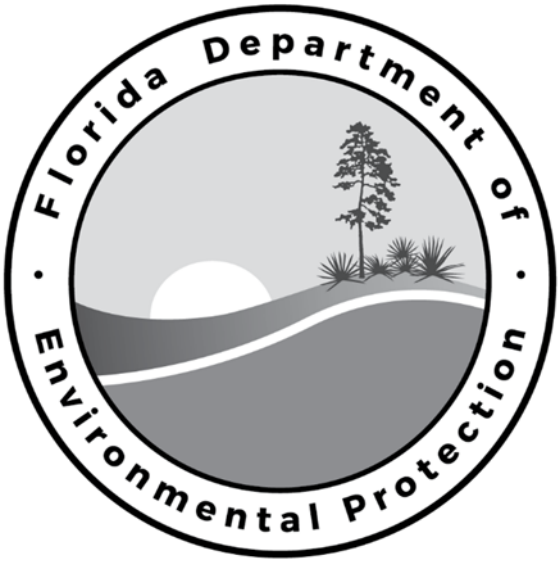



Biological Assessment of

# Packaging Corporation of America

Hamilton County

NPDES # FL0000281

Sampled April 10, 2017

December 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**

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**.** References to Rule 62-302.530, F.A.C., are to the currently applicable surface water quality criteria table with an effective date of 02/17/2016 and a notice identification number of 17115667. New limits for *E. coli*, enterococci, and total ammonia nitrogen have been approved but the updates will not be used in this report as the sampling occurred prior to their approval.

Please note that the human health-based water quality criteria (HHC) that were approved for adoption by the Environmental Regulation Commission (ERC) on July 26, 2016 are not yet in effect even though they are included in the version of Chapter 62-302, F.A.C. on the Department of State website. The rule revisions for the HHC have not been submitted to EPA due to an ongoing rule challenge, and cannot be used for Clean Water Act purposes until they have been approved by EPA.

**Facility Overview**

The Packaging Corporation of America (PCA) is an Industrial Wastewater Facility. The effluent is discharged into the Withlacoochee River, a Class III Fresh Water at the confluence of Jumping Gulley Creek and the river (see map Appendix A). The design flow of the wastewater system is 55 million gallons per day (MGD). The annual average effluent flow for May 2016 to April 2017 was 10.75 MGD. The plant discharges continuously, and the flow during this survey was 11.75 MGD (PCA staff).

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 the Withlacoochee River beginning 80m upstream of the confluence of Jumping Gulley Creek and the Withlacoochee River and ending 180 m upstream of the confluence), and a Test Site (located in the Withlacoochee River below the end of the downstream edge of the mixing zone). The mixing zone ends 357m (1,171 ft) below D-001. The 100m mark for the Stream Condition Index (SCI) was approximately 457m (1500 ft) downstream of D-001. Hester Dendy samplers were placed near each bank at both sites to capture any differences across the river width. Total Suspended Solids (TSS) and Carbonaceous Biochemical Oxygen Demand (CBOD) were collected as 24-hour timed composite samples from EFF-1. All other effluent samples were taken as grab samples from monitoring location EFF-1. Toxicity water samples were scheduled as composite samples but were collected as grab samples in accordance with the facility permit.

All field and laboratory methods followed DEP Standard Operating Procedures (see https://floridadep.gov/dear/florida-dep-laboratory/content/dep-laboratory-quality-assurance-manual-and-sops and https://floridadep.gov/dear/quality-assurance/content/dep-sops 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: Pat O'Connor, Brian Davis, Nick Williams, and Brittany Dion (DEP Northeast Regional Operation Center, Jacksonville), and DEP Central 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 D, E, and F)

- Dissolved oxygen levels (% saturation and mg/L) at all sites complied with the permit limits and Class III Freshwater Criteria. There is a SSAC of 4.0 mg/L for dissolved oxygen from June 1 to October 30.

- The pH of the effluent, Test Site, and Control Site complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and effluent permit limits.
- Specific conductance complied with the permit limit at the effluent and complied with the Class III Freshwater Criteria limit at the Test and Control Sites.
- The Habitat Assessment score was 121 at the Test Site and 111 at the Control Site. The Test site score places it in the Optimal category, while the Control Site score places it in the Suboptimal category (see Appendix C). The Control Site had greater substrate diversity and substrate availability. Both sites experienced moderate habitat smothering, and both sites lost points for lack of bank stability of both banks.

Organic Constituents (See Table 2 and Appendix F)

- No organic constituents were detected in the receiving waters or effluent.
- No organic constituents were detected in the field blank.

Nutrients (See Table 2 and Appendix F)

- The Withlacoochee River falls within the North Central Nutrient Watershed Region for Numeric Nutrient Criteria (NNC). For this region, the NNC thresholds, expressed as annual geometric means, are 0.3 mg/L total phosphorus and 1.87 mg/L 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
- In the Test and Control Site samples, total phosphorus and orthophosphate values were approximately 6 times lower, and the total nitrogen values were approximately 3 times lower than the effluent sample values. Total ammonia in the Test Site sample was 22 times lower than the effluent sample and 49 times lower in the Control Site sample. While the nutrient amounts detected in the Test and Control Site samples were generally similar and lower than the effluent, the amounts detected in the Test Site samples were higher than those detected in the Control Site samples.
- No nutrients were detected in the field blank.

Analytical Water Chemistry (See Table 2 and Appendix F)

- Total suspended solids of the effluent sample complied with permit limits.
- The permit contains a limit for Biochemical Oxygen Demand (BOD) for the effluent. However, a result for BOD cannot be calculated because a BOD analysis was not performed due to a scheduling error.
- Chlorophyll *a* (corrected) was detected in higher amount in the effluent sample than in the Test and Control Site samples, which were both between the MDL and PQL in the Test and Control Sites.

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

- Tests were performed April 11 through April 18, 2017.
- Chronic definitive bioassay results are reported as the 25% Inhibition Concentration (IC25).
  *Ceriodaphnia dubia* 7-day chronic definitive bioassay – IC25 is 70.2%
  *Pimephales promelas* 7-day chronic definitive bioassay – IC25 is >100%
  * NOTE: 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),200(5), 62-302.530(61108) and/or facility permit limits.

- Both results complied with effluent permit limits.
- For more information or to obtain copies of the bioassay bench sheets and SRT data, please contact the Biology Laboratory at 850-245-8177.

Metals (See Table 3 and Appendix F)

- All metals detected in the effluent sample were present at levels that complied with effluent permit limits and Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- All metals in Control and Test Site samples were either undetected or detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- No metals were detected in the field blank.

Algal Growth Potential (See Table 4 and Appendix F)

- The effluent AGP value of the unicellular, freshwater green alga, *Pseudokirchneriella subcapitata*, and the salinity adjusted effluent AGP value of *Dunaliella tertiolecta* were approximately 2.5 times higher than those in the Test Site and Control Site samples. The analytical chemistry suggests that the effluent, Test Site and Control Site are nitrogen-limited (Miller et al. 1978) (USEPA 2000).
- Both effluent AGP results were greater than the range (6.10 to 20.0 mg dry wt/L) suggested to be representative of high productivity for freshwaters (Miller et al. 1978). The Test Site and Control Site samples fell within this range.

Bioassessment

Periphyton (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 Rapid Periphyton survey (RPS) samplings with ≤ 25% rank 4-6 (algae >6mm thick) coverage are needed to achieve NNC floral metrics.
- The RPS was performed at the Test and Control Sites. The canopy cover was open at both sites. Thick algal growth may be expected at minimally shaded sites. The samplers did not use a boat and only sampled the edge of one side of the river. Additional points should have been sampled per DEP SOP FS 7000, Biological Communities, which would alter the percentage coverage of mat-forming algae. Filamentous mat-forming algae were found at 55% of the sampled points at the Test Site and at 64% of the sampled points at the Control Site.
- Samples of long, filamentous algal growth were collected at each site. *Oedogonium* sp. was the dominant taxa at the Test Site. *Phormidium* sp. was the dominant taxa at the Control Site.

Macroinvertebrates (See Tables 5)

- Quantitative macroinvertebrate data were collected from Hester Dendy sampling racks which consisted of 4 replicates per rack. There were two Test Sites and two Control Sites located on both sides of the Withlacoochee River (the northern Jumping Gully Creek side and the south side). The Shannon-Weaver diversity scores were 4.23 and 4.34 at the Test Sites and 3.79 and 4.07 at the Control Sites. Both sites had Dipterans and Ephemeropterans as the dominant sets of taxa. Both sites had sensitive taxa, such as Ephemeroptera and Trichoptera, present.
- For more information or to obtain a copy of the taxa lists, please contact the Biology Laboratory at 850-245-8177.

**Conclusion**

Ortho-phosphate and total ammonia values detected in the Test Site samples are slightly higher than the Control Site samples. The Rapid Periphyton Survey data is inconclusive due to sampling error. Hester Dendy macroinvertebrate data suggests no detectable negative impact in the Withlacoochee River from the effluent.

**Literature Cited**

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USEPA. 2000. Nutrient Criteria Technical Guidance Manual – River and Streams. EPA-822-B-00-002.

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

| Packaging Corporation of America | Units | Class III Criteria | Effluent Permit Limits | Effluent Grab | Test Site | Control Site |
|---|---|---|---|---|---|---|
| Habitat Assessment | - | - | - | - | 121 | 111 |
| Sample Depth | m | - | - | 0.3 | 0.3 | 0.3 |
| Temperature | C | - | Report | 21.8 | 21.0 | 20.6 |
| pH | SU | 6.0 - 8.5 | 6.0-9.0 | 7.1 | 7.0 | 6.9 |
| Specific Conductance | µmhos/cm | ≤ 1,275 | ≤ 3,900 | 1839 c | 263 | 155 |
| Dissolved Oxygen | % saturation | ≥ 34 | - | - | 63.5 | 63.1 |
| Dissolved Oxygen | mg/L | ≥ 5.0 | ≥ 1.5 | 9.99 | 5.7 | 5.7 |

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated

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

| Packaging Corporation of America | Units | Class III Criteria | Effluent Permit Limits | Effluent Grab | Effluent Comp | Test Site | Control Site | Field Blank |
|---|---|---|---|---|---|---|---|---|
| Ortho-phosphate | mg P/L | - | - | 0.51 | - | 0.088 | 0.071 | 0.004 U |
| Total Phosphorus | mg P/L | - | Report | 0.65 | - | 0.13 | 0.11 | 0.002 U |
| Total Ammonia | mg N/L | - | Report | 0.83 | - | 0.037 | 0.017 | 0.002 U |
| Un-ionized Ammonia (calculated salinity) | mg/L | ≤ 0.02 s | - | < 0.02 c | - | < 0.02 c | < 0.02 c | - |
| Nitrate and Nitrite | mg N/L | - | - | 0.27 | - | 0.25 | 0.24 | 0.004 U |
| Total Kjeldahl Nitrogen | mg N/L | - | Report | 1.9 | - | 0.49 | 0.45 | 0.080 U |
| Organic Nitrogen | mg N/L | - | - | 1.1 c | - | 0.45 c | 0.43 c | 0.039 c |
| Total Nitrogen | mg N/L | - | Report | 2.2 c | - | 0.74 c | 0.69 c | 0.042 c |
| Total Organic Carbon | mg C/L | - | - | 14 | - | 9.1 | 9.3 | 0.50 U |
| Chlorophyll *a* - Corrected | ug/L | - | - | 6.9 | - | 1.2 I | 0.94 I | - |
| Phaeophytin | ug/L | - | - | 6.6 | - | 0.40 U | 0.40 U | - |
| CBOD, 5 day, N - inhibited | mg/L | - | - | - | 3.1 p [1] | 1.0 I [1] | 1.0 I [1] | - |
| BOD, 5 day, N - uninhibited | lb/day | - | ≤14,168 | - | - | - | - | - |
| Total Suspended Solids | lb/day | - | ≤16,140 p | - | 294 c p A I | 294 c I | 195 c I | - |
| Turbidity | NTU | < 29 t | ≤103 s | 3.1 | - | 3.5 | 3.7 A | 0.10 U |
| Color (true) | PCU | - | - | 210 | - | 110 | 110 | 2.5 U |
| Alkalinity | | ≥ 20 | - | 391 | - | 66 | 54 | 0.65 U |
| Chloride | mg Cl/L | - | - | 28 | - | 11 | 9.9 | 0.20 U |
| Fluoride | mg F/L | ≤ 10.0 | - | 0.23 | - | 0.13 | 0.12 | 0.035 U |
| Sulfate | mg SO4/L | - | - | 1000 | - | 44 | 6.8 | 0.20 U |
| Oils and Greases | | ≤ 5.0 | ≤ 5.9s | - | 1.6 UJ | 1.7 U | 1.6 U | 1.8 I |
| **Toxicity (IC25, Chronic Definitive, % effluent)** | | | | | | | | |
| Bioassay - Water flea *(Ceriodaphnia dubia)* | - | - | ≥ 35 | 70.2 | - | - | - | - |
| Bioassay - Fish *(Pimephales promelas)* | - | - | ≥ 35 | 100 L | - | - | - | - |

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
c - Value is calculated
p - 24-hour timed proportioned composite
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J - Estimated value
L - Actual value is known to be greater than value given
U - Material analyzed for but not detected; value reported is the method detection limit
[1] - A CBOD N-inhibited analysis was performed instead of a BOD N-uninhibited analysis. Therefore, a comparison to the BOD permit limit cannot be made.

