Biological Assessment of

City of Graceville Advanced Wastewater Treatment Facility

Jackson County

NPDES # FL0038555

Sampled November 14, 2016

July 2017

Biology Program

DEP Laboratory

Division of Environmental Assessment and Restoration

DEP Laboratory Quality Manual

NELAC Certification No. E31780

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EPA End Sheet

The purpose of this investigation was to determine the discharge's effects on the biota of the receiving waters. Biological assessments are prepared by DEP staff to provide information for review of NPDES permit renewal applications. Biological assessments, in conjunction with other information concerning the subject facility and its receiving-water body, are used to determine appropriate permit conditions**.**

Facility Overview

The City of Graceville Advanced Wastewater Treatment Facility is a Municipal Domestic Wastewater Treatment Facility. The effluent is discharged via pipe into Holmes Creek, a Class III Fresh Water (see map Appendix A). The permitted design flow of the wastewater system is 1.1 million gallons per day (MGD). The annual average daily flow for November 2015 to October 2016 for monitoring location FLW-01 was 1.098 MGD. The plant intermittently discharges using a sequencing batch reactor and was discharging at the time of this survey. The flow was 0.494 MGD on the day of sampling, as reported by the facility.

See the Facility Summary (Appendix B) for a description of the facility, summary of permit limits, and Discharge Monitoring Report (DMR) information.

Methods

Chemical and biological comparisons were made between a Control Site (located in Holmes Creek beginning 6 m upstream of the discharge site and ending 106 m upstream of the discharge site) and a Test Site (located in Holmes Creek beginning 106 m downstream of the discharge site and ending 6 m downstream of the discharge site). The effluent was collected as both composite samples and grab samples from monitoring location EFF-01, after dechlorination. During this sampling event, 24-hour time composite effluent samples were collected instead of 16-hour flow proportioned effluent samples as required by the permit due to the inability to collect flow composite samples using the facility's equipment.

All field and laboratory methods followed DEP Standard Operating Procedures (see http://www.dep.state.fl.us/labs/library/lab_sops.htm and http://www.dep.state.fl.us/water/sas/sop/sops.htm for details) and met DEP quality assurance/quality control standards (see http://www.dep.state.fl.us/water/sas/qa/index.htm). Explanations of specific methods and measurements can be found in Appendix C.

The following were involved in this investigation: Nathan Mulkey, Frank Butera, and Mike King (DEP Northwest ROC), Mark Sumner (DEP Northwest District, Panama City), and the DEP Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Mike Tanski, Andrew Tintle, and Adrienne Pennington).

Results

Physical and Chemical Parameters (See Table 1 and Appendices C, D, E, and F)

- Habitat Assessment scores were similar at the Test Site (115) and Control Site (116), which places both sites in the Suboptimal category. While the Test Site had better substrate diversity, both sites had low substrate availability and suboptimal water velocity. Both sites had some degree of habitat smothering but the Test Site scored much lower for this parameter.
- The pH of the effluent, Test Site, and Control Site complied with the Class III Freshwater Quality Criterion (62-302.530(96)(c), F.A.C.) and effluent permit limits.
- The dissolved oxygen of the effluent, Test Site, and Control Site complied with the Class III Freshwater Quality Criterion (62-302.530(58)(a), F.A.C.) and effluent permit limits. Holmes Creek has Site Specific Alternative Criteria (SSAC) from June 1 through September 30 for dissolved oxygen. The minimum during that timeframe is 4.0 mg/L. Class III Freshwater Quality Criteria apply because this sampling event took place in November.
- The specific conductance of the Test and Control Sites complied with Class III Freshwater Quality Criterion (62-302.530(46), F.A.C.).

Organic Constituents (See Appendix F)

- No organic constituents were detected in the effluent grab, Test Site, Control Site, or field blank samples.

Nutrients (See Table 2 and Appendix F)

- Receiving waters for this facility fall within the Panhandle West Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). The limits for the annual geometric mean concentrations are 0.06 mg/L for total phosphorus and 0.67 mg/L for total nitrogen. This FYI event can only provide single sample results; therefore, compliance should be determined with additional sampling events.
  http://ca.dep.state.fl.us/mapdirect/?focus=nutrientcriteria

- The nutrient levels of the effluent, Test Site, and Control Site samples complied with effluent permit limits and/or Class III Freshwater Quality Criteria (62-302.530, F.A.C.). Time composite effluent samples were analyzed instead of flow proportioned effluent samples as required by the permit.
- Total phosphorus and ortho-phosphate in both the Test and Control Site samples were an order of magnitude lower than the effluent sample value. Nitrogen and total ammonia values in both the Test and Control Site samples were lower than effluent values. The Test Site sample contained higher levels of ortho-phosphate, total phosphorus, total ammonia, nitrate and nitrite, and total nitrogen than the Control Site sample, indicating nutrient enrichment due to the effluent.

Analytical Water Chemistry (See Table 2 and Appendix F)

- The amount of effluent total residual chlorine measured after dechlorination complied with the effluent permit limits.
- Total suspended solids and carbonaceous biochemical oxygen demand of the composite effluent sample complied with effluent permit limits. Time composite effluent samples were analyzed instead of flow proportioned effluent samples as required by the permit.
- Chlorophyll *a* was detected at a low level in the effluent sample and was undetected in both the Test and Control Site samples.
- Turbidity in the Test and Control Site samples complied with the Class III Freshwater Quality Criterion (62-302.530(117), F.A.C.).

Microbiology (See Table 2 and Appendix F)

- Fecal coliforms were detected in the effluent, Test Site, and Control Site samples at levels that complied with Class III Freshwater Quality Criteria (62-302.530(6), F.A.C.) and/or facility permit limits.

Toxicity Whole Effluent Test (See Table 2 and Appendix F)

- A chronic definitive and chronic screening bioassay were performed November 15 through November 22, 2016.
- The effluent composite sample IC25 for the chronic definitive bioassay with the fish, *Pimephales promelas*, was calculated as being greater than 100% effluent, and therefore complied with effluent permit limits.
- The chronic definitive *Ceriodaphnia dubia* bioassay was invalidated due to a reproduction issue in the control. Prior to test initiation, there was a suspected but unproven issue with the control water used in the *C. dubia* definitive test; therefore, a chronic screening bioassay was performed concurrently using a different control water. The calculated IC25 in the *C. dubia* screening test was >100% effluent sample. This result complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and, by inference, with the permitted limit but was not derived by the permitted test.
- For more information or to obtain copies of the toxicity bench sheets, please contact the Biology Laboratory at 850-245-8177.

Metals (See Table 3 and Appendix F)

- All metals detected in the effluent composite samples were present at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and effluent permit limits.
- All metals in Test and Control Site samples were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F. A. C.).
- Copper and lead were detected in the field blank. There was known contamination for copper, lead and nickel with the Northwest District, Pensacola deionized water lines. The issue was resolved through the installation of a Teflon tubing and spigot. These detects appear to be due to the water line contamination. Further testing is planned to pinpoint the source.

Algal Growth Potential (See Table 4 and Appendices C and F)

- The measured AGP values in the effluent and Test Site samples using the freshwater species, *Pseudokirchneriella subcapitata*, were similar and higher than the Control Site sample, suggesting nutrient enrichment at the Test Site due to the effluent. The analytical chemistry suggests that the effluent and the Test Site are nitrogen-limited, and the Control Site is nitrogen-phosphorus co-limited.
- The measured AGP results for all samples were within the range suggested to be representative of high productivity for freshwaters (Miller et al. 1978).

Macroinvertebrates (See Tables 5 and 6)

- Quantitative macroinvertebrate data from four replicates were collected from Hester Dendy samplers at the Test and Control Sites. The Shannon-Weaver diversity scores were similar at both the Test and Control Sites (4.31 and 3.79, respectively), though the Control Site had a much higher number of individuals counted. Both sites were dominated by dipterans and had sensitive taxa present.
- Qualitative macroinvertebrate data from dipnet samples indicated that the macroinvertebrate communities at the Test and Control Sites were similar. The Test Site scored 67 A on the Stream Condition Index (SCI) and the Control Site scored 69 A, indicative of well-balanced faunal communities (see Appendix C for an explanation of SCI). Both sites had similar numbers of Ephemeroptera, Trichoptera, long-lived, sensitive, and clinger taxa. The percentage of suspension feeders was higher at the Test Site than at the Control Site. The Control Site had a higher percentage of tanytarsini individuals (which tend to decline with human disturbance) but a similar percentage of very tolerant individuals as the Control Site (see Appendix C for an explanation of how these SCI metrics typically respond to human disturbance). Overall, there were no negative effects on macroinvertebrates at the Test Site that were attributable to the effluent.
- For more information or to obtain a copy of the taxa lists, please contact the Biology Laboratory at 850-245-8177.

Flora (See Appendices C and E)

- This FYI event can only provide single sample results; therefore, Numeric Nutrient Criteria (NNC) compliance should be determined with additional sampling events. Two temporally independent Linear Vegetation Survey (LVS) samplings showing a Coefficient of Conservatism score ≥ 2.5 and the frequency of occurrence of Florida Exotic Plant Pest Council (FLEPPC) exotic taxa ≤ 25% are needed to achieve NNC floral metrics. Sites with no observed macrophytes are considered to achieve the LVS component of the NNC. Two temporally independent Rapid Periphyton survey (RPS) samplings with ≤ 25% rank 4-6 (algae >6mm thick) coverage are needed to achieve NNC floral metrics.
- Both Test and Control Sites lacked aquatic macrophytes for the LVS.
- The RPS was performed at the Test and Control Sites. The canopy cover was measured at 90% for the Test Site and 89% for the Control Site. Thick algal growth is not expected at heavily shaded sites. At both sites, 0% of the sampled points had algal length measurements greater than 6mm.

Conclusion

The annual average daily flow for the 12 months prior to sampling is near the permitted capacity. Nutrient and AGP values indicate nutrient enrichment due to the effluent, though there is no evidence of an impact on the macroinvertebrate or floral communities.

Literature Cited

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Table 1. Effluent limits, Class III Freshwater Criteria, and field parameters

City of Graceville WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Grab	Test Site	Control Site
Habitat Assessment	-	-	-	-	115	116
Sample Depth	m	-	-	0.2	0.2	0.2
Temperature	C	-	Report	22.8	15.5	18.3
pH	S.U.	6.0 - 8.5	6.5 - 8.5	7.4	6.1	6.2
Specific Conductance	umhos/cm	≤ 1,275	-	-	198	179
Salinity	ppt	-	-	-	0.1 c	0.1c
Dissolved Oxygen	% saturation	≥ 67	-	96.4 c	83.3 c	88.3 c
Dissolved Oxygen	mg/L	-	≥5.0 s	8.3	8.3	8.3
Flow	MGD	-	1.1	0.494[3]	-	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
s - Single sample
[3]- Result obtained from facility monitoring data

Table 2. Effluent limits, Class III Freshwater Criteria, analytical water chemistry, microbiological, and toxicological data

City of Graceville WWTF	Units	Class III Criteria	Effluent Permit Limits	Effluent Composite[5]	Effluent Grab	Test Site	Control Site
Ortho-phosphate	mg P/L	-	-	-	0.76	0.064	0.009 I
Total Phosphorus	mg P/L	-	≤ 2.0 p	0.91	0.85	0.082	0.017
Total Ammonia	mg N/L	-	-	0.071	0.056	0.015	0.008
Un-ionized Ammonia	mg N/L	≤ 0.02 s	-	-	-	< 0.02 c	< 0.02 c
Nitrate and Nitrite	mg N/L	-	-	0.26	0.076	0.22	0.10
Total Kjeldahl Nitrogen	mg N/L	-	-	0.45 V	0.69 V	0.15 I	0.12 I
Organic Nitrogen	mg N/L	-	-	0.38 c	0.63 c	0.14 c	0.11 c
Total Nitrogen	mg N/L	-	≤ 6.0 p	0.71 c	0.77 c	0.37 c	0.22 c
Total Organic Carbon	mg C/L	-	-	4.4	3.3	1.7	1.7
Chlorophyll *a* - Corrected	ug/L	-	-	-	0.69 I	0.55 U	0.55 U
Phaeophytin	ug/L	-	-	-	0.40 U	0.40 U	0.40 U
CBOD, 5 day, N - inhibited	mg/L	-	≤ 10 p	3.5 A	-	1.5 I	2.1
Total Residual Chlorine	mg/L	≤ 0.01	≤ 0.01	-	0.01[3]	-	-
Total Suspended Solids	mg/L	-	≤ 10 p	4 I	-	3 I	2 I
Turbidity	NTU	< 29 t	-	-	1.2 A	4.7 A	5.6
Color (true)	PCU	-	-	-	5.5 I	18	22
Chloride	mg Cl/L	-	-	-	31	6.0	3.1
Fluoride	mg F/L	≤ 10.0	-	-	0.078 I	0.045 I	0.042 I
Sulfate	mg SO4/L	-	-	-	23	2.7	0.80
Microbiology							
Fecal Coliforms	cfu/100 mL	≤ 400s #	≤ 800s	-	20 B	156[4]	140[4]
Toxicity (IC25, Chronic definitive & screen, % effluent)[1]							
Bioassay - Water flea (Ceriodaphnia dubia)IC25	% effluent	-	≥ 100 p	No Result	-	-	-
Bioassay - Water flea (Ceriodaphnia dubia)IC25[1]	% effluent	-	≥ 100 p	> 100 p	-	-	-
Bioassay - Fish (Pimephales promelas)IC25	% effluent	-	≥ 100 p	> 100 p	-	-	-

