

Biological Assessment of

Georgia Pacific-Palatka

Putnam County

NPDES #FL0002763

Sampled December 2003

June 2004

Biology Section

Bureau of Laboratories

Division of Resource Assessment and Management

Quality Manual No. 870346G

NELAC Certification No. E31780

Florida Department of Environmental Protection

Fifth Year Inspection Summary

Discharger: Georgia Pacific-Palatka

County: Putnam

NPDES Number: FL0002763

Permit Expiration: 8/5/2007

Toxics Sampling Inspection **(XSI)**

Date Sampled: December 8, 10 and 12, 2003

Results: Dioxins, including the permitted analyte 2,3,7,8-TCDD, were not detected in the effluent (n=1, December 8, 2003), but the detection limits of the analysis were two orders of magnitude higher than the permit limit. No organic pollutants were detected in the effluent. Effluent metals complied with Class III Fresh Water Quality Criteria (FAC 62-302.530) and facility permit limits. Ten metals were routinely detected in the three effluent samples. Aluminum, cadmium, iron, lead, nickel, and zinc were detected in the effluent at levels above the practical quantitation limit (PQL). The metals arsenic, copper, chromium, and silver were found in the effluent at levels above the method detection limit (MDL) and below the PQL. Iron levels were elevated (~900 µg/L) and close to the Class III Fresh Water Quality Criterion (1,000 µg/L, 62-302.530 (39) F.A.C.). High aluminum levels (approximately 14,400 µg/L) were also detected, but Florida does not currently have a fresh water quality criterion for aluminum.

Compliance Biomonitoring Inspection **(CBI)**

Date Sampled: December 8, 10 and 12, 2003

Results: The effluent samples were chronically, but not acutely, toxic to the water flea, *Ceriodaphnia dubia*, during the 7-day chronic screening bioassay, a failure to meet the Class III Fresh Water Quality Criterion (62-302.530(62) F.A.C.). The effluent sample was not acutely toxic to the fish, *Pimephales promelas,* or to the water flea, *Ceriodaphnia dubia,* during the 96-hour acute bioassays. The effluent samples were not acutely or chronically toxic to the fish, *Pimephales promelas*, during the 7-day chronic screening bioassay.

Water Quality Inspection **(WQI)**

Date Sampled: December 8, 10 and 12, 2003

Results: Fecal coliforms were not detected in the effluent. Fecal coliforms were detected in the receiving water at levels that did not exceed the Class III Water Quality Criterion. Total coliforms

were detected in the effluent and the receiving water at levels that did not exceed the Class III Water Quality Criterion or the facility's permit limits.

Effluent conductivity was greater than 2,200 μmhos/cm on all three sample dates, an exceedance of the Class III Fresh Water Quality Criterion (62-302.530(23) F.A.C.). Effluent turbidity exceeded the Class III Fresh Water Quality Criterion (62-302.530(70) F.A.C.) when compared with the turbidity at three control sites. Effluent pH and dissolved oxygen complied with Class III Fresh Water Quality Criteria (62-302 F.A.C.) and facility permit limits. The effluent sample had a color of 1,200 PCU. BOD and TSS values complied with facility permit limits.

Conductivity at the two test sites (1,407and 1,643 μmhos/cm) exceeded the Class III Fresh Water Quality Criterion of less than 50% above background or 1,275 μmhos/cm, whichever is greater (62-302.530(23) F.A.C.). The elevated conductivity measured at the test sites was attributable to the elevated conductivity of the facility's effluent. Dissolved oxygen complied with the Class III Fresh Water Quality Criterion at four of five sites sampled; dissolved oxygen at Six Mile Creek (3.0 mg/L) failed to meet the 5.0 mg/L level set in Chapter 62-302.530(31) (F.A.C.). The pH at the five test and control sites complied with the Class III Fresh Water Quality Criterion.

Metals in water samples from the five test and control sites complied with Class III Fresh Water Quality Criteria (FAC 62-302.530). The concentrations of metals in water samples were 2-30 times higher at the test sites when compared with the control sites. Elevated metals content in water samples from the test sites were attributable to the facility's effluent.

The effluent total nitrogen concentration was 4.27 mg/L and total phosphorus concentration was 0.74 mg/L. Nutrient levels at the test sites were similar to those in the effluent and differed in the amounts and the relative proportions of compounds when compared to the control sites. Both total nitrogen and total phosphorus were approximately 5-10 times higher at the test sites than the control sites. Elevated nutrient levels at the test sites were attributable to the facility's effluent.

