

November 28, 2017

Melissa Madden
Environmental Consultant-Solid Waste
Florida Department of Environmental Protection – Southwest District
13051 North Telecom Parkway, Suite 101
Temple Terrace, FL 33637

RE: Citrus County Central Landfill
Landfill Gas Assessment and Groundwater Delineation Report
Permit No. 21375-025-SO-01
WACS Facility ID: 39859
Jones Edmunds Project No.: 03860-056-01

Dear Ms. Madden,

This report presents the findings and details the field work that was completed at the Citrus County Central Landfill to further investigate landfill gas migration and to delineate the groundwater exceedances at the site. FDEP approved the June 6, 2017 Landfill Gas Assessment and Groundwater Delineation Plan (Plan), which proposed the work detailed in this report. All investigation work in the Plan has been completed. This report follows the outline of the Plan.

Landfill Gas Monitoring Probe Installation

The Plan detailed the installation of 11 new landfill gas monitoring probes along the northern and eastern property boundaries. The new probes are GP-20 through GP-30 and they were installed at the locations shown on the site map included as Attachment 1. The probes were installed according to the Plan as detailed below:

- Sonic Drilling Technology was used to install the probes.
- The probes are 1-inch diameter PVC.
- The probes have 10-foot screens with 0.020 inch slots.
- The screened intervals were packed with pea gravel.
- The seal on top of the pea gravel was bentonite chips and fine sand.
- The probe annulus was grouted to the surface.
- The probes are finished with either stick up or flush mount locking protective casings depending on the location at the site.

The total depth of each probe (existing and new) is displayed in Table 1. Additionally, all of the landfill gas probes at the site were retrofitted with dedicated tubing that extends down to varying depths within the screened interval of each probe. Different colored tubing was used for probes with multiple tubing lengths. Table 1 includes the tubing colors and depths that are in each probe for sample measurement.

Table 1: Landfill Gas Probe Details

Table 1. L	anunn Gas	Probe Deta	alis	r			
			Solid	Tubing lengths			
Gas Probe ID	Probe Depth Slotted Bolow		Below Grade	Length of Clear (ft)	Length of Blue (ft)	Length of Black (ft)	
GP-1	40	35	5	40	20	NA	
GP-2	40	35	5	40	20	NA	
GP-3	40	35	5	40	20	NA	
GP-4	40	35	5	40	20	NA	
GP-5	40	35	5	40	20	NA	
GP-6	40	35	5	40	20	NA	
GP-7	40	35	5	40	20	NA	
GP-8	40	35	5	40	20	NA	
GP-9	40	35	5	40	20	NA	
GP-10	40	35	5	40	20	NA	
GP-11	40	35	5	40	20	NA	
GP-12	80	75	5	75	50	25	
GP-13	80	75	5	75	50	25	
GP-14	80	75	5	75	50	25	
GP-15	80	75	5	75	50	25	
GP-16	80	75	5	75	50	25	
GP-17	80	75	5	75	50	25	
GP-18	80	75	5	75	50	25	
GP-19	75	70	5	70	50	25	
GP-20	110	10	100	NA	105	NA	
GP-21	120	10	110	NA	115	NA	
GP-22	75	10	65	70	NA	NA	
GP-23	105	10	95	100	NA	NA	
GP-24	75	10	65	70	NA	NA	
GP-25	105	10	95	100	NA	NA	
GP-26	75	10	65	70	NA	NA	
GP-27	105	10	95	100	NA	NA	
GP-28	75	10	65	70	NA	NA	
GP-29	105	10	95	100	NA	NA	
GP-30	110	10	100	NA	105	NA	

Landfill Gas Monitoring

Landfill gas was measured in all of the probes, at each depth indicated in the table above, and in all of the groundwater monitoring wells on November 20 and 21, 2017. The gas data is tabulated and included as

Attachment 2 to this report. This data will also be submitted under separate cover as the fourth quarter 2017 landfill gas monitoring report for the site.

There were no detections of Methane in any of the landfill gas monitoring probes at any depths; however, most of the probes detected carbon dioxide and decreased concentrations of oxygen indicating landfill gas in the probes. Based on this initial sampling of the probes at the varying depths, Methane does not exceed 100% of the LEL at the compliance boundary and the site is in compliance with the landfill gas migration rule.

Methane was above 100% of the LEL in some of the groundwater monitoring wells and MW-9, MW-15, MW-17, and PZ-1 had measureable concentrations of Methane in them below 100% of the LEL. The groundwater wells that had Methane concentrations above 100% of the LEL are discussed below:

- MW-3: Methane concentration of 42% Volume, MW-3 is one of the background wells and is located on the southeast corner of the site.
 - LFG Probes GP-16 and GP-20 are east of MW-3. There was no Methane detected in these probes.
 - o LFG Probes GP-15 and GP-30 are south of MW-3. There was no Methane detected in these probes.
 - o LFG Probes GP-20 and GP-30 include tubing to 105 feet.
 - o The Methane observed in MW-3 appears to be delineated.
- MW-5: Methane concentration of 7.5% Volume, MW-5 is one of the piezometers/intermediate wells located in the middle of the site between the active and closed landfills.
 - o There are no LFG Probes near this groundwater well.
- MW-6: Methane concentration of 36% Volume, MW-6 is one of the piezometers/intermediate wells located in the middle of the site between the active and closed landfills.
 - o There are no LFG Probes near this groundwater well.
- MW-7: Methane concentration of 41% Volume, MW-7 is one of the background wells and is located on the east side of the active landfill near Phase 2.
 - o LFG Probes GP-18 and GP-21 are northeast of MW-7. There was no Methane detected in these probes.
 - o LFG Probe GP-17 is southeast of MW-3. There was no Methane detected in this probe.
 - o The Methane observed in MW-7 appears to be delineated.
- MW-16: Methane concentration of 78% Volume, MW-16 is one of the piezometers/intermediate wells located in the middle of the site between the active and closed landfills.
 - o There are no LFG Probes near this groundwater well.
- MW-20: Methane concentration of 41% Volume, MW-20 is the detection well north of the Phase 3 Active Landfill.
 - o There are no LFG Probes near this groundwater well as it is in the center of the site.
- MW-21: Methane concentration of 7.5% Volume, MW-21 is one of the compliance wells and is located north of the closed landfill area.

- Newly installed Groundwater Monitoring well MW-22 is north of MW-21 and screened at the same interval. No Methane was measured in MW-22.
- o LFG Probes GP-2, GP-24, and GP-25 are north of MW-21 near the property boundary. There was no Methane detected in these probes.
- o The Methane observed in MW-21 appears to be delineated.
- PZ-2: Methane concentration of 7% Volume, PZ-2 is one of the piezometers associated with the initial Rule 62-780 investigation. It is located north of the closed landfill area between MW-18 and MW-22.
 - o LFG Probes GP-2, GP-24, and GP-25 are northeast of PZ-2 near the property boundary. There was no Methane detected in these probes.
 - o LFG Probes GP-3, GP-27, and GP-26 are all northwest of PZ-2 near the property boundary. There was no Methane detected in these probes.
 - o The Methane observed in PZ-2 appears to be delineated.

The results from the initial measurements conducted in the new landfill gas monitoring probes along with the existing probes retrofitted with tubing installed to varying depths indicate that the Site is in compliance with the landfill gas migration rules.

Active Landfill Gas Extraction on the Closed Landfill Cells

As discussed in previous reports, the groundwater exceedances at the site are caused by landfill gas in contact with the groundwater. Exceedances caused by landfill gas were first observed in MW-10, which is north of the closed landfill cells. The corrective actions for groundwater and landfill gas delineation/control began in response to exceedances in MW-10. In 2010, a solar powered gas extraction system was installed near MW-10 and it was successful in remediating the groundwater near the water table in that area; however, there have been more recent groundwater exceedances in MW-19 and MW-21 that have the same characteristics as the MW-10 exceedances. These wells are also on the north site of the close landfill. To remediate the groundwater at the site near the closed landfill, the gas extraction efficiency needs to be increased.

To increase the gas extraction efficiency near the closed landfill, the County and Jones Edmunds are moving forward with installing a dedicated blower system connected to the passive landfill gas vents on the top of the closed landfill. The system is currently in design and a permit application will be submitted to FDEP for approval before construction.

Groundwater Delineation Wells

Three groundwater delineation wells –MW-18D, MW-19D, and MW-22—were installed along the north side of the closed landfill area as detailed in the Plan. All three wells were installed using Sonic Drilling Technology and they were installed to the depths detailed in the Plan. Attachment 3 includes the FDEP Well Completion Reports, boring logs, well development logs, and Water Management District permits for each well. Attachment 4 includes the updated site survey with the location and elevation information for each well.

The new wells were sampled on August 17, 2017 for field parameters, Iron, Benzene, Vinyl Chloride, and Dichloromethane (Methylene Chloride). There were no detections of any of the VOCs and the only parameters reported outside State groundwater protection standards were:

• MW-18D: pH 5.90 S.U. and Iron 939 μg/L.

• MW-19D: pH 6.15 S.U. and Iron 22,200 μg/L.

The Second Semiannual 2017 groundwater monitoring report for the Citrus County Central Landfill was submitted to FDEP on September 25, 2017. The background concentrations for pH ranged from 4.75 to 5.09 S.U. indicating that the groundwater at the site has a naturally low pH. The background Iron concentrations ranged from below the laboratory detection limit up to 1740 μ g/L indicating that the site has naturally elevated Iron in the groundwater.

Attachment 5 is a summary table of the sampling results from the new wells. Attachment 6 presents a summary table of all groundwater parameters reported at or above the laboratory detection limit during this sampling event. Attachment 7 presents Parameter Monitoring Report forms. The original Laboratory Data including Chain of Custody forms and the Field Data Sheets are included in Attachments 8 and 9, respectively.

Conclusions

Landfill gas measurements collected from the new probes coupled with measurements from the existing landfill gas monitoring probes, which were retrofitted with tubing to varying depths, showed that Methane is not exceeding 100% of the LEL at the landfill gas compliance boundary. The site is currently in compliance with the landfill gas migration rule.

The newly installed groundwater delineation wells did not report any detections of the parameters of concern at the site: Benzene, Vinyl Chloride, or Dichloromethane. Two of the wells reported exceedances of Iron and levels of pH below the State standard. Based on the initial sampling of the new delineation wells, the VOC plume north of the closed landfill is delineated and contained onsite.

Recommendations

Landfill gas data will continue to be collected quarterly. The data will be collected from:

- Each tubing depth in all of the older probes.
- All of the newly installed probes.
- All of the onsite groundwater monitoring wells.

The data will be compiled and submitted quarterly in accordance with the Rule and the current operations permit for the landfill. If after one year of data collection the new monitoring network continues to indicate that there is no Methane migrating past the compliance boundary, the County will request a reduction in the LFG monitoring requirements.

Groundwater monitoring will be conducted semiannually in accordance with the current permit. Newly installed delineation wells MW-18D, MW-19D, and MW-22 will be sampled with the semiannual monitoring events for the parameters listed in Permit No. 231375-025-SO-01, Appendix 3: Water Quality Monitoring Plan, Specific Condition II. 4. Assessment wells MW-18 and MW-19 are sampled for these parameters. The results of the sampling of the new delineation wells will be included in the semiannual groundwater monitoring reports for 2018. The necessity of these wells being incorporated into the permit or if additional sampling is necessary will be evaluated following the Second Semiannual 2018 sampling event.

The initial sampling events in the new gas monitoring network and the groundwater monitoring wells show that the site is in compliance with the landfill gas migration rule and that the groundwater exceedances that caused the execution of the consent order are delineated onsite. The County requests FDEP's consideration of closing out the consent order and continuing any investigation under the authority of Rule 62-780.

If you have any questions or comments on this report or any of the County's efforts to ensure that the Central landfill is in compliance, please call me at 352-377-5821 or email at thays@jonesedmunds.com.

Sincerely,

Troy D. Hays, PG

Sr. Manager/Vice President

M:\03860-CitrusCounty\058-01 LF Gas Routine and Non-Routine Monitoring and Maintenance\Consent Order Assistance\2017.11_SAR Report\2017.11.28_Citrus Central SAR Update.doc

xc:

Henry Norris, Citrus County Ray Oates, PG, Citrus County

Attachment 1: Site Map

Attachment 2: Landfill Gas Monitoring Data

Attachment 3: Groundwater Monitoring Well Installation Reports

Attachment 4: Site Survey

Attachment 5: Analysis Results Compared To Groundwater Standards

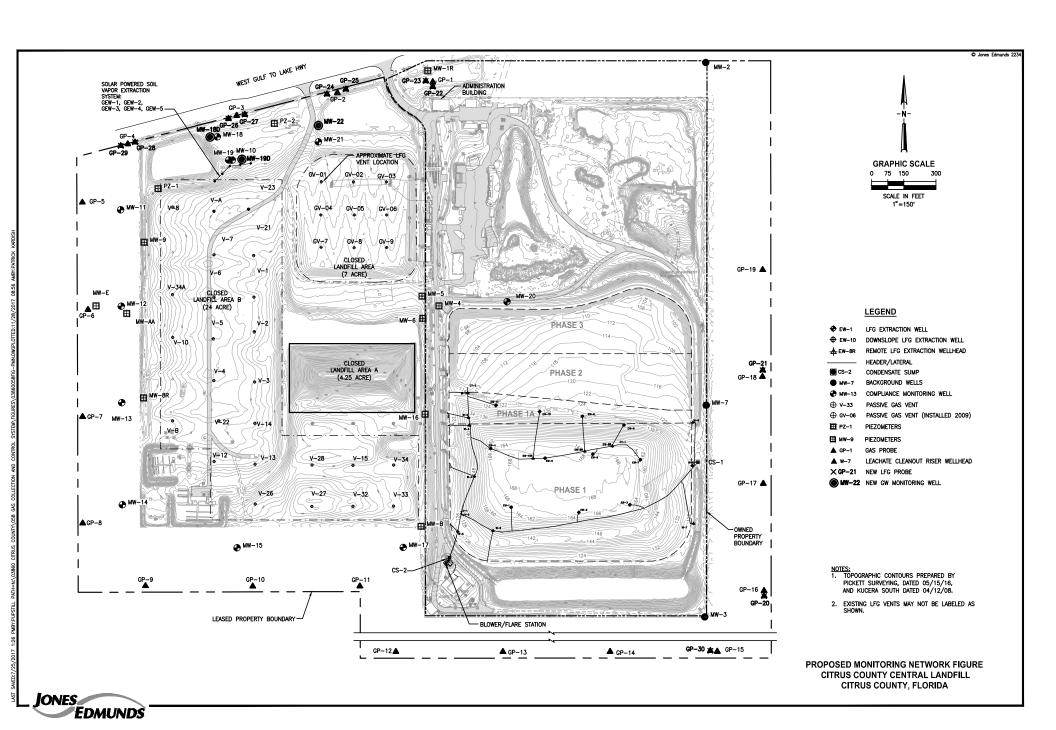
Attachment 6: Groundwater Parameters At or Above the Laboratory Detection Limit

Attachment 7: Parameter Monitoring Reports

Attachment 8: Original Laboratory Data Including Chain-of-Custody Forms

Attachment 9: Field Data Sheets

ATTACHMENT 1 SITE MAP



ATTACHMENT 2 LANDFILL GAS MONITORING DATA

FOURTH QUARTER 2017

General Data			
Date:	11/20/2017 & 11/21/2017	Sampler:	Steve Messick
Start Time:	10:00 AM on 11/20/2017 & 9:05 AM on 11/21/2017	Sky Conditions:	Clear on 11/20/2017 & Cloudy on 11/21/2017
Air Temperature (deg C):	17°C on 11/20/2017 & 18°C on 11/21/2017	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

						N	lethane	
Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
GP-1	11/20/2017	14:26	20	18.7	2.6	0.0	-	Gas Well
GP-1	11/20/2017	14:29	40	18.2	3.0	0.0	-	Gas Well
GP-2	11/20/2017	14:07	20	17.9	3.0	0.0	-	Gas Well
GP-2	11/20/2017	14:10	40	16.5	4.2	0.0	-	Gas Well
GP-3	11/20/2017	13:48	20	19.4	1.4	0.0	-	Gas Well
GP-3	11/20/2017	13:50	40	19.7	1.2	0.0	-	Gas Well
GP-4	11/20/2017	10:03	20	19.4	2.0	0.0	-	Gas Well
GP-4	11/20/2017	10:06	40	18.3	3.2	0.0	-	Gas Well
GP-5	11/20/2017	10:15	20	19.2	2.2	0.0	-	Gas Well
GP-5	11/20/2017	10:18	40	18.4	3.4	0.0	-	Gas Well
GP-6	11/20/2017	10:22	20	19.3	2.0	0.0	-	Gas Well
GP-6	11/20/2017	10:26	40	20.9	0.4	0.0	-	Gas Well
GP-7	11/20/2017	10:31	20	20.0	1.4	0.0	-	Gas Well
GP-7	11/20/2017	10:34	40	19.7	1.6	0.0	-	Gas Well
GP-8	11/20/2017	10:37	20	20.0	1.2	0.0	-	Gas Well
GP-8	11/20/2017	10:40	40	19.0	1.2	0.0	-	Gas Well
GP-9	11/20/2017	10:44	20	20.2	1.4	0.0	-	Gas Well
GP-9	11/20/2017	10:46	40	19.9	1.6	0.0	-	Gas Well
GP-10	11/20/2017	10:49	20	16.0	5.4	0.0	-	Gas Well
GP-10	11/20/2017	10:52	40	14.2	7.0	0.0	-	Gas Well
GP-11	11/20/2017	10:56	20	19.7	1.6	0.0	-	Gas Well
GP-11	11/20/2017	10:59	40	18.4	1.4	0.0	-	Gas Well
GP-12	11/20/2017	11:03	25	20.0	1.4	0.0	-	Gas Well
GP-12	11/20/2017	11:06	50	19.7	1.6	0.0	-	Gas Well
GP-12	11/20/2017	11:09	75	19.8	1.2	0.0	-	Gas Well
GP-13	11/20/2017	11:13	25	18.9	1.6	0.0	-	Gas Well
GP-13	11/20/2017	11:16	50	18.3	1.8	0.0	-	Gas Well
GP-13	11/20/2017	11:19	75	18.4	1.8	0.0	-	Gas Well
GP-14	11/20/2017	11:22	25	20.0	0.8	0.0	-	Gas Well
GP-14	11/20/2017	11:25	50	19.4	1.0	0.0	-	Gas Well

FOURTH QUARTER 2017

General Data			
Date:	11/20/2017 & 11/21/2017	Sampler:	Steve Messick
Start Time:	10:00 AM on 11/20/2017 & 9:05 AM on 11/21/2017	Sky Conditions:	Clear on 11/20/2017 & Cloudy on 11/21/2017
Air Temperature (deg C):	17°C on 11/20/2017 & 18°C on 11/21/2017	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