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

| Packaging Corporation of America | Units | Class III Criteria | Effluent Permit Limits | Effluent Grab Class III Criteria | Effluent Grab | Test Site Class III Criteria | Test Site | Control Site Class III Criteria | Control Site |
|---|---|---|---|---|---|---|---|---|---|
| Hardness | mg $CaCO_3$ | - | report | - | 250 c | - | 74.3 c | - | 67.4 c |
| Aluminum | ug/L | - | - | - | 217 | - | 248 | - | 224 |
| Arsenic | ug/L | ≤ 50 | - | - | 0.41 | - | 0.75 | - | 0.76 |
| Cadmium | ug/L | ≤ 0.1 b | - | ≤ 0.534 b | 0.020 U | ≤ 0.217 b | 0.020 U | ≤ 0.202 b | 0.020 U |
| Calcium | mg/L | - | - | - | 57.2 | - | 22.2 | - | 20.7 |
| Chromium, Total [2] | ug/L | - | - | ≤ 183 b | 0.48 I | ≤ 67.5 b | 0.70 I | ≤ 62.4 b | 0.71 I |
| Copper | ug/L | - | - | ≤ 20.4 b | 0.22 I | ≤ 7.23 b | 0.59 I | ≤ 6.66 b | 0.61 I |
| Iron | ug/L | ≤ 1,000 | - | - | 82 I | - | 770 | - | 790 |
| Lead | ug/L | - | ≤ 9.6s | ≤ 10.2 b | 0.17 I | ≤ 2.18 b | 0.39 | ≤ 1.92 b | 0.39 |
| Magnesium | mg/L | - | - | - | 26.1 | - | 4.57 | - | 3.81 |
| Nickel | ug/L | - | - | ≤ 113 b | 0.44 I | ≤ 40.5 b | 0.38 I | ≤ 37.3 b | 0.39 I |
| Potassium | mg/L | - | - | - | 30.4 | - | 3.5 | - | 2.5 |
| Selenium | ug/L | ≤ 5.0 | - | - | 0.20 U | - | 0.20 U | - | 0.20 U |
| Silver | ug/L | ≤ 0.07 | - | - | 0.010 U | - | 0.010 U | - | 0.010 U |
| Sodium | mg/L | - | - | - | 596 | - | 26.0 | - | 5.5 |
| Zinc | ug/L | - | - | ≤ 261 b | 5.0 U | ≤ 93.1 b | 5.0 U | ≤ 85.7 b | 5.0 U |

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

b - Value is calculated based on hardness, (62-302.530(3))

c - Value is calculated

s - Single sample

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

**Table 4. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), total nitrogen (TN) limitation and ratios of nitrogen to phosphorus**

| Packaging Corporation of America | | | | | | |
|---|---|---|---|---|---|---|
| **Location** | **Test Species** | **AGP (measured)** | **Predicted AGP (TSIN) ± 20%** | **Predicted AGP (TN) ± 20%** | **Inorganic N:P ratio** | **Total N:P ratio** |
| Effluent Grab | *Pseudokirchneriella subcapitata* | 25.6 | 41.8 ± 8.4 | 82.5 ± 16.5 | 2.2 | 3.3 |
| Effluent Grab * | *Dunaliella tertiolecta* | 26 * | not applicable [2] | not applicable [2] | 2.2 | 3.3 |
| Test Site | *Pseudokirchneriella subcapitata* | 9.77 | 10.9 ± 2.2 | 28.1 ± 5.6 | 3.3 | 5.7 |
| Control Site | *Pseudokirchneriella subcapitata* | 8.81 A | 9.8 ± 2 | 26.2 ± 5.2 | 3.6 | 6.3 |

* - sample salinity adjusted to 8.12 ppth

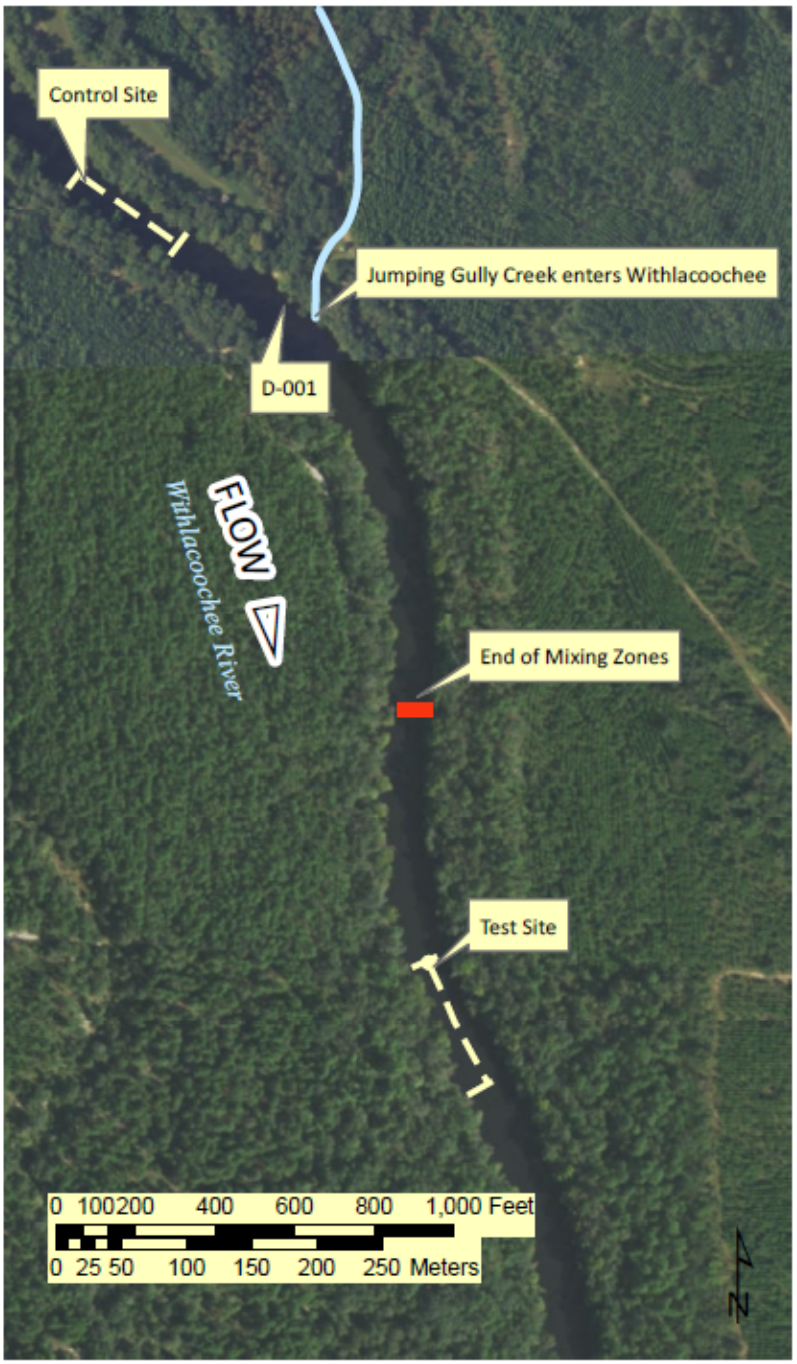
[2] - predictions not applicable to marine matrix

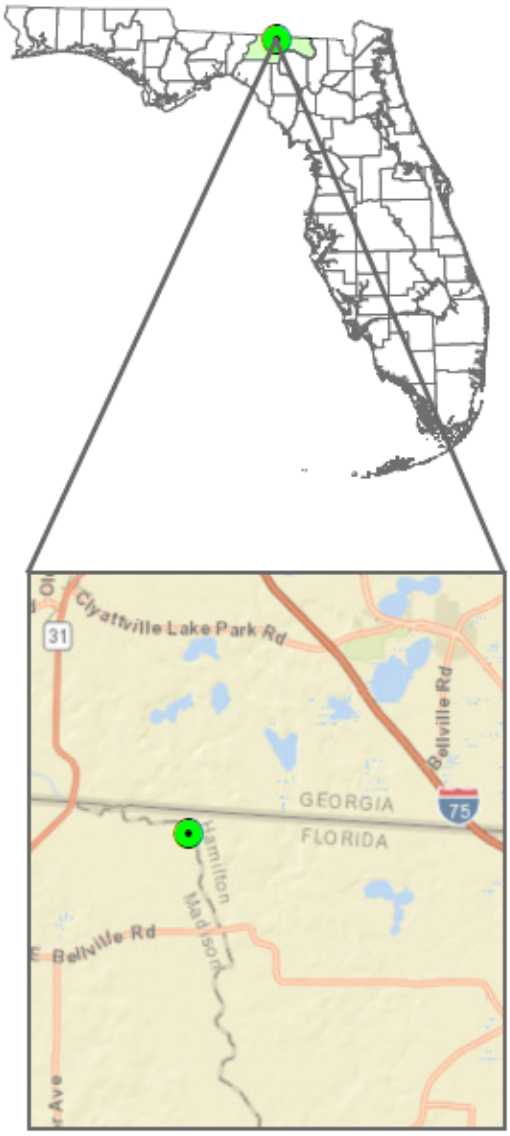
A - Value reported is the mean of two or more determinations

**Table 5. Macroinvertebrate Hester-Dendy samples - quantitative**

| Packaging Corporation of America | Test_Jumping Gully Side | Test_South Side | Control_Jumping Gully Side | Control_South Side |
|---|---|---|---|---|
| **Summary Statistics** | | | | |
| Shannon-Weaver Diversity | 4.23 | 4.34 | 3.79 | 4.07 |
| Number of Taxa | 46 | 43 | 48 | 56 |
| Number of EPT Taxa | 13 | 11 | 13 | 13 |
| Percent Dominant Taxon | 19.58 | 19.48 | 38.74 | 28.41 |
| Dominant Taxon Name | *Tricorythodes albilineatus* (Ephemeroptera) | *Tricorythodes albilineatus* (Ephemeroptera) | *Tricorythodes albilineatus* (Ephemeroptera) | *Tricorythodes albilineatus* (Ephemeroptera) |
| Total Number of Individuals (counted) | 1036 | 482 | 724 | 889 |
| Total Number of Individuals (#/$m^2$) | 2744 | 1278 | 1919 | 2355 |
| **Community Composition: Percent of total** | | | | |
| Acariformes | 0.2 | 0.2 | 0.3 | 0.0 |
| Amphipoda | 0.0 | 0.2 | 0.7 | 0.7 |
| Coleoptera | 2.6 | 2.7 | 2.4 | 0.6 |
| Diptera | 35.2 | 51.2 | 40.9 | 45.6 |
| Ephemeroptera | 37.1 | 32.0 | 48.3 | 43.5 |
| Gastropoda | 0.2 | 0.6 | 0.0 | 0.3 |
| Odonata | 0.0 | 0.2 | 0.0 | 0.5 |
| Oligochaeta | 0.0 | 0.0 | 0.1 | 0.0 |
| Plecoptera | 1.1 | 4.4 | 1.5 | 1.9 |
| Trichoptera | 23.7 | 8.3 | 5.7 | 6.9 |
| Other | 0.0 | 0.2 | 0.1 | 0.1 |
| **Functional Feeding Groups: Percent of total** | | | | |
| Browser-Grazers | 0.0 | 0.0 | 0.0 | 0.0 |
| Burrowing Deposit Feeders | 0.0 | 0.0 | 0.1 | 0.0 |
| Parasite | 0.0 | 0.0 | 0.0 | 0.0 |
| Piercers | 16.0 | 5.4 | 4.5 | 4.8 |
| Predators | 5.8 | 14.2 | 10.1 | 10.3 |
| Scavengers | 0.6 | 1.2 | 0.6 | 0.1 |
| Scrapers | 7.5 | 4.6 | 4.4 | 5.3 |
| Shredders | 4.9 | 7.2 | 4.8 | 3.9 |
| Surface Deposit Feeders | 45.9 | 53.7 | 65.2 | 56.8 |
| Suspension Feeders | 15.5 | 13.7 | 10.4 | 18.8 |
| Unknown | 3.9 | 0.0 | 0.0 | 0.0 |