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
p – 16-hour flow proportioned composite
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptance range
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
V - Analyte was detected in both sample and method blank
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)
[1] - Screening test for C. dubia performed after chronic definitive was invalidated
[3]- Result obtained from facility monitoring data
[4]- Fecal coliform test by membrane filter method conducted by the Water Spigot Overflow Laboratory
L - Actual value is known to be greater than value given (appears in Appendix F)
J - Estimated value (appears in Appendix F)
[5]- 24-hour timed composite samples analyzed

Table 3. Effluent limits, Class III Freshwater Criteria, and analytical metals data

City of Graceville WWTF	Units	Effluent Permit Limits	Effluent Class III Criteria	Effluent Composite[5]	Test Site Class III Criteria	Test Site	Control Site Class III Criteria	Control Site	Blank
Hardness	mg/L	Report	-	149 c	-	100 c	-	91.6 c	0.35 c
Arsenic	ug/L	-	≤ 50	0.74	≤ 50	0.40	≤ 50	0.37	0.050 U
Cadmium	ug/L	-	≤ 0.363 b	0.121	≤ 0.272 b	0.020 U	≤0.254b	0.020 U	0.020 U
Calcium	mg/L	-	-	46.2	-	36.7	-	34.0	0.075 U
Chromium, Total [2]	ug/L	-	≤ 119 b	0.21	≤ 86.5 b	0.51	≤ 80.2 b	0.45	0.050 U
Copper	ug/L	≤ 13.1 b	≤ 13.1 b	4.28	≤ 9.36 b	0.36 I	≤ 8.66 b	0.10 U	0.62
Iron	ug/L	-	≤ 1,000	62 I	≤ 1,000	340	≤ 1,000	410	30 U
Lead	ug/L	-	≤ 5.28 b	0.23	≤ 3.2 b	0.11 I	≤ 2.85 b	0.11 I	0.67
Magnesium	mg/L	-	-	8.12	-	2.14	-	1.64	0.040 U
Nickel	ug/L	-	≤ 73 b	0.67	≤ 52.4 b	0.17 I	≤ 48.5 b	0.077 I	0.050 U
Potassium	mg/L	-	-	9.8	-	1.1 I	-	0.41 I	0.30 U
Selenium	ug/L	-	≤ 5.0	0.20 U	≤ 5.0	0.20 U	≤ 5.0	0.20 U	0.20 U
Silver	ug/L	-	≤ 0.07	0.0050 U	≤ 0.07	0.0050 U	≤ 0.07	0.0050 U	0.0050 U
Sodium	mg/L	-	-	26.3	-	3.9	-	1.9 I	0.50 U
Zinc	ug/L	-	≤ 168 b	29	≤ 120 b	5.0 U	≤ 111 b	5.0 U	5.0 U

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
[2] - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III
b - Value is calculated based on hardness, (62-302.530(3))
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
c - Value is calculated
[5]- 24-hour timed composite samples analyzed

Table 4. Measured and predicted algal growth potential (AGP)

City of Graceville WWTF								
Location	**Test Species**	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (OP) ± 20%**	**Predicted AGP (TN) ± 20%**	**Predicted AGP (TP) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
Effluent Grab	*Pseudokirchneriella subcapitata*	13.7	5 ± 1	326.8 ± 65.4	29.1 ± 5.8	365.5 ± 73.1	0.2	0.9
Control Site	*Pseudokirchneriella subcapitata*	6.42	4.1 ± 0.8	3.9 ± 0.8	8.4 ± 1.7	7.3 ± 1.5	12	12.9
Test Site	*Pseudokirchneriella subcapitata*	16.6 A	8.9 ± 1.8	27.5 ± 5.5	14.1 ± 2.8	35.3 ± 7.1	3.7	4.5

A - Value reported is the mean of two or more determinations

Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN), and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus

Table 5. Macroinvertebrate Hester-Dendy samples – quantitative

City of Graceville WWTF	Test Site	Control Site
Summary Statistics		
Shannon-Weaver Diversity	4.31	3.79
Number of Taxa	39	41
Number of EPT Taxa	6	6
Percent Dominant Taxon	20.2	38.6
Dominant Taxon Name	*Tanytarsus* sp. M Epler (Diptera)	*Tanytarsus* sp. M Epler (Diptera)
Total Number of Individuals (counted)	216 *	392
Total Number of Individuals (#/m^2)	431	780
Community Composition: Percent of total		
Amphipoda	0.5	0.0
Coleoptera	0.9	0.3
Diptera	79.2	89.8
Ephemeroptera	16.2	6.9
Gastropoda	0.9	1.3
Odonata	0.5	0.3
Oligochaeta	0.0	0.8
Plecoptera	0.5	0.0
Trichoptera	1.4	0.8
Other	0.0	0.7
Functional Feeding Groups: Percent of total		
Burrowing Deposit Feeders	0.0	0.8
Predators	8.3	7.8
Scrapers	10.2	5.3
Shredders	4.2	4.0
Surface Deposit Feeders	46.0	52.2
Suspension Feeders	31.3	29.9
Unknown	0.0	0.0

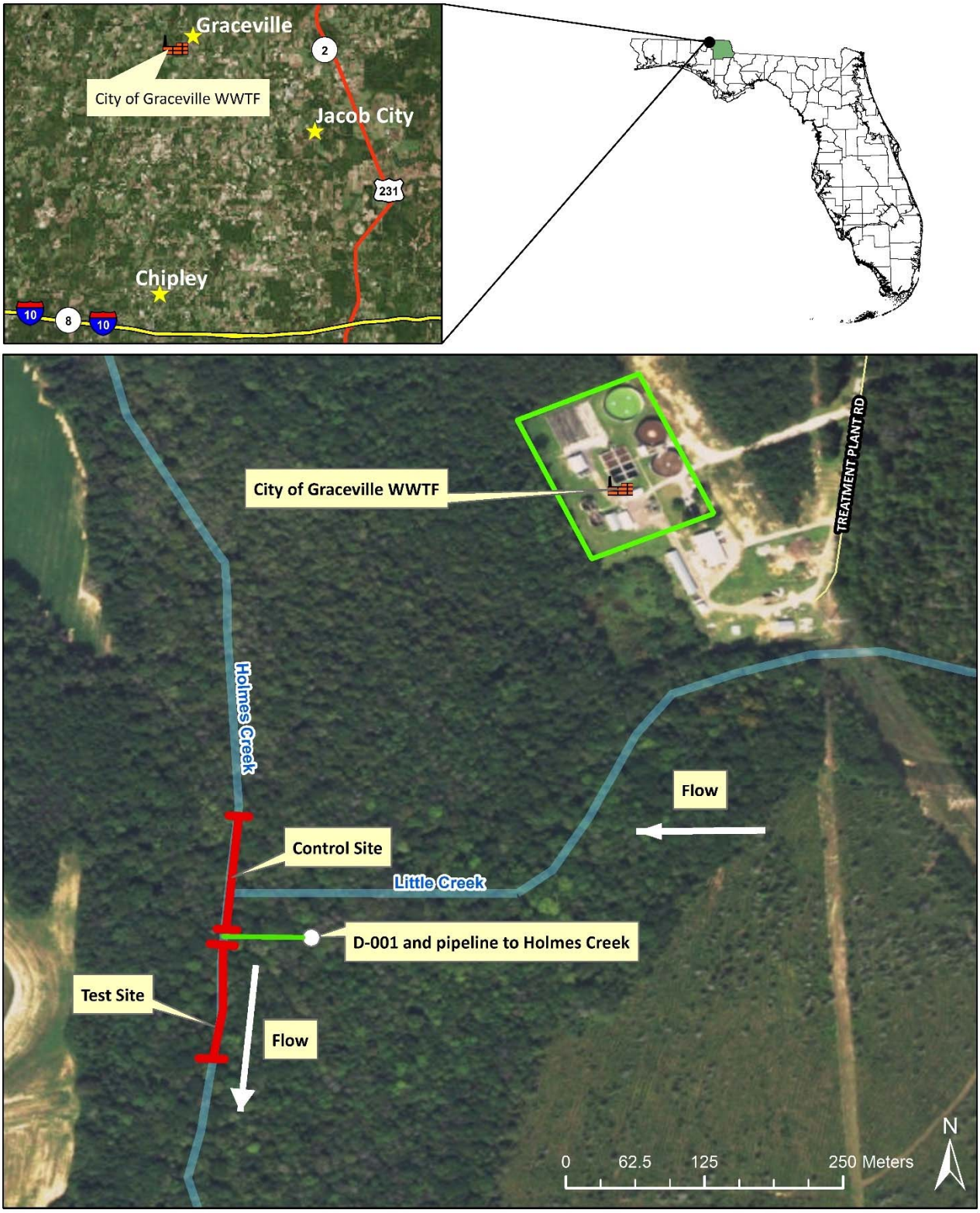
* Shannon Weaver Diversity scores calculated on samples with <300 individuals have the potential for negative bias (lower diversity scores compared to sites with more individuals) (Lande 1996)

Table 6. Macroinvertebrate dipnet samples – qualitative

City of Graceville WWTF	Test Site		Control Site	
Stream Condition Index 2012	**67 A**		**69 A**	
Replicate	Rep 1	Rep 2	Rep 1	Rep 2
Stream Condition Index Metrics				
Number of Total Taxa	41	46	41	49
Number of Ephemeroptera Taxa	3	3	4	3
Number of Trichoptera Taxa	2	5	3	5
Number of Clinger Taxa	6	9	6	9
Number of Long-lived Taxa	1	4	2	4
Number of Sensitive Taxa	10	12	11	13
Percent of Dominant Taxon	17.9	18.8	14.9	11.8
Percent Suspension Feeders and Filterers	35.7	35.8	26.6	26.8
Percent of Tanytarsini Individuals	19.3	18.1	29.1	32.7
Percent of Very Tolerant Individuals	5.0	6.9	7.8	7.8
Total Number of Individuals	140	144	141	153
Community Composition: Percent of total				
Dominant Taxon Name	*Cheumatopsyche* sp. (Trichoptera)	*Cheumatopsyche* sp. (Trichoptera)	*Rheotanytarsus exiguus* grp. (Diptera)	*Rheotanytarsus exiguus* grp. (Diptera)
Acariformes	0.0	0.0	0.7	0.7
Amphipoda	2.9	1.4	2.1	0.0
Bivalvia	0.0	0.7	1.4	0.7
Coleoptera	10.0	5.6	5.7	7.8
Decapoda	2.1	2.1	0.7	2.0
Diptera	49.3	47.2	60.3	68.6
Ephemeroptera	5.7	4.9	14.2	9.2
Gastropoda	7.1	13.2	6.4	3.3
Isopoda	0.7	0.7	2.1	0.0
Odonata	1.4	0.7	1.4	0.0
Oligochaeta	1.4	2.1	0.0	0.0
Plecoptera	0.0	0.0	0.0	0.0
Polychaeta	0.0	0.0	0.0	0.0
Trichoptera	19.3	21.5	5.0	7.8
Other	0.1	0.0	0.0	0.0
Functional Feeding Groups: Percent of total				
Browser-Grazers	1.4	0.7	1.1	0.3
Burrowing Deposit Feeders	1.4	2.1	0.0	0.0
Piercers	0.0	0.7	0.0	0.0
Predators	8.2	7.6	7.1	6.9
Scavengers	1.4	1.4	1.4	1.3
Scrapers	13.2	17.4	13.8	10.8
Shredders	8.2	5.6	12.1	11.1
Surface Deposit Feeders	30.4	28.8	37.9	42.2
Suspension Feeders	35.7	35.8	26.6	26.8
Unknown	0.0	0.0	0.0	0.7