						N	Methane	
Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
GP-14	11/20/2017	11:28	75	19.4	1.0	0.0	-	Gas Well
GP-15	11/20/2017	11:35	25	20.2	1.2	0.0	-	Gas Well
GP-15	11/20/2017	11:37	50	20.0	1.2	0.0	=	Gas Well
GP-15	11/20/2017	11:40	75	20.2	1.2	0.0	=	Gas Well
GP-16	11/20/2017	11:46	25	19.4	1.2	0.0	-	Gas Well
GP-16	11/20/2017	11:49	50	19.3	1.4	0.0	-	Gas Well
GP-16	11/20/2017	11:51	75	19.3	1.4	0.0	-	Gas Well
GP-17	11/20/2017	11:58	25	16.1	4.4	0.0	-	Gas Well
GP-17	11/20/2017	12:00	50	16.1	4.2	0.0	-	Gas Well
GP-17	11/20/2017	12:03	75	16.5	3.8	0.0	-	Gas Well
GP-18	11/20/2017	12:07	25	19.8	1.2	0.0	-	Gas Well
GP-18	11/20/2017	12:09	50	19.7	1.2	0.0	-	Gas Well
GP-18	11/20/2017	12:11	75	19.8	1.2	0.0	-	Gas Well
GP-19	11/20/2017	12:17	25	20.0	1.2	0.0	-	Gas Well
GP-19	11/20/2017	12:19	50	20.0	1.2	0.0	-	Gas Well
GP-19	11/20/2017	12:22	75	19.9	1.2	0.0	-	Gas Well
GP-20	11/20/2017	11:54	105	17.7	1.4	0.0	-	Gas Well
GP-21	11/20/2017	12:14	115	20.6	0.0	0.0	-	Gas Well
GP-22	11/20/2017	14:33	70	17.4	0.0	0.0	-	Gas Well
GP-23	11/20/2017	14:36	100	12.1	2.4	0.0	-	Gas Well
GP-24	11/20/2017	14:16	70	9.0	0.0	0.0	-	Gas Well
GP-25	11/20/2017	14:13	100	16.6	1.0	0.0	-	Gas Well
GP-26	11/20/2017	13:55	70	15.0	3.4	0.0	-	Gas Well
GP-27	11/20/2017	13:59	100	16.5	2.8	0.0	-	Gas Well
GP-28	11/20/2017	10:00	70	18.3	0.4	0.0	-	Gas Well
GP-29	11/20/2017	10:10	100	20.9	0.0	0.0	-	Gas Well
GP-30	11/20/2017	15:19	105	18.2	1.4	0.0	-	Gas Well
Admin Building	11/21/2017	12:03	-	20.9	0.0	0.0	-	Structure
Mod Bldg	11/21/2017	12:26	-	20.9	0.0	0.0	-	Structure
Shop	11/21/2017	12:18	-	20.9	0.0	0.0	-	Structure

FOURTH QUARTER 2017

General Data			
Date:	11/20/2017 & 11/21/2017	Sampler:	Steve Messick
Start Time:	10:00 AM on 11/20/2017 & 9:05 AM on 11/21/2017	Sky Conditions:	Clear on 11/20/2017 & Cloudy on 11/21/2017
Air Temperature (deg C):	17°C on 11/20/2017 & 18°C on 11/21/2017	Measuring Device:	Eagle RKI (SN E084039)

Sampling Data

						Methane		
Station I.D.	Date Sampled	Time Sampled	Depth of Intake (Feet)	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
Scale House	11/21/2017	12:14	-	20.9	0.0	0.0	-	Structure
Treatment Facility	11/21/2017	12:00	-	20.9	0.0	0.0	-	Structure
Firing Range	11/21/2017	11:33	-	20.9	0.0	0.0	-	9 Structures
Haz Waste Drop off Center	11/21/2017	9:05	-	20.9	0.0	0.0	-	3 Structures
MW-1R	11/20/2017	14:39	100	18.0	2.8	0.0	-	Groundwater Well
MW-2	11/20/2017	12:27	100	20.6	0.4	0.0	-	Groundwater Well
MW-3	11/21/2017	8:57	100	5.9	32.2	-	42.0	Groundwater Well
MW-5	11/21/2017	9:43	100	7.0	22.8	-	7.5	Groundwater Well
MW-6	11/21/2017	9:35	100	6.9	24.6	-	36.0	Groundwater Well
MW-7	11/21/2017	8:50	100	6.0	32.2	-	41.0	Groundwater Well
MW-8R	11/21/2017	11:04	100	10.5	14.4	0.0	-	Groundwater Well
MW-9	11/21/2017	10:56	100	6.5	8.0	36.0	-	Groundwater Well
MW-10	11/20/2017	14:59	100	9.8	17.4	0.0	-	Groundwater Well
MW-11	11/20/2017	9:52	100	20.9	0.0	0.0	-	Groundwater Well
MW-12	11/20/2017	9:34	100	18.4	3.0	0.0	-	Groundwater Well
MW-13	11/20/2017	9:22	100	20.9	0.2	0	-	Groundwater Well
MW-14	11/20/2017	9:00	100	20.9	0.0	0.0	-	Groundwater Well
MW-15	11/20/2017	9:05	100	10.8	11.6	26	-	Groundwater Well
MW-16	11/21/2017	9:08	100	4.5	35.6	-	78.0	Groundwater Well
MW-17	11/20/2017	9:12	100	10.7	11.6	24.0	-	Groundwater Well
MW-18	11/21/2017	10:29	100	14.0	8.8	0.0	-	Groundwater Well
MW-18D	11/21/2017	10:19	100	15.0	6.8	0.0	-	Groundwater Well
MW-19	11/20/2017	15:03	100	11.7	16.6	0.0	-	Groundwater Well
MW-19D	11/21/2017	10:37	100	13.8	9.0	0.0	-	Groundwater Well
MW-20	11/21/2017	9:20	100	6.6	26.2	-	41.0	Groundwater Well
MW-21	11/21/2017	11:50	100	3.7	26.4	-	7.5	Groundwater Well
MW-22	11/20/2017	14:22	100	9.2	7.8	0.0	-	Groundwater Well
MW-AA	11/20/2017	9:29	100	18.5	3.0	0.0	-	Groundwater Well
MW-B	11/21/2017	11:12	100	11.6	14.8	0.0	-	Groundwater Well
MW-E	11/20/2017	9:44	100	20.9	0.0	0.0	-	Groundwater Well

FOURTH QUARTER 2017

General Data									
Date: 11/20/2017 & 11/21/2017 Sampler: Steve Messick									
Start Time: 10:00 AM on 11/20/2017 & 9:05 AM on 11/21/2017 Sky Conditions: Clear o				Clear on 11/2	20/2017 & Cloudy on 11/21/2017				
Air Temperature (deg C):		17°C on 11/20/2017 & 18°C	on 11/21/2017		Measuring Device:		Eagle RKI (SN E084039)		
Sampling Data									
• 0							N	Methane	
Station I.D.	Date Sampled	Time Sampled	Depth of Intake ((Feet)	O2 %Volume	CO2 %Volume	Peak Recorded Concentration as % LEL	Peak Recorded Concentration as % Volume	Station Type
PZ-1	11/21/2017	10:47	100		6.4	7.8	37	-	Groundwater Well
P72	11/21/2017	10:11	100		6.7	23.7	_	7	Groundwater Well

ATTACHMENT 3 GROUNDWATER MONITORING WELL INSTALLATION REPORTS



Florida Department of **Environmental Protection**

Bob Martinez Center 2600 Blair Stone Road Tallahassee, Florida 32399-2400 DEP Form # 62-701.900(30)

Form Title: Monitoring Well Completion Report

Effective Date: January 6, 2010

Incorporated in Rule 62-701.510(3), F.A.C.

MONITORING WELL COMPLETION REPORT

DATE: November 27, 2017
FACILITY NAME: Citrus County Class I Central Landfill
DEP PERMIT NO.: 21375-025-SO-01 WACS FACILITY ID NO.: 39859 WACS MONITORING SITE NUM.: 30343 WACS WELL NO.: MW-18D (Assessment Well)
WACS MONITORING SITE NUM.: 30343 WACS WELL NO.: MW-18D (Assessment Well)
WELL TYPE: BACKGROUND □ DETECTION □ COMPLIANCE □
LATITUDE: 28 • 51 17.1630 " LONGITUDE: 82 • 26 30.4637 "
(see back for LAT / LONG requirements):
Coordinate Accuracy +/- 0.07 Datum NAD 1983 Elevation Datum NGVD 1929
Collection Method Real-Time Kinematic GPS Collection Date August 31, 2017
Collector Name Mark T. Thomas Collector Affiliation Citrus County Div of Eng Survey Section
AQUIFER MONITORED: Floridan
DRILLING METHOD: Sonic Geoprobe DATE INSTALLED: July 31, 2017
INSTALLED BY: Huss Drilling Inc.
BORE HOLE DIAMETER: 8 inch TOTAL DEPTH: 140 ft (BLS)
CASING TYPE: Schedule 40 PVC CASING DIAMETER: 2 inch CASING LENGTH: 130 ft
SCREEN TYPE: slotted PVC SCREEN SLOT SIZE: 0.010 inch SCREEN LENGTH: 10 ft
SCREEN DIAMETER: 2 inch SCREEN INTERVAL: 130 ft TO 140 ft (BLS)
FILTER PACK TYPE: silica fine sand FILTER PACK GRAIN SIZE: 20/30
INTERVAL COVERED: 140 ft TO 127 ft (BLS)
SEALANT TYPE: Fine Sand SEALANT INTERVAL: 127 ft TO 124 ft (BLS)
GROUT TYPE: Cement GROUT INTERVAL: 124 ft TO 0 ft (BLS)
TOP OF CASING ELEVATION (NGVD): 115.68 ft GROUND SURFACE ELEVATION (NGVD):
DESCRIBE WELL DEVELOPMENT: ESP - surge and purge
POST DEVELOPMENT WATER LEVEL ELEVATION (NGVD): 5.86 ft
DATE AND TIME MEASURED: August 3, 2017 8:55 AM*
REMARKS: clear, no odor, no sheen
* pre-development well level reading, no reading taken post-development
NAME OF PERSON PREPARING REPORT: Elizabeth D Kennelley
Jones Edmunds & Associates, Inc., 352-377-5821 ext 1416, ekennelley@jonesedmunds.com
(Name, Organization, Phone No., E-mail)



Florida Department of **Environmental Protection**

Bob Martinez Center 2600 Blair Stone Road Tallahassee, Florida 32399-2400 DEP Form # 62-701.900(30)

Form Title: Monitoring Well Completion Report

Effective Date: January 6, 2010

Incorporated in Rule 62-701.510(3), F.A.C.

MONITORING WELL COMPLETION REPORT

DATE: November 27, 2017
FACILITY NAME: Citrus County Class I Central Landfill
DEP PERMIT NO.: 21375-025-SO-01 WACS FACILITY ID NO.: 39859
WACS MONITORING SITE NUM.: 30344 WACS WELL NO.: MW-19D (Assessment Well)
WELL TYPE: BACKGROUND □ DETECTION □ COMPLIANCE □
LATITUDE: 28 • 51 · 16.3427 _{" LONGITUDE: 82 • 26 · 29.5432 _"}
(see back for LAT / LONG requirements):
Coordinate Accuracy +/- 0.07 Datum NAD 1983 Elevation Datum NGVD 1929
Collection Method Real-Time Kinematic GPS Collection Date August 31, 2017
Collector Name Mark T. Thomas Collector Affiliation Citrus County Div of Eng Survey Section
AQUIFER MONITORED: Floridan
DRILLING METHOD: Sonic Geoprobe DATE INSTALLED: July 29, 2017
INSTALLED BY: Huss Drilling Inc.
BORE HOLE DIAMETER: 8 inch TOTAL DEPTH: 160 ft (BLS)
CASING TYPE: Schedule 40 PVC CASING DIAMETER: 2 inch CASING LENGTH: 155 ft
SCREEN TYPE: slotted PVC SCREEN SLOT SIZE: 0.010 inch SCREEN LENGTH: 5 ft
SCREEN DIAMETER: 2 inch SCREEN INTERVAL: 155 ft TO 160 ft (BLS)
FILTER PACK TYPE: silica fine sand FILTER PACK GRAIN SIZE: 20/30
INTERVAL COVERED: 160 ft TO 153 ft (BLS)
SEALANT TYPE: Fine Sand SEALANT INTERVAL: 153 ft TO 150 ft (BLS)
GROUT TYPE: Cement GROUT INTERVAL: 150 ft TO 0 ft (BLS)
TOP OF CASING ELEVATION (NGVD): 113.59 ft GROUND SURFACE ELEVATION (NGVD):
DESCRIBE WELL DEVELOPMENT: ESP - surge and purge
POST DEVELOPMENT WATER LEVEL ELEVATION (NGVD): 5.72 ft
DATE AND TIME MEASURED: August 2, 2017 4:00 PM*
REMARKS: clear, no odor, no sheen, good recharge
* pre-development well level reading, no reading taken post-development
NAME OF PERSON PREPARING REPORT: Elizabeth D Kennelley
Jones Edmunds & Associates, Inc., 352-377-5821 ext 1416, ekennelley@jonesedmunds.com
(Name, Organization, Phone No., E-mail)



Florida Department of **Environmental Protection**

Bob Martinez Center 2600 Blair Stone Road Tallahassee, Florida 32399-2400 DEP Form # 62-701.900(30)

Form Title: Monitoring Well Completion Report

Effective Date: January 6, 2010

Incorporated in Rule 62-701.510(3), F.A.C.

MONITORING WELL COMPLETION REPORT

DATE: November 27, 2017
FACILITY NAME: Citrus County Class I Central Landfill
DEP PERMIT NO.: 21375-025-SO-01 WACS FACILITY ID NO.: 39859
WACS MONITORING SITE NUM.: 30345 WACS WELL NO.: MW-22 (Assessment Well)
WELL TYPE: BACKGROUND □ DETECTION □ COMPLIANCE □
LATITUDE: 28 • 51 · 17.8811 _{" LONGITUDE:} 82 • 26 · 25.1896 _"
(see back for LAT / LONG requirements):
Coordinate Accuracy +/- 0.07 Datum NAD 1983 Elevation Datum NGVD 1929
Collection Method Real-Time Kinematic GPS Collection Date August 31, 2017
Collector Name Mark T. Thomas Collector Affiliation Citrus County Div of Eng Survey Section
AQUIFER MONITORED: Floridan
DRILLING METHOD: Sonic Geoprobe DATE INSTALLED: August 1, 2017
INSTALLED BY: Huss Drilling Inc.
BORE HOLE DIAMETER: 8 inch TOTAL DEPTH: 125 ft (BLS)
CASING TYPE: Schedule 40 PVC CASING DIAMETER: 2 inch CASING LENGTH: 105 ft
SCREEN TYPE: slotted PVC SCREEN SLOT SIZE: 0.010 inch SCREEN LENGTH: 20 ft
SCREEN DIAMETER: 2 inch SCREEN INTERVAL: 125 ft TO 105 ft (BLS)
FILTER PACK TYPE: silica fine sand FILTER PACK GRAIN SIZE: 20/30
INTERVAL COVERED: 125 ft TO 102 ft (BLS)
SEALANT TYPE: Fine Sand SEALANT INTERVAL: 102 ft TO 100 ft (BLS)
GROUT TYPE: Cement GROUT INTERVAL: 100 ft TO 0 ft (BLS)
TOP OF CASING ELEVATION (NGVD): 113.79 ft GROUND SURFACE ELEVATION (NGVD):
DESCRIBE WELL DEVELOPMENT: ESP - surge and purge
POST DEVELOPMENT WATER LEVEL ELEVATION (NGVD): 5.07 ft
DATE AND TIME MEASURED: August 4, 2017 1:30 PM*
REMARKS: clear, no odor, no sheen, good recharge
* pre-development well level reading, no reading taken post-development
NAME OF PERSON PREPARING REPORT: Elizabeth D Kennelley
Jones Edmunds & Associates, Inc., 352-377-5821 ext 1416, ekennelley@jonesedmunds.com
(Name, Organization, Phone No., E-mail)

SO THE SAFE OF THE

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

☐ Delegated Authority (If Applicable)

☒ Southwest
 ☒ Northwest
 ☒ St, Johns River
 ☒ St, Johns River

☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP

The water well contractor is responsible for completing this form and forwarding the permit application to the appropriate delegated authority where applicable.