# Appendix A
# Packaging Corporation of America
*Fifth Year Bioassessment Sampling Locations*




**Madison and Hamilton County on Border of Florida/Georgia**

# State of Florida
# Department of Environmental Protection
# Facility Introduction & Summary

| **PART I: Information gathered prior to sampling event** | |
|---|---|
| **Prepared By: Ginny Montoya** | **Contact Number: 904-256-1632** |
| **Facility Name (as it appears on permit): Packaging Corporation of America – Valdosta Operations** | **Former Names: N/A** |
| **NPDES Permit Number: FL0000281** | **Permit Expiration Date: 2/14/2018** |
| **Physical Address: 5495 Lake Park – Clyattville Road, Clyattville, GA 31601** | |
| **District: Northeast** | **County: Hamilton (Discharge located in Hamilton County)** |
| **Function of Facility: Wastewater treatment system for an unbleached kraft linerboard production facility** | |
| **Facility Type: Industrial Wastewater** | **Permitted Capacity (MGD): 55.0** |
| **Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months):** Feb 2016 – Jan 2017<br>D-001 – 12.42 MGD | |
| **If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): N/A** | |
| **Description of type of Discharge:**<br>☒ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent**<br>☐ **Other, please specify:** | |
| **Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):**<br>**EFF-1 –** Effluent control structure following the Parshall flume flow meter. No chemical addition, including defoamers, shall occur after sampling location<br>**CAL-1 –** Calculated value<br>**SWD-2 –** In the Withlacoochee River at the USGS Gauging Station at Pinetta, Florida.<br>**SWU-1 –** In the Withlacoochee River, located approximately 100 feet up stream (north) of outfall D-001 (located near the confluence of Jumping Gully Creek and the Withlacoochee River). Streamside samples will be taken from the east riverbank, approximately four to five feet out from the water's edge.<br>**SWD-1 –** In the Withlacoochee River, near Florida Highway 150 Bridge. Streamside samples will be taken approximately four to five feet out from the water's edge or mid-river from the bridge, as appropriate. | |
| **Description of Permitted Outfall(s):**<br>**D-001 –** Discharge to Withlacoochee River, Class III Fresh Water (WBID# 3315), approximately 150feet in length. The point of discharge is located approximately at Lat 30 37' 22" N, Long 83 16' 10" W. | |
| **Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):** Treatment consists of a mechanical bar screen at the influent to the wastewater lift station prior to the primary clarifier, a manual bar screen for the auxiliary wastewater lift station bypass line, and a back-up manual bar screen in the channel downstream from the mechanical bar screen. The wastewater lift station pumps wastewater consisting of process and non-process wastewater from the mill manufacturing operations, and storm water, to a primary clarifier and associated sludge ponds for treatment for settleable solids removal. | |

Secondary treatment is accomplished in a series of six ponds covering approximately 850 acres, with nutrient addition to the individual ponds as needed, and coagulant/precipitant at the discharge from Pond 6 for incremental emergency color reduction. There are three facultative ponds, followed by an aerated stabilization basin, a 350-acre facultative impoundment, and a final polishing pond (Pond 7), prior to a final effluent pumping station and associated conveyance system which discharges final treated effluent from outfall D-001 to the Withlacoochee River, a class III fresh surface water of the state. In the previous permit cycle, there were seven ponds. Pond 1 will be taken out of service due to excessive buildup of solids in the pond. Pond 1 may be returned to service after solids removal at a later date if it is determined that it is needed. The pump station is designed to convey 55 MGD maximum of effluent to outfall D-001. The pump station includes bar screens, a post aeration chamber, parshall flume for effluent flow monitoring, and effluent pumps which convey the effluent to a final concrete control splitter structure identified as station 001B and then to outfall D-001. Approximately 13,000 L.F. of 48 inch HDPE transmission pipe conveys the effluent from EFF-1 to station 001B. The effluent gravity flows into the Withlacoochee River through outfall D-001. Under high-river stage the control structure splits the flow to a 5th port in order to prevent overflow of effluent from the control structure and damage from backpressure to the diffuser system and associated effluent conveyance system. A culvert with a minimum 8 square foot opening in the control dam of Jumping Gully Creek is provided to allow normal flow from Jumping Gully Creek to pass unrestricted to the Withlacoochee River. Outfall D-001 discharges into a segment of the Withlacoochee wherein a site-specific alternative water quality criterion (SSAC) for dissolved oxygen (DO) has been established and continued beginning since 1990.

## 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 |
| Chronic Whole Effluent Toxicity, 7-Day IC25 (*Ceriodaphnia dubia*) | Percent | Min | | | | 35 | Annually (on Days 1, 3 and 5) | Grab | EFF-1 | See I.A.13 |
| Chronic Whole Effluent Toxicity, 7-Day IC25 (*Pimephales promelas*) | Percent | Min | | | | 35 | Annually (on Days 1, 3 and 5) | Grab | EFF-1 | See I.A.13 |
| Flow (effluent) | MGD | Max | | Report | | Report | Continuous | Recording Flow Meter with Totalizer | EFF-1 | |
| Flow (upstream river) | CFS | Max | | | | Report | Daily | Calculated | CAL-1 | See I.A.6 |
| Flow (downstream river) | CFS | Max | | | | Report | Daily | Calculated | CAL-1 | See I.A.5 |
| Flow (RWC) | Percentage | | | | | 20% RWC | Daily | Calculated | CAL-1 | See I.A.4 |
| pH | s.u | Min | | | | 6.0 | Daily | In-situ | EFF-1 | See I.A.10 |
| | | Max | | | | 9.0 | | | | |
| Oxygen, Dissolved (DO) | mg/L | Min | | | | 1.5 | Daily | In-Situ | EFF-1 | See I.A.10 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Biochemical Oxygen Demand-5 | lb/day | Max<br>Max<br>Max | 5,550 | 7,084 | | 14,168 | Daily | 24-hr TPC | EFF-1 | See I.A.8 |
| Solids, Total Suspended | lb/day | Max<br>Max | | 10,760 | | 16,140 | Weekly | 24-hr TPC | EFF-1 | |
| Color, True | PCU | Max | | | | See I.A.9 | Daily | Calculated | CAL-1 | See I.A.9, I.A.10 |
| Turbidity | NTU | Max | | | | 103 | Weekly | Grab | EFF-1 | See I.A.10 |
| Specific Conductance | Umhos/cm | Max | | | | 3,900 | Weekly | Grab | EFF-1 | See I.A.10 |
| Temperature (C), Water | Deg C | Max | | | | Report | Weekly | In-Situ | EFF-1 | |
| Nitrogen, Total | mg/L | Max | | | | Report | Quarterly | Grab | EFF-1 | |
| Nitrogen, Total | mg/L | Max | | | | Report | Quarterly | Calculated | CAL-1 | |
| Nitrogen, Kjeldahl, Total (as N) | mg/L | Max | | | | Report | Quarterly | Grab | EFF-1 | |
| Nitrogen, Ammonia Total (as N) | mg/L | Max | | | | Report | Quarterly | Grab | EFF-1 | |
| Ammonia, Unionized (a NH3) | mg/L | Max | | | | 0.0917 | Quarterly | Calculated | CAL-1 | See I.A.7, I.A.10 |
| Phosphorus, Total (as P) | lb/day | Max | | | | Report | Quarterly | Grab | EFF-1 | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total (as P) | mg/L | Max | | | | Report | Quarterly | Calculated | CAL-1 | |
| Oil and Grease | mg/L | Max | | | | 5.9 | Quarterly | Grab | EFF-1 | See I.A.10 |
| Lead, Total Recoverable | µg/L | Max | | | | 9.6 | Quarterly | Grab | EFF-1 | See I.A.10 |
| Hardness, Total (as CaCO3) | mg/L | Max | | | | Report | Quarterly | Grab | EFF-1 | |
| Oxygen, Dissolved (DO) | mg/L | Max<br>Min | | Report<br>Report | | Report<br>Report | Daily | In Situ | SWU-1 | |
| pH | s.u. | Max<br>Min | | | | Report<br>Report | Weekly | In Situ | SWU-1 | |
| Temperature (C), Water | Deg C | Max | | | | Report | Weekly | In Situ | SWU-1 | |
| Specific Conductance | umhos/cm | Max | | | | Report | Weekly | Grab | SWU-1 | |
| Color, True | PCU | Max | | | | Report | Daily | Grab | SWU-1 | |
| Turbidity | NTU | Max | | | | Report | Weekly | Grab | SWU-1 | |
| Nitrogen, Total | mg/L | Max | Report | | | Report | Quarterly | Grab | SWU-1 | See I.A.11 and 12 |
| Nitrogen, Ammonia, Total (as N) | mg/L | Max | | | | Report | Quarterly | Grab | SWU-1 | |
| Ammonia, Unionized (as NH3) | mg/L | Max | | | | Report | Quarterly | Calculated | CAL-1 | See I.A.7 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total (as P) | mg/L | Max | Report | | | Report | Quarterly | Grab | SWU-1 | See I.A.11 and 12 |
| Oil and Grease | mg/L | Max | | | | Report | Quarterly | Grab | SWU-1 | |
| Lead, Total Recoverable | µg/L | Max | | | | Report | Quarterly | Grab | SWU-1 | |
| Hardness, Total (as CaCO3) | mg/L | Max | | | | Report | Quarterly | Grab | SWU-1 | |
| Oxygen, Dissolved (DO) | mg/L | Max<br>Min | | Report<br>Report | | Report<br>Report | Daily | In Situ | SWD-1 | |
| pH | s.u. | Max<br>Min | | | | Report<br>Report | Weekly | In Situ | SWD-1 | |
| Temperature (C), Water | Deg C | Max | | | | Report | Weekly | In Situ | SWD-1 | |
| Specific Conductance | umhos/cm | Max | | | | Report | Weekly | Grab | SWD-1 | |
| Color, True | PCU | Max | | | | Report | Weekly | Grab | SWD-1 | |
| Turbidity | NTU | Max | | | | Report | Weekly | Grab | SWD-1 | |
| Nitrogen, Total | mg/L | Max | Report | | | Report | Quarterly | Grab | SWD-1 | See I.A.11 and 12 |
| Nitrogen, Ammonia, Total (as N) | mg/L | Max | | | | Report | Quarterly | Grab | SWD-1 | |
| Ammonia, Unionized (as NH3) | mg/L | Max | | | | Report | Quarterly | Calculated | CAL-1 | See I.A.7 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphorus, Total (as P) | mg/L | Max | Report | | | Report | Quarterly | Grab | SWD-1 | See I.A.11 and 12 |
| Oil and Grease | mg/L | Max | | | | Report | Quarterly | Grab | SWD-1 | |
| Lead, Total Recoverable | µg/L | Max | | | | Report | Quarterly | Grab | SWD-1 | |
| Hardness, Total (as CaCO3) | mg/L | Max | | | | Report | Quarterly | Grab | SWD-1 | |

## PART I: Continued

| Receiving Waters: | Classification (indicate whether fresh or marine): |
|---|---|
| Withlacoochee River | Class III (Fresh |

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

a. Effluent Limitation

(1) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC25) shall not be less than 35% effluent. [Rules 62-302.530(61) and 62-4.241(2)(b), F.A.C.]