A - Value reported is the mean of two or more determinations

Appendix A
City of Graceville WWTF
Fifth Year Bioassessment Sampling Locations



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Appendix B

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Kim Allen	**Contact Number: X10553**
Facility Name (as it appears on permit): City of Graceville Advanced Wastewater Treatment Facility	**Former Names:**
NPDES Permit Number: FL0038555	**Permit Expiration Date: 3/18/2018**
Physical Address: 865 6th St, Graceville, FL	
District: NWD	**County: Jackson**
Function of Facility: Municipal Wastewater Treatment plant	
Facility Type: DW	**Permitted Capacity (MGD): 1.1 MGD**
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months):	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): N/A	
Description of type of Discharge: ☐ **Continuous** ☒ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify** **This is a Sequencing Batch Reactor (SBR)**	

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):

2. Effluent samples shall be taken at the monitoring site locations listed in Permit Condition I.A.1. and as described below:

Monitoring Site Number	Description of Monitoring Site
FLW-01	Sonic flow meter at 6 inch Parshall Flume before chlorine contact chamber
EFF-01	Manhole on Pipe After Dechlorination
EFA-01	Baffle at end of Chlorine Contact Chamber Prior to Dechlorination
EFD-01	Manhole on Pipe After Dechlorination

Description of Permitted Outfall(s):

Discharge to Holmes Creek, Class III fresh waters, (WBID# 59) for which the discharge pipe is approximately 200 feet in length and discharges at a depth of approximately 1 foot. The point of discharge is located approximately at latitude 30°57' 6" N, longitude 85°31' 41" W.

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

1.1 MGD maximum monthly average daily flow activated sludge wastewater treatment system. Static bar screens are located upstream of the plant influent pump station. Influent pump stations discharge to two fine screens at the grit chamber and headworks. Screened influent then is directed to either a 750,000 gallon influent Flow Equalization Tank or to the two Sequential Batch Reactors (SBRs) creating an even flow entering the plant. Full contact stabilization biological treatment is effected by dual SBRs operating in a fill-and-draw, non-steady state activated sludge process providing aeration and clarification. SBR's discharge to two post equalization tanks before two disk filters prior to disinfection. Effluent is disinfected in a chlorine contact chamber and subsequently dechlorinated prior to discharging into Holmes Creek. Biosolids are aerobically digested, dewatered either by a screw press or drying beds. Class B biosolids may be land applied at permitted land application sites. Facility is permitted to receive biosolids from other WWTPs for further treatment and disposal.

PART I: Continued										
List <u>current</u> Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)										
			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes

		Effluent Limitations			Monitoring Requirements			
Parameter	Units	Max /Min	Limit	Statistical Basis	Frequency of Analysis	Sample Type	Monitoring Site Number	Notes
Flow	MGD	Max Max	1.1 Report	Monthly Average Quarterly Average	Continuous	Recording Flow Meter with Totalizer	FLW-01	See I.A.4
BOD, Carbonaceous 5 day, 20C	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Solids, Total Suspended	mg/L	Max Max Max Max	5.0 6.25 7.5 10.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Nitrogen, Total	mg/L	Max Max Max Max	3.0 3.75 4.5 6.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Phosphorus, Total (as P)	mg/L	Max Max Max Max	1.0 1.25 1.5 2.0	Annual Average Monthly Average Weekly Average Single Sample	Weekly	16-hr FPC	EFF-01	
Coliform, Fecal	#/100mL	Max Max Max	200 200 800	Annual Average Monthly Geometric Mean Single Sample	Weekly	Grab	EFF-01	See I.A.5
pH	s.u.	Min Max	6.5 8.5	Single Sample Single Sample	Continuous	Meter	EFF-01	See I.A.3
Chlorine, Total Residual (For Disinfection)	mg/L	Min	0.5	Single Sample	Continuous	Meter	EFA-01	See I.A.3 and I.A.6
Chlorine, Total Residual (For Dechlorination)	mg/L	Max	0.01	Single Sample	Daily; 24 hours	Grab	EFD-01	
Oxygen, Dissolved (DO)	mg/L	Max	5.0	Single Sample	Daily; 24 hours	Grab	EFF-01	
Hardness, Total (as CaCO3)	mg/L	Max	Report	Single Sample	Quarterly	16-hr FPC	EFF-01	
Copper, Total Recoverable	ug/L	Max	-	Single Sample	Quarterly	16-hr FPC	EFF-01	See I.A.7
Chronic Whole Effluent Toxicity, 7-day IC25 (Ceriodaphnia dubia)	percent	Min	100	Single Sample	Annually	24-hr FPC	EFF-01	See I.A.8
Chronic Whole Effluent Toxicity, 7-Day IC25 (Pimephales promelas)	percent	Min	100	Single Sample	Annually	24-hr FPC	EFF-01	See I.A.8

PART I: Continued

Receiving Waters:	**Classification (indicate whether fresh or marine):**
Holmes Creek	Class III Fresh

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):

c. Sampling Requirements

(1) For each routine test or additional follow-up test conducted, a total of three flow proportional 24-hr composite samples of final effluent shall be collected and used in accordance with the sampling protocol discussed in EPA-821-R-02-013, Section 8.

(2) The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.

(3) Samples for routine and additional follow-up tests shall not be collected on the same day.

d. Test Requirements

(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: 100%, 50%, 25%, 12.5%, and 6.25% final effluent.

(2) The permittee shall conduct a daphnid, Ceriodaphnia dubia, Survival and Reproduction Test and a fathead minnow, Pimephales promelas, Larval Survival and Growth Test, concurrently.

(3) All test species, procedures and quality assurance criteria used shall be in accordance with Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th Edition, EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.

(4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7.2.3.

e. Quality Assurance Requirements

(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT-QA data shall be included in the reports for each companion routine or additional follow-up test required.

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or does not meet "test acceptability criteria", the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EPA-821-R-02-013, Section 13.12 (Ceriodaphnia dubia) and Section 11.11 (Pimephales promelas). The repeat test shall begin within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations for either test species prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) for that species shall be terminated with the conclusion that the test fails and constitutes non-compliance.

(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
N/A

Facility Mixing Zone Details (if applicable):
N/A

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Monitoring Group	Date	Monitoring Location	Parameter	Description	Result	Limit	Units	Statistical Base
D-001	2/28/2017	FLW-01	P 50050	Flow	1.22	1.1	MGD	MK - Monthly Average
D-001	1/31/2017	FLW-01	P 50050	Flow	1.84	1.1	MGD	MK - Monthly Average
D-001	10/31/2016	EFF-01	P 80082	BOD5	8.35	7.5	mg/L	WA - Weekly Average
D-001	9/30/2016	EFF-01	P 80082	BOD5	10	7.5	mg/L	WA - Weekly Average
D-001	8/31/2016	FLW-01	P 50050	Flow	1.518	1.1	MGD	MK - Monthly Average
D-001	4/30/2016	FLW-01	P 50050	Flow	1.355	1.1	MGD	MK - Monthly Average
D-001	3/31/2016	FLW-01	P 50050	Flow	1.184	1.1	MGD	MK - Monthly Average
D-001	3/31/2016	EFF-01	P TRP3B	Tox CD	90.6	100.0	percent	ME - Minimum
D-001	2/29/2016	FLW-01	P 50050	Flow	1.306	1.1	MGD	MK - Monthly Average
D-001	2/29/2016	EFF-01	P 80082	BOD5	7.88	7.5	mg/L	WA - Weekly Average
D-001	2/29/2016	EFF-01	P TRP3B	Tox CD	82.4	100.0	percent	ME - Minimum
D-001	1/31/2016	FLW-01	P 50050	Flow	1.677	1.1	MGD	MK - Monthly Average
D-001	12/31/2015	FLW-01	P 50050	Flow	1.464	1.1	MGD	MK - Monthly Average
D-001	11/30/2015	FLW-01	P 50050	Flow	1.754	1.1	MGD	MK - Monthly Average

Date	Parameter and Units	Limit	Result

Describe previous FYI and WQBEL study:

To: File, Application No. FL00038555-008-DW1P/NR
From: Frank O'Keefe, Florida DEP-Northwest District Pensacola Date: January 29, 2013
Subject: WQBEL Level 1 analysis for permit renewal

The facility has provided reasonable assurance that the discharge will not adversely affect the designated use of the receiving water. Inspection data, as well as all other available data, have been evaluated in accordance with the Department's reasonable assurance procedures to ensure that no limits other than those included in this permit are needed to maintain Florida water quality standards.
Discharge Serial Number D-001 discharges into Holmes Creek, a Class III fresh water body in northwestern Jackson County, at a point approximately 0.13 miles west of the WWTP. The facility discharges into a segment of Holmes Creek (WBID 59) approximately 40 miles from its confluence with the Choctawhatchee River, a class III fresh water. WBID 59 is shown on the Integrated Assessment Category Map to be a water body that meets planning list criteria and is potentially impaired for one or more designated uses. However, Holmes Creek WBID 59 was not on the 303(d) lists for 1998, 2002, 2005, or 2010. The DEP Bureau of Laboratories' Technical Reports, fifth year report on Holmes Creek for the Graceville WWTP sampled in April 2011 and published in September 2011 is available at http://www.dep.state.fl.us/labs/cgi-bin/reports/results.asp.
The fifth year report showed that the sample did not show concerns with acute toxicity or other parameters, but that Holmes Creek iron did exceed the Class III Fresh Water Quality Criteria (62-302.530(38)) while iron was undetectable in the treatment plants effluent. Increased ortho-phosphate, total phosphorus, nitrate and nitrite, and total nitrogen values at the Test Site indicates enrichment due to the effluent. However, the periphyton and macroinvertebrate communities at the Control and Test Site are similar and are not adversely affected by the effluent. The permit is currently at AWT limits an annual average limit of 3 mg/L for Total Nitrogen and 1 mg/L for Total Phosphorus. No algal problems have been reported.
This renewal permit brings forth most of the previous effluent limitations. Those effluent limits were established pursuant to a Level II Water Quality Based Effluent Limit Study. The report, "Graceville Sewage Treatment Plant Wasteload Allocation Water Quality Sampling Graceville, Jackson County, Florida," Environmental Services, Inc., Jacksonville, August 1993, concluded that the discharge does not exhibit any adverse impacts. The Department subsequently issued an Interoffice Memorandum, which differed in its conclusions for the study report.
Subsequently the Department advised the permittee by letter of the more stringent requirements to be applied to this facility. These resulted in an upgrade to the facility to advanced wastewater treatment (AWT) to meet the 5:5:3:1 limit requirements.
A search of the PCS database revealed two violations of permit limits over the last 3 years but there was no distinct pattern that could be discerned and the facility is considered to be in compliance.
In order to provide reasonable assurance that the discharge will not adversely affect the designated use of the receiving water, whole effluent toxicity testing is required. During the previous permit cycle the permittee conducted Chronic Screen NOEC> 100% toxicity testing once every six months. Toxicity was not reported to be an issue during the previous permitting cycle. The frequency for this permit cycle shall be reduced to once every year and changed to IC25>100% based on the permit writer's best professional judgment and review of information on file.
The facility has provided reasonable assurance that the discharge will not adversely affect the designated use of the receiving water. Available data have been evaluated in accordance with the Department's reasonable assurance procedures to ensure that no limits other than those included in this permit are needed to maintain Florida water quality standards.

Describe previous or current Enforcement Actions (including WLs):

Describe any violations or problems noted in previous inspection:

11/16/16 inspection found:
Time composite samples being collected instead of flow proportioned as required
Grit chamber not functioning at time of the inspection

Discuss whether DMR trends within previous five years are improving or declining:

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

PART II: Sampling Event Information

Date(s) sample collected: **November 14, 2016**	**Sampler(s):** **Mark Sumner**
Temperature (Deg C): **22.8**	**pH (SU):**
Dissolved Oxygen (mg/L): **8.28**	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L): **0.01 (reported by facility)**	**Total Residual Chlorine - after Disinfection (mg/L):** **0.53 (reported by facility)**
Method of Chlorination: **Chlorine contact chamber**	**Method of De-chlorination:**

Flow During Sample Collection for each outfall(MGD):

0.494 MGD (reported by facility)

Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):

1.098 MGD from November 2015 to October 2016

Describe Discharge during Sampling Event:
☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent ☐ Other, please specify

Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:

Appendix C

Explanation of Measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (DEP SOPs). Methods for all analyses are on file at the DEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.dep.state.fl.us/labs/library/lab_sops.htm and/or http://www.dep.state.fl.us/water/sas/qa/index.htm.