	Permit No	861252
	Florida Unique ID_	
)	Permit Stipulations 23, 39	Required (See Attached)
	62-524 Quad No	Q3920 Delineation No
	CUP/WUP Applicat	ion No
	ADOME TO	HE LINE FOR AFFICIAL MEE ONLY

1 Tiitt/Forestry, Withlacoochee 3900 COMMONWEALTH TALL. FL TALLAHASSEE FL 32399	
1. Tiitf/Forestry, Withlacoochee 3900 COMMONWEALTH TALL. FI TALLAHASSEE FL 32399 *Owner, Legal Name if Corporation *Address *City *State *ZIP *Telephone Number	
2, 380 W GULF TO LAKE HWY Lecanto	
*Well Location - Address, Road Name or Number, City	
3. <u>18E19S01 20000</u> Parcel ID No. (PIN); or Alternate Key (Circle One) Lot Block Unit	
4. 1 19 18 Citrus	No
doday or Early township hange Sound	-```- <u> </u>
5. Stephanie S Stallsmith 9342 (352) 567-9500 stephanie@hussdrillling.com *Water Well Contractor *License Number *Telephone Number E-mail Address	
6. 35920 STATE ROAD 52 DADE CITY FL 33525	
*Water Well Contractor's Address City State ZIP	
7. *Type of Work: x Construction Repair Modification Abandonment	
8. *Number of Proposed Wells 3 9. *Specify Intended Use(s) of Well(s); Date Stamp	
DomesticLandscape IrrigationAgricultural IrrigationSite Investigation Received:	
Bottled Water Supply Recreation Area Irrigation Livestock X Monitoring Nursery Irrigation Test Jun 7, 2017 3:43 pm	
Public Water Supply (Limited Use/DOH) Public Water Supply (Community or Non-Community/DEP) Golf Course Irrigation HVAC Supply	
Class I InjectionHVAC Return Class V Injection:RechargeCommercial/Industrial DisposalAquifer Storage and RecoveryDrainage	
Remediation: Recovery Air Sparge Other (Describe)	
Official Use Only [Note: Not all types of wells are permitted by a given permitting authority] Official Use Only	
10.*Distance from Septic System if ≤200 ft 11. Facility Description 12. Estimated Start Date <u>07/24/2017</u>	,
	_ft.
14, Estimated Screen Interval: From 155.0 To 160.0 ft.	_
15.*Primary Casing Material:Black SteelGalvanizedX_PVCStainless Steel	
Not Cased Other:	
16. Secondary Casing:Telescope CasingLinerSurface Casing Dlameterin.	
17. Secondary Casing Material: Black Steel Galvanized PVC Stainless Steel Other	
18.*Method of Construction, Repair, or Abandonment:AugerCable ToolJettedRotaryx_Sonic	
Combination (Two or More Methods) Hand Driven (Well Point, Sand Point) Hydraulic Point (Direct Push) Horizontal Drilling Plugged by Approved Method Other (Describe)	
19. Proposed Grouting Interval for the Primary, Secondary, and Additional Casing:	
From <u>0.0 To 151.0 Seal Material (</u> Bentonite <u>x</u> Neat Cement Other)	
From To Seal Material (Bentonite Neat Cement Other) From To Seal Material (Bentonite Neat Cement Other)	
From To Seal Material (Bentonite Neat Cement Other)	
20. Indicate total number of existing wells on site 0 List number of existing unused wells on site 0	
21.* Is this well or any existing well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP)	,
or CUP/WUP Application? Yes X No If yes, complete the following: CUP/WUP No. District Well ID No.	
22. Latitude 28 51 18.36 Longitude 82 26 24.45	
23. Data Obtained From: GPS X Map Survey Datum: NAD 27 X NAD 83 WGS 84	
I hereby certify that I will comply with the applicable rules of Title-10, Florida Administration Code, and that a water I scrify that I am the owner of the property, that the information provided is accurate, and that I am aware of my	,
use permit or artificial rechange pormit, if needed, has been or wit to obtained prior to commiscensement of woll responsibilities under Chargler 373, Rectiful Statutes, to maintain or properly abandon this well; or, I certify that I be need to the owner, that the information cowied of its actuarities, and that I have information or cowded is actuarities, and that I have information cowded in actuarities, and that I have information or cowner of this	HA)1
necessary approval from other federal, state, or local governments, if applicable. Lagree to provide a well responsibilities as stated above. Owner consents to allowing personnel of this WMD or Delegated Authority acc completion report to the District within 30 days after completion of the construction, repair, medification, or abandoment authorized by this permit, or the permit operation, without excess first.	205 3 10
провиссипном диристици од виз респин, се иго учини подучином, учиничен сесто з окак	
Digitally Signed 9342 Digitally Signed 6/7/2017	
*Signature of Contractor *License No, *Signature of Owner or Agent *Date	
DO NOT WRITE BELOW THIS LINE - FOR OFFICIAL USE ONLY	
DO NOT WRITE BELOW THIS LINE - FOR OFFICIAL USE ONLY	

WSouthwest

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS (*Denotes Required Fields Where Applicable)

Date Stamp Received: Aug 22, 2017 11:55 am

□ Northwest (*Denotes Required Fields Where Applicable) □ St. Johns River □ South Florida □ Suwannee River □ DEP	Aug 22, 2017 11:55 am
☐Delegated Authority (If Applicable)	Official Use Only
1.*Permit Number_ <u>861252</u> *CUP/WUP Number *DID Number 62-524 [Delineation No
2.*Number of permitted wells constructed, repaired, or abandoned3_ *Number of permitted wells not constructed, rep	paired, or abandoned0
3.*Owner's Name Tiltf/Forestry, Withlacoochee 4.*Completion Date 07/28/2017 5. Florida U	Inique ID
6. 380 W GULF TO LAKE HWY Lecanto 34452 *Well Location - Address, Road Name or Number, City, ZIP	
7. *County_Citrus*Section1Land Grant*Township	19 *Range18
8. Latitude 28 51 16.33 Longitude 82 26 28.67	
9. Data Obtained From: GPS X Map Survey Datum: NAD 27 X NAD	83WGS 84
Bottled Water Supply Recreation Area Irrigation Nursery Irrigation Termulation Public Water Supply (Limited Use/DOH) Commercial/Industrial Ea Public Water Supply (Community or Non-Community/DEP) Golf Course Irrigation HV Class I Injection Class V Injection: Recharge Commercial/Industrial Disposal Aquifer Storage and Recovery Drainage	/AC Return
Remediation:RecoveryAir SpargeOther (Describe)	
Other (Describe)	tted X Sonic
14. *Measuring Point (Describe) Which Is ft. Above Below Land Surface 15. *Casing Material:Black SteelGalvanized XPVCStainless SteelNot CasedOth	*Flowing: Yes No
16.*Total Well Depth <u>165.0 ft.</u> Cased Depth <u>160.0 ft.</u> *Open Hole: From <u>To</u> ft. *Screen: From <u>To</u>	ft. Slot Size
17.*Abandonment: Other (Explain) From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite 18.*Surface Casing Diameter and Depth:	
DiainFromftToft No. of Bags Seal Material (Check One):Neat CementB DiainFromftToft No. of Bags Seal Material (Check One):Neat CementB	SentoniteOther SentoniteOther
Dia in. From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement B	Bentonite Other Bentonite Other Bentonite Other Bentonite Other Bentonite Other
Diain. Fromft. Toft. No. of Bags Seal Material (Check One):Neat CementE	Bentonite Other Sentonite Other Sentonite Other
Dia in. From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement E Dia in. From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement E	Bentonite Other Other Other Other Other
22. Pump Type (If Known): CentrifugalJetSubmersibleTurbine Ironppm Sulfateppm	Chlorideppm
Horsepower Pump Capacity (GPM) Pump Depth ft. Intake Depth ft. Laboratory Test Field Tes	
24. Water Well Contractor:	

*License Number 9342

E-mail Address stephanie@hussdrilling.com

"Driller's Name (Print or Type) Bubba Tait

*Contractor Name Stephanle S Stallsmith

*Contractor's Signature Digitally Signed

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT 2379 BROAD STREET, BROOKSVILLE, FL 34604-6899 PHONE: (352) 796-7211 or (800) 423-1476 WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT 4049 REID STREET, PALATKA, FL 32178-1429 PHONE: (386) 329-4500 WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT 152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712 (U.S. Highway 90, 10 miles west of Tallahassee)

PHONE: (850) 539-5999 WWW.NWFWMD.STATE.FL.US SOUTH FLORIDA WATER MANAGEMENT DISTRICT P.O. BOX 24680 3301 GUN CLUB ROAD WEST PALM BEACH, FL 33416-4680 PHONE: (561) 686-8800 WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT 9225 CR 49 LIVE OAK, FL 32060 PHONE: (386) 362-1001 or (800) 226-1066 (Florida only) WWW.MYSUWANNEERIVER.COM

				cutt	ings every 20 ft. or at for	mation changes. Note cavities and depti-	i to producing zone. Grain Size: F≃Fine,
	im, and C≂0		∍)				
From	0.0 ft.	То	15.0	_ft.	Color BROWN	Grain Size (F, M, C)FINE	Material SAND
From	15.0 ft,	To_	27.0		Calor BROWN	Grain Size (F, M, C)MEDIUM	Material SAND AND CLAY
From	27.0 ft.	To	75,0		Color BROWN	Grain Size (F, M, C)FINE	Material SAND
From	75.0 ft.	To_	80.0	Ţt.	Color BROWN	Grain Size (F, M, C)MEDIUM	Material SAND AND CLAY
From	80.0 ft.	To	88.0		Color WHITE	Grain Size (F, M, C)SOFT	Material LIMESTONE
From	88.0 ft.	To	165.0	ft.	Color BROWN	Grain Size (F, M, C)FINE	Material SAND
From	ft.	To		fl.	Color	Grain Size (F, M, C)	Material
From	ft.	To		ft.	Color	Grain Size (F, M, C)	Material
From	ft.	To.	an armed a last, the Last death (100)	ft.	Color	Grain Size (F, M, C)	Material
From	ft.	To		ft.	Color	Grain Size (F, M, C)	Material
From				Īt.	Color	Grain Size (F, M, C)	Material
From	ft.	To		ĨII.	Color	Grain Size (F, M, C)	Material
From	ft.	To		īđ.	Color	Grain Size (F, M, C) Grain Size (F, M, C)	Material
From		To		ft.	Color	Grain Size (F, M, C)	Material
From		To		ft.	Color	Grain Size (F, M, C)	Material
From	ft,			ft.	Color	Grain Size (F, M, C) Grain Size (F, M, C)	Material
From	ſt.	To		ft.	Color	Grain Size (F, M, C)	Material
From	ft.	То		fŧ.	Color	Grain Size (F, M, C)	Material
From		To		ft.	Color	Grain Size (F. M. C)	Material
From	ſt.	То		ft.	Color	Grain Size (F, M, C)	Material
From				ft.	Color	Grain Size (F, M, C)	Material
From		To		ft.	Color	Grain Size (F, M, C)	Material
From		То		ft.	Color	Grain Size (F, M, C)	Material
From		То		ft.	Color		Material
From	ft.	To	***************************************	ft	Color		Malerial
From	ft.	То		ft.	Color		Malerial

Comments: Finish: SCREENED OR SANDPOINT

*Detailed Site Map of Well Location

Z

Give distances from all reference points or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well.

IXSouthwest

□Northwest

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS (*Denotes Required Fields Where Applicable)

Date Stamp Received: Aug 22, 2017 11:55 am

ACOD WE DANK	□St, Johns River □South Florida □Suwannee River □DEP □Delegated Authority (If Applicable)			Official Use Only
1.*Permit Number 861252	*CUP/WUF	Number	*DID Numb	per6	32-524 Delineation No
					led, repaired, or abandoned0
•					
3.*Owner's Name Tiltf/F	orestry, Withlacoochee	···	_ 4.°Completion Dat	e <u>07/28/2017</u> 5. F	lorida Unique ID
6. 380 W GULF TO LAKE		Lecante	o	34452	
*Well Location - Addre	ss, Road Name or Number	er, City, ZIP			
7. *County_Citrus	*Sec	tion1 Land	Grant	*To	ownship <u>19</u> *Range <u>18</u>
8. Latitude 28 51 17.10		Longitude 82 26 29.9	3		
9. Data Obtained From:				NAD 27X	_NAD 83WGS 84
10.*Type of Work: X_C					
11. Specify Intended Use	(s) of Well(s):			icultural Irrigation	Site Investigation
Domestic		Landscape Irrigation	Live	stock	X Monitoring
Bottled Water Supp	_	_Recreation Area Irrig		sery Irrigation	Test
Public Water Supply	r (Limited Use/DOH) r (Community or Non-Com	munitu/DED\		nmercial/Industrial	Earth-Coupled Geothermal HVAC Supply
	(Constituting of Mon-Con	iniunky/DEF)	G0I	f Course Irrigation	HVAC Supply HVAC Return
Class I Injection Class V Injection:R	Pacharaa Cammarai	Undustrial Disposal	Anuifor Storage	•	
Remediation:Reco	veni Air Sparce	_ issured initiabilities (editoset) tedito		ino recoverybre	iii ago
Other in					
12 *Drill Mothad:	Augor Cable Tool	Polany	Combination (Two	or More Methods)	Jetted X Sonic
12. DIN MERIOG.	Horizontal Drilling	Hydraulic Point	Combination (1440 (Direct Push)	Other	ootiod <u>11</u> Johns
13.*Measured Static Water	r Level 0.0 ft. N	leasured Pumping Wa	ter Level	ft. After	Hours atGPM
14. Measuring Point (Desc	cribe)	Which i	sftAbov	eBelow LandSi	urface *Flowing:YesI
					Olher
16.*Total Well Depth <u>140</u>	.0 ft. Cased Depth 130	.0 ft. "Open Hole: Fr	omfo1	t. *Screen: From	ft. Slot Size
17.*Abandonment: _	Other (Explain)				
Fromft. To	ft, No. of Bags	Seal Material (C	heck Oпe):N	eat CementBer	ntoniteOther
Fromft. To	ft, No. of Bags	Seal Material (C	theck One):Ne	eat CementBer	ntonite Other other
From ft. To	ft. No. of Bags ft. No. of Bags	Seal Material (C	theck One):N	eat Cement Bei	ntonite Other
Fromft. To	ft, No. of Bags	Seal Material (C	heck One):N	eat CementBei	ntoniteOther
18.*Surface Casing Diam	eter and Depth:				
Diain. From_	ft. Toft. N ft. Toft. N	lo. of BagsS	eal Material (Check (One):Neat Cemer	ntBentoniteOther
		io. of Bags	ieai Materiai (Check t	one):Neat Cemer	ntBentoniteOther
19.*Primary Casing Diam	eter and Depth: 0.00_ftTo_ <u>130.00</u> ftN	in of Page 1500 S	Coal Material (Chack (Inaly V Mant Comp	nt Bentonile Other
Dia <u>2,00 i</u> n. From	10.00 k. 10.130,00 k. 1	to of Bags 15.00 S	Seal Material (Check (One): Neat Cemer	nt Bentonite Other
Diain. From_	ft. To ft. h	lo. of Bags	eal Material (Check (One):Neat Ceme	ntBentoniteOther
Diain. From_	ft. Toft. N	lo. of Bags	Seal Material (Check (Seal Material (Check (One):Neat Ceme One):Neat Ceme	ntBentoniteOther
		10. 01 Mays	Jour Material Collect	/,, tous conto	
20.*Liner Casing Diamete Dia in. From		No. of Bags	Seal Material (Check (One): Neat Ceme	nt Bentonite Other
Diain. From_	ft. Toft. h	No. of Bags	Seal Material (Check	One):Neat Ceme	ntBentoniteOther
Diain. From_			Seal Material (Check	One):Neat Ceme	ntBentoniteOther
21. Telescope Casing Di	ameter and Deoth:				
Diain. From_	ft. Tofl. 1		Seal Material (Check		
Diain. From_			Seal Material (Check Seal Material (Check		
Dia in From	ft. Toft. I	No. of Bags	seat Marchal (Cueck)	Cureyinear cellie	.uoutdingOutdi

Turbine

_Submersible

Pump Capacity (GPM)

_ft. Intake Depth _____ft.

23. Chemical Analysis (When Required):

Laboratory Test

_ppm Sulfate _

*Driller's Name (Print or Type) Bubba Tait

Chloride

_ppm

_Field Test Kit

Contractor's Signature Digitally Signed

22. Pump Type (If Known):

_Centrifugal ___

Horsepower_

Pump Depth ____

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT 2379 BROAD STREET, BROOKSVILLE, FL 34604-6899

PHONE: (352) 796-7211 or (800) 423-1476 WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

4049 REID STREET, PALATKA, FL 32178-1429

PHONE: (386) 329-4500 WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712

(U.S. Highway 90, 10 miles west of Tallahassee)

PHONE: (850) 539-5999

WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

P.O. BOX 24680

3301 GUN CLUB ROAD

WEST PALM BEACH, FL 33416-4680

PHONE: (561) 686-8800 WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT

9225 CR 49

LIVE OAK, FL 32060

PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)

WWW.MYSUWANNEERIVER.COM

	AAL AAJAID'S		_				
*DRILL O	CUTTINGS	.OG (Examine	cutti	ngs every 20 ft. or at forma	tion changes. Note cavities and depth	n to producing zone. Grain Size: F=Fine,
M≂Medi∟	ım, and C≃0	oarse)				
From	0.0 ft,	To	15.0	ft.	Cator_BROWN	Grain Size (F, M, C)FINE	Material SAND
From	15.0 ft.	To	27.0	ft.	Calor BROWN	Grain Size (F, M, C)MEDIUM	Material SAND AND CLAY
From	27.0 ft,	To	75.0		Calor BROWN	Grain Size (F, M, C)FINE	Material SAND
From	75.0 ft,	To	80.0	ft.	Calor BROWN	Grain Size (F, M, C)MEDIUM	Material SAND AND CLAY
From	80,0 ft,	То	88.0	ft.	Color WHITE	Grain Size (F, M, C)SOFT	Material LIMESTONE
From	88.0 ft.	To	130.0	ſŧ.	Color BROWN	Grain Size (F, M, C)FINE	Material SAND
From	ft.	To		ft.	Color	Grain Size (F, M, C)	Malerial
From	ft.	То		ſŧ.	Color	Grain Size (F, M, C)	Malerial
From	ſL.	To		ſt.	Color	Grain Size (F, M, C) Grain Size (F, M, C)	Material
From	fl.	To_		ſt.	Color	Grain Size (F, M, C)	Material
From	ſl.	To		ſt.	Color	Grain Size (F, M, C) Grain Size (F, M, C)	Material
From	ft.	To		ſŧ.	Color	Grain Size (F, M, C)	Malerial
From	ft.	To		ft.	Color	Grain Size (F, M, C) Grain Size (F, M, C)	Malerial
From	ſt.	To		ft.	Color	Grain Size (F, M, C)	Malerial
From	ft.	To		ft.	Color	Grain Size (F, M, C) Grain Size (F, M, C)	Malerial
From	ſt.	To		ſŧ.	Color	Grain Size (F, M, C)	Malerial
From	ft.	To		ſt.	Color	Grain Size (F, M, C)	Material
From		To		ſt.	Color		Material
From	ft.	To		ſt.	Color	Grain Size (F, M, C)	Material
From	ſĹ	To_		ft.	Color	Grain Size (F, M, C)	Material
From	ft.	To		ft.	Color	Grain Size (F, M, C)	Malerial
From	ft.	To		ft.	Color	Grain Size (F, M, C) Grain Size (F, M, C)	Material
From	ft.	To_		fŧ.	Color	Grain Size (F, M, C)	Material
From	ft.	To		ft.	Color	Grain Size (F. M. C)	Malerial
From	ft.	To		ſĹ.	Color	Grain Size (F, M, C)	Malerial
From	ft.	To		lt.	Color	Grain Size (F, M, C)	Material

Finish: SCREENED OR SANDPOINT

*Detailed Site Map of Well Location

Give distances from all reference points or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well.