(2) For acute whole effluent toxicity, the 96-hour LC50 shall not be less than 100% effluent in any test. [Rule 62-302.500(1)(a)4 and 62-4.241(2)(a), F.A.C.]

b. Monitoring Frequency

(1) Routine toxicity tests shall be conducted annually, the first starting within 1 year from the last chronic test and lasting for the duration of this permit.

c. Sampling Requirements

(1) For each routine test or additional follow-up test conducted, single grab samples of final effluent shall be collected on days 1, 3 and 5 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%**, **70%**, **35%**, **20%**, and **10%** 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 any other test acceptability criteria are not met, 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 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.

f. Reporting Requirements
(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as the calculated IC25 for each test species.
(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-013, Section 10, Report Preparation and Test Review, and mailed or ***emailed*** to the Department at the address below ***within 30 days*** after the last day of the test.
(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-013, Section 10, and mailed or ***emailed within 30 days*** after the last day of the second valid additional follow-up test.
(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.
(5) The same bioassay data shall not be reported as the results of more than one test.
(6) All bioassay laboratory reports shall be mailed or ***emailed within 30 days*** to Jacksonville *only*:
Florida Department of Environmental Protection
Northeast District – Wastewater Section
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256
g. Test Failures
A test fails when the test results do not meet the limits in 13.a.(1).
(1) Additional Follow-up Tests:
(a) If a routine test does not meet the chronic toxicity limitation in 13.a.(1) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with 13.d.
(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.
(c) The additional follow-up tests shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 70%, 35%, 20%, and 10% effluent. The permittee may modify the dilution series in the additional follow-up tests to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be analyzed according to the procedures in EPA-821-R-02-013.
(2) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.
(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.
(b) The Department shall review and approve the plan before initiation.
(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.
(d) Progress reports shall be submitted quarterly to the Department at the address above.
(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance with 13.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in 13.b.(1). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-013, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.
(f) Upon completion of four consecutive quarterly valid routine tests that demonstrate compliance with the effluent limitation in 13.a.(1) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive quarterly valid routine whole effluent toxicity tests.
(g) If a test within the sequence of the four is deemed invalid, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive quarterly valid routine tests for the purpose of terminating the plan.
(3) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in 13.(a)(2), the Department may revise this permit to require acute definitive whole effluent toxicity testing.
(4) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity failures.

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

**Facility Mixing Zone Details (if applicable):**
Mixing zones have been established as follows:

Length Downstream from Outfall D-001
a. Dissolved oxygen 1,171 ft.
b. Specific Conductance 959 ft.
c. Chronic Whole Effluent Toxicity 1,171 ft.
d. pH 1,171 ft.
e. Turbidity 828 ft.
f. Unionized Ammonia as NH3 1,171 ft.
g. Total Recoverable Lead 989 ft.
h. Transparency 1,171 ft.
i. Oil & Grease 396 ft.

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

| Date | Parameter and Units | Limit | Result |
|---|---|---|---|
| None | | | |
| | | | |
| | | | |

**Describe previous FYI and WQBEL study:**
**9/25/2012 – CSI/XSI-WQI – All in compliance**

**Describe previous or current Enforcement Actions (including WLs):**
**N/A**

**Describe any violations or problems noted in previous inspection:**
**5/2013 – In Compliance**

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

**No visible improvement or decline in parameter results. They all appear to be steady.**

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

| PART II: Sampling Event Information | |
|---|---|
| **Date sample collected: 4/10/17** | **Sampler(s): Nick Williams ad Brittany Dion (effluent)<br>Pat O' Connor and Brian Davis (stream)** |
| **Temperature (Deg C):<br>21.81 (effluent)<br>20.55 (test)<br>21.02 (control)** | **pH (SU):<br>7.12 (effluent)<br>6.86 (test)<br>6.95 (control)** |
| **Dissolved Oxygen (mg/L):<br>9.99 (effluent)<br>5.7 (test)<br>5.7 (control)** | **Conductivity (umhos/cm):<br>Unk – 0.999 ppt for salinity (effluent)<br>155 (test)<br>263 (control)** |
| **Total Residual Chlorine (mg/L):<br>N/A – facility does not chlorinate** | **Total Residual Chlorine - after Disinfection (mg/L):<br>N/A – facility does not chlorinate** |
| **Method of Chlorination:<br>N/A – facility does not chlorinate** | **Method of De-chlorination:<br>N/A – facility does not chlorinate** |
| **Flow During Sample Collection for each outfall(MGD):<br>11.75 MGD** | |
| **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):<br>10.75 MGD** | |
| **Describe Discharge during Sampling Event:<br>☒ Continuous ☐ Intermittent ☐ Seasonal ☐ Rainfall Dependent<br>☐ Other, please specify:** | |
| **Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here: Plant was operating under normal conditions.** | |

## Appendix C

## Explanation of Measurements

### (1) Quality Assurance and Quality Control

DEP'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) 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).

### (5) 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. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a “problem” threshold for fresh receiving waters, implying nutrient enrichment. 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.

### (6) Algal Phytoplankton and Periphyton Assemblages

Qualitative periphyton are sampled by taking subsamples of algae from natural substrates throughout the sample reach. Phytoplankton were sampled from the water column using a 1 L grab sample. Periphyton were subsampled and identified to the lowest practical level, usually species. Wet taxa and diatoms are identified separately. In the wet taxa analysis, soft algae are identified to the lowest practical level, and diatoms are identified only to order level (diatom). In the diatom analysis, diatoms are identified to the lowest practical level.

Chlorophyll *a* Content: Chlorophyll *a* content is an estimate of algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be 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.

Algal Density: Algal density is estimated as number of natural units/ml for phytoplankton samples. Although algal density of a single site is highly variable and depends on a number of factors, comparison of algal density at a control site to algal density at a related test site gives a partial comparison of algal biomass at the two sites (Stevenson and Smol 2003).

Taxa richness: Taxa richness is the number of distinct algal taxa present in a sample. Extreme nutrient enrichment tends to reduce the number of different types of algae present in a sample because a few tolerant taxa tend to reproduce rapidly and constitute the majority of the cells present. However, moderate nutrient enrichment of nutrient poor waters may sometimes be correlated with increased algal taxa richness (Stevenson and Bahls 1999) as the algal community begins to respond to the increased input of nutrients.

Community Composition: Shifts in relative proportions of major groups of algae downstream of a point source, compared to upstream, control conditions, may indicate negative effects of a discharge (Stevenson and Bahls 1999) and 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.

**(7) Benthic Macroinvertebrate Assemblages**

Quantitative Benthic macroinvertebrates were collected using Hester-Dendy multi-plate samplers incubated for 28 days. 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.

**(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) 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-2017-04-03-45**

FYI5 Packaging Corporation of America Sampling Inspection

**Customer: NE-DIST**

**Project ID: FYI5**

# Florida Department of Environmental Protection
## Central Laboratory Submittal Form

Page 1 of 5

last revised Apr 7, 2016

Requester: Lillian Haynes

Field Report Prepared By: Nick Williams

Collected By: Nick Williams, Brittany Dian

Sampling Agency: FDEP

---

Location: FYI5 PCA EFF. GRAB

Field ID:

STORET #:

Latitude: ☐ dd ☐ dms | Longitude: ☐ dd ☐ dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 4/10/17 Time 12:50 | Eastern Central | Composite end Date Time | Bottle Group(s) (See pg 2): A

Matrix (type, e.g., Salt, Fresh, etc): Fresh | Diss. Oxygen: 9.99 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C): 21.81 | pH: 7.12 | Sample Depth: 1 ☒ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt): 0.999 | Comments: corrected salinity on 11/13/17

---

Location: FYI5 PCA EFF. COMP

Field ID:

STORET #:

Latitude: ☐ dd ☐ dms | Longitude: ☐ dd ☐ dms

☒ Comp ☐ Grab | Collection (comp begin or grab) Date 4/9/17 Time 10:00 | Eastern Central | Composite end Date 4/10/17 Time 10:00 | Bottle Group(s): B

Matrix (type, e.g., Salt, Fresh, etc): Fresh | Diss. Oxygen: ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C): 3.6 | pH: | Sample Depth: ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt): | Comments:

---

Location: FYI5 PCA FIELD BLANK

Field ID:

STORET #:

Latitude: ☐ dms | Longitude: ☐ dd ☐ dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 4/10/17 Time 12:50 | Eastern Central | Composite end Date Time | Bottle Group(s): E

Matrix (type, e.g., Salt, Fresh, etc): Fresh | Diss. Oxygen: ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C): | pH: | Sample Depth: ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt): | Comments:

---

Location:

Field ID:

STORET #:

Latitude: ☐ dd ☐ dms | Longitude: ☐ dd ☐ dms

☐ Comp ☐ Grab | Collection (comp begin or grab) Date Time | Eastern Central | Composite end Date Time | Bottle Group(s):

Matrix (type, e.g., Salt, Fresh, etc): | Diss. Oxygen: ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C): | pH: | Sample Depth: ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt): | Comments:

---

| Relinquished By: | Date/Time | Shipping Method | Number of Coolers Shipped: | Received By: | Date/Time |
|---|---|---|---|---|---|
| | 4/10/17 @17:25 | Fedex | | SK | 4-11-17 9:55 |

**Request Number: RQ-2017-04-03-45**

FYI5 Packaging Corporation of America Sampling Inspection

**Customer: NE-DIST**

**Project ID: FYI5**

# Florida Department of Environmental Protection
## Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Lillian Haynes

Collected By: B. DAVIS, P. O'Connor

Field Report Prepared By: P. O'Connor

Sampling Agency: DEAR NED ROC

---

**Location:** WITHLA R ABV PCA POD
**Field ID / STORET #:**
**Latitude:** ☐ dd ☐ dms **Longitude:** ☐ dd ☐ dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04-10-17 Time 1220 | Eastern / Central | Composite end Date Time | Bottle Group(s) (See pg 2) C+D+F

Matrix (type, e.g., Salt, Fresh, etc): Surface Water Fresh | Diss. Oxygen 5.7 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L) N/A

Temp (C) 20.55 | pH 6.86 | Sample Depth 0.3 ☐ ft ☒ m | Sp. Conductance (umho/cm) 155

Salinity (ppt) 0.08 | Comments DO% 63.1 Control

---

**Location:** WITHLA R BEL PCA POD
**Field ID / STORET:**
**Latitude:** ☐ dd ☐ dms **Longitude:** ☐ dd ☐ dms

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04-10-17 Time 1425 | Eastern / Central | Composite end Date Time | Bottle Group(s) C+D+F

Matrix (type, e.g., Salt, Fresh, etc): Surface Water Fresh | Diss. Oxygen 5.7 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) 21.02 | pH 6.95 | Sample Depth 0.3 ☐ ft ☒ m | Sp. Conductance (umho/cm) 263

Salinity (ppt) 0.13 | Comments DO% 63.5 Test

---

**Location:**
**Field ID:**
**STORET #:**
**Latitude:** ☐ dd ☐ dms **Longitude:** ☐ dd ☐ dms

☐ Comp ☐ Grab | Collection (comp begin or grab) Date Time | Eastern / Central | Composite end Date Time | Bottle Group(s)

Matrix (type, e.g., Salt, Fresh, etc) | Diss. Oxygen ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) ~~2~~ | pH | Sample Depth ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt) | Comments ~~Test~~

---

**Location:**
**Field ID:**
**STORET #:**
**Latitude:** ☐ dd ☐ dms **Longitude:** ☐ dd ☐ dms

☐ Comp ☐ Grab | Collection (comp begin or grab) Date Time | Eastern / Central | Composite end Date Time | Bottle Group(s)

Matrix (type, e.g., Salt, Fresh, etc) | Diss. Oxygen ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) | pH | Sample Depth ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt) | Comments

---

| Relinquished By: | Date/Time | Shipping Method | Number of Coolers Shipped: | Received By: | Date/Time |
|---|---|---|---|---|---|
| POConnor | ~~04/10/17~~ 1800 04-10-17 | Fed Ex | 4 3 | SK | 4-11-17 9:55 |

**Request Number: RQ-2017-04-03-45**

FYI5 Packaging Corporation of America Sampling Inspection

**Customer: NE-DIST**

**Project ID: FYI5**

# Florida Department of Environmental Protection
## Central Laboratory Submittal Form



last revised Apr 7, 2016

Requester: Lillian Haynes

Field Report Prepared By: J. Walters

Collected By: B. Davis, P. O'Connor

Sampling Agency: DEAR - Biology Program

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Location: PCA Control HD1 - JumpingGullySide | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 12:45 | (Eastern) Central | Composite end Date | Time | Bottle Group(s) (See pg 2): D | | | | |
| Field ID: Control HD1 - Rep1 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | 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: PCA Control HD1 - Jumping Gully Side | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 12:45 | (Eastern) Central | Composite end Date | Time | Bottle Group(s): D | | | | |
| Field ID: Control HD1 - Rep2 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | 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: PCA Control HD1 - JumpingGullySide | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 12:45 | (Eastern) Central | Composite end Date | Time | Bottle Group(s): D | | | | |
| Field ID: Control HD1 - Rep3 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | 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: PCA Control HD2 - S. Side | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1305 | (Eastern) Central | Composite end Date | Time | Bottle Group(s): D | | | | |
| Field ID: Control HD2 - Rep1 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | 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 |
|---|---|---|---|---|---|
| | | | | SR | 4-11-17 / 9155 |

