	0.1	0.09					Turb
		E	15	14.9					Turb
		A	4.01						pH
		B	7.00						pH
		C	1500						Cond
		--	--						DO
		--	--						Temp
		D	0.1						Turb
		E	15						Turb