STATE OF FLORIDA WELL COMPLETION REPORT

© Southwest
☐ Northwest
☐ South Florida
☐ Suwannee River
☐ DEP

Date Stamp Received: Aug 22, 2017 11:55 am

Objects □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Official Use Only
1.*Permit Number_861252	neation No
2.*Number of permitted wells constructed, repaired, or abandoned3 *Number of permitted wells not constructed, repaired	
3.*Owner's Name Tiltf/Forestry, Withlacoochee 4.*Completion Date 07/28/2017 5. Florida Uniq	ue ID
6, 380 W GULF TO LAKE HWY Lecanto 34452 *Well Location - Address, Road Name or Number, City, ZIP	
7. "County Citrus	19 'Range 18
8. Latitude <u>28 51 18.36</u> Longitude <u>82 26 24.41</u>	
9. Data Obtained From: GPS X Map Survey Datum: NAD 27 X NAD 83	WGS 84
10.*Type of Work: X Construction Repair Modification Abandonment	vestigation oring
Public Water Supply (Limited Use/DOH) Public Water Supply (Community or Non-Community/DEP) Class I Injection Commercial/industrial Earth- Golf Course Irrigation HVAC	Coupled Geothermal Supply Return
Class V Injection:Recharge Commercial/Industrial DisposalAquifer Storage and RecoveryDrainage Remediation:RecoveryAir SpargeOther (Describe)	
Other (Describe)	· · · · · · · · · · · · · · · · · · ·
112.*Drill Method: Auger Cable Tool Rotary Combination (Two or More Methods)Jetted	i X Sonic
Horizontal DrillingHydraulic Point (Direct Push)Other	GPM
14. 'Measuring Point (Describe) Which is ft. Above Below Land Surface *F 15. 'Casing Material: Black Steel Galvanized X PVC Stainless Steel Not Cased Other	lowing:YesNo
15.*Casing Material:Black SteelGalvanized XPVCStainless SteelNot CasedOther_	4 Ola O'
16.^Total Well Depth 125.0 ft. Cased Depth 105.0 ft. *Open Hole: From To ft. *Screen: From To	ft. Slot Size
17. Abandonment: Other (Explain) From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bentonite	Other Other Other
18,*Surface Casing Diameter and Depth:	onite Other
Dia in. From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Bent Bent Bent Bent Bent Bent Bent Bent	tonite Other tonite Other tonite Other tonite Other tonite Other
Diain. Fromft. Toft. No. of Bags Seal Material (Check One):Neat CementBen	toniteOther toniteOther toniteOther
Dia in From ft. To ft. No. of Bags Seal Material (Check One): Neat Cement Ben	toniteOther toniteOther toniteOther
22. Pump Type (If Known): 23. Chemical Analysis (When Required):CentrifugalJetSubmersibleTurbine Ironppm	Chlorideppm
Horsepower Pump Capacity (GPM)	
Pump Depthft. Intake DepthftLaboratory TestField Test Ki	t
24, Water Well Contractor:	
*Contractor Name Stephanie S Stallsmith *License Number 9342 E-mail Address stephanie@husso	irilling.com
*Contractor's Signature Digitally Signed **Driller's Name (Print or Type) Bubba Tait (I certify that the information provided in this report is accurate and true.)	

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT 2379 BROAD STREET, BROOKSVILLE, FL 34604-6899 PHONE: (352) 796-7211 or (800) 423-1476 WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT 4049 REID STREET, PALATKA, FL 32178-1429 PHONE: (386) 329-4500 WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT 152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712 (U.S. Highway 90, 10 miles west of Tallahassee) PHONE: (850) 539-5999

WWW.NWFWMD.STATE.FL.US

PHONE: (561) 686-8800 WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT 9225 CR 49 LIVE OAK, FL 32060 PHONE: (386) 362-1001 or (800) 226-1066 (Florida only) WWW.MYSUWANNEERIVER.COM

*DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F≃Fine, M=Medium, and C=Coarse) Color BROWN Color BROWN 15.0 ft. Material SAND .ft_0.0 Grain Size (F, M, C)FINE From Material SAND AND CLAY Grain Size (F, M, C)MEDIUM Grain Size (F, M, C)FINE 15.0_ft. 27.0 ft. From Material SAND Color BROWN 27.0 ft. 75.0 ft, To Material SAND AND CLAY Grain Size (F, M, C)MEDIUM 75.0 ft, 80.0 ft. To Color BROWN

From From Material LIMESTONE 0.08 88.0 ft. Color WHITE Grain Size (F, M, C)SOFT From ft. To 125.0 ft. Color BROWN Material SAND 88.0 ft. Grain Size (F. M. C)FINE From To Grain Size (F, M, C) Grain Size (F, M, C) Material Color From ft. To ft. Material From ft. To ſŧ Color From ſŧ. To ft. Color Grain Size (F, M, C) Material ſĹ. To ft. Color Grain Size (F, M, C) Material From Color Grain Size (F, M, C) Malerial From ſt. To ft. ft. To ft. Color Grain Size (F, M, C) Material From Grain Size (F, M, C) Color Material From ft. To ft. Grain Size (F, M, C) ft. ft. Color Material From To Grain Size (F, M, C) Material From Ħ. To ft. Color Grain Size (F, M, C) Material From Ħ. To ft Color Grain Size (F, M, C) From ſt. To. ft. Color Material Color Grain Size (F, M, C) Material From To ft. From ft. To, ft. Color Grain Size (F, M, C) Material ft. To ft. Color Grain Size (F, M, C) Material From Grain Size (F, M, C) Color Material ft. To ft. From Grain Size (F, M, C) Material ft. To ft. Color From Grain Size (F, M, C) From ft. То ft. Color Material From ft. To ft. Color Grain Size (F, M, C) Material From ft. To ft. Color Grain Size (F, M, C) Material ft. Grain Size (F, M, C) Material From ft. To Color

Comments: Finish: SCREENED OR SANDPOINT

*Detailed Site Map of Well Location

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Give distances from all reference points or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well.

WELL DEVELOPMENT FIELD REPORT

PROJE	CT NA	ME / NUMBI	ER: 0	trus 3860	Courí - 058	ty Cent -01-300	ral L	F. PAGE	: /	of /	L
		:R: <u>M</u>	_		w				: 8/	14/17	7
WEATI	HER CC	NDITIONS:	CI	oud	y 3	5°C, 4	lind	0-5	5 u	<i>)</i>	
DEVEL	OPER	(s): 5.	Mes	5101	<u> </u>	/ Dril	lers: f	luss			
DEVEL	OPMEN	NT TECHNIC	QUE:	ESP	(GR	undfo.	5)	surg	e on	ndp	urge
TOTAL	WELL	DEPTH (Ini	tial): /	25.49	2	WELL DIA	METER:	2	P	VC	
TOTAL	WELL	DEPTH (Fir	nal): /2	5.57	7	SCREEN L	ENGTH	20	st.		
DEPTH	TO W	ATER:	108.78	2	illy.	WELL VOI	LUME:	2.7	gpv		
TIME	DTW	GALLONS PURGED	PUMP DEPTH (ft)	RATE (gpm)	TURB. (NTU)	PUMP SETTING (HZ)			COMME	NTS	
1330	108.72		125		>1000	400	ORa	nac/k	Rown	00/0	9
		₹50						0 /			
1432		1/60	116	1.0		268	Temp	, Cond.	, 20.	IPH	ORP
1502	108.83	30	116	1.0	7.14	268	25.5	519	0.68	6.95	31.0
	108.86		116	1.0	1.95	268	25.4	582	0.64		35-7
	108.85		116	1.0	0.42	268	25.4	530	0.60	6.81	38.3
Totalpi	inged	7-200	,			,			. ,		
	pu	age w.	Itea	clean	, 10 3	sand, no	odo.	e, no	SALL	n	
	-					<u> </u>					
							-		-		
							-				
							-				
										,	,
ADDIT	IONAL	COMMENTS	3: I	begar	hy s	unging	the.	entia	e wa	ter c	wed to sater // could
Ther	pur	sped at	4004	ZIN	lax) u	ntil c	lay(+	-590	llons.), alle	wed to
Rech	agge	then.	Repea	ted.	Afte	Rash	oxt	WALL	e, pu	ige u	sater
clear	Red 4	Rom OR	ange/	brow	nto	right w	hite	gray	and	twe	11 could
with	Sland	o at n	rid so	WOOD W	a+ 1.	going a	2.20	bean	in po	Line	field
Read	linas	Promor	well 1.	ooks	good	3,					
	•										
16 5	mple	: pump n	red we	aying	water	Colum	n-1-110	stal	768	12	

WELL DEVELOPMENT FIELD REPORT

Citaus County Central IF. PAGE: / of / PROJECT NAME / NUMBER: 03860 - 058 - 01 - 3000 DATE: 8/2/17 **WELL NUMBER:** MW-191 Cloudy w/light Rain, 25°C, wind 3 mph **WEATHER CONDITIONS:** Rillers: Huss **DEVELOPER (s):** 5, Me,5510 ESP (GRUNDFOS pump) **DEVELOPMENT TECHNIQUE:** Surge and purge TOTAL WELL DEPTH (Initial): 165.70 **WELL DIAMETER: SCREEN LENGTH:** TOTAL WELL DEPTH (Final): 165.70 **DEPTH TO WATER:** 107.87 **WELL VOLUME: PUMP PUMP** GALLONS DEPTH RATE TURB. SETTING TIME DTW PURGED (NTU) (HZ) **COMMENTS** (ft) (gpm) bottom 280 D.O. IAHIORP 0900 107.87 1.0 0930 131.04 3.41 280 30 1.0 y a Ray / brown color w/sandinparge wate 163 6.51 280 1000 127.5 30 1.0 310 Hz 1010 Inckrased ump. per 1100 137.32 72.5 3.52 310 94 310 1230 137.07 163 1.25 2.20 -198.0 13635 163 1.25 310 1330 75 1.71 1430 75 163 1.25 1.44 310 163 12.21 15.44 1530 75 1.25 1-19 310 24.3/120 -138. 1600 134.46 37.5 163 1-25 1.05 310 0.77 no sheen, goo I can. At 280 hz to purae Rate is lapm. I Rani reed entire water column. ina clear to slightly King fie

at 0.5gpm 1-280Hz monitor drawdown

To sample: purge

WELL DEVELOPMENT FIELD REPORT

PROJE	CT NA	ME / NUMB	Cit ER: 0:	kus (ounty	Central	PAGE: 1 of Z
		ER: Mw					DATE: 8 3 17
							d 3mph
DEVEL	OPER	(s): 5. N	Ness10	<u>k</u>		Rillers	: Huss
DEVEL	OPME	NT TECHNI	QUE: E	50 (a	Frandf	05 Pamp	o), surge and purge
in .							
TOTAL	. WELL	DEPTH (In	itial <u>)</u> : <i>[</i> 3	6.16	_ ,	WELL DIA	METER: 2" PVC
TOTAL	. WELL	DEPTH (Fi	nal <u>)</u> : <i>14</i>	10.43	-	SCREEN L	ENGTH: 10 Foot
DEPTH	TO W	ATER:	09.82		-,	WELL VOI	LUME: 4.29PV
TIME	DTW	GALLONS PURGED	PUMP DEPTH (ft)	RATE (gpm)	TURB. (NTU)	PUMP SETTING (HZ)	COMMENTS
0855	109.82	_	136		≥1000	400	looks like a lot of quick gul in
0902	2 (202	5	126		,,,,,		purge water to start. Poor
							Recharge. See he low
							Temp/Cond/D.O. /pH / DRP
1620		1 /- 75	126	0.4	31.7	265	26.1/214/2.98/5.91/69.1
, ,		1-1/2 80	will	1224	1	OmoRRO	,
Total	PANGE	51 /- 60	12066	CONI	nue T	OMORRO	<i>ω</i>
		,					
	No	color,	no od	bR, n	o shee	h	
ADDIT	IONAL	COMMENT	S: I	0.01	Ly sua	a ina e.r	time water column then
sum	sed 1	From boi	Hom at	400	Hz. Lo	120112	tire water column, then le mostly quick gels o I moved l, pumping slowly, raised pump
pum	pup	in col	unn 3	Ft. s			I pumping slowly, Raised pump
Sme	Ret		ow at			een w	
me c	il	RV - ~ m	2000	VU T	gent e	id of	after column. Pumped at 400 Hz
Beca	454	of poor	Bech	ARRE	this	wellis	
SURGE	2 and	1 punge	Fast	unti	1/6/	0 then	slowed ounge Rate enough
Jo I	CAU	kd get	some	rield	Readi	195.1	sill contine this well to markow.

Note: It Rained most of the day to day

\[
\text{Vertices the day to day}
\]

\[
\text{Vertices the day}
\]

\[
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WELL DEVELOPMENT CONTINUATION

Citaus County Central Lt. 03860-058-01-3000

PROJECT NAME / NUMBER: 33860 - 058 - 01 - 3000 PAGE: 7 of 2

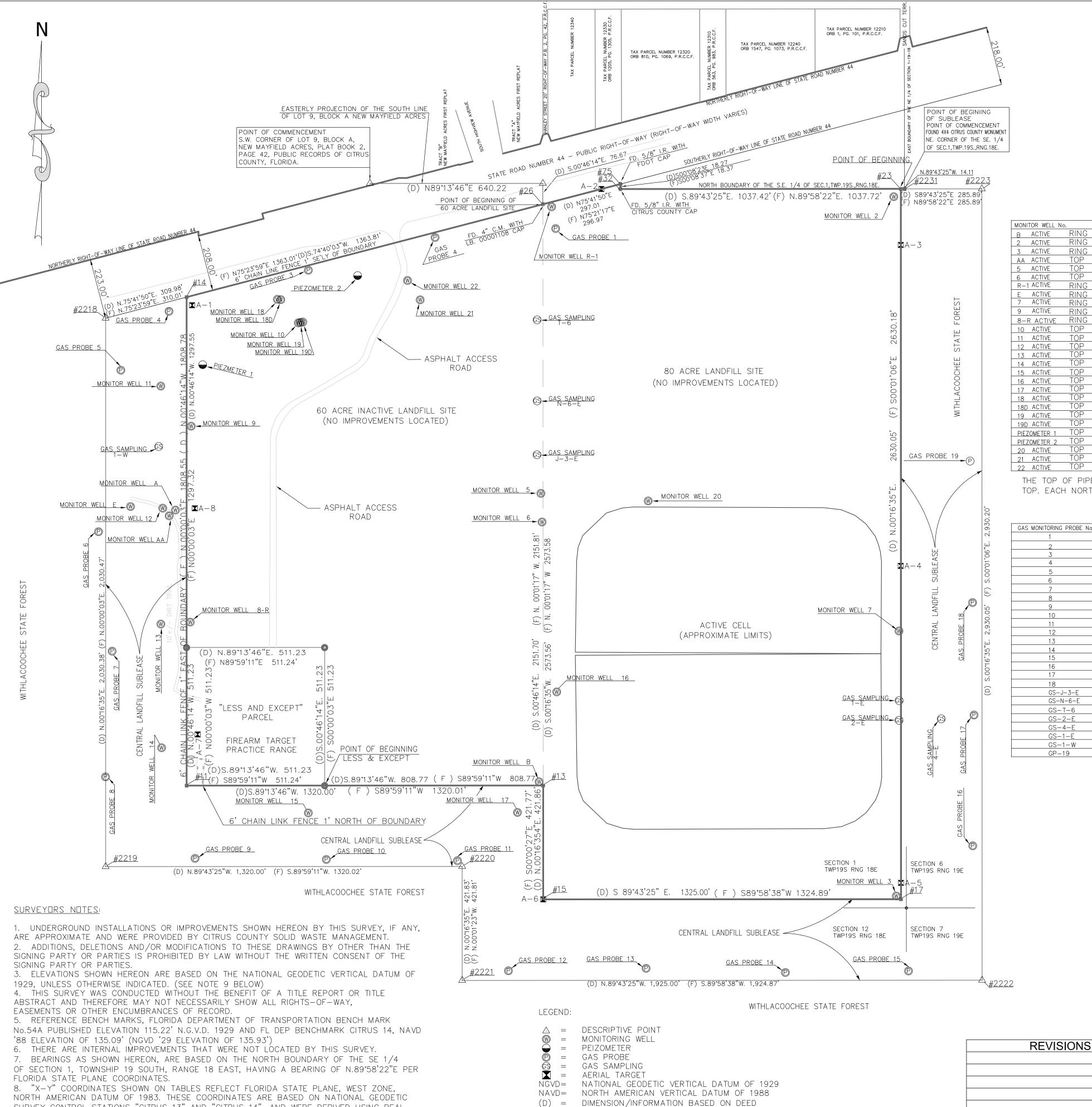
WELL NUMBER: MW-18D DATE: 8/4/17 Day 2

			PUMP			PUMP	
		GALLONS	DEPTH	RATE	TURB.	SETTING	
TIME	DTW	PURGED	(ft)	(gpm)	(NTU)	(HZ)	COMMENTS
9805	109.78	1/20	136				T.D.= 136.16, DTW= 109-78=4.29pV
0850	109.78	_	131		>/000	280	Temp/ Cond/D.D. loH I DEP
1030	129.47	7-20	13)	0.20	55.0	260	25.8 / 159 [2.77 5.38 98.0
1130		⁺ /- 16	131		22.0	265	28.1 /155 /2.77 /5.35 / 120.7
		no no	Re su	50000	lod 50,	Vils	light hozer white color
1200		<i>.</i> ₽.	131		5.65	265	28.4/160 268 5.46 124.3
1245		189	131	0.20	3.61	265	27.1 166 12.93 5.45 130.4
<u> </u>		+2 155			-		
roine f	UKO 4-1	100					This well purges clear but it
		9					This well purges clear but it draws down 5 to 10 feet at
							265 Hz so make sure to low
							sump to allow FOR drawdow
114	000	eter 'n	CE 10 6	200	doe n	sheen	
700	Ö		0.00702	7700	JON JAP	3	
					ļ		
			-				

ADDITIONAL COMMENTS: To begin I surged entire water column and purged from bottom and mid-screen. Pumped at 400 Hz to begin to dean out bottom of well. Then moved up three entire water column. Finally pumping from mid-well screen

Place pump @ 126 ft, pump @ 1/-20gpm which is about 260-265 HZ-Monitor draw down

ATTACHMENT 4 SITE SURVEY



(F) = DIMENSION/INFORMATION BASED ON FIELD MEASURE

FLORIDA DEPARTMENT OF TRANSPORTATION

DEP = FLORIDA DEPARTMENT OF ENVIRONMENTAL

I.R. = IRON ROD

TWP = TOWNSHIP

RGE = RANGE

C.M. = CONCRETE MONUMENT

PROTECTION

SURVEY CONTROL STATIONS "CITRUS 13" AND "CITRUS 14", AND WERE DERIVED USING REAL

CONVENTIONAL SURVEY METHODS MEETING FLORIDA SURVEY STANDARDS.

PRODUCED BY THIS OFFICE.