√ 2 BS4 1495
4.11.17 1039
RR

**Request Number: RQ-2017-04-03-45**

FYI5 Packaging Corporation of America Sampling Inspection

**Customer: NE-DIST**

**Project ID: FYI5**

# Florida Department of Environmental Protection
## Central Laboratory Submittal Form



last revised Apr 7, 2016

Requester: Lillian Haynes

Collected By: B. Davis, P. O'Connor

Field Report Prepared By: J. Walters

Sampling Agency: DEAR - Biology Program

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Location: PCA Control HD2 - S. Side | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1305 | Eastern / Central | Composite end Date | Time | | | | | Bottle Group(s) (See pg 2): D |
| Field ID: Control HD2 - Rep2 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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: PCA Control HD2 - S. Side | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1305 | Eastern / Central | Composite end Date | Time | | | | | Bottle Group(s): D |
| Field ID: Control HD2 - Rep 3 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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: PCA Test HD1 - WithlaR Bel POD PCA | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1415 | Eastern / Central | Composite end Date | Time | | | | | Bottle Group(s): D |
| Field ID: ~~Control~~ TEST HD1 - Rep1 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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: PCA Test HD1 - WithlaRBel POD PCA | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1415 | Eastern / Central | Composite end Date | Time | | | | | Bottle Group(s): D |
| Field ID: Test HD1 - Rep2 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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 |
|---|---|---|---|---|---|
| | | | | SR | 4-11-17 / 9:55 |

**Request Number: RQ-2017-04-03-45**

FYI5 Packaging Corporation of America Sampling Inspection

**Customer: NE-DIST**

**Project ID: FYI5**

# Florida Department of Environmental Protection
## Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Lillian Haynes

Collected By: B. Davis, P. O'Connor

Field Report Prepared By: J. Walters

Sampling Agency: DEAR - Biology Program

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Location: PCA Test HD1-WithloRBe1PCA POD | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1415 | Eastern / Central | Composite end Date | Time | | | | Bottle Group(s) (See pg 2): D |
| Field ID: Test HD1-Rep3 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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: PCA Test HD2 - S. Side | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1405 | Eastern / Central | Composite end Date | Time | | | | Bottle Group(s): D |
| Field ID: Test HD2-Rep1 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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: PCA Test HD2 - S. Side | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1405 | Eastern / Central | Composite end Date | Time | | | | Bottle Group(s): D |
| Field ID: Test HD2-Rep2 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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: PCA Test HD2 - S. Side | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 04/10/17 Time 1405 | Eastern / Central | Composite end Date | Time | | | | Bottle Group(s): D |
| Field ID: Test HD2-Rep3 | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | 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 |
|---|---|---|---|---|---|
| | | | | SR | 4-11-17 9:56 |

**Request Number: RQ-2017-04-03-45**

FYI5 Packaging Corporation of America Sampling Inspection

**Customer: NE-DIST**

**Project ID: FYI5**

# Florida Department of Environmental Protection
## Central Laboratory Submittal Form

last revised Apr 7, 2016

Requester: Lillian Haynes

Field Report Prepared By: Nick Williams

Collected By: Nick Williams, Brittany Dan

Sampling Agency: FDEP




| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Loca | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 4/12/17 Time 11:45 a.m. | Eastern Central | Composite end Date | Time | Bottle Group(s) (See pg 2) B | | | | |
| Field | Matrix (type, e.g., Salt, Fresh, etc) Fresh | | Diss. Oxygen 8.87 | ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L) | | | | | |
| STO | Temp (C) 23.4 | pH 7.85 | Sample Depth 1 | ☒ ft ☐ m | Sp. Conductance (umho/cm) 2854 | | | | | |
| Latitu | ☐ dd ☐ dms | Salinity (ppt) 1.48 | Comments site requested tox be grab based on permit | | | | | | | |
| 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 |
|---|---|---|---|---|---|
| Nick Williams | 4/12/17 | FEDEX ✓ | 1 | | 4/13/17 10:10 |

✓ 4.13.17 1050 2854 JDJS JL

Sample collection time taken from sample container

**Request Number: RQ-2017-04-03-45**

FYI5 Packaging Corporation of America Sampling Inspection

**Customer: NE-DIST**

**Project ID: FYI5**

# Florida Department of Environmental Protection
## Central Laboratory Submittal Form



last revised Apr 7, 2016

Requester: Lillian Haynes

Collected By: Nick Williams, Brittany Dion

Field Report Prepared By: Nick Williams

Sampling Agency: FDEP

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location: PCA Effluent | ☐ Comp ☒ Grab | Collection (comp begin or grab) Date 4/14/17 Time | Eastern / Central | ~~Composite end Date~~ | ~~Time~~ | Bottle Group(s) (See pg 2): B | | | | | | | |
| Field ID: Tox Grab | Matrix (type, e.g., Salt, Fresh, etc): Fresh | | | Diss. Oxygen: 9.22 | ☒ mg/L ☐ % sat | ~~Total Res. Chlorine (mg/L)~~ | | | | | | | |
| STORET # | Temp (C): 23.4 | pH: 7.88 | | Sample Depth: 1 | ☒ ft ☐ m | Sp. Conductance (umho/cm): 2860 | | | | | | | |
| Latitude ☐ dd ☐ dms | Longitude ☐ dd ☐ dms | Salinity (ppt): 1.49 | 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 |
|---|---|---|---|---|---|
| | 4/14/17 14:10 | FEDEX | 2 | | 0903 4/15/17 |

3 BioAssay Jugs

1 1.1 °C

2 0.8 °C

3 0.8 °C

Collection time on bottle = 4/14/17 1140

640-Tallahassee

## TA386 - NE-DIST-2017-04-11-01

Printed: 4/12/2017 11:30:54 AM



| SAMPLE ID | FIELD ID | SITE LOCATION | DATE SAMPLED | MATRIX | ANALYSIS | SPECIFIC |
|---|---|---|---|---|---|---|
| 1886879 | WITHLA R ABV PCA POD | WITHLA R ABV PCA POD | 4/10/2017 12:20:00 PM | W-SURF-FRH | OV-OILGR-W | 155 umhos/cm |
| 1886880 | WITHA R BEL PCA POD | WITHA R BEL PCA POD | 4/10/2017 2:25:00 PM | W-SURF-FRH | OV-OILGR-W | 263 umhos/cm |
| 1887003 | FYI5 PCA EFF. GRAB | FYI5 PCA EFF. GRAB | 4/10/2017 12:35:00 PM | WATER | OV-OILGR-W | |
| 1887004 | FYI5 PCA FIELD BLANK | FYI5 PCA FIELD BLANK | 4/10/2017 12:01:00 AM | W-FIELD-BK | OV-OILGR-W | |

640-Tallahassee

680-137385 Chain of Custody

04-13-17 0700

680-137385 4.4(F)3.7°C

## Appendix E

## Physical/Chemical and Habitat Assessment field sheets

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

| SAMPLING AGENCY: DEAR NE ROC | | STORET STATION NUMBER: 21010030 | DATE (MM/DD/YY): 04/10/17 | RECEIVING BODY OF WATER: Suwannee River |
|---|---|---|---|---|
| REMARKS: | COUNTY: Hamilton | LOCATION: Withlacoochee R. ≈1200 m below PCA POD | | FIELD ID/NAME: |

| Habitat Parameter | Optimal | Suboptimal | Marginal | Poor |
|---|---|---|---|---|
| Primary Habitat Components<br>**Substrate Diversity** 16 | Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)<br>20 19 18 17 16 | Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)<br>15 14 13 12 11 | Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed<br>10 9 8 7 6 | One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered<br>5 4 3 2 1 |
| **Substrate Availability** 8 | Greater than 30% major productive habitat present at site<br>20 19 18 17 16 | 16% to 30% major productive habitat, by aerial extent<br>15 14 13 12 11 | 6% to 15% major productive habitat<br>10 9 8 7 6 | Less than 5% major productive habitat<br>5 4 3 2 1 |
| **Water Velocity** 16 | Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec<br>≥0.33 0.31 0.29 0.27 >0.25<br>20 19 18 17 16 | Max. observed at typical transect: >0.1 to 0.25 m/sec<br>0.25 0.21 0.17 0.13 >0.1<br>15 14 13 12 11 | Max. observed at typical transect: 0.05 to 0.1 m/sec<br>0.1 0.09 0.07 0.06 0.05<br>10 9 8 7 6 | Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec<br><0.05 0.04 0.03 0.01 <0.01<br>5 4 3 2 1 |
| **Habitat Smothering** 11<br>Primary Score 51 | Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae.<br>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.<br>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).<br>10 9 8 7 6 | Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation.<br>5 4 3 2 1 |
| Secondary Habitat Components<br>**Artificial Channelization** 20 | Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.<br>20 19 18 17 16 | Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.<br>15 14 13 12 11 | Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.<br>10 9 8 7 6 | Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.<br>5 4 3 2 1 |
| **Bank Stability**<br>Right Bank 5<br>Left Bank 5 | 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.<br>10 9 | Only meets 2 of the 3 requirements for optimal bank stability.<br>8 7 6 | Only meets 1 of the 3 requirements for optimal bank stability.<br>5 4 | Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.<br>3 2 1 |
| **Riparian Buffer Zone Width**<br>Right Bank 10<br>Left Bank 10 | Width of vegetation greater than 18 m<br>10 9 | Width of vegetation >12 to 18m<br>8 7 6 | Width of vegetation 6 to 12 m. human activities close to system<br>5 4 | Less than 6 m of buffer zone due to intensive human activities<br>3 2 1 |
| **Riparian Zone Vegetation Quality**<br>Right Bank 10<br>Left Bank 10<br>Secondary Score 70 | 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.<br>10 9 | >50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.<br>8 7 6 | 25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.<br>5 4 | Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).<br>3 2 1 |

121 **TOTAL SCORE**

| Date: 04-10-17 | Analyst: P O'Connor, B. Davis | Signature: |
|---|---|---|

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

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

SAMPLE ID _____ ORG ID 21FLA LATITUDE 30.61789
COUNTY MADISON/HAMILTON STORET # 21010030 LONGITUDE 83.26793
DATE 04-10-17 TIME 1425 SAMPLING AGENCY DEAR NED ROC
SITE NAME withlacoochee River ≈ 1200' below RCA. POD
FIELD ID/NAME _____ RECEIVING BODY OF WATER Suwannee River

### RIPARIAN ZONE / STREAM FEATURES

Meter ID: QUANTA #1

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

| Forest/Natural | Silviculture | Field/Pasture | Agricultural | Residential | Commercial | Industry | Other (Specify) |
|---|---|---|---|---|---|---|---|
| 25 | 25 | 20 | 20 | 5 | | 5 | |

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: >18 Right Bank: >18

**Hydrologic Modification Score** (per FT 3101):

**High Water Mark:** 5.0 (m) + 1.6 (above present water level) = 6.6 (present depth) (above bed)

**Artificially Impounded** ☐ Yes ☒ No

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

| | | |
|---|---|---|
| | 0.25 | 25 m wide |
| m/s | ~~0.3~~ Ro m/s | m/s |
| m deep | 1.6 m deep | m deep |

**Artificially Channelized:** ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ 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 ☐ LCI ☐ BioRecon

| | % Coverage | INVERT # Times Sampled | PERI # Times Sampled |
|---|---|---|---|
| Woody Debris (Snags) | 21 | | |
| Undercut Banks / Roots | 21 | | |
| Leaf Packs or Mat ..... | 21 | | |
| Aquatic Vegetation ..... | — | | |
| Rock or Shell Rubble.. | 21 | | |
| Sand..... | 60 | | |
| Mud / Muck / Silt ..... | 35 | | |
| 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 | 21.02 | 6.95 | 5.7 | 63.5 | 263 | 0.13 | 1.2 |
| Mid: | | | | | | | | TOTAL DEPTH |
| Bottom | | | | | | | | 1.6 |

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

**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: | ☐ | ☒ | ☐ | ☐ |

**AMBIENT FIELD CONDITIONS / NOTES:** HNO3 Lot # 6302040 X 10/28/17

H2SO4 Lot # 6302030 X 10/28/17

Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10

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

**SAMPLING TEAM** B. DAVIS, P. O'Connor

SIGNATURE: Patrick O'Connor

62-160.800, F.A.C.