Impact Bioassessment Inspection **(IBI)**

Date Sampled: December 8, 2003

Results: The Algal Growth Potential (AGP) values at the three control sites ranged from 2.62 to 5.26 mg dry weight/L and dry weight of algae was equal to or greater than that predicted by the amount of total suspended inorganic nitrogen (TSIN) in the sample. Only at Rice Creek at Bardin Road was the AGP value slightly above the 5.0 mg dry weight/L "problem" threshold. In contrast, the AGP values of the effluent and test site water samples were <1 mg dry weight/L, despite much higher nutrient availability; no growth was measured in the water sample from Rice Creek below the outfall. Estimated production was 97-100% less than predicted by available TSIN in these three samples, suggesting algal growth inhibition may have occurred. Further testing using a test designed to measure algal growth inhibition would be required to make that determination.

Phytoplankton assemblages at the two test sites were similar to that of the effluent and differed from those of the three control sites. Over 58% of each test site sample was composed of the filamentous blue-green alga, *Jaaginema*, with blue-green algae comprising 74-90% of the total samples. At the control sites, blue-green algae comprised <28% of the samples. Cell density was 2,317-10,308 algal units/ml at the test sites but only 168-309 algal units/ml at the three control sites.

Qualitative measures of benthic macroinvertebrate assemblages from dipnet samples indicated degradation at the two test sites compared with the three control sites. The test sites up- and downstream of the Georgia Pacific outfall ranked "Poor" and "Very Poor", respectively, on the Stream Condition Index (SCI). The three control sites scored "Good" (Six Mile Creek) or "Excellent" (Rice Creek at Bardin Road, Etonia Creek at Bardin Road).

Quantitative measures of benthic macroinvertebrate assemblages from Hester-Dendy samplers showed severe degradation at the two test sites compared to the three control sites. Shannon-Weaver diversity (H') at the two test sites was 0.51-0.67 while control site results ranged from 2.78-3.62 (mean 3.32). Both receiving water sites in Rice Creek failed to meet the Biological Integrity Criterion (62-302.530(11) F.A.C.), since H' was reduced by 80-85% relative to the mean of the control site results.

Submersed aquatic vegetation (SAV) was absent from approximately 1,500 m of nearshore shallow water at the confluence of Rice Creek and the St. Johns River where color was elevated and Secchi depth reduced as a result of the facility's effluent. Emersed and floating vegetation were also less common. SAV and/or emersed and floating vegetation were present in similar sections of nearshore shallow water where color was at background levels. Elevated color and reduced Secchi depth attributable to the facility's discharge may have adversely affected the growth of several types of aquatic vegetation in a section of the St. Johns River.

Biological assessments are prepared by FDEP 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.

Introduction

The Georgia Pacific-Palatka Pulp and Paper Mill is located in Putnam County, Florida (Appendix 1). The 40-million gallons per day (MGD) wastewater treatment system for the mill provides primary clarification followed by secondary treatment consisting of more than 900 acres of facultative and aerobic lagoons. The wastewater treatment system also includes a liquid oxygen injection system that injects pure oxygen into two effluent side streams. Oxygen is injected at a rate that counteracts the biochemical oxygen demand (BOD) of the effluent. The injection rate is designed to maintain a minimum dissolved oxygen concentration of 4.0 mg/L in the summer months and 5.0 mg/L in the winter months at the point of discharge (see Facility Summary in Appendix 2).

The effluent is continuously discharged into the Class III fresh waters of Rice Creek, which then flows into the St. Johns River. The design flow of the wastewater system is 60 million gallons per day (MGD), and the mean flow from January 2003 to August 2003 was 27 MGD. The actual flow during this survey (12/8/2003) was 21.7 MGD (facility information per J. RiCharde, FDEP Northeast District).

Surface Water Quality Criteria and facility permit limits are listed in Table 1. Administrative Order 039-NE was issued in August 2002 in conjunction with NPDES permit # FL0002763. Process improvements are being implemented to reduce flow volume over time. All current monitoring requirements are as listed in the Administrative Order (Appendix 2). Appendix 2 summarizes DMR data for the facility for 2003.