9. CONVERSION FROM NAVD 1988 TO NGVD 1929 FOR THIS SITE IS +0.84'.

TIME KINEMATIC GLOBAL POSITIONING SYSTEMS, WITH AN ESTIMATED ACCURACY OF ± 0.07 , AND

10. THE SPECIFIC PURPOSE OF THIS SURVEY MAP IS TO SHOW UPDATED NGVD '29 ELEVATIONS

OF THE MONITORING WELLS SHOWN HEREON. NO X OR Y COORDINATES OR ELEVATIONS OF GAS

MONITORING PROBES WERE REVISITED. BOUNDARY DATA SHOWN HEREON WAS PREVIOUSLY

TOP = ELEVATION ON TOP OF ACTUAL PVC MONITORING WELL PIPE RING = ELEVATION ON TOP OF METAL RING ON TOP OF PVC MW PIPE

MONITOR WELL No		X COORDINATE	Y COORDINATE	LONGITUDE	LATITUDE	NGVD '29 ELEVATION
B ACTIVE	RING	515703.188	1641952.201	82°26'19.59919" W.	28°50'59.45064" N.	RING 113.30'
2 ACTIVE	RING	517016.947	1644134.0121	82°26'04.91534" W.	28°51'21.09969" N.	RING 136.05'
3 ACTIVE	RING	517026.689	1641528.493	82°26'04.69852" W.	28°50'55.30387" N.	RING 120.305'
AA ACTIVE	TOP	514330.1915	1642944.6946	82°26'35.08066" W.	28°51'09.22643" N.	TOP 105.85'
5 ACTIVE	TOP	515706.7199	1643027.5870	82°26'19.60416" W.	28°51'10.09772" N.	TOP 120.98'
6 ACTIVE	TOP	515710.8712	1642921.8127	82°26'19.55309" W.	28°51'09.05065" N.	TOP 118.27'
R-1 ACTIVE	RING	515734.4675	1644075.0314	82°26'19.33566" W.	28°51'20.46904" N.	RING 118.07'
E ACTIVE	RING	514187.411	1642978.872	82°26'36.68776" W.	28°51'09.55952" N.	RING 109.36'
7 ACTIVE	RING	517032.495	1642518.150	82°26'04.67396" W.	28°51'05.10226" N.	RING 128.47'
9 ACTIVE	RING	514411.959	1643276.437	82°26'34.17505" W.	28°51'12.51388" N.	RING 113.29'
8-R ACTIVE	RING	514408.379	1642551.088	82°26'34.18489" W.	28°51'05.33238" N.	RING 117.96'
10 ACTIVE	TOP	514808.4751	1643659.0352	82°26'29.73194" W.	28°51'09.22643" N.	TOP 113.37'
11 ACTIVE	TOP	514299.5523	1643424.8999	82°26'35.44538" W.	28°51'13.97960" N.	TOP 104.69'
12 ACTIVE	TOP	514306.5574	1642972.8677	82°26'3534763" W.	28°51'09.50448" N.	TOP 103.36'
13 ACTIVE	TOP	514299.7062	1642543.8233	82°26'35.40666" W.	28°51'05.25644" N.	TOP 111.92'
14 ACTIVE	TOP	514302.3733	1642085.7341	82°26'35.35744" W.	28°51'00.72119" N.	TOP 108.50'
15 ACTIVE	TOP	514845.7153	1641844.4367	82°26'29.23727" W.	28°50'58.35224" N.	TOP 123.58'
16 ACTIVE	TOP	515765.2792	1642292.6040	82°26'18.91510" W.	28°51'02.82310" N.	TOP 119.64'
17 ACTIVE	TOP	515619.9611	1641846.2474	82°26'20.53070" W.	28°50'58.39859" N.	TOP 110.85'
18 ACTIVE	TOP	514730.9420	1643746.0676	82°26'30.60751" W.	28°51'17.17530" N.	TOP 115.82'
18D ACTIVE	TOP	514743.7275	1643744.7840	82°26'30.4637" W.	28°51'17.16301" N.	TOP 115.68'
19 ACTIVE	TOP	514816.3731	1643660.2048	82°26'29.6432" W.	28°51'16.32832" N.	TOP 113.50'
19D ACTIVE	TOP	514825.2669	1643661.6193	82°26'29.5432" W.	28°51'16.3427" N.	TOP 113.59'
PIEZOMETER 1	TOP	514454.2759	1643505.5893	82°26'33.70877" W.	28°51'14.78419" N.	TOP 110.97'
PIEZOMETER 2	TOP	515020.7612	1643833.4593	82°26'27.35189" W.	28°51'18.05116" N.	TOP 116.82'
20 ACTIVE	TOP	516104.004	1642999.189	82°26'15.135" W.	28°51'09.831" N.	TOP 119.76'
21 ACTIVE	TOP	515259.800	1643743.909	82°26'24.660" W.	28°51'17.173" N.	TOP 115.63'
22 ACTIVE	TOP	515212.9683	1643815.5673	82°26'25.1896" W.	28°51'17.8811" N.	TOP 113.79
	<u> </u>		<u> </u>			

THE TOP OF PIPE OR TOP OF RING ELEVATIONS SHOWN HEREON WERE TAKEN ON THE NORTH RIM OF SAID TOP. EACH NORTH RIM HAD EITHER AN EXISTING FILE CUT OR BLACK MARKER "CROWS FOOT"

LANDFILL GAS MONITORING PROBE LOCATIONS GAS MONITORING PROBE No. X COORDINATE Y COORDINATE LONGITUDE ELEVATION TOP OF WELL CASING 515759.6430 1644024.1637 82°26'19.05041" W. 28'51'19.96634" N. 114.31 82°26'24.09040" W. 28°51'19.57128" N. 515311.3421 1643985.9194 1643863.4854 | 82°26'29.34620" W. | 28°51'18.34191" N. 514843.5355 1643702.6107 82°26'35.10924" W. 28°51'16.73024" N. 104.54 514330.4791 1643484.3916 | 82°26'37.10426" W. | 28°51'14.56316" N.

514152.2632 1642886.4767 | 82°26'38.00907" W. | 28°51'08.64040" N. 1642444.1964 82°26'37.42546" W. 28°51'04.26342" N. 114.60 514095.1760 1641978.6777 82°26'37.68296" W. 28°50'59.65361" 106.71 514426.7014 | 1641676.8201 | 82°26'33.94218" W. | 28°50'56.67730" N. 114.28 514912.7361 1641672.9166 82°26'28.47643" W. 28°50'56.65656" N. 1641667.9273 | 82°26'23.02437" W. | 28°50'56.62497" N. | 1641260.0907 | 82°26'20.88666" W. | 28°50'52.59406" N. 1641269.1991 | 82°26'15.15374" W. | 28°50'52.70287" N 1641253.6098 82°26'09.35312" W. 28°50'52.56731" N. 1641259.1318 82°26'04.22809" W. 28°50'52.63852" N 1641722.4351 82°26'01.57149" W. 28°50'57.23411" N. 1642206.6639 82°26'01.53673" W. 28°51'02.02843" N. 117.59 517305.2505 | 1642623.1043 | 82°26'01.61100" W. | 28°51'06.15126" N 118.01 125.74 515693.4141 | 1643368.8358 | 82°26'19.76802" W. | 28°51'13.48569" N. 127.45 515693.4326 | 1643668.7379 | 82°26'19.78024" W. | 28°51'16.4450" N.

517032.8076 | 1642187.6990 | 82°26'04.65684" W. | 28°51'01.83062" N.

517188.9927 | 1642192.9295 | 82°26'02.90069" W. | 28°51'01.88807" N.

517033.1595 | 1642260.5152 | 82°26'04.65588" W. | 28°51'02.55156" N.

514292.2992 | 1643199.9376 | 82°26'35.51750" W. | 28°51'11.75208" N.

517295.633 | 1643146.916 | 82°26'01.741" W. | 28°51'11.337" N.

DESCRIPTION AS FURNISHED

A PORTION OF SECTION 1, TOWNSHIP 19 SOUTH, RANGE 18 EAST, TALLAHASSEE MERIDIAN, CITRUS COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 OF SECTION 1, TOWNSHIP 19, SOUTH, RANGE 18 EAST, TALLAHASSEE MERIDIAN; THENCE N.89°43'25"W. ALONG THE NORTH BOUNDARY OF THE SOUTHEAST 1/4 OF SAID SECTION 1, A DISTANCE OF 14.11 FEET TO THE POINT OF BEGINNING, SAID POINT BEING THE NORTHEAST CORNER OF THOSE LANDS DESCRIBED IN OFFICIAL RECORD BOOK 759, PAGE 889, PUBLIC RECORDS OF CITRUS COUNTY, FLORIDA; THENCE S.00°16'35"E., A DISTANCE OF 2,630.05 FEET; THENCE N.89°43'25"W. PARALLEL WITH THE NORTH BOUNDARY OF THE SOUTHEAST 1/4 OF SAID SECTION 1, A DISTANCE OF 1.325.00 FEET; THENCE N.00°16'35"E., A DISTANCE OF 2,573.56 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF STATE ROAD No. 44. SAID POINT BEING 150.00 FEET FROM. WHEN MEASURED AT RIGHT ANGLES TO THE CENTERLINE OF SAID STATE ROAD No. 44; THENCE N.75°41'50"E. ALONG SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 297.01 FEET; THENCE DEPARTING SAID SOUTH RIGHT-OF-WAY LINE S.00°08'23"E., A DISTANCE OF 18.27 FEET TO A POINT ON THE NORTH BOUNDARY OF THE SOUTHEAST 1/4 OF SAID SECTION 1: THENCE S.89°43'25"E. ALONG THE NORTH BOUNDARY OF THE SOUTHEAST 1/4 OF SAID SECTION 1, A DISTANCE OF 1,037.42 FEET TO THE POINT OF BEGINNING.

CONTAINING 79.87 ACRES, MORE OR LESS.

AND

A PORTION OF SECTION 1, TOWNSHIP 19 SOUTH, RANGE 18 EAST BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE SOUTHWEST CORNER OF LOT 9, BLOCK A, NEW MAYFIELD ACRES AS RECORDED IN PLAT BOOK 2, PAGE 49, PUBLIC RECORDS OF CITRUS COUNTY, FLORIDA, THENCE N.89°13'46"E. ON AN EASTERLY PROJECTION OF THE SOUTH LINE OF SAID LOT 9, BLOCK A, A DISTANCE OF 640.22 FEET, THENCE S.0°46'14"E., A DISTANCE OF 76.67 FEET TO A POINT THAT IS 150 FEET FROM, MEASURED AT A RIGHT ANGLE TO, THE CENTERLINE OF STATE ROAD No. 44, SAID POINT ALSO BEING THE POINT OF BEGINNING; THENCE CONTINUE S0'46'14"E. A DISTANCE OF 2151.70 FEET; THENCE S.89'13'46"W., A DISTANCE OF 1320 FEET; THENCE N.0°46'14"W., A DISTANCE OF 1808.78 FEET TO A POINT THAT IS 150 FEET FROM, MEASURED AT A RIGHT ANGLE TO, THE CENTERLINE OF SAID STATE ROAD No. 44; THENCE N.74°40'03"E. PARALLEL TO AND 150 FEET FROM THE CENTERLINE OF STATE ROAD No. 44 A DISTANCE OF 1363.81 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPT

A PORTION OF SECTION 1, TOWNSHIP 19 SOUTH, RANGE 18 EAST, CITRUS COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCE AT THE SW CORNER OF LOT 9, BLOCK A, NEW MAYFIELD ACRES AS RECORDED IN PLAT BOOK 2, PAGE 42, PUBLIC RECORDS OF CITRUS COUNTY, FLORIDA; THENCE S.89'43'25"E. ALONG THE SOUTH LINE OF SAID LOT 9, BLOCK A AND A EASTERLY PROJECTION THEREOF, A DISTANCE OF 640.22 FEET; THENCE S.00°16'35"W., A DISTANCE OF 76.49 FEET TO A POINT THAT IS 150 FEET SOUTHEASTERLY FROM, WHEN MEASURED AT A RIGHT ANGLE TO THE CENTERLINE OF STATE ROAD No. 44; THENCE CONTINUE S.00°16'35"W, A DISTANCE OF 2,151.70 FEET; THENCE S.89°13'48"W, A DISTANCE OF 808.77 FEET TO THE POINT OF BEGINNING: THENCE CONTINUE S.89°13'46"W, A DISTANCE OF 511.23 FEET; THENCE N.00°46'14"W., A DISTANCE OF 511.23 FEET; THENCE N.89°13'46"E., A DISTANCE OF 511.23 FEET; THENCE S.00°46'14"E., A DISTANCE OF 511.23 FEET TO THE POINT OF BEGINNING.

SAID EXCEPTION CONTAINING 6 ACRES, MORE OR LESS.

SUBLEASE DESCRIPTION:

126.97'

128.86

128.26

124.04' (NAVD 1988)

A PORTION OF SECTIONS 1 AND 12. TOWNSHIP 19 SOUTH, RANGE 18 EAST AND SECTION 6. TOWNSHIP 19 SOUTH, RANGE 19 EAST, CITRUS COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 19 SOUTH, RANGE 18 EAST, CITRUS COUNTY, FLORIDA; THENCE SOUTH 89°43'25" EAST ALONG AN EASTERLY EXTENSION OF THE NORTH BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 1, A DISTANCE OF 285.89 FEET; THENCE SOUTH 00"16'35" WEST. A DISTANCE OF 2,930.05 FEET; THENCE NORTH 89°43'25" WEST PARALLEL WITH THE NORTH BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 1, A DISTANCE OF 1,925.00 FEET; THENCE NORTH 00°16'35" EAST, A DISTANCE OF 421.83 FEET; THENCE NORTH 89°43'25" WEST PARALLEL WITH THE NORTH BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 1. A DISTANCE OF 1,320.00 FEET: THENCE NORTH 00"16'35" EAST, A DISTANCE OF 2,030.38 FEET TO A POINT OF INTERSECTION WITH THE SOUTHERLY RIGHT-OF-WAY LINE OF STATE ROAD NUMBER 44, SAID POINT BEING 150.0 FEET FROM, WHEN MEASURED AT RIGHT ANGLES TO THE CENTERLINE OF SAID STATE ROAD NUMBER 44; THENCE NORTH 75°41'50" EAST ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE, A DISTANCE OF 309.98 FEET; THENCE DEPARTING SAID SOUTHERLY RIGHT-OF-WAY LINE SOUTH 00°16'35" WEST, A DISTANCE OF 1,808.41 FEET; THENCE SOUTH 89°43'25" EAST PARALLEL WITH THE NORTH BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 1, A DISTANCE OF 1,320.00 FEET; THENCE SOUTH 001635" WEST, A DISTANCE OF 421.83 FEET; THENCE SOUTH 89°43'25" EAST PARALLEL WITH THE NORTH BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 1, A DISTANCE OF 1,325.00 FEET; THENCE NORTH 0016'35" EAST, A DISTANCE OF 2,630.05 FEET TO A POINT OF INTERSECTION WITH THE NORTH BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 1; THENCE SOUTH 89°43'25" EAST ALONG THE NORTH BOUNDARY OF THE SOUTHEAST QUARTER OF SAID SECTION 1, A DISTANCE OF 14.11 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINING 55.55 ACRES, MORE OR LESS.

POINT NUMBER	X COORDINATE	Y COORDINATE
14	514395.1807	1643753.9871
26	515714.1808	1644097.5662
75	516001.5039	1644172.6504
32	516001.5501	1644154.2004
23	517039.2700	1644154.6930
2231	517053.3100	1644154.6790
2233	517339.2700	1644154.8351
17	517040.1105	1641524.5131
2222	517340.2063	1641224.6324
2221	515415.3389	1641223.8669
15	515715.2180	1641523.9862
13	515715.1632	1641945.7506
2220	515415.1689	1641645.6796
2219	514095.1490	1641645.3671
2218	514095.1795	1643675.8414
11	514395.1535	1641945.4381

X COORDINATE	Y COORDINATE	ELEVATION
514415.7043	1643723.8932	110.16'
515930.7731	1644154.1668	116.16'
517039.1853	1643947.0030	130.79'
517038.7010	1642758.8531	126.06'
517039.9417	1641584.9931	119.62'
515715.2180	1641523.9862	109.08'
514435.8577	1642134.6139	115.28'
514425.2393	1642971.9717	109.56'
	514415.7043 515930.7731 517039.1853 517038.7010 517039.9417 515715.2180 514435.8577	514415.7043 1643723.8932 515930.7731 1644154.1668 517039.1853 1643947.0030 517038.7010 1642758.8531 517039.9417 1641584.9931 515715.2180 1641523.9862 514435.8577 1642134.6139

REVISIONS	JOB No. 15-039	SPECIFIC PURPOSE SURVEY					
	PROJ. No. 15-458	SI LCII .	IC I DINI OSE SUNVET				
	DRAWN BY: MTT						
	DWG. No. 15039-A	Citrus County					
	MAP DATE: 6-11-2015						
	SCALE: 1" = 200'	Division of Engineering					
	SHEET No. 1 OF 1	Currey Section					
	FIELD DATE: 6-11-2015	Survey Section					
14.2017-Correct/Identity of Mon. Well 18D on map	FB L4 AND L5	3600 WEST SOVEREIGN PATH, SUITE 241					
31.2017-Additional Monitoring Well locations:		LECANTO, FLORIDA. 34461	Mark T. Thomas				
		L 32Z L 2Z/-249B FAX L 32Z L 2Z/-247B	l Florida Dogiotration No. 5151				

| MW-18D, MW-19D, & MW 22; Field Date 08.22.17 | |SEC. 01,TWP. 19 S, RNG 18 E |

F.B. L-5, Pgs 45-47

SEPTEMBER 14, 2017

Florida Registration No. 5151 (352) 527-5498 FAX (352) 527-5476

Not valid without the original raised seal and signature of a Florida licensed Surveyor and Mapper

ATTACHMENT 5 ANALYSIS RESULTS COMPARED TO GROUNDWATER STANDARDS

ANALYSIS RESULTS COMPARED TO GROUNDWATER STANDARDS AND/OR GUIDANCE CONCENTRATIONS CITRUS COUNTY CENTRAL LANDFILL **AUGUST 2017 Initial Sampling**

PARAMETER		pH (FIELD)	IRON					
STANDARD		6.5-8.5 S.U.**	300 μg/L**					
Assessment								
MW-18D	8/17/2017	5.90	939					
MW-19D	8/17/2017	6.15	22200					
MW-22	8/17/2017	-	-					

LEGEND

=Primary Drinking Water Standard

=Secondary Drinking Water Standard

=Chapter 62-777 Groundwater Cleanup Target Levels (GCTL)

@ =Analysis Result is at Groundwater Standard

=Analysis Result is not at or outside Groundwater Standard

=Not Sampled NS =Not Measured NM

Note:

This table displays analysis results which were reported at or outside Groundwater Standards.

Analysis results notated with "@" indicate that the analysis result was reported at the Groundwater Standard.

Analysis results which were reported above the laboratory detection limit (reporting limit), but not at or above the Groundwater Standard are not displayed in this table.