Revision Date: March 1, 2014

## DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

| Site: | County: | Date: | Investigators: |
|---|---|---|---|
| with. R below POD | MADISON | 04/10/17 | BDAVIS, POlen |

STORET Station Number:

| Transect (m) | Point 1=right 9=left | Algal Thickness Rank (N-6, X) | Estimated | Canopy Cover |
|---|---|---|---|---|
| 0 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 10 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 20 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 30 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 40 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 50 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |

| Transect (m) | Point 1=right 9=left | Algal Thickness Rank (N-6, X) | Estimated | Canopy Cover |
|---|---|---|---|---|
| 60 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 70 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 80 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 90 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 100 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |

| | |
|---|---|
| Secchi depth | 1.2 |
| Estimated? | NO |

| | |
|---|---|
| # points ranked 4-6 | 6 |
| total points assessed | 10 |
| % points ranked 4-6 | 60 |

| Check accompanying data collected at same site/date. | |
|---|---|
| Algal mat sample | |
| Linear Veg Survey | |
| 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 9000-5 Stream/River Habitat Assessment Field Sheet

| SAMPLING AGENCY: NE ROC | | STORET STATION NUMBER: 21010029 | DATE (MM/DD/YY): 04-10-17 | RECEIVING BODY OF WATER: SUWANNEE R |
|---|---|---|---|---|
| REMARKS: | COUNTY: MADISON | LOCATION: WITHLACOOCHEE R ABV PCA PDS | | FIELD ID/NAME: |

| Habitat Parameter | Optimal | Suboptimal | Marginal | Poor |
|---|---|---|---|---|
| Primary Habitat Components<br>**Substrate Diversity** 13 | Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]<br>20 19 18 17 16 | Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)<br>15 14 13 12 11 | Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed<br>10 9 8 7 6 | One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered<br>5 4 3 2 1 |
| **Substrate Availability** 3 | Greater than 30% major productive habitat present at site<br>20 19 18 17 16 | 16% to 30% major productive habitat, by aerial extent<br>15 14 13 12 11 | 6% to 15% major productive habitat<br>10 9 8 7 6 | Less than 5% major productive habitat<br>5 4 3 2 1 |
| **Water Velocity** 14 | Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec<br>≥0.33 0.31 0.29 0.27 >0.25<br>20 19 18 17 16 | Max. observed at typical transect: >0.1 to 0.25 m/sec<br>0.25 0.21 0.17 0.13 >0.1<br>15 14 13 12 11 | Max. observed at typical transect: 0.05 to 0.1 m/sec<br>0.1 0.09 0.07 0.06 0.05<br>10 9 8 7 6 | Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec<br><0.05 0.04 0.03 0.01 <0.01<br>5 4 3 2 1 |
| **Habitat Smothering** 11<br>Primary Score 41 | Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae.<br>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.<br>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).<br>10 9 8 7 6 | Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation.<br>5 4 3 2 1 |
| Secondary Habitat Components<br>**Artificial Channelization** 20 | Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.<br>20 19 18 17 16 | Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.<br>15 14 13 12 11 | Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.<br>10 9 8 7 6 | Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.<br>5 4 3 2 1 |
| **Bank Stability**<br>Right Bank 5<br>Left Bank 5 | 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.<br>10 9 | Only meets 2 of the 3 requirements for optimal bank stability.<br>8 7 6 | Only meets 1 of the 3 requirements for optimal bank stability.<br>5 4 | Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.<br>3 2 1 |
| **Riparian Buffer Zone Width**<br>Right Bank 10<br>Left Bank 10 | Width of vegetation greater than 18 m<br>10 9 | Width of vegetation >12 to 18m<br>8 7 6 | Width of vegetation 6 to 12 m. human activities close to system<br>5 4 | Less than 6 m of buffer zone due to intensive human activities<br>3 2 1 |
| **Riparian Zone Vegetation Quality**<br>Right Bank 10<br>Left Bank 10<br>Secondary Score 20 | 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.<br>10 9 | >50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.<br>8 7 6 | 25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.<br>5 4 | Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).<br>3 2 1 |

111 **TOTAL SCORE**

| Date: 04-10-17 | Analyst: P O'Connor, B. Davis | Signature: |
|---|---|---|

62-160.800, F.A.C.

Revision Date: March 1, 2014

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

SAMPLE ID _____ ORG ID _____ LATITUDE _____
COUNTY MADISON STORET # 21010029 LONGITUDE _____
DATE 04-10-17 TIME 1220 SAMPLING AGENCY DEAR NED ROC
SITE NAME With lacoochee River ABOVE PCA POD
FIELD ID/NAME _____ RECEIVING BODY OF WATER _____

### RIPARIAN ZONE / STREAM FEATURES

Meter ID: QUANTA #1

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

| Forest/Natural | Silviculture | Field/Pasture | Agricultural | Residential | Commercial | Industry | Other (Specify) |
|---|---|---|---|---|---|---|---|
| 25 | 25 | 25 | 20 | 5 | | | |

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 : >18 Right Bank : >18

**Hydrologic Modification Score** (per FT 3101) _____

**High Water Mark:** 5.0 (m) + 2.6 (above present water level) = 7.6 (present depth) (above bed)

**Artificially Impounded** ☐ Yes ☒ No

**Typical Width (m) Depth (m)/Velocity (m/sec) Transect**
25 m wide

| | | |
|---|---|---|
| _____ m/s | 0.25 m/s | _____ m/s |
| _____ m deep | 2.6 m deep | _____ m deep |

**Artificially Channelized** : ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ 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 ☐ LCI ☐ BioRecon

| | % Coverage | INVERT # Times Sampled | PERI # Times Sampled |
|---|---|---|---|
| Woody Debris (Snags) | <1 | | |
| Undercut Banks / Roots | <1 | | |
| Leaf Packs or Mat ..... | <1 | | |
| Aquatic Vegetation ..... | | | |
| Rock or Shell Rubble.. | <1 | | |
| Sand..... | 60+ | | |
| Mud / Muck / Silt ..... | 35 | | |
| 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 | 20.55 | 6.86 | 5.7 | 63.1 | 155 | 0.08 | 1.3 |
| Mid: | | | | | | | | TOTAL DEPTH |
| Bottom | | | | | | | | |

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

**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: ICE Exp: _____

**Clarity** Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐

**ABUNDANCE**

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

**AMBIENT FIELD CONDITIONS / NOTES:** $HNO_3$ Lot# 6302040 X 10-28-17
$H_2SO_4$ Lot# 6302030 X 10-28-17

Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10
☑ The antecedent hydrologic conditions have been met to my best knowledge.

**SAMPLING TEAM** B. DAVIS, P. O'CONNOR SIGNATURE : Patricia O'Conn

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

Control

**DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet**

Site: Withlacoochee R Abv PCA POD

County: MADISON

Date: 04-10-17

Investigators: B. DAVIS, P. O'Connor

STORET Station Number: 21010029

| Transect (m) | Point 1=right 9=left | Algal Thickness Rank (N-6, X) | Estimated | Canopy Cover |
|---|---|---|---|---|
| 0 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 10 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 20 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 30 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 40 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 50 | 1 | 5 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |

| Transect (m) | Point 1=right 9=left | Algal Thickness Rank (N-6, X) | Estimated | Canopy Cover |
|---|---|---|---|---|
| 60 | 1 | 4 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 70 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 80 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 90 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |
| 100 | 1 | 3 | | |
| | 2 | | | |
| | 3 | | | |
| | 4 | | | |
| | 5 | | | 0 |
| | 6 | | | |
| | 7 | | | |
| | 8 | | | |
| | 9 | | | |

| | |
|---|---|
| Secchi depth | 1-3 |
| Estimated? | No |

| | |
|---|---|
| # points ranked 4-6 | 7 |
| total points assessed | ~~20~~ 10 |
| % points ranked 4-6 | 70 |

| Check accompanying data collected at same site/date. | |
|---|---|
| Algal mat sample | ✓ |
| Linear Veg Survey | ✓ |
| 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