Methods

The purpose of this investigation was to determine the potential effects of the facility's effluent on the biota of the receiving waters. Chemical and biological comparisons were made between three control sites and two test sites (see map in Appendix 1). One control site was located approximately 4 km upstream of the facility in Rice Creek before the outfall (Rice Creek at Bardin Road). A second control site was located on Etonia Creek, which supplies part of the water used in the plant (Etonia Creek at Bardin Road, approximately 6 km upstream from the junction of Rice and Etonia Creeks). However, since these were much smaller streams than Rice Creek in the vicinity of the outfall (see Habitat Assessment and Physical/Chemical Characterization sheets in Appendix 7), an additional control site was added in Six Mile Creek. Six Mile Creek was approximately the same size and depth as Rice Creek near the outfall, but was located east of the facility on the opposite side of the St. Johns River approximately 35 km north. Like Rice Creek, it is tidally influenced, but not saline. Tests sites in Rice Creek were located approximately 100 m upstream and downstream of the outfall (Rice Creek above and below the outfall). Although Rice Creek is a Class III Fresh Water, tidal influence from the St. Johns River causes upstream flow and effluent retention on incoming tides and downstream flow on outgoing tides; this required the placement of test sites both up- and downstream of the facility.

Detailed analytical and sampling methods and their relationship to Florida Administrative Code are given in Appendix 3. Additional surveys of submerged vegetation at all study sites and in the St. Johns River up and downstream of the mouth of Rice Creek were performed and are described in Appendix 3.

All field and laboratory biological methods followed Biology Section Standard Operating Procedures (SOPs, see http://www.floridadep.org/labs/qa/2002sops.htm for details) and met FDEP quality assurance/quality control standards (see http://www.floridadep.org/labs/qa/index.htm).

The following were involved in this investigation: P. O'Connor, S. Evans, T. Kallemeyn, J. RiCharde and M. Long (FDEP Northeast District), and K. Espy, J. Jackson and S. Levings (FDEP Central Laboratory, Tallahassee). The report was reviewed by District representatives and the Point Source Studies Review Committee (Wayne Magley, Chuck Ziegmont and Michael Tanski).

Results and Discussion

- Specific chemical results from grab samples are reported in Table 1 and a complete list of chemical analytes can be reviewed in Appendix 4. There was no evidence of field blank contamination on December 8 and 10, 2003, but acetophenone was detected in the field blank at a level below the practical quantitation limit (PQL) on December 12, 2003.
- Dioxins, including the permitted analyte 2,3,7,8-TCDD, were not detected in the effluent (Table 1b). However, it should be noted that the detection limit for this dioxin compound was 235 times greater than the facility's permit limit. No organic pollutants were detected in the effluent.
- Effluent metals complied with Class III Fresh Water Quality Criteria (FAC 62-302.530) and facility permit limits (Table 1a). Ten metals were routinely detected in the effluent samples. Aluminum, cadmium, iron, lead, nickel and zinc were detected in the effluent at levels above the PQL. The metals arsenic, copper, chromium and silver were found in the effluent at levels above the method detection limit (MDL) and below the PQL. Iron levels

Table 1a. Effluent limits, Class III Criteria and chemical, microbiological, and toxicological data. Effluent samples. Table continued on following page. Notes follow Table 1c.

Georgia Pacific-Palatka	Class III Standards	Effluent Limits	Effluent 12/8/03	Effluent 12/10/03	Effluent 12/12/03
Organic Constituents (µg/L)					
None Detected	-	-	-	-	-
Metals (µg/L unless otherwise noted)					
Aluminum	-	-	14,400	14,300	14,500
Arsenic	≤50	-	6 U	1.3 I	1.1 I
Cadmium	≤1.6 b	Report	0.21	0.21	0.21
Calcium (mg/L)	-	-	50.4	49.9	49.7
Chromium-III	≤122.4 b	-	8.2 I	7.2 I	-
Copper	≤13.4 b	-	8.9 I	8.3 I	8.5 I
Iron	≤1000	Report	889	899	905
Lead	≤5.5 b	Report	2.1	2.2	2.3
Magnesium (mg/L)	-	-	6.7	6.7	6.6
Nickel	≤74.9 b	-	15	14	14
Selenium	≤5	-	1 U	1 U	1 U
Silver	≤0.07	-	0.04 I	0.039 I	0.041 I
Zinc	≤172.2 b	b	33 J	35	36
Nutrients (mg/L)					
Ortho-phosphate	-	-	0.12	-	-
Total Phosphorus	-	-	0.74	-	-
Ammonia	-	Report	0.072 A	0.097	0.093
Unionized Ammonia	≤0.02	Report	< 0.02 c	< 0.02 c	< 0.02 c
Nitrate+Nitrite	-	-	0.77 A	-	-
Total Kjeldahl Nitrogen	-	Report	3.5 A	-	-
Organic Nitrogen	-	-	3.43 c	-	-
Total Nitrogen	-	Report	4.27 c	-	-
General Physical and Chemical Parameters					
Dissolved Oxygen (mg/L)	≥5	Report	8.3	7.6	8.2
pH (S.U.)	6.0-8.5	6.0-8.5	8	7.2	7.9
Conductivity (umhos/cm)	≤1275	Report	**2250**	**2370**	**2376**
Temperature (C)	-	-	16.7	14.5	13.2
Temperature (F)	-	Report	62.1	58.1	55.8
BOD (mg/L)	-	Report	9.3	-	-
BOD (lbs/day)	-	14,340 s	1685	-	-
Settleable solids (ml/L/hr)	-	0.1	0.5 UQ	-	-
TSS (mg/L)	-	Report	11 I	-	-
TSS (lbs/day)	-	17,500 s	1993	-	-
Color	-	Report	1200	-	-
Turbidity	29	Report	**36**	-	-
Flow (MGD)	-	Report	21.7	19.4	17.1
Hardness (mg/L)	-	Report	153.4 c	152.2 c	151.3 c
Microbiology (# counts/100ml)					
Fecal Coliforms-Membrane Filter	800 s	800 s	10 U	-	-
Total Coliforms	2400 s	2400 s	280	-	-
Toxicology Bioassays, LC50 and NOEC percent effluent levels					
Fish, 96 hour screening acute	-	LC50>100%	100% L	-	-
Fish - 7 day chronic screening	-	Report	100% L	-	-
Water flea, 96 hour screening acute	-	LC50>100%	100% L	-	-
Water flea - 7 day chronic screening	-	Report	**<100%**	-	-