ATTACHMENT 6 GROUNDWATER PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT

PARAMETERS AT OR ABOVE THE LABORATORY DETECTION LIMIT CITRUS COUNTY CENTRAL LANDFILL AUGUST 2017 INITIAL SAMPLING

PARAMETER		CONDUC- TIVITY (FIELD)	DISSOLVED OXYGEN (FIELD)	GROUND- WATER ELEVATION	pH (FIELD)	REDOX POTENTIAL	TEMPER- ATURE (FIELD)	TURBIDITY (FIELD)	IRON
STANDARD UNITS		(1) uS/cm	(1) ppm	(1) ft, NGVD	6.5-8.5 S.U.** S.U.	(1) mV	(1) deg C	(1) NTU	300 μg/L** μg/L
Assessment MW-18D	8/17/2017	215	0.52	6.24	5.90	17.4	26.8	14.1	939
MW-19D	8/17/2017	242	0.21	5.97	6.15	-164.5	26.5	4.39	22200
MW-22	8/17/2017	492	0.16	5.26	6.61	-48.0	24.7	3.91	241
QAQC EQUBLK	8/17/2017	-	-	-	-	-	-	-	<22.0

LEGEND

* =Primary Drinking Water Standard

** =Secondary Drinking Water Standard

*** =Chapter 62-777 Groundwater Cleanup Target Levels (GCTL)

(1) =No Standard

Not Analyzed

I = Value is between the Method Detection Level (MDL) and the Reporting Detection Level (RDL)

J = Estimated value

V = Analyte found in associated method blank

Q = Estimated value; analyte analyzed after acceptable holding time

ATTACHMENT 7 PARAMETER MONITORING REPORT FORMS

Citrus County Central Landfill Parameter Monitoring Report

Sampling Date/Time: 8/17/2017 3:40:00 PM **PART III Analytical Results Report Period: AUGUST 2017 Initial Sampling** Facility WACS #: SWD/09/39859 Well Purged: Yes **Test Site ID #:** Well Type: [] Background Intermediate [] Well Name: **MW-18D** Compliance Water Supply **Classification of Ground Water:** GII Detection Piezometer Assessment Leachate Ground Water Elevation (NGVD): 6.24 Other Surface Water

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS DATE/TIME	ANALYSIS RESULT *	UNITS	DETECTION LIMIT/UNITS
082545	GROUNDWATER ELEVATION	SP	No	DEP SOP	8/17/2017 3:40:00 PM	6.24	ft, NGVD	ft, NGVD
000094	CONDUCTIVITY (FIELD)	SP	No	EPA 120.1	8/17/2017 3:40:00 PM	215	μmhos/cm	0μmhos/cm
000406	pH (FIELD)	SP	No	EPA 150.1	8/17/2017 3:40:00 PM	5.90	pH µnits	pH Units
000010	TEMPERATURE (FIELD)	SP	No	EPA 170.1	8/17/2017 3:40:00 PM	26.8	°C	0°C
082078	TURBIDITY (FIELD)	SP	No	EPA 180.1	8/17/2017 3:40:00 PM	14.1	NTU	0NTU
000299	DISSOLVED OXYGEN (FIELD)	SP	No	EPA 360.1	8/17/2017 3:40:00 PM	0.52	mg/L	0mg/L
001045	IRON	SP	No	EPA 6010D	8/25/2017 1:47:00 PM	939	μg/L	22.0µg/L
034030	BENZENE	SP	No	EPA 8260B	8/29/2017 3:20:00 PM	< 0.71	μg/L	0.71µg/L
034423	DICHLOROMETHANE	SP	No	EPA 8260B	8/29/2017 3:20:00 PM	<2.0	μg/L	2.0μg/L
039175	VINYL CHLORIDE	SP	No	EPA 8260B	8/29/2017 3:20:00 PM	< 0.71	μg/L	0.71µg/L
046480	REDOX POTENTIAL (FIELD)	SP	No	SM18 2580 B	8/17/2017 3:40:00 PM	17.4	mV	-999mV

1

^{*} Attach Laboratory Reports

PART III Analytical Results	Sampling Date/Tir	ne: 8/17/2017 1:57:00 PM
est Site ID #: ell Name: MW-19D	Report Period:	AUGUST 2017 Initial Sampling
Test Site ID #:	Well Purged:	Yes
Well Name: MW-19D	Well Type: []	Background [] Intermediate
	[]	Compliance [] Water Supply
Classification of Ground Water: GII	[]	Detection [] Piezometer
Correct Western Electric (NCVD). 5.05	[X]	Assessment [] Leachate
Ground water Elevation (NGVD): 5.97	[]	Other [] Surface Water

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS DATE/TIME	ANALYSIS RESULT *	UNITS	DETECTION LIMIT/UNITS
082545	GROUNDWATER ELEVATION	SP	No	DEP SOP	8/17/2017 1:57:00 PM	5.97	ft, NGVD	ft, NGVD
000094	CONDUCTIVITY (FIELD)	SP	No	EPA 120.1	8/17/2017 1:57:00 PM	242	μmhos/cm	0µmhos/cm
000406	pH (FIELD)	SP	No	EPA 150.1	8/17/2017 1:57:00 PM	6.15	pH µnits	pH Units
000010	TEMPERATURE (FIELD)	SP	No	EPA 170.1	8/17/2017 1:57:00 PM	26.5	°C	0°C
082078	TURBIDITY (FIELD)	SP	No	EPA 180.1	8/17/2017 1:57:00 PM	4.39	NTU	0NTU
000299	DISSOLVED OXYGEN (FIELD)	SP	No	EPA 360.1	8/17/2017 1:57:00 PM	0.21	mg/L	0mg/L
001045	IRON	SP	No	EPA 6010D	8/25/2017 1:44:00 PM	22200	μg/L	22.0μg/L
034030	BENZENE	SP	No	EPA 8260B	8/29/2017 2:51:00 PM	< 0.71	μg/L	0.71µg/L
034423	DICHLOROMETHANE	SP	No	EPA 8260B	8/29/2017 2:51:00 PM	<2.0	μg/L	$2.0 \mu g/L$
039175	VINYL CHLORIDE	SP	No	EPA 8260B	8/29/2017 2:51:00 PM	< 0.71	μg/L	0.71µg/L
046480	REDOX POTENTIAL (FIELD)	SP	No	SM18 2580 B	8/17/2017 1:57:00 PM	-164.5	mV	-999mV

Sampling Date/Time: 8/17/2017 3:55:00 PM **PART III Analytical Results Report Period: AUGUST 2017 Initial Sampling** Facility WACS #: SWD/09/39859 Well Purged: Yes **Test Site ID #:** Well Type: [] Background Intermediate [] Well Name: MW-22 Compliance Water Supply **Classification of Ground Water:** GII Detection Piezometer Assessment Leachate [X] [] Ground Water Elevation (NGVD): 5.26 [] Other [] Surface Water

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS DATE/TIME	ANALYSIS RESULT *	UNITS	DETECTION LIMIT/UNITS
082545	GROUNDWATER ELEVATION	SP	No	DEP SOP	8/17/2017 5:23:00 PM	5.26	ft, NGVD	ft, NGVD
000094	CONDUCTIVITY (FIELD)	SP	No	EPA 120.1	8/17/2017 3:55:00 PM	492	μmhos/cm	0µmhos/cm
000406	pH (FIELD)	SP	No	EPA 150.1	8/17/2017 3:55:00 PM	6.61	pH µnits	pH Units
000010	TEMPERATURE (FIELD)	SP	No	EPA 170.1	8/17/2017 3:55:00 PM	24.7	°C	0°C
082078	TURBIDITY (FIELD)	SP	No	EPA 180.1	8/17/2017 3:55:00 PM	3.91	NTU	0NTU
000299	DISSOLVED OXYGEN (FIELD)	SP	No	EPA 360.1	8/17/2017 3:55:00 PM	0.16	mg/L	0mg/L
001045	IRON	SP	No	EPA 6010D	8/25/2017 1:49:00 PM	241	μg/L	22.0μg/L
034030	BENZENE	SP	No	EPA 8260B	8/29/2017 3:50:00 PM	< 0.71	μg/L	0.71µg/L
034423	DICHLOROMETHANE	SP	No	EPA 8260B	8/29/2017 3:50:00 PM	<2.0	μg/L	$2.0 \mu g/L$
039175	VINYL CHLORIDE	SP	No	EPA 8260B	8/29/2017 3:50:00 PM	< 0.71	μg/L	0.71µg/L
046480	REDOX POTENTIAL (FIELD)	SP	No	SM18 2580 B	8/17/2017 3:55:00 PM	-48.0	mV	-999mV

PART III Analytical Results Sampling Date/Time: 8/17/2017 3:58:00 PM							00 PM		
Facilit	y WACS #: SWD/09/39859			Report Period: AUGUST 2017 Initial Sampli					
Test Si	ite ID #:			We	ell Purged:				
Well Name: EQUBLK		(AA0586	(AA05866-04)		ell Type: []	Background	[]]	Intermediate	
		(,		[]	Compliance	[]	Water Supply	
Classif	ication of Ground Water:				[]	Detection	[]]	Piezometer	
G IIII (FI (ALCHE)					[]	Assessment	[]]	Leachate	
Groun	d Water Elevation (NGVD):				[X]	Other	[]	Surface Water	
STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS DATE/TIME	ANALYSIS RESULT *	UNITS	S DETECTION LIMIT/UNITS	
001045	IRON	BP	No	EPA 6010D	8/25/2017 1:52:00) PM <22.0	μg/L	22.0μg/L	
034030	BENZENE	BP	No	EPA 8260B	8/24/2017 3:37:00	PM <0.71	μg/L	0.71µg/L	
034423	DICHLOROMETHANE	BP	No	EPA 8260B	8/24/2017 3:37:00) PM <2.0	μg/L	2.0μg/L	
039175	VINYL CHLORIDE	BP	No	EPA 8260B	8/24/2017 3:37:00	PM <0.71	μg/L	0.71µg/L	

PART	III Analytical Results		Sar	Sampling Date/Time: 8/17/2017						
Facility	y WACS #: SWD/09/39859		Report Period: AUGUST 2017 Initial Sampling							
Test Si	te ID #:		Well Purged:							
Well Name: TRIP1 Classification of Ground Water:		(AA05866-05)	We	ell Type: []	Background	[]]	Intermediate			
		()		[]	Compliance	[]	Water Supply			
				[]	Detection	[]]	Piezometer			
C	d Water Floretier (NCVD).			[]	Assessment	[]]	Leachate			
Groun	d Water Elevation (NGVD):			[X]	Other	[] ;	Surface Water			
STORET CODE	PARAMETER MONITORED	SAMPLING FIELD METHOD FILTERED	ANALYSIS METHOD	ANALYSIS DATE/TIME	ANALYSIS RESULT *	UNITS	S DETECTION LIMIT/UNITS			
034030	BENZENE	No	EPA 8260B	8/24/2017 4:07:00	PM <0.71	μg/L	0.71μg/L			
034423	DICHLOROMETHANE	No	EPA 8260B	8/24/2017 4:07:00	PM <2.0	μg/L	2.0μg/L			
039175	VINYL CHLORIDE	No	EPA 8260B	8/24/2017 4:07:00	PM <0.71	ug/I	0.71ug/L			

ATTACHMENT 8 ORIGINAL LABORATORY DATA INCLUDING CHAIN-OF-CUSTODY FORMS

10775 Central Port Drive Orlando FL, 32824

Phone: 407.826.5314 FAX: 407.850.6945

Wednesday, August 30, 2017 Jones Edmunds & Associates, Inc. (JO006) Attn: Elizabeth Kennelley 730 N.E.Waldo Road Bldg.A Gainesville, FL 32641

RE: Laboratory Results for

Project Number: 03860-056-01, Project Name/Desc: Citrus Co. LF

ENCO Workorder(s): AA05866

Dear Elizabeth Kennelley,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, August 18, 2017.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Caelene 5. Pasipanki

Carlene S Pasipanki For David Camacho Project Manager Enclosure(s)



LAB #		AA05866-01	AA05866-02	AA05866-03	AA05866-04	AA05866-05	-
MATRIX	Minimum	Ground Water	Ground Water	Ground Water	Ground Water	WATER	-
SAMPLE ID	Reporting Limit	MW-19D	MW-18D	MW-22	EQUIPMENT BLANK 1	TRIP BLANK 1	-
Volatile Organic Compounds by	y GCMS (Water)						
Vinyl chloride	1.0 ug/L	<0.71 [11]	<0.71 [11]	<0.71 [11]	<0.71 [11]	<0.71 [11]	-
Methylene chloride	5.0 ug/L	<2.0 [11]	<2.0 [11]	<2.0 [11]	<2.0 [11]	<2.0 [11]	-
Benzene	1.0 ug/L	<0.71 [11]	<0.71 [11]	<0.71 [11]	<0.71 [11]	<0.71 [11]	-
Dibromofluoromethane	53-146	93%	77%	98%	125%	118%	-
Toluene-d8	41-146	103%	81%	103%	115%	112%	-
4-Bromofluorobenzene	41-142	93%	74%	100%	131%	125%	-
Field Parameters (Water)							
Specific Conductance (EC)	0 umhos/cm	242	215	492	-	-	-
Dissolved Oxygen	0 mg/L	0.21	0.52	0.16	-	-	-
pH	pH Units	6.15	5.90	6.61	-	-	-
Oxidation/Reduction Potential	-999 mV	-164.5	17.4	-48.0	-	-	-
Temperature	0 °C	26.5	26.8	24.7	-	-	-
Turbidity	0 NTU	4.39	14.1	3.91	-	-	-
Depth to Water	Ft	107.62	109.44	108.53	-	-	-
Metals (total recoverable) by E	EPA 6000/7000 Ser	ies Methods (\	Water)				
Iron	50.0 ug/L	22200	939	241	<22.0	-	-



QUALITY CONTROL

Metals (total recoverable) by EPA 600 Batch 7H24027 - EPA 3005A	00/7000 Series N	Anthods - Oug								
Batch 7H24027 - EPA 3005A		icinous - Qua	ality Contro	ol						
Blank (7H24027-BLK1)				Prepared:	08/24/2017	12.17 Anal	vzed: 08/25	/2017 12:42		
Iron	22.0 U	50.0	ug/L	r repared.	06/24/2017	12.1/ Allai	yzcu. 06/25/	2017 12.42		
Blank (7H24027-BLK2)	22.0	30.0	ug/L	Prepared:	08/24/2017	12.17 Anal	vzed: 08/25	/2017 12:45		
Iron	22.0 U	50.0	ug/L	Trepared.	00/24/2017	12.17 / Hilli	yzed: 00/25/	2017 12.43		
LCS (7H24027-BS1)		20.0	ug L	Prepared:	08/24/2017	12·17 Anal	vzed: 08/25/	/2017 12:48		
Iron	1030	50.0	ug/L	1000	00/21/2017	103	80-120	2017 12.10		
Matrix Spike (7H24027-MS1)		Source: CA128	-		08/24/2017			/2017 12:53		
Iron	1490	50.0	ug/L	1000	547	94	75-125	2017 12.33		
Matrix Spike Dup (7H24027-MSD1)		Source: CA128			08/24/2017			/2017 12:55		
Iron	1580	50.0	ug/L	1000	547	103	75-125	6	20	
Post Spike (7H24027-PS1)	1300	Source: CA128			08/24/2017					
	1.60	0.0500	mg/L	1.00	0.547	105	80-120	2017 13:03		
Iron	1.00		LITY CO		0.547	103	80-120			
		QUAL	LITTCO	VIKUL						
				G 11	-		A/BEG		D.D.D.	G 1
Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
· ·										
Volatile Organic Compounds by GCN	MS - Quality Co	ntrol								
Batch 7H24016 - EPA 5030B_MS										
Blank (7H24016-BLK1)				Prepared:	08/24/2017	00:00 Anal	yzed: 08/24/	2017 14:00		
Benzene	0.71 U	1.0	ug/L	-			-			U
Methylene chloride	2.0 U	5.0	ug/L							U
Vinyl chloride	0.71 U	1.0	ug/L							U
Surrogate: 4-Bromofluorobenzene	69)	ug/L	50.0		138	41-142			
Surrogate: Dibromofluoromethane	60)	ug/L	50.0		120	53-146			
Surrogate: Toluene-d8	58		ug/L	50.0		115	41-146			
LCS (7H24016-BS1)				Prepared:	08/24/2017	00:00 Anal	yzed: 08/24/	2017 12:32		
Benzene	17	1.0	ug/L	20.0		86	56-136			
Methylene chloride	18	5.0	ug/L	20.0		90	43-142			
Vinyl chloride	19	1.0	ug/L	20.0		93	20-167			
Surrogate: 4-Bromofluorobenzene	65	,	ug/L	50.0		130	41-142			
Surrogate: Dibromofluoromethane	56		ug/L	50.0		113	53-146			
Surrogate: Toluene-d8	59		ug/L	50.0		117	41-146			
Matrix Spike (7H24016-MS1)		Source: AA060	_		08/24/2017			2017 17:06		
Benzene	18	1.0	ug/L	20.0	0.71 U	91	56-136	2017 17.00		
Methylene chloride	20	5.0	ug/L ug/L	20.0	2.0 U	99	43-142			
Vinyl chloride	21	1.0	ug/L	20.0	0.71 U	106	20-167			
Surrogate: 4-Bromofluorobenzene	68			50.0		125	41-142			
Surrogate: 4-Bromofluorooenzene Surrogate: Dibromofluoromethane	60		ug/L ug/I	50.0 50.0		135 120	53-146			
Surrogate: Dibromojiuoromeinane Surrogate: Toluene-d8	59		ug/L ug/L	50.0		120 119	33-140 41-146			
					00/24/2017			/2017 17.25		
		Source: AA060	14ソ-10	rrepared:	08/24/2017	υυ:υυ Anal	-	201/1/:35		
Matrix Spike Dup (7H24016-MSD1)	17	1.0	, /r	20.0	0.71 II	9.1	56 126	0	1.4	
Benzene Methylene chloride	17 19	1.0 5.0	ug/L ug/L	20.0 20.0	0.71 U 2.0 U	84 96	56-136 43-142	8 2	14 23	