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following DEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20- 60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Habitat Assessment

Habitat assessment is used to evaluate the physical structure and extent of disturbance in a waterbody. Eight aspects are ranked, with 20 possible points for each aspect (QA Rule SOP FT 3100). The Habitat Assessment score includes types and amounts of benthic substrates, water velocity, amount of sand or silt accumulation, extent of artificial channelization, bank stability, and riparian zone width and vegetation type. All scores are summed to yield an overall Habitat Assessment score. Habitat Assessment score ranges from 11-160 and overall habitat quality is assigned to one of four categories: Optimal (120-160 points), Suboptimal (80-119 points), Marginal (40-79 points), and Poor (11-39 points).

(6) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. AGP results within the range 6.10 to 20.0 mg dry wt/L are suggested to be representative of high productivity for freshwaters (Miller et al. 1978). High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61), F.A.C..

(7) Benthic Macroinvertebrate Assemblages

Benthic macroinvertebrates were collected using two methods. Quantitative samples were collected from Hester-Dendy multi-plate samplers incubated for 28 days. Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP FS7420). Benthic macroinvertebrates were sorted and identified to the lowest practical taxonomic level, usually species.

Taxa richness: Taxa richness is the number of distinct macroinvertebrate taxa present in a sample. Stress, habitat destruction and pollution tend to reduce the number of different types of organisms present (Karr and Chu 1998). Decreases in taxa richness related to a facility's effluent may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C. and/or 62-302.530(61), F.A.C..

Percent Contribution of Dominant Taxon: Percent contribution of the dominant taxon is calculated by dividing the number of individuals in the most abundant taxa by the total number of individuals counted. Percent contribution of the dominant taxon tends to increase with increasing perturbation (Plafkin *et al*., 1989). Increases in the percent contribution of the dominant taxon related to a facility's effluent may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

Community Composition: Shifts in proportions of major groups of organisms downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Fore et. al. 2007, Karr and Chu 1998). Shifts in community composition related to a facility's effluent may constitute exceedances of 62-302.530(46) F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C. and/or 62-302.530(61), F.A.C.

Functional Feeding Groups: Environmental degradation may differentially affect groups of invertebrates based on how the group feeds (e.g. predators, deposit feeders, etc.). In Florida, pollution may be responsible for reducing the numbers of filter feeders and shredders (Fore et. al. 2007). Changes in the proportions of functional feeding groups related to a facility's effluent may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C. and/or 62-302.530(61), F.A.C..

Shannon-Weaver Diversity Index: This index is specified in the Florida Administrative Code 62-302 as a measure of biological integrity. Low diversity scores are undesirable. Where diversity is low, only a few taxa are abundant as compared to an area where many taxa are present in equitable abundance among taxa (Magurran 1988). A difference of 25% in Shannon-Weaver diversity between results from Hester-Dendy multiplate samplers incubated for 28 days at test and control sites constitute exceedances of 62-302.530(10), F.A.C.

The Stream Condition Index (SCI): The SCI is a biological assessment tool that measures the degree to which flowing fresh waters support a healthy, well-balanced biological community, as indicated by aquatic, benthic macroinvertebrates. Macroinvertebrate taxonomic and abundance data are used to calculate ten biological metric scores, each of which has been shown to respond predictably to human disturbance (Fore et al. 2007; DEP SOP SCI 1000; DEP-SAS-001/11, incorporated into the Quality Assurance Rule by reference 62-160.210(2)(a), F.A.C.). The points for each of the metric scores (0 to 10) are summed to yield a final SCI score (range 0-100). The ten metrics are percent contribution of Tanytarsini, number of sensitive taxa, percent contribution of very tolerant taxa, number of total taxa, number of Ephemeroptera taxa, number of Trichoptera taxa, percent contribution of the dominant taxon, the percent contribution of suspension and filter feeders, number of long-lived taxa, and number of clinger taxa. As human disturbance increases, it is expected that the number of total taxa, the number of Ephemeroptera taxa, Trichoptera taxa, sensitive taxa, clinger taxa, long-lived taxa, and the percent contribution of Tanytarsini and suspension and filter feeders will decrease while percent contribution of dominant taxon and percent contribution of very tolerant taxa will increase.

The SCI can be used to determine faunal health associated with Chapter 62-302.531, F.A.C. An average SCI score of 40 or higher from at least two temporally independent SCIs, performed at representative locations and times indicates a balanced faunal community. Neither of the two most recent SCI scores should be less than 35. Failure of the SCI indicates that the stream does not meet the Clean Water Act goal of biological integrity, as measured by community structure and function. A failing SCI could be due to water quality problems or other physical disturbance factors such as habitat disruption or hydrologic alterations. While the stressor may not be known, a failed SCI does indicate that fauna is not well-balanced. A failing SCI score, if it is shown to be related to a facility's effluent, may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C., 62-302.530(47)(b), F.A.C., or of 62-302.530(61).

(8) Rapid Periphyton Survey

Rapid Periphyton Survey (RPS) is a rapid method to quantify the extent and abundance of attached algae (periphyton) in a stream or river. A total of 99 points are assessed within a 100m area of sampling reach, 9 equidistant points along 11 cross-

section transects spaced 10 m apart, If greater than 20% of sampled points have algal lengths greater than 6mm, a sample is collected and the autecological information associated with the dominant algae is evaluated (see DEP SOP FS 7230 Rapid Periphyton Survey). This method could be used to determine floral health associated with Chapter 62-302.531, F.A.C..

(9) Linear Vegetation Survey

Linear Vegetation Survey (LVS) is a rapid screening tool for ecological condition, by determining how closely a site's flora resembles that of an undisturbed condition. When the total area of macrophytes equals or exceeds two square meters within the wetted area of the 100 m sampling reach, macrophyte taxonomic names are recorded (FDEP SOP FS 7320 Stream and River Linear Vegetation Survey (LVS) Method). This method could be used to determine floral health associated with Chapter 62-302.531, F.A.C..

(10) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix D

Chain of Custody

Request Number: RQ-2016-11-07-17

FYI Graceville, City of - Advanced WTF Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Page 1 of 5

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Field Report Prepared By: Mark Summel

Collected By: MARK SUMMEL

Sampling Agency: FDEP

Location: City of Graceville	☑ Comp ☐ Grab	Collection (comp begin or grab) Date 11/14/16 Time 7:00C	Eastern Central	Composite end Date 11/14/16 Time 7:00	Bottle Group(s) (See pg 2): B						
Field ID: EFF 01 Composit	Matrix (type, e.g., Salt, Fresh, etc): FRESH		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C): 6.9	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location: City of Graceville	☐ Comp ☐ Grab	Collection (comp begin or grab) Date 11/14/16 Time 9:31	Eastern Central	Composite end Date Time	Bottle Group(s): A						
Field ID: EFF01 Grab	Matrix (type, e.g., Salt, Fresh, etc): Fresh		Diss. Oxygen: 8.28	☐ mg/L ☒ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C): 22.8	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location: City of Graceville	☐ Comp ☐ Grab	Collection (comp begin or grab) Date 11/14/16 Time 10:08am	Eastern Central	Composite end Date Time	Bottle Group(s): E						
Field ID: Blank	Matrix (type, e.g., Salt, Fresh, etc): DI water		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)						
Field ID	Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)						
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Mark Summel	11/14/16 1:35		4	DK	11-14-16 1:35

Request Number: RQ-2016-11-07-17

FYI Graceville, City of - Advanced WTF Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Collected By: Nathan Melka

Field Report Prepared By: N. Melka

Sampling Agency: FDEP NWROC

Location: Holmes Creek below Graceville WWTF	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 11/14/16 Time 1130	Eastern Central	Composite end Date Time	Bottle Group(s) (See pg 2) C/D						
Field ID: Graceville Test	Matrix (type, e.g., Salt, Fresh, etc): Fresh	Diss. Oxygen 8.3	☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)							
STORET #	Temp (C) 15.5	pH 6.1	Sample Depth 0.2	☐ ft ☑ m	Sp. Conductance (umho/cm) 198						
Latitude 30.94889 ☑ dd ☐ dms	Longitude 85.53080 ☑ dd ☐ dms	Salinity (ppt)	Comments: Facility discharging during sampling								
Location: Holmes Creek above Graceville WWTF	☐ Comp ☑ Grab	Collection (comp begin or grab) Date 11/14/16 Time 1240	Eastern Central	Composite end Date Time	Bottle Group(s) C/D						
Field ID: Graceville Control	Matrix (type, e.g., Salt, Fresh, etc): Fresh	Diss. Oxygen 8.3	☑ mg/L ☐ % sat	Total Res. Chlorine (mg/L)							
STORET #	Temp (C) 18.3	pH 6.2	Sample Depth 0.2	☐ ft ☑ m	Sp. Conductance (umho/cm) 179						
Latitude 30.95041 ☑ dd ☐ dms	Longitude 85.53034 ☑ dd ☐ dms	Salinity (ppt)	Comments: Facility Discharging during Sampling								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)						
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)							
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time	Bottle Group(s)						
Field ID	Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)							
STORET #	Temp (C)	pH	Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)						
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments								

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Nathan Melka	11/14/16	Fed Ex	3		11/15/16, 1013D

Request Number: RQ-2016-11-07-17

FYI Graceville, City of - Advanced WTF Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Field Report Prepared By:

Collected By:

Sampling Agency:

Location: City of Graceville			☒ Comp ☐ Grab	Collection (comp begin or grab) Date 11/15/16 Time 0900	Eastern Central	Composite end Date 11/16/16 Time 0900				Bottle Group(s) (See pg 2): B	
Field ID: EFF01 Composit			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C) 9.8	pH 7.45		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments						
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments						
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments						
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments						
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)			
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments						

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
MARK Simms	11/16/16 2:10 PM EST		1	SK	11-16-16 / 2:11

Request Number: RQ-2016-11-07-17

FYI Graceville, City of - Advanced WTF Sampling Inspection

Customer: NW-DIST

Project ID: FYI5

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Adrienne E. Pennington

Collected By: Mark Summer

Field Report Prepared By: Mark Summer

Sampling Agency: FDEP

Location: City of Graceville			☒ Comp ☐ Grab	Collection (comp begin or grab) Date 11/17/16 Time 07:00	Eastern Central	Composite end Date 11/18/16 Time 0700				Bottle Group(s) (See pg 2) B
Field ID: EFF 01 Composit			Matrix (type, e.g., Salt, Fresh, etc) CMS			Diss. Oxygen 8.10	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L) 0.01		
STORET #			Temp (C) 9.5 ~~9.15~~	pH 7.36		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					
Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Date Time	Eastern Central	Composite end Date Time				Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)		
STORET #			Temp (C)	pH		Sample Depth	☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments					

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Mark Summer	11/18/16 12:00			SC	11-18-16/12:00

Appendix E

Physical/Chemical and Habitat Assessment field sheets

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21 FLPNS LATITUDE 30.95041
COUNTY Jackson STORET # 321491 01 LONGITUDE 85.53041
DATE 11-14-2016 TIME 1240 SAMPLING AGENCY FDEP- NWROC
SITE NAME Holmes Creek Graceville WWTP Control
FIELD ID/NAME _____ RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
✓	✓		✓	✓			

Landscape Development Intensity Index (LDI):

Local Watershed Erosion (select one): ☐ None ☐ Slight ☐ Moderate ☒ Heavy
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side
Left Bank: 718 Right Bank: 718

Hydrologic Modification Score (per FT 3101):

High Water Mark: 1.7 (m) + 1.0 (above present water level) = 2.7 (present depth) (above bed)

Artificially Impounded: ☐ Yes ☒ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect
95m 6 m wide

N/A m/s	0.17 m/s	N/A m/s
.1 m deep	.3 m deep	.1 m deep

Artificially Channelized: ☐ No ☒ Mostly recovered, more sinuous ☐ Some recovery ☐ Recent, severe

Canopy Cover %: ☐ Open ☐ Lightly Shaded (11-45%) ☒ Heavily Shaded ☐ Moderate Shaded (46-80%)