## Appendix F

## Chemical analysis of effluent and receiving water

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:50 | Effluent Grab | AGP/LN | Algal Growth Potential-Salinity Adjusted | 26.0 | mg DryWt/L | 0.3 | 0.9 |
| 4/10/2017 12:50 | Effluent Grab | AGP/LN | Algal Growth Potential | 25.6 | mg DryWt/L | 0.3 | 0.9 |
| 4/10/2017 12:50 | Effluent Grab | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Uncorrected | 11 | ug/L | 0.4 | 1.2 |
| 4/10/2017 12:50 | Effluent Grab | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Corrected | 6.9 | ug/L | 0.55 | 1.7 |
| 4/10/2017 12:50 | Effluent Grab | Chlorophyll/Grain Size/BOD | Phaeophytin-a | 6.6 | ug/L | 0.4 | 1.2 |
| 4/10/2017 12:50 | Effluent Grab | Chlorophyll/Grain Size/BOD | Chlorophyll/Phaeophytin Ratio | 1.4 | | 0 | 0 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Sodium | 596 | mg/L | 2.5 | 10 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Zinc | 5.0 U | ug/L | 5 | 20 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Arsenic | 0.41 | ug/L | 0.05 | 0.2 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Chromium | 0.48 I | ug/L | 0.4 | 1.6 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Copper | 0.22 I | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Iron | 82 I | ug/L | 30 | 120 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Nickel | 0.44 I | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Aluminum | 217 | ug/L | 3 | 12 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Selenium | 0.20 U | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Magnesium | 26.1 | mg/L | 0.04 | 0.16 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Cadmium | 0.020 U | ug/L | 0.02 | 0.08 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Silver | 0.010 U | ug/L | 0.01 | 0.04 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Lead | 0.17 I | ug/L | 0.05 | 0.2 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Calcium | 57.2 | mg/L | 0.075 | 0.3 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Hardness | 250 | mg/L | 0.35 | 1.4 |
| 4/10/2017 12:50 | Effluent Grab | Metals | Potassium | 30.4 | mg/L | 1.5 | 6 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Ammonia-N | 0.83 | mg N/L | 0.02 | 0.05 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | O-Phosphate-P | 0.51 | mg P/L | 0.008 | 0.02 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Fluoride | 0.23 | mg F/L | 0.035 | 0.1 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Sulfate | 1.0E+03 | mg SO4/L | 20 | 50 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Kjeldahl Nitrogen | 1.9 | mg N/L | 0.08 | 0.2 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Organic Carbon | 14 | mg C/L | 0.5 | 1 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | NO2NO3-N | 0.27 | mg N/L | 0.004 | 0.01 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Total Alkalinity | 391 | mg CaCO3/L | 0.65 | 2.5 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Turbidity | 3.1 | NTU | 0.1 | 0.1 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Chloride | 28 | mg Cl/L | 2 | 5 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Total-P | 0.65 | mg P/L | 0.005 | 0.05 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Color (true) | 210 | PCU | 7.5 | 18 |
| 4/10/2017 12:50 | Effluent Grab | Overflow | HEM | 1.6 UJ | mg/L | 1.6 | 5.8 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Malathion | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Norflurazon | 0.028 U | ug/L | 0.028 | 0.11 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Parathion Methyl | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Prometryn | 0.019 U | ug/L | 0.019 | 0.075 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Azinphos Methyl | 0.019 U | ug/L | 0.019 | 0.075 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Bromacil | 0.038 U | ug/L | 0.038 | 0.15 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Ethion | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Hexazinone | 0.028 U | ug/L | 0.028 | 0.11 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Ametryn | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Diazinon | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Disulfoton | 0.0047 U | ug/L | 0.0047 | 0.019 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Metalaxyl | 0.038 UJ | ug/L | 0.038 | 0.15 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Metribuzin | 0.019 U | ug/L | 0.019 | 0.075 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Metolachlor | 0.057 U | ug/L | 0.057 | 0.23 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Naled | 0.038 U | ug/L | 0.038 | 0.15 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Phorate | 0.0047 U | ug/L | 0.0047 | 0.019 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Prometon | 0.019 U | ug/L | 0.019 | 0.075 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Atrazine Desisopropyl | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Atrazine | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Chlorpyrifos Methyl | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Ethoprop | 0.0047 U | ug/L | 0.0047 | 0.019 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Mevinphos | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Atrazine Desethyl | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Butylate | 0.019 U | ug/L | 0.019 | 0.075 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Chlorpyrifos Ethyl | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Demeton | 0.023 U | ug/L | 0.023 | 0.091 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Parathion Ethyl | 0.019 U | ug/L | 0.019 | 0.075 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Alachlor | 0.057 U | ug/L | 0.057 | 0.23 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Fonofos | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Simazine | 0.0094 U | ug/L | 0.0094 | 0.038 |
| 4/10/2017 12:50 | Effluent Grab | Pesticides | Fenamiphos | 0.028 UJ | ug/L | 0.028 | 0.11 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Isophorone | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Dimethyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Nitrobenzene | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 1,4-Dioxane | 0.27 | ug/L | 0.02 | 0.08 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 38 U | ug/L | 38 | 150 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Chrysene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2,4-Dinitrophenol | 14 U | ug/L | 14 | 57 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Acenaphthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Hexachlorocyclopentadiene | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | N-Nitrosodimethylamine | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Pentachlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Phenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Di-n-butyl phthalate | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Di-n-octyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Hexachlorobenzene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Hexachlorobutadiene | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Phenanthrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 1.9 U | ug/L | 1.9 | 7.5 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Butyl benzyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Naphthalene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2,4-Dimethylphenol | 9.4 U | ug/L | 9.4 | 38 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2-Chloronaphthalene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Acenaphthylene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Benzo(a)anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Diethyl phthalate | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2-Chlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 2-Nitrophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | 4-Nitrophenol | 14 U | ug/L | 14 | 57 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Benzidine | 94 U | ug/L | 94 | 380 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Fluorene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Hexachloroethane | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Priority Organic Pollutants | Benzo(a)pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Dissolved Oxygen | 9.99 | mg/L | | |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Temperature | 21.81 | C | | |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | Sample Depth | 1 | ft | | |
| 4/10/2017 12:50 | Effluent Grab | Nutrients | pH | 7.12 | | | |
| 4/10/2017 10:00 | Effluent Comp | Chlorophyll/Grain Size/BOD | Biochemical Oxygen Demand-5 Day,N-Inhib | 3.1 | mg/L | 0.2 | 2 |
| 4/10/2017 10:00 | Effluent Comp | Toxicology | Bioassay-Chron-Def-FW-C.dubia, NOEC | 70 | NOEC | | |
| 4/10/2017 10:00 | Effluent Comp | Toxicology | Bioassay-Chron-Def-FW-C.dubia, IC25 | 70.2 | IC25 | | |
| 4/10/2017 10:00 | Effluent Comp | Toxicology | Bioassay-Chron-Def-FW-Fish, IC25 | 100 L | IC25 | | |
| 4/10/2017 10:00 | Effluent Comp | Toxicology | Bioassay-Chron-Def-FW-Fish, NOEC | 100 | NOEC | | |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 10:00 | Effluent Comp | Nutrients | TSS | 3 IA | mg/L | 2 | 10 |
| 4/10/2017 10:00 | Effluent Comp | Nutrients | Temperature | 3.6 | C | | |
| 4/10/2017 12:50 | Field Blank | Metals | Aluminum | 3.0 U | ug/L | 3 | 12 |
| 4/10/2017 12:50 | Field Blank | Metals | Silver | 0.010 U | ug/L | 0.01 | 0.04 |
| 4/10/2017 12:50 | Field Blank | Metals | Lead | 0.050 U | ug/L | 0.05 | 0.2 |
| 4/10/2017 12:50 | Field Blank | Metals | Hardness | 0.35 U | mg/L | 0.35 | 1.4 |
| 4/10/2017 12:50 | Field Blank | Metals | Potassium | 0.30 U | mg/L | 0.3 | 1.2 |
| 4/10/2017 12:50 | Field Blank | Metals | Calcium | 0.075 U | mg/L | 0.075 | 0.3 |
| 4/10/2017 12:50 | Field Blank | Metals | Chromium | 0.40 U | ug/L | 0.4 | 1.6 |
| 4/10/2017 12:50 | Field Blank | Metals | Magnesium | 0.040 U | mg/L | 0.04 | 0.16 |
| 4/10/2017 12:50 | Field Blank | Metals | Cadmium | 0.020 U | ug/L | 0.02 | 0.08 |
| 4/10/2017 12:50 | Field Blank | Metals | Selenium | 0.20 U | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:50 | Field Blank | Metals | Sodium | 0.50 U | mg/L | 0.5 | 2 |
| 4/10/2017 12:50 | Field Blank | Metals | Zinc | 5.0 U | ug/L | 5 | 20 |
| 4/10/2017 12:50 | Field Blank | Metals | Iron | 30 U | ug/L | 30 | 120 |
| 4/10/2017 12:50 | Field Blank | Metals | Arsenic | 0.050 U | ug/L | 0.05 | 0.2 |
| 4/10/2017 12:50 | Field Blank | Metals | Nickel | 0.20 U | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:50 | Field Blank | Metals | Copper | 0.20 U | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Fluoride | 0.035 U | mg F/L | 0.035 | 0.1 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Color (true) | 2.5 U | PCU | 2.5 | 6 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Sulfate | 0.20 U | mg SO4/L | 0.2 | 0.5 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Turbidity | 0.10 U | NTU | 0.1 | 0.1 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Total Alkalinity | 0.65 U | mg CaCO3/L | 0.65 | 2.5 |
| 4/10/2017 12:50 | Field Blank | Nutrients | O-Phosphate-P | 0.004 U | mg P/L | 0.004 | 0.01 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Kjeldahl Nitrogen | 0.080 U | mg N/L | 0.08 | 0.2 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Organic Carbon | 0.50 U | mg C/L | 0.5 | 1 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Chloride | 0.20 U | mg Cl/L | 0.2 | 0.5 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Total-P | 0.002 U | mg P/L | 0.002 | 0.005 |
| 4/10/2017 12:50 | Field Blank | Nutrients | Ammonia-N | 0.002 U | mg N/L | 0.002 | 0.005 |
| 4/10/2017 12:50 | Field Blank | Nutrients | NO2NO3-N | 0.004 U | mg N/L | 0.004 | 0.01 |
| 4/10/2017 12:50 | Field Blank | Overflow | HEM | 1.8 I | mg/L | 1.6 | 5.7 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Mevinphos | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Chlorpyrifos Ethyl | 0.0095 U | ug/L | 0.0095 | 0.038 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:50 | Field Blank | Pesticides | Ethoprop | 0.0047 U | ug/L | 0.0047 | 0.019 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Parathion Methyl | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Prometon | 0.019 U | ug/L | 0.019 | 0.076 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Prometryn | 0.019 U | ug/L | 0.019 | 0.076 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Bromacil | 0.038 U | ug/L | 0.038 | 0.15 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Ethion | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Fonofos | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Butylate | 0.019 U | ug/L | 0.019 | 0.076 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Metalaxyl | 0.038 UJ | ug/L | 0.038 | 0.15 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Metolachlor | 0.057 U | ug/L | 0.057 | 0.23 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Parathion Ethyl | 0.019 U | ug/L | 0.019 | 0.076 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Chlorpyrifos Methyl | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Demeton | 0.023 U | ug/L | 0.023 | 0.091 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Metribuzin | 0.019 U | ug/L | 0.019 | 0.076 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Ametryn | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Azinphos Methyl | 0.019 U | ug/L | 0.019 | 0.076 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Hexazinone | 0.028 U | ug/L | 0.028 | 0.11 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Disulfoton | 0.0047 U | ug/L | 0.0047 | 0.019 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Naled | 0.038 U | ug/L | 0.038 | 0.15 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Alachlor | 0.057 U | ug/L | 0.057 | 0.23 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Fenamiphos | 0.028 UJ | ug/L | 0.028 | 0.11 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Norflurazon | 0.028 U | ug/L | 0.028 | 0.11 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Phorate | 0.0047 U | ug/L | 0.0047 | 0.019 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Simazine | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Atrazine | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Diazinon | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Malathion | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Atrazine Desethyl | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Pesticides | Atrazine Desisopropyl | 0.0095 U | ug/L | 0.0095 | 0.038 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Di-n-butyl phthalate | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Phenanthrene | 0.19 U | ug/L | 0.19 | 0.75 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Acenaphthylene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Benzo(a)pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Hexachlorobenzene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Acenaphthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Benzidine | 94 U | ug/L | 94 | 380 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Hexachlorocyclopentadiene | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Nitrobenzene | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2,4-Dinitrophenol | 14 U | ug/L | 14 | 57 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Butyl benzyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Chrysene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Pentachlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2,4-Dimethylphenol | 9.4 U | ug/L | 9.4 | 38 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2-Chlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2-Nitrophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Di-n-octyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Phenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.94 U | ug/L | 0.94 | 3.8 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Benzo(a)anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Diethyl phthalate | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Dimethyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Fluorene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Hexachlorobutadiene | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | N-Nitrosodimethylamine | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2-Chloronaphthalene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 38 U | ug/L | 38 | 150 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 4-Nitrophenol | 14 U | ug/L | 14 | 57 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Hexachloroethane | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Isophorone | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Naphthalene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | Pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 1,4-Dioxane | 0.020 U | ug/L | 0.02 | 0.08 |
| 4/10/2017 12:50 | Field Blank | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:20 | Control Site | AGP/LN | Algal Growth Potential | 8.81 A | mg DryWt/L | 0.3 | 0.9 |
| 4/10/2017 12:20 | Control Site | Chlorophyll/Grain Size/BOD | Chlorophyll/Phaeophytin Ratio | 1.6 | | 0 | 0 |
| 4/10/2017 12:20 | Control Site | Chlorophyll/Grain Size/BOD | Biochemical Oxygen Demand-5 Day,N-Inhib | 1.0 I | mg/L | 0.2 | 2 |
| 4/10/2017 12:20 | Control Site | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Uncorrected | 1.0 I | ug/L | 0.4 | 1.2 |
| 4/10/2017 12:20 | Control Site | Chlorophyll/Grain Size/BOD | Phaeophytin-a | 0.40 U | ug/L | 0.4 | 1.2 |
| 4/10/2017 12:20 | Control Site | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Corrected | 0.94 I | ug/L | 0.55 | 1.7 |
| 4/10/2017 12:20 | Control Site | Metals | Chromium | 0.71 I | ug/L | 0.4 | 1.6 |
| 4/10/2017 12:20 | Control Site | Metals | Zinc | 5.0 U | ug/L | 5 | 20 |
| 4/10/2017 12:20 | Control Site | Metals | Arsenic | 0.76 | ug/L | 0.05 | 0.2 |
| 4/10/2017 12:20 | Control Site | Metals | Cadmium | 0.020 U | ug/L | 0.02 | 0.08 |
| 4/10/2017 12:20 | Control Site | Metals | Hardness | 67.3 | mg/L | 0.35 | 1.4 |
| 4/10/2017 12:20 | Control Site | Metals | Silver | 0.010 U | ug/L | 0.01 | 0.04 |
| 4/10/2017 12:20 | Control Site | Metals | Sodium | 5.5 | mg/L | 0.5 | 2 |
| 4/10/2017 12:20 | Control Site | Metals | Selenium | 0.20 U | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:20 | Control Site | Metals | Magnesium | 3.81 | mg/L | 0.04 | 0.16 |
| 4/10/2017 12:20 | Control Site | Metals | Aluminum | 224 | ug/L | 3 | 12 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:20 | Control Site | Metals | Copper | 0.61 I | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:20 | Control Site | Metals | Calcium | 20.7 | mg/L | 0.075 | 0.3 |
| 4/10/2017 12:20 | Control Site | Metals | Lead | 0.39 | ug/L | 0.05 | 0.2 |
| 4/10/2017 12:20 | Control Site | Metals | Nickel | 0.39 I | ug/L | 0.2 | 0.8 |
| 4/10/2017 12:20 | Control Site | Metals | Iron | 790 | ug/L | 30 | 120 |
| 4/10/2017 12:20 | Control Site | Metals | Potassium | 2.5 | mg/L | 0.3 | 1.2 |
| 4/10/2017 12:20 | Control Site | Nutrients | Chloride | 9.9 | mg Cl/L | 0.2 | 0.5 |
| 4/10/2017 12:20 | Control Site | Nutrients | Fluoride | 0.12 | mg F/L | 0.035 | 0.1 |
| 4/10/2017 12:20 | Control Site | Nutrients | Organic Carbon | 9.3 | mg C/L | 0.5 | 1 |
| 4/10/2017 12:20 | Control Site | Nutrients | TSS | 2 I | mg/L | 2 | 10 |
| 4/10/2017 12:20 | Control Site | Nutrients | Ammonia-N | 0.017 | mg N/L | 0.002 | 0.005 |
| 4/10/2017 12:20 | Control Site | Nutrients | Kjeldahl Nitrogen | 0.45 | mg N/L | 0.08 | 0.2 |
| 4/10/2017 12:20 | Control Site | Nutrients | Total Alkalinity | 54 | mg CaCO3/L | 0.65 | 2.5 |
| 4/10/2017 12:20 | Control Site | Nutrients | Sulfate | 6.8 | mg SO4/L | 0.2 | 0.5 |
| 4/10/2017 12:20 | Control Site | Nutrients | Turbidity | 3.7 A | NTU | 0.1 | 0.1 |
| 4/10/2017 12:20 | Control Site | Nutrients | Color (true) | 110 | PCU | 2.5 | 6 |
| 4/10/2017 12:20 | Control Site | Nutrients | NO2NO3-N | 0.24 | mg N/L | 0.004 | 0.01 |
| 4/10/2017 12:20 | Control Site | Nutrients | O-Phosphate-P | 0.071 | mg P/L | 0.004 | 0.01 |
| 4/10/2017 12:20 | Control Site | Nutrients | Total-P | 0.11 | mg P/L | 0.005 | 0.05 |
| 4/10/2017 12:20 | Control Site | Overflow | HEM | 1.6 U | mg/L | 1.6 | 5.6 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Nitrobenzene | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Di-n-butyl phthalate | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | N-Nitrosodimethylamine | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Pentachlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2,4-Dimethylphenol | 9.4 U | ug/L | 9.4 | 38 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Di-n-octyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Dimethyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Hexachlorobutadiene | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Phenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Benzo(a)pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 1.9 U | ug/L | 1.9 | 7.5 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Fluorene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Hexachlorocyclopentadiene | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2-Chloronaphthalene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2-Nitrophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Acenaphthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Hexachloroethane | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 4-Nitrophenol | 14 U | ug/L | 14 | 57 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Acenaphthylene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Isophorone | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 1,4-Dioxane | 0.022 I | ug/L | 0.02 | 0.08 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2-Chlorophenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 2.8 U | ug/L | 2.8 | 11 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Butyl benzyl phthalate | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Chrysene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Diethyl phthalate | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Phenanthrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Benzidine | 94 U | ug/L | 94 | 380 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Benzo(a)anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Naphthalene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2,4-Dinitrophenol | 14 U | ug/L | 14 | 57 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 38 U | ug/L | 38 | 150 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Hexachlorobenzene | 0.94 U | ug/L | 0.94 | 3.8 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 1.9 U | ug/L | 1.9 | 7.5 |
| 4/10/2017 12:20 | Control Site | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.19 U | ug/L | 0.19 | 0.75 |
| 4/10/2017 12:20 | Control Site | Nutrients | Specific Conductance | 155 | umhos/cm | | |
| 4/10/2017 12:20 | Control Site | Nutrients | Sample Depth | 0.3 | m | | |
| 4/10/2017 12:20 | Control Site | Nutrients | Dissolved Oxygen | 63.1 | %Sat | | |
| 4/10/2017 12:20 | Control Site | Nutrients | Specific Conductance | 155 | umhos/cm | | |
| 4/10/2017 12:20 | Control Site | Nutrients | Temperature | 20.55 | C | | |
| 4/10/2017 12:20 | Control Site | Nutrients | Sample Depth | 0.3 | m | | |
| 4/10/2017 12:20 | Control Site | Nutrients | pH | 6.86 | | | |
| 4/10/2017 12:20 | Control Site | Nutrients | Dissolved Oxygen | 63.1 | %Sat | | |
| 4/10/2017 12:20 | Control Site | Nutrients | pH | 6.86 | | | |
| 4/10/2017 12:20 | Control Site | Nutrients | Temperature | 20.55 | C | | |
| 4/10/2017 14:25 | Test Site | Nutrients | Specific Conductance | 263 | umhos/cm | | |
| 4/10/2017 14:25 | Test Site | Nutrients | pH | 6.95 | | | |
| 4/10/2017 14:25 | Test Site | Nutrients | Sample Depth | 0.3 | m | | |
| 4/10/2017 14:25 | Test Site | Nutrients | Temperature | 21.02 | C | | |
| 4/10/2017 14:25 | Test Site | Nutrients | Dissolved Oxygen | 63.5 | %Sat | | |
| 4/10/2017 14:25 | Test Site | AGP/LN | Algal Growth Potential | 9.77 | mg DryWt/L | 0.3 | 0.9 |
| 4/10/2017 14:25 | Test Site | Chlorophyll/Grain Size/BOD | Chlorophyll/Phaeophytin Ratio | 1.5 | | 0 | 0 |
| 4/10/2017 14:25 | Test Site | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Uncorrected | 1.4 | ug/L | 0.4 | 1.2 |
| 4/10/2017 14:25 | Test Site | Chlorophyll/Grain Size/BOD | Biochemical Oxygen Demand-5 Day,N-Inhib | 1.0 I | mg/L | 0.2 | 2 |
| 4/10/2017 14:25 | Test Site | Chlorophyll/Grain Size/BOD | Phaeophytin-a | 0.40 U | ug/L | 0.4 | 1.2 |
| 4/10/2017 14:25 | Test Site | Chlorophyll/Grain Size/BOD | Chlorophyll-a, Corrected | 1.2 I | ug/L | 0.55 | 1.7 |
| 4/10/2017 14:25 | Test Site | Metals | Zinc | 5.0 U | ug/L | 5 | 20 |
| 4/10/2017 14:25 | Test Site | Metals | Potassium | 3.5 | mg/L | 0.3 | 1.2 |
| 4/10/2017 14:25 | Test Site | Metals | Arsenic | 0.75 | ug/L | 0.05 | 0.2 |
| 4/10/2017 14:25 | Test Site | Metals | Lead | 0.39 | ug/L | 0.05 | 0.2 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 14:25 | Test Site | Metals | Nickel | 0.38 I | ug/L | 0.2 | 0.8 |
| 4/10/2017 14:25 | Test Site | Metals | Hardness | 74.2 | mg/L | 0.35 | 1.4 |
| 4/10/2017 14:25 | Test Site | Metals | Cadmium | 0.020 U | ug/L | 0.02 | 0.08 |
| 4/10/2017 14:25 | Test Site | Metals | Selenium | 0.20 U | ug/L | 0.2 | 0.8 |
| 4/10/2017 14:25 | Test Site | Metals | Chromium | 0.70 I | ug/L | 0.4 | 1.6 |
| 4/10/2017 14:25 | Test Site | Metals | Aluminum | 248 | ug/L | 3 | 12 |
| 4/10/2017 14:25 | Test Site | Metals | Iron | 770 | ug/L | 30 | 120 |
| 4/10/2017 14:25 | Test Site | Metals | Sodium | 26.0 | mg/L | 0.5 | 2 |
| 4/10/2017 14:25 | Test Site | Metals | Silver | 0.010 U | ug/L | 0.01 | 0.04 |
| 4/10/2017 14:25 | Test Site | Metals | Copper | 0.59 I | ug/L | 0.2 | 0.8 |
| 4/10/2017 14:25 | Test Site | Metals | Calcium | 22.2 | mg/L | 0.075 | 0.3 |
| 4/10/2017 14:25 | Test Site | Metals | Magnesium | 4.57 | mg/L | 0.04 | 0.16 |
| 4/10/2017 14:25 | Test Site | Nutrients | Chloride | 11 | mg Cl/L | 0.2 | 0.5 |
| 4/10/2017 14:25 | Test Site | Nutrients | Fluoride | 0.13 | mg F/L | 0.035 | 0.1 |
| 4/10/2017 14:25 | Test Site | Nutrients | Ammonia-N | 0.037 | mg N/L | 0.002 | 0.005 |
| 4/10/2017 14:25 | Test Site | Nutrients | Total-P | 0.13 | mg P/L | 0.005 | 0.05 |
| 4/10/2017 14:25 | Test Site | Nutrients | NO2NO3-N | 0.25 | mg N/L | 0.004 | 0.01 |
| 4/10/2017 14:25 | Test Site | Nutrients | Turbidity | 3.5 | NTU | 0.1 | 0.1 |
| 4/10/2017 14:25 | Test Site | Nutrients | Color (true) | 110 | PCU | 2.5 | 6 |
| 4/10/2017 14:25 | Test Site | Nutrients | TSS | 3 I | mg/L | 2 | 10 |
| 4/10/2017 14:25 | Test Site | Nutrients | Sulfate | 44 | mg SO4/L | 0.2 | 0.5 |
| 4/10/2017 14:25 | Test Site | Nutrients | Total Alkalinity | 66 | mg CaCO3/L | 0.65 | 2.5 |
| 4/10/2017 14:25 | Test Site | Nutrients | O-Phosphate-P | 0.088 | mg P/L | 0.004 | 0.01 |
| 4/10/2017 14:25 | Test Site | Nutrients | Organic Carbon | 9.1 | mg C/L | 0.5 | 1 |
| 4/10/2017 14:25 | Test Site | Nutrients | Kjeldahl Nitrogen | 0.49 | mg N/L | 0.08 | 0.2 |
| 4/10/2017 14:25 | Test Site | Overflow | HEM | 1.7 U | mg/L | 1.7 | 6 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Diethyl phthalate | 1.9 U | ug/L | 1.9 | 7.6 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Fluorene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Hexachlorobenzene | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Isophorone | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | N-Nitrosodiphenylamine/ Diphenylamine | 2.9 U | ug/L | 2.9 | 11 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Nitrobenzene | 1.9 U | ug/L | 1.9 | 7.6 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 4-Chlorophenyl phenyl ether | 1.9 U | ug/L | 1.9 | 7.6 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Anthracene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Pyrene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | N-Nitrosodimethylamine | 1.9 U | ug/L | 1.9 | 7.6 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | N-Nitrosodi-n-propylamine | 1.9 U | ug/L | 1.9 | 7.6 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Hexachlorobutadiene | 2.9 U | ug/L | 2.9 | 11 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Dimethyl phthalate | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Dibenzo(a,h)anthracene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2,6-Dinitrotoluene | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2-Methyl-4,6-dinitrophenol | 2.9 U | ug/L | 2.9 | 11 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Benzo(a)anthracene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Bis(2-chloroethyl)ether | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Hexachlorocyclopentadiene | 2.9 U | ug/L | 2.9 | 11 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Phenanthrene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 1,4-Dioxane | 0.020 U | ug/L | 0.02 | 0.08 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2,4-Dinitrotoluene | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2-Chlorophenol | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Phenol | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2,4,6-Trichlorophenol | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2-Nitrophenol | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Benzo(g,h,i)perylene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Bis(2-ethylhexyl)phthalate | 1.9 U | ug/L | 1.9 | 7.6 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2,4-Dichlorophenol | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2-Chloronaphthalene | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Benzo(b)fluoranthene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Benzo(k)fluoranthene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Chrysene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Di-n-butyl phthalate | 1.9 U | ug/L | 1.9 | 7.6 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Fluoranthene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Hexachloroethane | 2.9 U | ug/L | 2.9 | 11 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Indeno(1,2,3-cd)pyrene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Naphthalene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 3,3'-Dichlorobenzidine | 38 U | ug/L | 38 | 150 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 4-Chloro-3-methylphenol | 0.95 U | ug/L | 0.95 | 3.8 |