QUALITY CONTROL

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Sanple Notes
Volatile Organic Compounds by GC	MS - Quality Co	ntrol								
Batch 7H24016 - EPA 5030B_MS										
Matrix Spike Dup (7H24016-MSD1) (Continued	Source: AA060)49-10	Prepared:	08/24/2017	00:00 Anal	yzed: 08/24/	2017 17:35	;	
Surrogate: 4-Bromofluorobenzene	67		ug/L	50.0		134	41-142			
Surrogate: Dibromofluoromethane	58		ug/L	50.0		116	53-146			
Surrogate: Toluene-d8	57		ug/L	50.0		114	41-146			
Batch 7H29004 - EPA 5030B_MS										
Blank (7H29004-BLK1)				Prepared:	08/29/2017	00:00 Anal	yzed: 08/29/	2017 10:18	;	
Benzene	0.71 U	1.0	ug/L							U
Methylene chloride	2.0 U	5.0	ug/L							U
Vinyl chloride	0.71 U	1.0	ug/L							U
Surrogate: 4-Bromofluorobenzene	46		ug/L	50.0		91	41-142			
Surrogate: Dibromofluoromethane	47		ug/L	50.0		93	53-146			
Surrogate: Toluene-d8	51		ug/L	50.0		102	41-146			
LCS (7H29004-BS1)				Prepared:	08/29/2017	00:00 Anal	yzed: 08/29/	2017 09:17	,	
Benzene	22	1.0	ug/L	20.0		112	56-136			
Methylene chloride	22	5.0	ug/L	20.0		108	43-142			
Vinyl chloride	19	1.0	ug/L	20.0		95	20-167			
Surrogate: 4-Bromofluorobenzene	48		ug/L	50.0		96	41-142			
Surrogate: Dibromofluoromethane	49		ug/L	50.0		97	53-146			
Surrogate: Toluene-d8	51		ug/L	50.0		103	41-146			
Matrix Spike (7H29004-MS1)	;	Source: AA059	76-03	Prepared:	08/29/2017	00:00 Anal	yzed: 08/29/	2017 13:51		
Benzene	23	1.0	ug/L	20.0	0.71 U	116	56-136			
Methylene chloride	22	5.0	ug/L	20.0	2.0 U	112	43-142			
Vinyl chloride	18	1.0	ug/L	20.0	0.71 U	92	20-167			
Surrogate: 4-Bromofluorobenzene	49		ug/L	50.0		98	41-142			
Surrogate: Dibromofluoromethane	48		ug/L	50.0		96	53-146			
Surrogate: Toluene-d8	51		ug/L	50.0		102	41-146			
Matrix Spike Dup (7H29004-MSD1)	:	Source: AA059	076-03	Prepared:	08/29/2017	00:00 Anal	yzed: 08/29/	2017 14:21		
Benzene	22	1.0	ug/L	20.0	0.71 U	110	56-136	5	14	
Methylene chloride	22	5.0	ug/L	20.0	2.0 U	112	43-142	0.09	23	
Vinyl chloride	18	1.0	ug/L	20.0	0.71 U	92	20-167	0.7	24	
Surrogate: 4-Bromofluorobenzene	49		ug/L	50.0		98	41-142			
Surrogate: Dibromofluoromethane	48		ug/L	50.0		96	53-146			
Surrogate: Toluene-d8	49		ug/L	50.0		98	41-146			



Special Notes

PQL PQL: Practical Quantitation Limit. В Results are based upon membrane filter colony counts that are outside the method indicated ideal range. Ι The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL). J Estimated value. K Off-scale low; Actual value is known to be less than the value given. L Off-scale high; Actual value is known to be greater than value given. Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the Μ MDL. Ν The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a "tentative identification". Ρ Greater than 25% concentration difference was observed between the primary and secondary GC column. The lower concentration is reported. 0 Sampled, but analysis lost or not performed. Sample exceeded the accepted holding time. Q Т Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis. U Indicates that the compound was analyzed for but not detected. ٧ Indicates that the analyte was detected in both the sample and the associated method blank. Υ The laboratory analysis was from an improperly preserved sample. The data may not be accurate. Ζ Too many colonies were present (TNTC); the numeric value represents the filtration volume. ? Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data. Not reported due to interference. A-02 A-02 -48.0 A-02a 5.90 A-02a U [11] U Analyte included in the analysis, but not detected



LABORATORY CERTIFICATION SUMMARY

Analysis	Matrix	Cert ID	Cert Number	
Iron Total EPA 6010D	Water	NELAC	E87610	
8260B	Water	NELAC	E83182	



ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD 10775 Central Port Dr.

Orlando, FL 32824

4810 Executive Park Court, Suite 111 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210

Cary, NC 27511 (919) 467-3090 Fax (919) 467-3515 www.encolabs.com

	4 Fax (407) 850-6945 (904) 296-3007 Fax (904) 296-0210	Requested Ahalyses	Requested Turnaround Times
Jones Edmunds & Associates, Inc. (JO006) ddress 730 N.E.Waldo Road Bldg.A Styrst/Zip Gainesville, FL 32641 et (352) 377-5821 Fax (352) 377-3166 Sampler(s) Name. Attiliation (Print) Steve Messick, Tones Edmunds & Associates, Inc Sampler(s) Signature	Project Number 03860-056-01 Project Name/Desc Citrus Co. LF PO # / Billing Info Reporting Contact Elizabeth Kennelley Billing Contact Accounts Payable Ste Location / Time Zone La carrio, F.L. / BST	Preservation (See Codes) (Combine as necessary)	Note: Frush requests subject to acceptance by the facility Standard Expedited Due Lab Workorder AA05866
Stare Massec Collection Date Collection Date	Collection Comp / Grab (see codes) Containers	ス / ス / ス / ス 1	Field cleaned ESP flush widest water
Sample Kit Prepared By EC Commental Special Reporting Requirements Samples shipped by Green bound Bus Phiopity from Gainesville, F to Oxlando, FL. LooleR	Relinquished By Relinquished By Cooler Ws & Temps on Receipt		Date/Time 8/16/17 Date/Time 08/18/17 13: Date/Time Unaccepta

Jones, Edmunds, and Associates, Inc. Environmental Consultants 730 NE Waldo Road

(352) 377-5821 Fax (352) 377-3166

Gainesville, Florida 32641

Please return a copy of this form with original lab report.

Field Data Information Form

Project Name: Citrus County - Central Class I Landfil

Project Number: 03860-056-01-6402

Date: 8//2//>
Sampler: Steve Messick

Laboratory: ENCO Lab - Orlando, Florida

tral	Class I Landfil	1					3
2							
							-9
lo, F	lorida						33
)	Temp (Deg C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mV)	Static Depth to Water *	Collection Method
5	26.5	242	0.21	4.39	-164,5	107.62	E515

Collection Method	Description:						
BA	BAILER						
BP	BLADDER PUMP	2					
CP	CENTRIFUGAL PUMP						
E	GRAB						
м	METER READING						
PP :	PERISTALTIC PUMP						
90	SUBMERSIBLE OR IN-PLACE	E DEDICATED PUMP					
2	UNKNOWN						

* Initial Depth to Water at Time of Sampling

Sampling pH Date Time (S. U.) Station 1357 6.15 mw-19D 0.52 14.1 17.4 109.44 CP 1540 26.8 215 5.90 mW-18D 24.7 3.91 1723 6-61 492 -48.0 108.53 0.16 MW-22

TO BE SUBMITTED TO LABORATORY WITH CHAIN-OF-CUSTODY

ATTACHMENT 9 FIELD DATA SHEETS

				GRO	NUC	IDWA	TEF	R S	AMPL	ING L	-0	G			7	
SITE NAME: 0	Citrus County -	- Central Land	fill						SITE	N: Lecanto,	Flori	da				
WELL NO	D: MW-19D				SAM	IPLE ID: 17	M8CC-1	9D					DA	TE: 8	1/17/1	7
		T		T					DATA		1000000					
	ER (in) 2"pvc	TUBING DIAMETER			160.50	to 165.70	втос		STATIC D	ER (feet):	07	.62	PURGE ESP	PUMP		
1 WELL	VOLUME =	(165.70 fee	et _ 10	7.62 feet))	(0.16	gallons/foo	t = 9.	3 ga	allons V	Vater Level	Measi	ured with: MPN			FS2222	IETHOD: 2.5 N/A Full volumes
	t if applicable			IENT VOL. = Pi = 0 ga		OLUME + ((0.006	TUBING gallon				NG LE eet) +	0.123	W CELL gallons		JME gallons	
	UMP OR TUE N WELL (feet):			FINAL PUMP DEPTH IN WE			7	PUI	RGING TIATED AT:	1311	PUI	RGING DED AT: 13 5	-5	TOTA	AL VOLUME GED (gallon	s): 14.3
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PUR RA	TE WATE	R	pH (standard units)	TEM (°C		COND. (μS/cm)	DISSOLV OXYGE (mg/L	:N	TURBIDITY (NTUs)		LOR cribe)	ODOR	ORP (mVolts)
1330	9.3	9.3	0.5	5 //0.2	12	6.18	26.	4	248	0.39	>	4.73	No		None	-148.7
1350	2.5	11.8	1	110.2	2 6	5.13	26.	¥	244	0:31		3.25			1	-152.4
1355	2.5	14.3	不	//0.2	2 6	5.15	26.	5	242	0.21		-4.39	د	_	本	-164.5

		.E														
						SAI	MPLII	NG	DATA							
	DBY (Print) / Assick / Jones,		ssoc. In	IC.		SAMPLER	R(S) SIGN	UTA		<i>!</i>		SAMPLING I			SAMPLING AT: /40	
PUMP OF DEPTH IN	R TUBING WELL (feet):	115		SAMPLE P	UMP TE Oth	VOC Sam	pling Rat	te 100	0-400 ml/min nin):+/- 5 0		BING I	MATERIAL CO	DE:	SAI	MPLING EQ DE: ESP	UIPMENT
FIELD DE	CONTAMINA	TION: Y	N	FIELD-FILT	TERED:	Y (N			R SIZE:					DU	PLICATE: Y	(v)
		PLE CONTAIN PECIFICATION				SAMP	LE PRES	SERV	ATION							
SAMPLE			ERIAL DE	VOL		PRES. JSED	TOTAL V ADDED IN FIE	OL LD (mL)	FINAL P	н		INTE	NDED A	ANALY	'SIS	
17M8C			G	40 mL		HCL	Non	е	N/A				826	0B		
17M8C	C- 1	F	Έ	250 mL	1	INO3	None	е	~ 2				Fe)		
					-											
				-	-								-			
		-									-					
REMARKS	S: Well screen	length is from	helow	top of casing (B	STOCY											
* Verified Sky Condi Approx. W	Sample pH as tions:	s <2 or >12 (as	applica Ambier	able) at <u>M</u> し nt Air Temperat	y-/9 ture:	33°C	_	ORI	m moi	ved i	107	had	to	ger	tint	truck
Grundfos I	ump: CPM Pump Setting: ng Length: /3	268 Hz.	narge _ Perista	sec, altic Pump Setti	Pressung: #	re	PSI [©]	J &			16.					7 -
	Commen															
74	15 15	the fi	Rot	time	thi	is we	elli	ha	s eu	er be	.e.	sam	ple.	d,		- 1
																A*

GROUNDWATER SAMPLING LOG

SITE							SITE						
	Citrus County – D: MW-18D	Central Landf	ill		CAMPLE ID: 47	714000 400	LOCATIO	ON: Lecanto,	Florida			, ,	
VVELL INC	J. IVIVV-10D			,	SAMPLE ID: 17		DATA			DA	ATE: 8	17/1	7
WELL	-	TUDING		NA/ELL O		JRGING							
DIAMETE	ER (in) 2"pvc	TUBING DIAMETER		From 130	0.43 to 140.4	3 BTOC	STATIC I	ER (feet): /1	9. <i>44</i> ELL CAPACITY	PURG	E PUMP		
1 WELI	L VOLUME =	140.43 feet	-109.44	feet) X 0.1	6 gallons/foot	:= 5. 0 ga	allons W	ater Level M	easured with: MPN	M-GNV-0	01	PURGE M 2.3 2.4 F 32 222	ETHOD: 2.5 N/A Full volumes
(only fill o	ENT VOLUME out if applicable	١ .		VOL. = PUM	P VOLUME + ((TUBING CAF	ACITY :	X TUBIN	G LENGTH) + FL	OW CEL	L VOLU	ME	
		N	A 1 =	0 gallor	ns + (0.006	gallons/for	ot X	fe	eet) + 0.123	gallon	s = ,	gallons	
	N WELL (feet):	119		AL PUMP OR		PL IN	JRGING ITIATED AT:	1459	PURGING ENDED AT: /3	538		AL VOLUME GED (gallons	
TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP.	COND. (μS/cm)	DISSOLV OXYGE (mg/L)	N (NTHE)		OLOR scribe)	ODOR	ORP (mVolts)
1524	5.0	5.0	0.2	114.29	5.88	26.8	221	0.64	11.0	wh	ide	None	95.0
1531	1.4	6.4		114.33	5.95	26.7	225	0.55	12.6	o l	Ī	1	47.4
1538	1.4	7.8	V	//4.33	590	26.8	215	0.52	14.1	\	V	Y	12.4
							-						
			<u> </u>				<u></u>						
			· · · · · · · · · · · · · · · · · · ·		SA	MPLING	DATA						
	D BY (Print) / A		Inc		SAMPLER	R(S) SIGNATI	JRES: *	/ -	SAMPLING			SAMPLING	
	ssick / Jones, E R TUBING	amunas & As		SAMPLE PUN		npling Rate 10		/ 3/	AT: 15			AT: /5/A	
	WELL (feet):	119	İ	LOW RATE	Other Sample	s Rate (mL / r	nin):+/- 75	0	PE			DE: ESP	
FIELD DE	CONTAMINAT	TON: 🕥		IELD-FILTEF) FILTI	ER SIZE:	μm			DUI	PLICATE: Y	(N)
		LE CONTAIN ECIFICATION			SAMF	PLE PRESER	VATION					· ·	
SAMPLE CODE	# CONTAIN	MATE CO		VOL	PRES. USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL F	РН	IN	rended	ANALY	'SIS	
17M8C		C		40 mL	HCL	None	N/A			826	60B		
17M8C	C- 1	P	E	250 mL	HNO3	None	52			F	е		
					 								
	2 11												
REMARKS	S: Well screen	lenath is from	below top o	f casing (RTC)C) \(\sum_{\text{\color}}				/ >				
	Sample pH as		•	• • • • • • • • • • • • • • • • • • • •	, 10	ORK	echa	Age 1	here,	DUR	ge.	510Wl	Y-
Sky Condi	itions:	Direction: D	Ambient Air	Temperature	32°C	54	ORMS	644	and on 7	to da	01 , 3	5/owi	20
			-			PSI P.	rogre	55			7'		0
Grundfos	Pump Setting: ng Length: //	265 Hz.	Peristaltic I	Pump Setting:	#	watch	out	for e	Low do	un l	here	2	
(Commen	ts:											
			est 4	ine to	his we	Il has	sver.	been	sample	d.			
									-				

GROUNDWATER SAMPLING LOG

SITE									SITE						10	
	itrus County - : EQUBLK-1	- Centra	al Landfil	1			SAMPLE ID: 17	MRCC FOR1	LOCATIO	N: Lecanto	, Flori	da			1.1	
WELL NO.	. LQODLK-1		411						DATA				DA	IE: 8	1/2/1	7
WELL		TUBI	ING			WELLSO	PU REEN LENGT	JRGING I	STATIC	COTU			UDOF	DUME	TVDE	
DIAMETE		DIAM	/IETER (From	to BTOC	;	TO WATI	ER (feet):		C	ESP	PUMP)	TYPE:	
WELL VO	LUME PURG	E: 1 V	VELL VO	DLUM	= (TC	TAL WEL	L DEPTH -	STATIC DEPT	H TO WATE	ER) X V	VELL C	CAPACITY		7	PURGE ME	ETHOD: 2.5 N/A
	VOLUME =		feet			feet) X	gallons/fo		gallons			sured with: MPN			FS2222 F	uli volumes
	IN I VOLUME it if applicable		E: 1EQ			L. = PUMI	P VOLUME + (TUBING CAP	ACITY)	(TUBI	NG LE	NGTH) + FLOV	V CELL	. VOLU	ME	
				1	=	0 gallon	s + (0.006	gallons/foo	t X		feet) +	0.123 g	allons	= ,	gallons	
1	JMP OR TUB WELL (feet):						TUBING (feet): N/A		RGING FIATED AT:	N/A	- 1	RGING DED AT: N/			AL VOLUME GED (gallons): N/A
TIME	VOLUME PURGED (gallons)	VOL PUR	MUL. UME RGED	PUR	E	DEPTH TO WATER	pH (standard units)	TEMP.	COND. (μS/cm)	DISSOL' OXYGI (mg/l	EN	TURBIDITY (NTUs)		LOR cribe)	ODOR	ORP (mVolts)
	(gallolis)	(gail	lons)	(gpr	n)	(feet)	1			(9/.	-/					
					+											
					-		. کھ	221	. ,			- 1				16
							-0.	yess	ch						/ K =	
							I'								2.0	
																12.50
			1									a 12				
							SA	MPLING	DATA							
	BY (Print) / A sick / Jones.			oc Inc				(S) SIGNATU		'/		SAMPLING IN			SAMPLING I	
PUMP OR				,	SAM	IPLE PUM W RATE	IP VOC Sam	npling Rate 100 s Rate (mL / m	0-400 ml/mir	1// 40	BING I	AT: 155 MATERIAL COL		SAI	AT: /53 MPLING EQU DE: ESP	
FIELD DEC	CONTAMINA	TION:	\bigcirc	N		D-FILTER	ED: Y Noment Type:	FILTE	R SIZE:	μm				DUI	PLICATE:	N)
		PLE CO	NTAINE CATION	R			SAMF	LE PRESERV	ATION							
SAMPLE CODE	ID #CONTAI	NERS	MATER		V	OL	PRES. USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL P	т		INTE	NDED /	ANALY	'SIS	
17M8CC	2- 2		CG		40	mL	HCL	None	N/A				826	0B		
17MBCC	C- 1		PE		250) mL	HNO3	None	*				Fe)		
												Ø				
												6				4
												.06				
														- 1)		
DEMARKS	<u>. </u>						1							- 10		J.
REMARKS			407		L1_\ ·	MILLE	103									
Sky Conditi	Sample pH as ions: <u>C/o</u> nd Speed and	udi	A	mbien	t Air Te	mperature:	34°C									2-
Grundfos P	mp: CPM ump Setting: g Length: /3	97	ill/Discha P_ Hz. F	arge Perista	Itic Pum	_ sec, Pre	essure #	PSI								
C	ommen	ts:														

Field Cleaned ESP flus 4 w/ dist. water Lot # 060317154 w F 233

Month 3/8" tubing Lot # 298 # 266-8

Pump to tubing then used at well MW-22

GROUNDWATER SAMPLING LOG

SITE	litaria Carrati	Ozzta							SITE							
WELL NO	itrus County - : MW-22	- Centra	ii Lanoni			S	AMPLE ID: 17	M8CC-22	LOCATIO	N: Lecanto	o, Floric	la	DA.	TE: d	1/	
								JRGING	DATA	· · · · · · · · · · · · · · · · · · ·			0/	8	7/17/1	7
	R (in) 2"pvc		TETER (From 105.	REEN LENGT 57 to 125.57	TH: 20 ft 7 BTOC	STATIC D	ER (feet):	108.	53	PURGE	PUMP	TYPE:	
1 WELL	. VOLUME =	(125.5	7 fee	t – /	8.5	TOTAL WELL 3 feet) X 0.1	6 gallons/for	ot = 2.7	TH TO WATE	ER) X W	VELL C	APACITY ured with: MP				ETHOD: 2.5 N/A Full Volumes
	ENT VOLUME ut if applicable		E: 1 EC		MENT	VOL. = PUMP 0 gallons	VOLUME + (+ (0.006		DACITY >		NG LE	NGTH) + FLC 0.123	W CELL gallons		ME gallons	
	UMP OR TUE		7			L PUMP OR 1 TH IN WELL (1		P IN	JRGING ITIATED AT:			RGING DED AT:			L VOLUME	
TIME	PURGED PURGED RATE WATER (standard units) (°C) (μS/cm) (Mg/L) (NTUs)								TURBIDITY (NTUs)	(des	LOR cribe)	ODOR	ORP (mVolts)			
1639	2.7	2.	7	0.:	۷	108.63	6.63	24.8	480	0-21	6	27.5	Whi	dy	None	-88.0
1653	2.7	5,4			!	108.63	6.62	24.7	487	٥. ٤ 8		7.38	1		/	-62.1
1707	2.7	8.1		\dashv	_	108.63	6.64	24.7	488	0.18		4.69	CLE	ar	<u> </u>	-55.9
1721	2.7	10.	8	V		108.63	6.61	24.7	492	0.16		3.91	4		<u>Y</u>	-48.0
320													-			
		l					<u> </u>					-			İ	
							SA	MPLING	DATA							
	BY (Print) / Assick / Jones.			soc. Ir	nc.			(S) SIGNATI		: 1		SAMPLING AT: / 7;	INITIATI	ĒD .	SAMPLING AT: 27	ENDED
PUMP OR DEPTH IN	TUBING WELL (feet):	117	7			AMPLE PUMP	VOC Sam	pling Rate 10	0-400 ml/mir	TUI	BING N	ATERIAL CO		SAN	MPLING EQ DE: ESP	
FIELD DE	CONTAMINA	TION:	(V)	N		IELD-FILTERE) FILT	ER SIZE:	μm				DUF	PLICATE: -	N
		PLE CO PECIFIC		ER			SAMP	LE PRESER	VATION							
SAMPLE		INERS	MATE			VOL	PRES. USED	TOTAL VOL ADDED IN FIELD (mL	FINAL P	Н		INT	ENDED.	ANALY	SIS	
17M8C			CC			40 mL	HCL	None	N/A				826	0B		
17M8C	C- 1		PE		2	250 mL	HNO3	None	≤ 2				Fe)		
					_											
					-											
			, Ç		-				,							
					-											
				-	+											
REMARKS	S: Well screen	length i	is from b	pelow	top of	casing (BTOC	C).									
Sky Condit	Sample pH as tions:	ude	A	Ambie	nt Air	at <u>MW- 2</u> Temperature:	34°C									,
Bladder Pu Grundfos F	ump: CPM	, Refi	II/Discha	arge	_	sec, Prestump Setting: #	ssure	PSI								
(Commen	its:							8							(0)

This is the first time that this well has ever been sampled.