SEDIMENT / SUBSTRATE

Sediment Oils: ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse

Sediment Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☒ Anaerobic ☐ Other (Specify):

Smothering of Substrates:
Sand Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒
Silt Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒
Algae Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐

SUBSTRATE TYPE
Assessment Tool: ☒ SCI ☐ RPS ☐ LVS ☐ BioRecon ☒ < 2 m² SAV

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	6	57	
Undercut Banks / Roots	.6	57	
Leaf Packs or Mat	.1	54	
Aquatic Vegetation			
Rock or Shell Rubble			
Sand		2	
Mud / Muck / Silt			
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top	0.2	18.3	6.2	8.3	83	179	0.1	☑ VOB
Mid:								
Bottom	0.4							TOTAL DEPTH

Meter ID: 132237 **Meter verify?** ☐ Yes ☐ No

Water Odors Normal ☐ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐

Water Surface Oils Normal ☐ Sheen ☐ Globs ☐ Slick ☐ Other ☐

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number: _____ Exp: _____

Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐

Algae Sample Taken? ☐ Yes ☐ No
Sample Preserved? ☐ Yes ☐ No
Lot Number: _____ Exp: _____

Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☐	☒	☐
Fish:	☐	☐	☒	☐
Aquatic Plants:	☒	☐	☐	☐
Iron/Sulfur Bacteria:	☐	☐	☒	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐

AMBIENT FIELD CONDITIONS / NOTES:

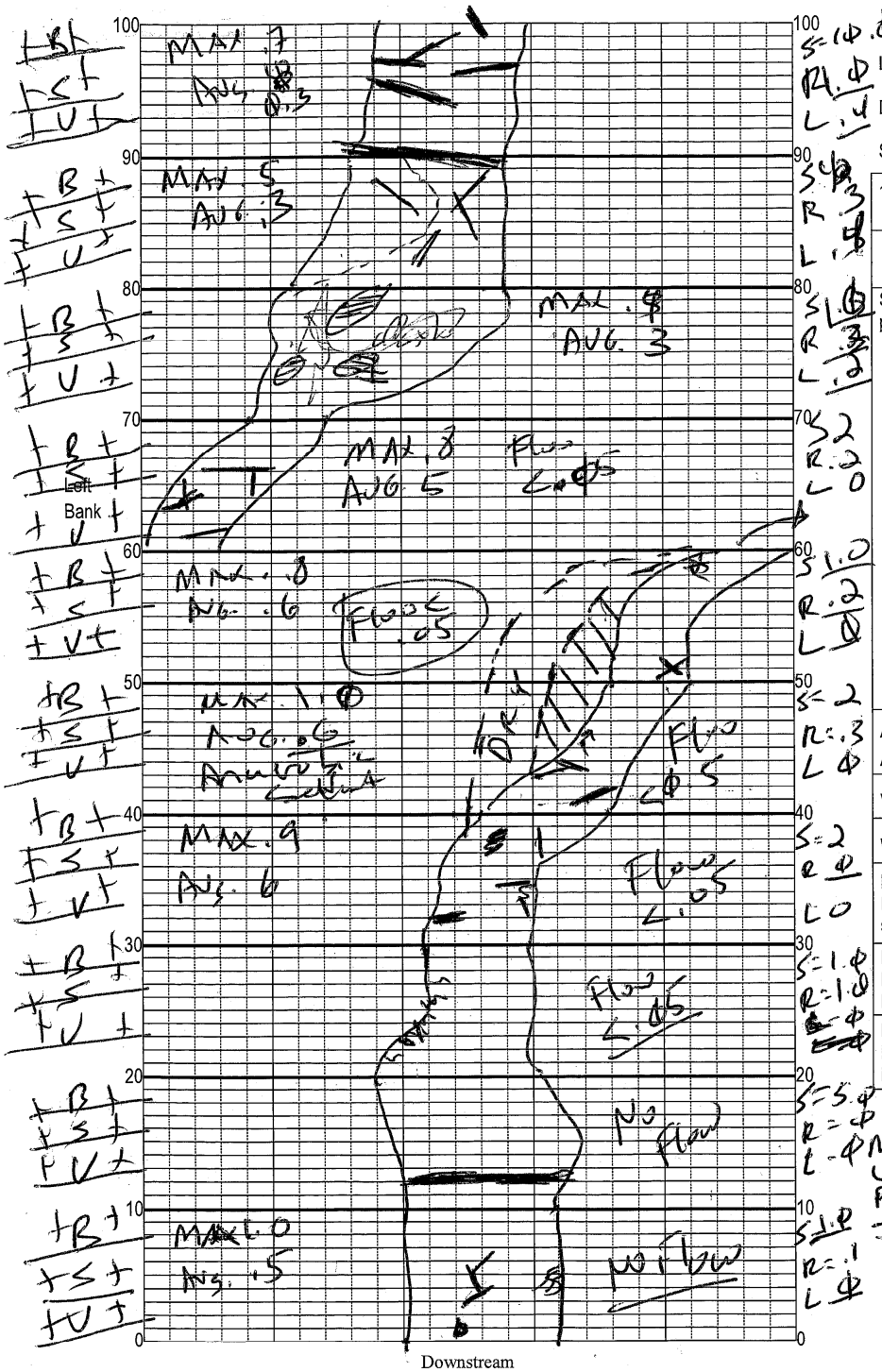
☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM N. Mulloy, F. Burton, M. King SIGNATURE _____ DATE: 11-14-2016

62-160.800, F.A.C. Revision Date: March 1, 2014

101 30.95111 85.53039

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Location: Holmes Ck Greenville Control

Date: 11-14-2016

Sampler: FButler

100 m: Latitude 30.95111
Longitude 85.53039

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

- Snags 29/600 5%
- Roots/undercut banks 3/600 0.5%
- Leaf Packs (or mats) 6/600 0.2%
- Aquatic Macrophytes ____
- BAR ____
- _____ ____
- Pools total # observed = ____ # range expected = ____

Average width _____ m
Average depth _____ m

Velocity measured at .3 der 95 meter mark. 6 secs.

WQ & chemistry taken at _____ meter mark.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:
Muscle wood
Loosestrife cordate
Popcorn
Japanese Climb. Fern
Possum Haw
Magnolia virginiana
Bahmeria
Swamp Chestnut Oak
Taxodium
Ruellia

62-160.800, F.A.C

Revision Date: March 1, 2014

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
FL DEP - NWRO C		32Q1Q1Q1	11-14-16	
REMARKS:	COUNTY: Jackson	LOCATION: Holmes Ck Gracevile Control		FIELD ID/NAME: Control

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 8	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 (8) 7 ~~6~~	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 6	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 (6)	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity 13	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 (13) 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 12 Primary Score 39	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 (12) 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 24	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. (20) 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 10 Left Bank 10	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 9 Left Bank 8 Secondary Score 77	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 (9)	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. (8) 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

116 **TOTAL SCORE**

Date: 11/14/2016	Analyst: F Butera	Signature: F. BUTERA

62-160.800, F.A.C. Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Holmes Ck Gainesville Control | County: Jackson | Date: 11-14-16 | Investigators: [illegible]

STORET Station Number: 32010101

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N	NO		60	1	N	NO	
	2					2			
	3					3			
	4					4			
	5			96		5			92
	6					6			
	7					7			
	8					8			
	9	N				9	N		
10	1	N	NO		70	1	N	NO	
	2	N X				2			
	3	X				3			
	4					4			
	5			92		5			96
	6					6			
	7					7			
	8	X N				8			
	9	X N				9	N		
20	1	N	NO		80	1	N	NO	
	2	X				2			
	3					3			
	4					4			
	5			90		5			96
	6					6			
	7					7			
	8	X				8			
	9	X				9	N		
30	1	N	NO		90	1	N	NO	
	2	X				2			
	3					3			
	4					4			
	5					5			96
	6					6			
	7					7			
	8	X				8			
	9	X				9	N		
40	1	N	NO		100	1	N		
	2					2			
	3					3			
	4					4			
	5					5			96
	6					6			
	7					7			
	8					8			
	9	N	N			9	N		
50	1	N	NO						
	2								
	3								
	4								
	5			76					
	6								
	7								
	8								
	9	N	N						

Secchi depth	0.8
Estimated?	NO
# points ranked 4-6	0
total points assessed	79
% points ranked 4-6	0

Check accompanying data collected at same site/date.	
Algal mat sample	NO
Linear Veg Survey	NA
Habitat Assessment	✓
SCI/Biorecon	✓
Water sample	✓
RQ-	

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 77066 ORG ID 21FLPNS LATITUDE 30.94888
COUNTY JACKSON STORET # 32010102 LONGITUDE 85.53055
DATE 11-14-2016 TIME 11:40 central SAMPLING AGENCY FL DEP - NWROC
SITE NAME Hymans Ck. Graceville WWTP - Test Site
FIELD ID/NAME HUMCBLWGRV RECEIVING BODY OF WATER Choctawhatchee R.

RIPARIAN ZONE / STREAM FEATURES RPS ID 8472

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category) :

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)
✓	✓		✓	✓			

Landscape Development Intensity Index (LDI):

Local Watershed Erosion (select one) : ☐ None ☐ Slight ☐ Moderate ☒ Heavy
Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☐ Moderate ☒ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side: Left Bank : 718 Right Bank : 518

Hydrologic Modification Score (per FT 3101):

High Water Mark: 2.0 (m) + .6 (above present water level) = 2.6 (above bed) (present depth)

Artificially Impounded: ☐ Yes ☒ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect

45 m	8 m wide	
m/s	m/s	25 m/s
6 secs	7 sec.	
<.1 m deep	.1 m deep	.3 m deep

Artificially Channelized : ☐ No ☒ Mostly recovered, more sinuous ☐ Some recovery ☐ Recent, severe

Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☒ Heavily Shaded ☐ Moderate Shaded (46-80%)

SEDIMENT / SUBSTRATE

Sediment Oils: ☒ Absent ☒ Slight ☐ Moderate ☐ Profuse

Sediment Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☒ Anaerobic ☐ Other (Specify) :

Smothering of Substrates

	None	Slight	Moderate	Severe
Sand Smothering:	☐	☐	☐	☒
Silt Smothering:	☐	☐	☐	☒
Algae Smothering:	☐	☒	☐	☐

SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☒ RPS ☐ LVS ☐ BioRecon ☒ ≤ 2 m² SAV

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)...	4	5	
Undercut Banks / Roots	1.5	5	
Leaf Packs or Mat	.5	5	
Aquatic Vegetation			
Rock or Shell Rubble..			
Sand.....	94	55	
Mud / Muck / Silt			
Other			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :	0.3	15.5	6.1	8.3	83	198	0.1	VOB
Mid:								☑ VOB
Bottom	0.6							TOTAL DEPTH

Meter ID: 132237 Meter verify? ☑ Yes ☐ No 0.6

Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐

Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐

Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☒ Yes ☐ No
Lot Number:_____ Exp:_____

Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐

Algae Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☐ No
Lot Number:_____ Exp:_____

Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐

ABUNDANCE

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☐	☒	☐
Fish:	☐	☐	☒	☐
Aquatic Plants:	☒	☐	☐	☐
Iron/Sulfur Bacteria:	☐	☐	☒	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐

AMBIENT FIELD CONDITIONS / NOTES: Graceville Test WWTP Discharging during Survey. WBID 59C RQ: 2016-11-0717

☒ The antecedent hydrologic conditions have been met to my best knowledge.