| Date Sampled | UDL | SCH_Group | Component | Result | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Benzidine | 95 U | ug/L | 95 | 380 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Butyl benzyl phthalate | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Pentachlorophenol | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 1,2,4-Trichlorobenzene | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Acenaphthene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Acenaphthylene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Benzo(a)pyrene | 0.19 U | ug/L | 0.19 | 0.76 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Di-n-octyl phthalate | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2,4-Dimethylphenol | 9.5 U | ug/L | 9.5 | 38 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 2,4-Dinitrophenol | 14 U | ug/L | 14 | 57 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 4-Bromophenyl phenyl ether | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | 4-Nitrophenol | 14 U | ug/L | 14 | 57 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Bis(2-chloroethoxy)methane | 0.95 U | ug/L | 0.95 | 3.8 |
| 4/10/2017 14:25 | Test Site | Priority Organic Pollutants | Bis(2-chloroisopropyl)ether | 2.9 U | ug/L | 2.9 | 11 |
| 4/10/2017 14:25 | Test Site | Nutrients | Sample Depth | 0.3 | m | | |
| 4/10/2017 14:25 | Test Site | Nutrients | Temperature | 21.02 | C | | |
| 4/10/2017 14:25 | Test Site | Nutrients | Dissolved Oxygen | 63.5 | %Sat | | |
| 4/10/2017 14:25 | Test Site | Nutrients | Specific Conductance | 263 | umhos/cm | | |
| 4/10/2017 14:25 | Test Site | Nutrients | pH | 6.95 | | | |

**EPA End Sheet**

## The Bioassay of the Packaging Corporation of America effluent sampled on April 10, 2017, NPDES #FL0000281

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 FL0000281 11 | 12 170410 | # B | # S | # 2 |

Remarks

#

## The Priority Pollutants Analysis for the Packaging Corporation of America effluent sampled on April 10, 2017, NPDES #FL0000281

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 FL0000281 11 | 12 170410 | # X | # S | # 2 |

Remarks

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## Biological Analyses of the Packaging Corporation of America effluent sampled on April 10, 2017, NPDES #FL0000281

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 FL0000281 11 | 12 170410 | # S | # S | # 2 |

Remarks