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 111 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct. Cary, NC 27511 (919) 467-3090 Fax (919) 467-3515 www.encolabs.com

Client Name	Project Number					Request	ed Analyses				Requested Turnaround
Jones Edmunds & Associates, Inc. (JO006						The same					Times
Address	Project Name/Desc		Chlorida)	-							Note : Rush requests subject to
730 N.E.Waldo Road Bidg.A	Citrus Co. LF										acceptance by the facility
City/ST/Zip	PO # / Billing Info		Chloride, Vinyl	1					1		
Gairesville, FL 32641			ride							150	Standard
Tel Fax	Reporting Contact		용								Staridard
(352) 377-5821 (352) 377-3166	Elizabeth Kenne	elley									Expedited
Sampler(s) Name, Affiliation (Print) Steve Messick,	Billing Contact		thy.	Total							
Sampler(s) Signature Accounts Payable Site Location / Time Zone			e,Me	10						14.	Due//
Sampler(s) Signature Site Location / Time Zone			8260B (Benzana, Mathylene	5							Lab Workorder
Steve march locanto, Fl. /EST			826 (Ber	Iron							
	1 3-1-110,	1			Preservation	n (See Code	s) (Combine a	s necessary)	11		AA05866
Item# Sample ID (Field Identification) Collection Date	Collection	Matrix Total # of						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
m W = 19h	Time Comp / Grab	(see codes) Containers							1		Sample Comments
1 (17m8cc-17b) 8/17/17	1357 6 -	GW 3	2	1							
2 (17m8cc -18D) EQUELK#1	1540 G	GW 3	2	1							No.
Y (17MACC-EDB1)	1555 6	0 3	2	1							Field cleaned Elf
4 (17 m8CC-22)	1723 G	EW 3	2	1					1000		SIUSE WISIS C. WALLE
5 (17 pm 8cc - 781)		0 2	2					Well-yell			DA/RC
(","			and a							-	any at
1.3											
18			-								
15.											
			19								
**											
	0		< Tota	al # of C	ontainers						
Sample Kit Prepared By Date/Time Relinquished By Date/Time Relinquished By									1	Date/Time 8/15/17	
ECG 8/11/0/82	Relinquished By		8	111/	17 18:0	25	P Am	-me		4	@ 1930
Comments/Special Reporting Requirements	1		Date/Tim	P/17/1	7 Receive	Ву	- per	BOX /	1	Date/Time	
Samples stopped by Corryliand	1 time ?	Messick		(0)	1800						
Samples stopped by Graylound Eur Prickety From Gainesville, Fl to Onlando, Fl.	Relinquished By	2		Date/Tim	е	Receive	d Ву				Date/Time
+ Oxlando Fr											1 4
	Cooler #'s & Temps on Rece	eipt = eight					11.119		Condition U	Jpon Rec	ceipt
/ Gooler											
Matrix : CW Groundwater CO Cail DW Drieline Water CE Calling to Ch			11 (01)							Accept	table Unacceptable

DEP-SOP-001/01

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FT 1500 Field Measurement of Dissolved Oxygen (D.O.)

SITE NAME <u>Citrus</u>	County LF.	DA	TE	7/17/17					
NSTRUMENT (MAKE/MODEL#) YSI 556 MPS INSTRUMENT # YSI - GNV - 03									
PARAMETER: [check of	only one]								
☐ TEMPERATURE	☐ CONDUCTIVITY	☐ SALINITY	□ рН	ORP					
TURBIDITY	☐ RESIDUAL CI	X DO	OTHER_						
STANDARDS: [Specify the values, and the date the stand	ne type(s) of standards used lards were prepared or purd	d for calibration, the orig chased]	nin of the stan	dards, the standard					
Standard A <u>Moist</u>	Air Chamber								
Zero D.O. Calibration	Check Date <u>06/29</u>	17 Reference	Meter Boo	k <u>Steve - 01</u>					
(Zero D. O. checke	d with standard quarte	erly)							

\ <u>=</u> 5	10 0. 0.	011001101	d William	andara qu	actionly)				
DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE (mg/L)	Temper- ature (Deg C)	INSTRUMENT RESPONSE (mg/L)	(+/- 0.3 mg/L) DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/08/17	1126	A	7.49	30.5	7.89 /7.56	0.07	Yes	Inet.	Sum
*	1749	A	7.73	28.7	7.86	0.13	Yes	cont.	Som
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FT 1100 Field Measurement of Hydrogen Ion Activity (pH)

SITE NAME Cotaus County LF. DATE 8/17/17											
INSTRUMENT (MAKE/MODEL#) YSI 556 MPS INSTRUMENT # YSI - GNV - 03											
Instrument Gain <u>-5.2.74</u>	Date Det	ermined <u>8//7</u>	/// (Acc	eptable Gain	= Acceptal	ole Slope)					
(Range -5.597 to -4.579 ac	ceptable)	(Check In	, strument G	ain at the beg	ginning of e	ach week)					
PARAMETER: [check only	one]		19								
☐ TEMPERATURE	CONDUC	TIVITY	SALINITY	ХрН	☐ ORP						
☐ TURBIDITY ☐] RESIDUA	L CI	DO	☐ OTHE	R						
STANDARDS: [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]											
Standard A 7.00 SU Lot # 以口 Expiration Date 10/2018 Standard B 4.01 SU Lot # ひし Expiration Date 12/2018											
Standard B 4.01 SU Lot # UO! Expiration Date 12/2018											
Standard C 10.00 SU Lot # UF/ Expiration Date 11/2018											
Standard D 6.86 SU Lot # TQ1 Expiration Date 10/2017											
DATE (yy/mm/dd) TIME STD (A, B, C)	STD VALUE (SU)	INSTRUMENT RESPONSE (SU)	(+/- 0.2 SU) DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS					
7/08/17 1/28 A	7.00	7.15/2.00	Ø	Yes	Init.	Sm					
1120 B	4.01	4.07 4.01	Ø	Yes	Init.	Som					
1131 C	10.00	10.00	Ø	Yes	Init.	Sim					
1133 D	6.86	6-91	0.05	Yes	Init.	Sm					
1751 A	2.00	7.07	0.07	yes	cont.	fm					
V 1752 B	4.01	4.06	0.05	Yes	Cont.	Sm					
					(4)	·					
į l											

DEP-SOP-001/01 FT 2100 Oxidation – Reduction Potential (ORP)

Page	 of	_/

SITE NAMEcitr	is County - LF.		DATE	8/17/17
INSTRUMENT (MAK PARAMETER: [chec	E/MODEL#) <u>YSI 556 MI</u> ck only one]	PS INSTRUMEN	NT# <u>YSI-</u>	GNV - 01
☐ TEMPERATURE ☐ TURBIDITY	☐ CONDUCTIVITY ☐ RESIDUAL CI	☐ SALINITY	□ pH □ OTHER	X ORP
STANDARDS: [Special values, and the date the s	ify the type(s) of standards us fandards were prepared or pu	ed for calibration, the ourchased]	origin of the sta	ndards, the standard
	bell's Solution Mixed Sock Solution Lot # 16M	•	tion Date ation Date 2	····

DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE (mV)	Temper- ature (Deg C)	INSTRUMENT RESPONSE (mV)	(+/- 10 mV) DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/08/17	1134	A	225.5	26.9	221.8/225.5	ø	Yes	Init-	form
¥	1754	A	225.0	27.3	224.3	0.7	yes	cont.	Som
				ı'					
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DEP-SOP-001/01 FT 1200 Field Measurement of Specific Conductance

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SITE NA	ME C	itaus Co	ranty - 1	!F		DATE	8/17/17	
INSTRU	MENT (I	MAKE/MO	DEL#)	YSI 556 MPS	IN	STRUMENT	# <u>YSI - GI</u>	NV - 03
PARAM	ETER: [check only	y one]					
☐ TE	MPERATI	JRE >	CONDUCT	TIVITY SA	ALINITY	□рН	☐ ORP	
☐ TU	RBIDITY		RESIDUAL	. CI 🔲 Do)		ER	
STANDA values, and	RDS: [ad the date	Specify the t the standard	ype(s) of star ds were prepa	ndards used for ca ared or purchasedj	libration, th I	e origin of the s	standards, the s	standard
Stand	dard A _	1413 uS	/cm Lot	# Ual	Expi	iration Date	10/201	18
Stand	dard B _	447 uS	/cm Lot	# 451	Ехр	iration Date		8
Stand	dard C _	84 uS	/cm Lot	# UP/	Ехр	iration Date	,	18
Stand	dard D _	uS	/cm Lot	#	Ехр	iration Date	}	
DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE (uS/cm)	INSTRUMENT RESPONSE (uS/cm)	(+/- 5%) DEV	CALIBRATE D (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
7/08/17	1136	A	1413	1428/14/3	8	Yes	Init.	Som
1	1138	8	447	440	<2	Yes	Int	Sim
	1139	C	84	85	<2	Yes	Init.	Sim
	1755	C	84	86	<3	yes	Cont.	Sou
	1757	B	447	441	<2	Yes	Cont.	Son
*	1758	A	1413	14 17	</td <td>Yes</td> <td>Cont.</td> <td>Som</td>	Yes	Cont.	Som
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DEP-SOP-001/01 FT 1600 Field Measurement of Turbidity

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SITE NAMEC.ta	ALS County	LF.		D	ATE	8/17/17
INSTRUMENT (MAKI	E/MODEL#) _	Hach 210	0P	INSTRUM	IENT#_	TB-GNV- 01
Instrument Calibration	on Date: <u>06/29</u>	<u>9/17</u> Ref	ference l	Meter Boo	k: Steve -	01
PARAMETER: [chec	k only one]					
☐ TEMPERATURE		CTIVITY	☐ SALIN	NITY	☐ pH	☐ ORP
X TURBIDITY	RESIDUA	AL CI	□ DO		OTHER	
STANDARDS: [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]						
Standard AGel	Standard 3.	61 NTU				
Standard BGel	Standard 42	2.7 NTU				
Standard C Gel	Standard 43	39 NTU				

Stand	dard D _	Measure	ement Ce	ell + Distilled \	Nater < 0.2	25NTU		
DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE (NTU)	INSTRUMENT RESPONSE (NTU)	(+/- 6.5%) DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	SAMPLER INITIALS
17/08/17	1141	A	3.61	3.66	42	Yes	Init.	Som
	1/4/	B	42.7	43.4	42	yes	Init.	Smy
	1142	D	0.25	0.22	_	_	Init.	Som
	1759	A	3.61	3.66	<2	Yes	Cont.	pa
V	1800	B	42.7	42.5	<1	Je5	Cont.	San
X	1801	D	-0.25	0-2H		_	Cont.	Som
							,	ж.
						3,000		
						2		
	1							
	:=							
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DEP-SOP-001/01 FT 1400 Field Measurement of Temperature

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SITE NAME in Ho		DATE 1/0	5/16		
NSTRUMENT (MAKE/MODEL#) <u>YSI 556 MPS</u> INSTRUMENT # <u>YSI - GNV - 03</u> PARAMETER: [check only one]					
X TEMPERATURE	CONDUC.	TIVITY	SALINITY	□рН	☐ ORP
☐ TURBIDITY	RESIDUA	L CI	□ DO	☐ OTHER	
STANDARDS: [Specify the type(s) of standards used for calibration, the origin of the standards, the standard values, and the date the standards were prepared or purchased]					
Standard A NIST Th	ermometer	5.0 °C	#2E4826	#94748 Cal Da	ate: 9/21/15
Standard B NIST Th	ermometer	25.0 °C	#2E4826	#94748 Exp. [Date: 01/05/17
Chandend C NICT TI		40.000	"0 = 1000		

Stariu	aru C IN	io i men	nometer	· 40.0 °C	#2E4826			
DATE (yy/mm/dd)	TIME (hr:min)	STD (A, B, C)	STD VALUE (°C)	INSTRUMENT RESPONSE (°C)	(+/- 0.5°C) DEV	CALIBRATED (YES, NO)	TYPE (INIT, CONT)	CALIBRATOR INITIALS
16/01/05	1441	С	40.0	40.1	0.1	yes	Init	SMM
16/01/05	1445	В	25.0	25.1	0.1	yes	Init	SMM
16/01/05	1452	Α	5.0	5.1	0.1	yes	Init	SMM
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REFERENCE FACTORS FOR FIELD SAMPLING DATA SHEETS

WELL CAPACITY (Gallons Per Foot):

0.75" = 0.02

1" = 0.04

1.25" = 0.06 $2^{2} = 0.16$

 $3^{\circ} = 0.37$

 $4^n = 0.65$

 $5^{\circ} = 1.02$

 $6^{\circ} = 1.47$

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

MATERIAL CODES:

AG = Amber Glass;

CG = Clear Glass;

PE = Polyethylene;

PP = Polypropylene;

S = Silicone; T = Teflon;

O = Other

PP =

SAMPLING/PURGING

APP = After Peristaltic Pump ESP = Electric Submersible Pump

B = Bailer

BP = Bladder Pump

Peristaltic Pump

EQUIPMENT CODES:

RFPP = Reverse Flow Peristaltic Pump O = Other (Specify)

SM = Straw Method (Tubing Gravity Drain)

VT = Vacuum Trap

STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: \pm 0.2 units

Temperature: + 0.2 °C

Specific Conductance: +5%

Dissolved Oxygen: all readings < 20% saturation (see Table FS 2200-2)

optionally, \pm 0.2 mg/L or \pm 10% (whichever is greater)

Turbidity: all readings < 20 NTU

optionally \pm 5 NTU or \pm 10% (whichever is greater)

gal/min	= ml/min	gal/min =	ml/min	gal/min =	ml/min
0.026	100	0.211	800	0.396	1500
0.053	200	0.238	900	0.423	1600
0.079	300	0.264	1000	0.449	1700
.0.106	400	0.291	1100	. 0.476	1800 .
0.132	500	0.317	1200	0.502	1900
0.159	600	0.343	1300	0.528	2000
0.185	700	0.370	1400		

GENERAL SAMPLING NOTES AND CONVENTIONS

- 1. All sampling was performed according to the FDEP Standard Operating Procedures as listed in DEP-SOP-001/01 (Field Procedures) dated March 31, 2008 (Effective 12/3/08).
- 2. Field cleaning and decontamination has been done in accordance with DEP-SOP-001/01 (Field Procedures), FC-1000.
- 3. Tubing and filter cartridge lot numbers for all sampling points and wells are the same as those listed for that tubing type on the Equipment Blank data form(s) covering that equipment system,
- 4. Tubing suppliers/manufacturers are named in the following list:

•	HDPE disposable tubing	US Plastics
•	Tygon tubing	Cole Parmer
	Norprene tubing	Cole Parmer
6	Silicon tubing	Cole Parmer

- 5. Field instrument calibrations were conducted in accordance with DEP-SOP-001/01 (Field Procedures), FT1000.
- 6. Calibration solution and gas suppliers are named in the following list:

•	pH calibration solutions	Cole Parmer/Oakton
•	Conductivity calibration solutions	Cole Parmer/Oakton
•	Dissolved Oxygen probe membranes	YSI
•	ORP calibration solutions	YSI
•	Turbidity calibration solutions/gel standards	Hach
•	TVA calibration gas cylinders	Praxair
•	Eagle RKI calibration gas cylinders	Praxair
	-	

- 7. All samples collected were grab samples.
- 8. All sample containers requiring added preservative were supplied pre-preserved from the laboratory. No additional preservative was added in the field.
- 9. A combination of a front-bumper-mounted gasoline generator and an electric air compressor or compressed nitrogen are used to power the Grundfos electric submersible pump and bladder pump systems, as appropriate.
- 10. Screened intervals are assumed to be at the bottom of all monitoring wells sampled.
- 11. Well purge method indications on the field data sheets correspond to DEP-SOP-001/01 (Field Procedures), FS2000 sections as indicated below:

Data Sheet Designation	SOP Designation
2.3	FS 2212.2.3
2.4	FS 2212.2.4
2.5	FS 2212.2.5
2222 or 3.7.1	FS 2222 or 2212.3.7.1
Private	FS 2215.1 & 2215.2 (Jones Edmunds SOP for private
F F F F F F F F F F F F F F F F F F F	well sampling)

Comments or Exceptions