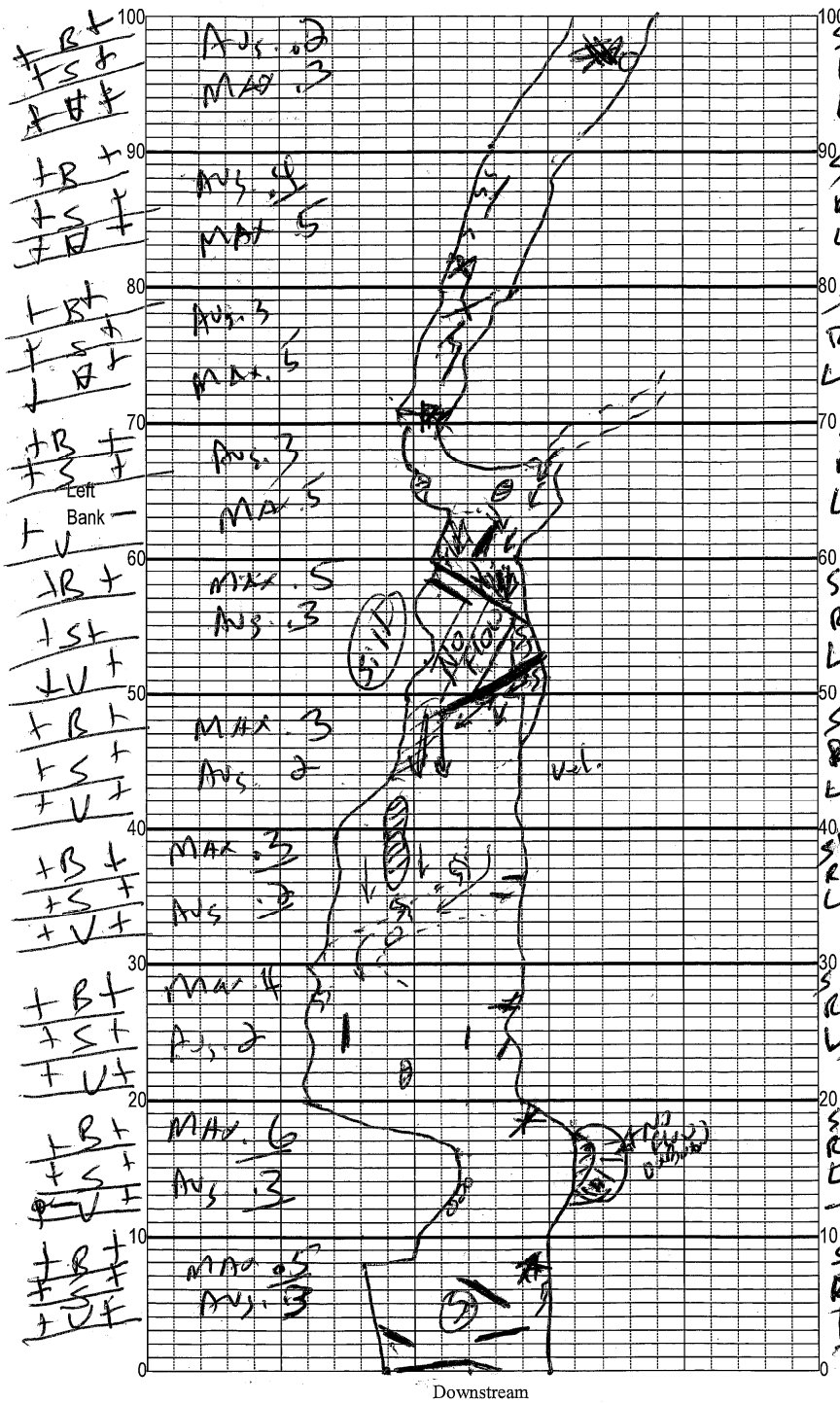
SAMPLING TEAM N. Mulkey, F. Butera, M. King SBIO ✓

SIGNATURE: F Butera DATE : 11-14-2016

62-160.800, F.A.C. Revision Date: March 1, 2014

STORET 3201Φ102 SBIO ID 77066

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Location: Holmes Ck Graceville Test

Date: 11-14-2016

Sampler: FBUTLER

100 m: Latitude	
Longitude	
0 m: Latitude	
Longitude	

Substrates: Code key, draw proportionate habitat abundance. %

Snags	21.5/500	4.3
Roots/undercut banks	4.3	17
Leaf Packs (or mats)	2.0/5.0	0.4%
Aquatic Macrophytes		
BAR		
Pools	total # observed = 1	
	# range expected = 2	

Average width 5 m

Average depth .3 m

Velocity measured at 45 meter mark.

WQ & chemistry taken at _____ meter mark.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

Muscle wood
Chinese Privet
Colocasia
Ilex opaca
Japan Climb Fern
Boehmeria
Smilax Bundleri
Mag. virginiana
Poison Ivy
Oak
Red Maple

62-160.800, F.A.C

Revision Date: March 1, 2014

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
FL DEP - NWROC		32D1601Ø2	11/14/16	Chotaw. R
REMARKS:	COUNTY:	LOCATION: Holmes cic.		FIELD ID/NAME:
WBID 59C	JAckson	Graceville - Test		HOMCBLWGRV

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 11	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 (11)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 6	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 (6)	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity ~~16~~ (FD) 14	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 ~~16~~	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 (14) 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering 6 Primary Score ~~39~~ 37 (FD)	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 (6)	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 2Ø	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 1Ø Left Bank 1Ø	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 1Ø Left Bank 1Ø	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 1Ø Left Bank Ø Secondary Score 78	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. exotics 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

FD ~~117~~ 115 **TOTAL SCORE**

Date: 11-14-16	Analyst: F. Buton	Signature:

SBIO ID 77066 HA ID 14175 RPS ID 8472

SBIO ~~VFD~~ Verify ____

62-160.800, F.A.C. Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Holmes Ck Graceville Test | County: Jackson | Date: 11-14-16 | Investigators: FB

STORET Station Number: 32D140102

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9	N	N	
10	1	N		
	2			
	3			
	4			
	5	N		85
	6	N	X	
	7	N	X	
	8	N	X	
	9	N	X	
20	1	N		
	2			
	3			
	4			
	5			88
	6			
	7			
	8			
	9	N		
30	1	N	NO	
	2	3		
	3	N		
	4	N		
	5	N		92
	6	N		
	7	3		
	8	3		
	9	N	NO	
40	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9	N		
50	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9	N		

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	N	NO	
	2	3		
	3			
	4			
	5			80
	6			
	7			
	8			
	9	N	N	
70	1	N	NO	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9	N	N	
80	1	N	NO	
	2			
	3			
	4			
	5			85
	6			
	7			
	8			
	9	N	N	
90	1	N	NO	
	2			
	3			
	4			
	5			90
	6			
	7			
	8			
	9	N	N	
100	1	N	NO	
	2	N		
	3	N		
	4	3		
	5	3		86
	6	3		
	7	N		
	8	N		
	9	N	N	

Secchi depth	108
Estimated?	N
# points ranked 4-6	4
total points assessed	96
% points ranked 4-6	4

Check accompanying data collected at same site/date.	
Algal mat sample	NO
Linear Veg Survey	NO
Habitat Assessment	✓
SCI/Biorecon	✓
Water sample	✓

RQ-2016-11-07-17

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

SBIO ID 77066
RPS ID 8472

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

SBIO VFB SBIO verify ____

Appendix F

Chemical analysis of effluent and receiving water

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 8:10	Effluent Comp	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.5 A	mg/L	0.2	2
11/14/2016 8:10	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	No Result	NOEC		
11/14/2016 8:10	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	100	NOEC		
11/14/2016 8:10	Effluent Comp	Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, NOEC	100	NOEC		
11/14/2016 8:10	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	100 L	IC25		
11/14/2016 8:10	Effluent Comp	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	No Result	IC25		
11/14/2016 8:10	Effluent Comp	Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, IC25	100 L	IC25		
11/14/2016 8:10	Effluent Comp	Metals	Calcium	46.2	mg/L	0.075	0.3
11/14/2016 8:10	Effluent Comp	Metals	Chromium	0.21	ug/L	0.05	0.2
11/14/2016 8:10	Effluent Comp	Metals	Zinc	29	ug/L	5	20
11/14/2016 8:10	Effluent Comp	Metals	Magnesium	8.12	mg/L	0.04	0.16
11/14/2016 8:10	Effluent Comp	Metals	Iron	62 I	ug/L	30	120
11/14/2016 8:10	Effluent Comp	Metals	Nickel	0.67	ug/L	0.05	0.2
11/14/2016 8:10	Effluent Comp	Metals	Lead	0.23	ug/L	0.05	0.2
11/14/2016 8:10	Effluent Comp	Metals	Copper	4.28	ug/L	0.1	0.4
11/14/2016 8:10	Effluent Comp	Metals	Sodium	26.3	mg/L	0.5	2
11/14/2016 8:10	Effluent Comp	Metals	Potassium	9.8	mg/L	0.3	1.2
11/14/2016 8:10	Effluent Comp	Metals	Hardness	149	mg/L	0.35	1.4
11/14/2016 8:10	Effluent Comp	Metals	Selenium	0.20 U	ug/L	0.2	0.8
11/14/2016 8:10	Effluent Comp	Metals	Arsenic	0.74	ug/L	0.05	0.2
11/14/2016 8:10	Effluent Comp	Metals	Cadmium	0.121	ug/L	0.02	0.08
11/14/2016 8:10	Effluent Comp	Metals	Silver	0.0050 U	ug/L	0.005	0.02
11/14/2016 8:10	Effluent Comp	Metals	Aluminum	106	ug/L	2	8
11/14/2016 8:10	Effluent Comp	Nutrients	Total-P	0.91	mg P/L	0.005	0.05
11/14/2016 8:10	Effluent Comp	Nutrients	TSS	4 I	mg/L	2	10
11/14/2016 8:10	Effluent Comp	Nutrients	Ammonia-N	0.071	mg N/L	0.002	0.005
11/14/2016 8:10	Effluent Comp	Nutrients	Kjeldahl Nitrogen	0.45 V	mg N/L	0.08	0.2
11/14/2016 8:10	Effluent Comp	Nutrients	NO2NO3-N	0.26	mg N/L	0.004	0.01
11/14/2016 8:10	Effluent Comp	Nutrients	Organic Carbon	4.4	mg C/L	0.5	1
11/14/2016 8:10	Effluent Comp	Nutrients	Temperature	6.9	C		
11/14/2016 8:10	Effluent Comp	Nutrients	Temperature	6.9	C		
11/14/2016 10:31	Effluent Grab	AGP/LN	Algal Growth Potential	13.7	mg DryWt/L	0.3	0.9

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 10:31	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.87 I	ug/L	0.4	1.2
11/14/2016 10:31	Effluent Grab	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
11/14/2016 10:31	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	1.5		0	0
11/14/2016 10:31	Effluent Grab	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.69 I	ug/L	0.55	1.7
11/14/2016 10:31	Effluent Grab	Microbiology	Fecal Coliforms-Membrane Filter	20 B	cfu/100 mL	2	2
11/14/2016 10:31	Effluent Grab	Nutrients	Fluoride	0.078 I	mg F/L	0.035	0.1
11/14/2016 10:31	Effluent Grab	Nutrients	Organic Carbon	3.3	mg C/L	0.5	1
11/14/2016 10:31	Effluent Grab	Nutrients	Sulfate	23	mg SO4/L	0.2	0.5
11/14/2016 10:31	Effluent Grab	Nutrients	Kjeldahl Nitrogen	0.69 V	mg N/L	0.08	0.2
11/14/2016 10:31	Effluent Grab	Nutrients	Total Alkalinity	130	mg CaCO3/L	0.65	2.5
11/14/2016 10:31	Effluent Grab	Nutrients	Chloride	31	mg Cl/L	0.2	0.5
11/14/2016 10:31	Effluent Grab	Nutrients	NO2NO3-N	0.076	mg N/L	0.004	0.01
11/14/2016 10:31	Effluent Grab	Nutrients	Total-P	0.85	mg P/L	0.005	0.05
11/14/2016 10:31	Effluent Grab	Nutrients	Turbidity	1.2 A	NTU	0.1	0.1
11/14/2016 10:31	Effluent Grab	Nutrients	Color (true)	5.5 I	PCU	2.5	6
11/14/2016 10:31	Effluent Grab	Nutrients	O-Phosphate-P	0.76	mg P/L	0.08	0.2
11/14/2016 10:31	Effluent Grab	Nutrients	Ammonia-N	0.056	mg N/L	0.002	0.005
11/14/2016 10:31	Effluent Grab	Pesticides	Phorate	0.0054 U	ug/L	0.0054	0.022
11/14/2016 10:31	Effluent Grab	Pesticides	Prometon	0.022 UJ	ug/L	0.022	0.086
11/14/2016 10:31	Effluent Grab	Pesticides	Prometryn	0.022 U	ug/L	0.022	0.086
11/14/2016 10:31	Effluent Grab	Pesticides	Metribuzin	0.022 U	ug/L	0.022	0.086
11/14/2016 10:31	Effluent Grab	Pesticides	Parathion Methyl	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Chlorpyrifos Methyl	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Malathion	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Mevinphos	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Parathion Ethyl	0.022 U	ug/L	0.022	0.086
11/14/2016 10:31	Effluent Grab	Pesticides	Chlorpyrifos Ethyl	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Diazinon	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Fonofos	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Norflurazon	0.032 U	ug/L	0.032	0.13
11/14/2016 10:31	Effluent Grab	Pesticides	Simazine	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Sucralose	8.6	ug/L	0.5	2
11/14/2016 10:31	Effluent Grab	Pesticides	Disulfoton	0.0054 U	ug/L	0.0054	0.022
11/14/2016 10:31	Effluent Grab	Pesticides	Demeton	0.026 U	ug/L	0.026	0.1
11/14/2016 10:31	Effluent Grab	Pesticides	Azinphos Methyl	0.022 U	ug/L	0.022	0.086
11/14/2016 10:31	Effluent Grab	Pesticides	Atrazine Desethyl	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Ametryn	0.011 U	ug/L	0.011	0.043

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 10:31	Effluent Grab	Pesticides	Carbamazepine	0.31	ug/L	0.0004	0.0016
11/14/2016 10:31	Effluent Grab	Pesticides	Naled	0.043 U	ug/L	0.043	0.17
11/14/2016 10:31	Effluent Grab	Pesticides	Metolachlor	0.065 UJ	ug/L	0.065	0.26
11/14/2016 10:31	Effluent Grab	Pesticides	Metalaxyl	0.043 UJ	ug/L	0.043	0.17
11/14/2016 10:31	Effluent Grab	Pesticides	Hexazinone	0.032 UJ	ug/L	0.032	0.13
11/14/2016 10:31	Effluent Grab	Pesticides	Fenamiphos	0.032 UJ	ug/L	0.032	0.13
11/14/2016 10:31	Effluent Grab	Pesticides	Ethion	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Ethoprop	0.0054 U	ug/L	0.0054	0.022
11/14/2016 10:31	Effluent Grab	Pesticides	Butylate	0.022 U	ug/L	0.022	0.086
11/14/2016 10:31	Effluent Grab	Pesticides	Bromacil	0.043 U	ug/L	0.043	0.17
11/14/2016 10:31	Effluent Grab	Pesticides	Alachlor	0.065 U	ug/L	0.065	0.26
11/14/2016 10:31	Effluent Grab	Pesticides	Acetaminophen	0.0040 U	ug/L	0.004	0.016
11/14/2016 10:31	Effluent Grab	Pesticides	Atrazine	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Pesticides	Atrazine Desisopropyl	0.011 U	ug/L	0.011	0.043
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 U	ug/L	40	160
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	ug/L	2	8.1
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	61
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Chrysene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	ug/L	2	8.1
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Anthracene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 U	ug/L	3	12
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 U	ug/L	3	12
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Fluoranthene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	400
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	ug/L	0.2	0.81

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	8.1
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Phenanthrene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	1,4-Dioxane	0.13	ug/L	0.02	0.08
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	ug/L	15	61
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Acenaphthylene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	8.1
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Di-n-butyl phthalate	2.0 U	ug/L	2	8.1
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Pentachlorophenol	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Diethyl phthalate	2.0 U	ug/L	2	8.1
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Naphthalene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Nitrobenzene	2.0 U	ug/L	2	8.1
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Pyrene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	40
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Acenaphthene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0 U	ug/L	3	12
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Fluorene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Hexachlorobutadiene	3.0 U	ug/L	3	12
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Hexachloroethane	3.0 U	ug/L	3	12
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20 U	ug/L	0.2	0.81
11/14/2016 10:31	Effluent Grab	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4
11/14/2016 10:31	Effluent Grab	Nutrients	Temperature	22.8	C		
11/14/2016 10:31	Effluent Grab	Nutrients	Dissolved Oxygen	8.28	%Sat		
11/14/2016 13:40	Control Site	AGP/LN	Algal Growth Potential	6.42	mg DryWt/L	0.3	0.9
11/14/2016 13:40	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55 U	ug/L	0.55	1.7
11/14/2016 13:40	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.40 U	ug/L	0.4	1.2
11/14/2016 13:40	Control Site	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	2.0		0	0

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 13:40	Control Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	2.1	mg/L	0.2	2
11/14/2016 13:40	Control Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
11/14/2016 13:40	Control Site	Microbiology	Fecal Coliforms-Membrane Filter	130 Q	cfu/100 mL	2	2
11/14/2016 13:40	Control Site	Overflow	Fecal Coliforms-Membrane Filter	140	cfu/100 mL	4	4
11/14/2016 13:40	Control Site	Metals	Hardness	91.6	mg/L	0.35	1.4
11/14/2016 13:40	Control Site	Metals	Silver	0.0050 U	ug/L	0.005	0.02
11/14/2016 13:40	Control Site	Metals	Potassium	0.41 I	mg/L	0.3	1.2
11/14/2016 13:40	Control Site	Metals	Calcium	34.0	mg/L	0.075	0.3
11/14/2016 13:40	Control Site	Metals	Iron	410	ug/L	30	120
11/14/2016 13:40	Control Site	Metals	Magnesium	1.64	mg/L	0.04	0.16
11/14/2016 13:40	Control Site	Metals	Zinc	5.0 U	ug/L	5	20
11/14/2016 13:40	Control Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
11/14/2016 13:40	Control Site	Metals	Chromium	0.45	ug/L	0.05	0.2
11/14/2016 13:40	Control Site	Metals	Copper	0.10 U	ug/L	0.1	0.4
11/14/2016 13:40	Control Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
11/14/2016 13:40	Control Site	Metals	Nickel	0.077 I	ug/L	0.05	0.2
11/14/2016 13:40	Control Site	Metals	Arsenic	0.37	ug/L	0.05	0.2
11/14/2016 13:40	Control Site	Metals	Sodium	1.9 I	mg/L	0.5	2
11/14/2016 13:40	Control Site	Metals	Lead	0.11 I	ug/L	0.05	0.2
11/14/2016 13:40	Control Site	Metals	Aluminum	105	ug/L	2	8
11/14/2016 13:40	Control Site	Nutrients	Kjeldahl Nitrogen	0.12 I	mg N/L	0.08	0.2
11/14/2016 13:40	Control Site	Nutrients	Color (true)	22	PCU	2.5	6
11/14/2016 13:40	Control Site	Nutrients	NO2NO3-N	0.10	mg N/L	0.004	0.01
11/14/2016 13:40	Control Site	Nutrients	Fluoride	0.042 I	mg F/L	0.035	0.1
11/14/2016 13:40	Control Site	Nutrients	Total-P	0.017	mg P/L	0.002	0.005
11/14/2016 13:40	Control Site	Nutrients	Total Alkalinity	90 A	mg CaCO3/L	0.65	2.5
11/14/2016 13:40	Control Site	Nutrients	O-Phosphate-P	0.009 I	mg P/L	0.004	0.01
11/14/2016 13:40	Control Site	Nutrients	Turbidity	5.6	NTU	0.1	0.1
11/14/2016 13:40	Control Site	Nutrients	Ammonia-N	0.008	mg N/L	0.002	0.005
11/14/2016 13:40	Control Site	Nutrients	TSS	2 I	mg/L	2	10
11/14/2016 13:40	Control Site	Nutrients	Organic Carbon	1.7	mg C/L	0.5	1
11/14/2016 13:40	Control Site	Nutrients	Chloride	3.1	mg Cl/L	0.2	0.5
11/14/2016 13:40	Control Site	Nutrients	Sulfate	0.80	mg SO4/L	0.2	0.5
11/14/2016 13:40	Control Site	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.04
11/14/2016 13:40	Control Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	ug/L	0.21	0.84

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.2 U	ug/L	3.2	13
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Chrysene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Di-n-octyl phthalate	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Phenanthrene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2,4-Dimethylphenol	11 U	ug/L	11	42
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Acenaphthylene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Fluorene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.2 U	ug/L	3.2	13
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Hexachloroethane	3.2 U	ug/L	3.2	13
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Pentachlorophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Phenol	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Acenaphthene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Benzidine	110 U	ug/L	110	420
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Nitrobenzene	2.1 U	ug/L	2.1	8.4
11/14/2016 13:40	Control Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2-Chloronaphthalene	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2 U	ug/L	3.2	13
11/14/2016 13:40	Control Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	ug/L	2.1	8.4
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Hexachlorobenzene	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.2 U	ug/L	3.2	13
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2,4-Dichlorophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.4
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Fluoranthene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	ug/L	2.1	8.4
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Pyrene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2,4-Dinitrophenol	16 U	ug/L	16	63
11/14/2016 13:40	Control Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42 U	ug/L	42	170
11/14/2016 13:40	Control Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Anthracene	0.21 U	ug/L	0.21	0.84

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Diethyl phthalate	2.1 U	ug/L	2.1	8.4
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Hexachlorobutadiene	3.2 U	ug/L	3.2	13
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Naphthalene	0.21 U	ug/L	0.21	0.84
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2-Chlorophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	2-Nitrophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	4-Nitrophenol	16 U	ug/L	16	63
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	ug/L	2.1	8.4
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Dimethyl phthalate	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	Isophorone	1.1 U	ug/L	1.1	4.2
11/14/2016 13:40	Control Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.4
11/14/2016 13:40	Control Site	Nutrients	Sample Depth	0.2	m		
11/14/2016 13:40	Control Site	Nutrients	pH	6.2			
11/14/2016 13:40	Control Site	Nutrients	Temperature	18.3	C		
11/14/2016 13:40	Control Site	Nutrients	Dissolved Oxygen	8.3	mg/L		
11/14/2016 13:40	Control Site	Nutrients	Specific Conductance	179	umhos/cm		
11/14/2016 13:40	Control Site	Nutrients	pH	6.2			
11/14/2016 13:40	Control Site	Nutrients	Specific Conductance	179	umhos/cm		
11/14/2016 13:40	Control Site	Nutrients	Temperature	18.3	C		
11/14/2016 13:40	Control Site	Nutrients	Sample Depth	0.2	m		
11/14/2016 13:40	Control Site	Nutrients	Dissolved Oxygen	8.3	mg/L		
11/14/2016 12:30	Test Site	AGP/LN	Algal Growth Potential	16.6 A	mg DryWt/L	0.3	0.9
11/14/2016 12:30	Test Site	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.5 I	mg/L	0.2	2
11/14/2016 12:30	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55 U	ug/L	0.55	1.7
11/14/2016 12:30	Test Site	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.40 U	ug/L	0.4	1.2
11/14/2016 12:30	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Uncorrected	0.40 U	ug/L	0.4	1.2
11/14/2016 12:30	Test Site	Chlorophyll/Grain Size/BOD	Chlorophyll/Phaeophytin Ratio	2.2		0	0
11/14/2016 12:30	Test Site	Microbiology	Fecal Coliforms-Membrane Filter	160 BQ	cfu/100 mL	2	2
11/14/2016 12:30	Test Site	Overflow	Fecal Coliforms-Membrane Filter	156	cfu/100 mL	4	4
11/14/2016 12:30	Test Site	Metals	Silver	0.0050 U	ug/L	0.005	0.02
11/14/2016 12:30	Test Site	Metals	Selenium	0.20 U	ug/L	0.2	0.8
11/14/2016 12:30	Test Site	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
11/14/2016 12:30	Test Site	Metals	Aluminum	86.6	ug/L	2	8
11/14/2016 12:30	Test Site	Metals	Hardness	101	mg/L	0.35	1.4

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 12:30	Test Site	Metals	Nickel	0.17 I	ug/L	0.05	0.2
11/14/2016 12:30	Test Site	Metals	Arsenic	0.40	ug/L	0.05	0.2
11/14/2016 12:30	Test Site	Metals	Iron	340	ug/L	30	120
11/14/2016 12:30	Test Site	Metals	Sodium	3.9	mg/L	0.5	2
11/14/2016 12:30	Test Site	Metals	Calcium	36.7	mg/L	0.075	0.3
11/14/2016 12:30	Test Site	Metals	Chromium	0.51	ug/L	0.05	0.2
11/14/2016 12:30	Test Site	Metals	Potassium	1.1 I	mg/L	0.3	1.2
11/14/2016 12:30	Test Site	Metals	Zinc	5.0 U	ug/L	5	20
11/14/2016 12:30	Test Site	Metals	Lead	0.11 I	ug/L	0.05	0.2
11/14/2016 12:30	Test Site	Metals	Copper	0.36 I	ug/L	0.1	0.4
11/14/2016 12:30	Test Site	Metals	Magnesium	2.14	mg/L	0.04	0.16
11/14/2016 12:30	Test Site	Nutrients	Sulfate	2.7	mg SO4/L	0.2	0.5
11/14/2016 12:30	Test Site	Nutrients	Fluoride	0.045 I	mg F/L	0.035	0.1
11/14/2016 12:30	Test Site	Nutrients	Kjeldahl Nitrogen	0.15 I	mg N/L	0.08	0.2
11/14/2016 12:30	Test Site	Nutrients	Color (true)	18	PCU	2.5	6
11/14/2016 12:30	Test Site	Nutrients	O-Phosphate-P	0.064	mg P/L	0.004	0.01
11/14/2016 12:30	Test Site	Nutrients	NO2NO3-N	0.22	mg N/L	0.004	0.01
11/14/2016 12:30	Test Site	Nutrients	Turbidity	4.7 A	NTU	0.1	0.1
11/14/2016 12:30	Test Site	Nutrients	Total-P	0.082	mg P/L	0.005	0.05
11/14/2016 12:30	Test Site	Nutrients	TSS	3 I	mg/L	2	10
11/14/2016 12:30	Test Site	Nutrients	Ammonia-N	0.015	mg N/L	0.002	0.005
11/14/2016 12:30	Test Site	Nutrients	Chloride	6.0	mg Cl/L	0.2	0.5
11/14/2016 12:30	Test Site	Nutrients	Total Alkalinity	97	mg CaCO3/L	0.65	2.5
11/14/2016 12:30	Test Site	Nutrients	Organic Carbon	1.7	mg C/L	0.5	1
11/14/2016 12:30	Test Site	Pesticides	Sucralose	1.7	ug/L	0.05	0.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Dimethyl phthalate	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2,4-Dinitrophenol	16 U	ug/L	16	63
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2-Nitrophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Anthracene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	ug/L	2.1	8.4
11/14/2016 12:30	Test Site	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.2 U	ug/L	3.2	13
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Phenanthrene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2,4-Dichlorophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1 U	ug/L	1.1	4.2

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 12:30	Test Site	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	ug/L	2.1	8.4
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Butyl benzyl phthalate	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Fluoranthene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Fluorene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.4
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Phenol	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Benzidine	110 U	ug/L	110	420
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.2 U	ug/L	3.2	13
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Isophorone	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	1,4-Dioxane	0.020 U	ug/L	0.02	0.08
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2-Chloronaphthalene	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Acenaphthene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	ug/L	2.1	8.4
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Pyrene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2,4-Dimethylphenol	11 U	ug/L	11	42
11/14/2016 12:30	Test Site	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	4-Nitrophenol	16 U	ug/L	16	63
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Acenaphthylene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.4
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Chrysene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Hexachlorobutadiene	3.2 U	ug/L	3.2	13
11/14/2016 12:30	Test Site	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2-Chlorophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42 U	ug/L	42	170
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.2 U	ug/L	3.2	13
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Di-n-octyl phthalate	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Hexachlorobenzene	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Naphthalene	0.21 U	ug/L	0.21	0.84
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Nitrobenzene	2.1 U	ug/L	2.1	8.4
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Pentachlorophenol	1.1 U	ug/L	1.1	4.2

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.2 U	ug/L	3.2	13
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1 U	ug/L	1.1	4.2
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Diethyl phthalate	2.1 U	ug/L	2.1	8.4
11/14/2016 12:30	Test Site	Priority Organic Pollutants	Hexachloroethane	3.2 U	ug/L	3.2	13
11/14/2016 12:30	Test Site	Nutrients	Temperature	15.5	C		
11/14/2016 12:30	Test Site	Nutrients	Dissolved Oxygen	8.3	mg/L		
11/14/2016 12:30	Test Site	Nutrients	Specific Conductance	198	umhos/cm		
11/14/2016 12:30	Test Site	Nutrients	Sample Depth	0.2	m		
11/14/2016 12:30	Test Site	Nutrients	pH	6.1			
11/14/2016 12:30	Test Site	Nutrients	Temperature	15.5	C		
11/14/2016 12:30	Test Site	Nutrients	Specific Conductance	198	umhos/cm		
11/14/2016 12:30	Test Site	Nutrients	pH	6.1			
11/14/2016 12:30	Test Site	Nutrients	Dissolved Oxygen	8.3	mg/L		
11/14/2016 12:30	Test Site	Nutrients	Sample Depth	0.2	m		
11/14/2016 11:08	Blank	Metals	Hardness	0.35 U	mg/L	0.35	1.4
11/14/2016 11:08	Blank	Metals	Lead	0.67	ug/L	0.05	0.2
11/14/2016 11:08	Blank	Metals	Arsenic	0.050 U	ug/L	0.05	0.2
11/14/2016 11:08	Blank	Metals	Silver	0.0050 U	ug/L	0.005	0.02
11/14/2016 11:08	Blank	Metals	Nickel	0.050 U	ug/L	0.05	0.2
11/14/2016 11:08	Blank	Metals	Potassium	0.30 U	mg/L	0.3	1.2
11/14/2016 11:08	Blank	Metals	Calcium	0.075 U	mg/L	0.075	0.3
11/14/2016 11:08	Blank	Metals	Magnesium	0.040 U	mg/L	0.04	0.16
11/14/2016 11:08	Blank	Metals	Selenium	0.20 U	ug/L	0.2	0.8
11/14/2016 11:08	Blank	Metals	Cadmium	0.020 U	ug/L	0.02	0.08
11/14/2016 11:08	Blank	Metals	Sodium	0.50 U	mg/L	0.5	2
11/14/2016 11:08	Blank	Metals	Aluminum	2.0 U	ug/L	2	8
11/14/2016 11:08	Blank	Metals	Copper	0.62	ug/L	0.1	0.4
11/14/2016 11:08	Blank	Metals	Iron	30 U	ug/L	30	120
11/14/2016 11:08	Blank	Metals	Zinc	5.0 U	ug/L	5	20
11/14/2016 11:08	Blank	Metals	Chromium	0.050 U	ug/L	0.05	0.2
11/14/2016 11:08	Blank	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
11/14/2016 11:08	Blank	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
11/14/2016 11:08	Blank	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
11/14/2016 11:08	Blank	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
11/14/2016 11:08	Blank	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
11/14/2016 11:08	Blank	Nutrients	Total Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 11:08	Blank	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
11/14/2016 11:08	Blank	Nutrients	Color (true)	2.5 U	PCU	2.5	6
11/14/2016 11:08	Blank	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
11/14/2016 11:08	Blank	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
11/14/2016 11:08	Blank	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
11/14/2016 11:08	Blank	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
11/14/2016 11:08	Blank	Pesticides	Prometon	0.021 UJ	ug/L	0.021	0.086
11/14/2016 11:08	Blank	Pesticides	Fonofos	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Chlorpyrifos Methyl	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Azinphos Methyl	0.021 U	ug/L	0.021	0.086
11/14/2016 11:08	Blank	Pesticides	Atrazine	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Simazine	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Fenamiphos	0.032 UJ	ug/L	0.032	0.13
11/14/2016 11:08	Blank	Pesticides	Norflurazon	0.032 U	ug/L	0.032	0.13
11/14/2016 11:08	Blank	Pesticides	Atrazine Desisopropyl	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Metolachlor	0.064 UJ	ug/L	0.064	0.26
11/14/2016 11:08	Blank	Pesticides	Parathion Methyl	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Acetaminophen	0.0040 U	ug/L	0.004	0.016
11/14/2016 11:08	Blank	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.04
11/14/2016 11:08	Blank	Pesticides	Phorate	0.0054 U	ug/L	0.0054	0.021
11/14/2016 11:08	Blank	Pesticides	Prometryn	0.021 U	ug/L	0.021	0.086
11/14/2016 11:08	Blank	Pesticides	Demeton	0.026 U	ug/L	0.026	0.1
11/14/2016 11:08	Blank	Pesticides	Ametryn	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Metribuzin	0.021 U	ug/L	0.021	0.086
11/14/2016 11:08	Blank	Pesticides	Naled	0.043 U	ug/L	0.043	0.17
11/14/2016 11:08	Blank	Pesticides	Parathion Ethyl	0.021 U	ug/L	0.021	0.086
11/14/2016 11:08	Blank	Pesticides	Carbamazepine	0.0004 U	ug/L	0.0004	0.0016
11/14/2016 11:08	Blank	Pesticides	Bromacil	0.043 U	ug/L	0.043	0.17
11/14/2016 11:08	Blank	Pesticides	Chlorpyrifos Ethyl	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Diazinon	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Ethoprop	0.0054 U	ug/L	0.0054	0.021
11/14/2016 11:08	Blank	Pesticides	Metalaxyl	0.043 UJ	ug/L	0.043	0.17
11/14/2016 11:08	Blank	Pesticides	Atrazine Desethyl	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Butylate	0.021 U	ug/L	0.021	0.086
11/14/2016 11:08	Blank	Pesticides	Hexazinone	0.032 UJ	ug/L	0.032	0.13
11/14/2016 11:08	Blank	Pesticides	Mevinphos	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Alachlor	0.064 U	ug/L	0.064	0.26

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 11:08	Blank	Pesticides	Disulfoton	0.0054 U	ug/L	0.0054	0.021
11/14/2016 11:08	Blank	Pesticides	Malathion	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Pesticides	Ethion	0.011 U	ug/L	0.011	0.043
11/14/2016 11:08	Blank	Priority Organic Pollutants	1,4-Dioxane	0.16	ug/L	0.02	0.08
11/14/2016 11:08	Blank	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Hexachloroethane	3.1 U	ug/L	3.1	12
11/14/2016 11:08	Blank	Priority Organic Pollutants	Fluorene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.1 U	ug/L	2.1	8.3
11/14/2016 11:08	Blank	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	42
11/14/2016 11:08	Blank	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Phenanthrene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Chrysene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Pentachlorophenol	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Naphthalene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.1 U	ug/L	3.1	12
11/14/2016 11:08	Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.1 U	ug/L	3.1	12
11/14/2016 11:08	Blank	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	420
11/14/2016 11:08	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.1 U	ug/L	2.1	8.3
11/14/2016 11:08	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	42 U	ug/L	42	170
11/14/2016 11:08	Blank	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Pyrene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Acenaphthylene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.1 U	ug/L	2.1	8.3
11/14/2016 11:08	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.1 U	ug/L	3.1	12
11/14/2016 11:08	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	16 U	ug/L	16	62
11/14/2016 11:08	Blank	Priority Organic Pollutants	Nitrobenzene	2.1 U	ug/L	2.1	8.3
11/14/2016 11:08	Blank	Priority Organic Pollutants	Fluoranthene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4.2

Date_Sampled	UDL	SCH_Group	Component	Result	Units	MDL	PQL
11/14/2016 11:08	Blank	Priority Organic Pollutants	Diethyl phthalate	2.1 U	ug/L	2.1	8.3
11/14/2016 11:08	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	4-Nitrophenol	16 U	ug/L	16	62
11/14/2016 11:08	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.1 U	ug/L	2.1	8.3
11/14/2016 11:08	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Anthracene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.1 U	ug/L	3.1	12
11/14/2016 11:08	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4.2
11/14/2016 11:08	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	2.1 U	ug/L	2.1	8.3
11/14/2016 11:08	Blank	Priority Organic Pollutants	Acenaphthene	0.21 U	ug/L	0.21	0.83
11/14/2016 11:08	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.1 U	ug/L	3.1	12
11/14/2016 11:08	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4.2

The Bioassay of the Graceville WWTF effluent sampled on November 14, 2016, NPDES #FL0038555

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code			NPDES NUMBER										YR/MO/DA						Insp Type		Inspector		Fac Type	
1	N	2	5	3	F	L	0	0	3	8	5	5	5	11	12	1	6	1	1	1	4	#	**B**	#	**S**	#	1

Remarks

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The Priority Pollutants Analysis of the Graceville WWTF effluent sampled on November 14, 2016 NPDES #FL0038555

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code			NPDES NUMBER										YR/MO/DA						Insp Type		Inspector		Fac Type	
1	N	2	5	3	F	L	0	0	3	8	5	5	5	11	12	1	6	1	1	1	4	#	**X**	#	**S**	#	1

Remarks

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Biological Analyses of the Graceville WWTF effluent sampled on November 14, 2016, NPDES #FL0038555

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)

Transaction Code			NPDES NUMBER										YR/MO/DA						Insp Type		Inspector		Fac Type	
1	N	2	5	3	F	L	0	0	3	8	5	5	5	11	12	1	6	1	1	1	4	#	**S**	#	**S**	#	1

Remarks

#