Table 1b. Effluent limits and Dioxin data. Effluent samples. Table continued on following page. Notes follow Table 1c.

Georgia Pacific-Palatka	Class III Standards	Effluent Limits	Effluent 12/8/03	Effluent 12/10/03	Effluent 12/12/03
Dioxin compounds (pg/L)					
1,2,3,4,6,7,8-HpCDD	-	-	6.3 U	-	-
1,2,3,4,6,7,8-HpCDF	-	-	4.2 U	-	-
1,2,3,4,7,8,9-HpCDF	-	-	6.7 U	-	-
1,2,3,4,7,8-HxCDD	-	-	5.3 U	-	-
1,2,3,4,7,8-HxCDF	-	-	3.1 U	-	-
1,2,3,6,7,8-HxCDD	-	-	5.4 U	-	-
1,2,3,6,7,8-HxCDF	-	-	2.8 U	-	-
1,2,3,7,8,9-HxCDD	-	-	5.1 U	-	-
1,2,3,7,8,9-HxCDF	-	-	3 U	-	-
1,2,3,7,8-PeCDD	-	-	7.3 U	-	-
1,2,3,7,8-PeCDF	-	-	4.6 U	-	-
2,3,4,6,7,8-HxCDF	-	-	2.7 U	-	-
2,3,4,7,8-PeCDF	-	-	5.4 U	-	-
2,3,7,8-TCDD	-	0.014	3.3 U	-	-
2,3,7,8-TCDF	-	-	3.3 U	-	-
OCDD	-	-	10 U	-	-
OCDF	-	-	8.2 U	-	-
Total HpCDD	-	-	6.3 U	-	-
Total HpCDF	-	-	6.7 U	-	-
Total HxCDD	-	-	5.4 U	-	-
Total HxCDF	-	-	3.1 U	-	-
Total PeCDD	-	-	7.3 U	-	-
Total PeCDF	-	-	5.4 U	-	-
Total TCDD	-	-	3.3 U	-	-
Total TCDF	-	-	3.3 U	-	-

were elevated (approximately 900 µg/L) and close to the Class III Fresh Water Quality Criterion (1,000 µg/L, 62-302.530(39) F.A.C.). High aluminum levels (approximately 14,400 µg/L) were also detected, but Florida does not currently have a fresh water quality criterion for aluminum.

- Effluent conductivity was greater than 2,200 µmhos/cm on all three sample dates (Table 1a), an exceedance of the Class III Fresh Water Quality Criterion (62-302.530(23) F.A.C.). Effluent pH and dissolved oxygen complied with Class III Fresh Water Quality Criteria (62-302.530 F.A.C.) and facility permit limits.
- Effluent turbidity (36 NTU) exceeded the Class III Fresh Water Quality Criterion (62-302.530(70) F.A.C., Table 1), exceeding the natural background at the three control sites by >29 NTU (range 0.55-3.6 NTU). The effluent sample contained 11 mg/L of TSS and had a color of 1200 PCU and a BOD of 9.3 mg/L. No settleable solids were measured, but the sample was held beyond the normal holding time. BOD and TSS (in lbs/day) complied with facility permit limits for single day maximum releases.
- The effluent samples were chronically, but not acutely, toxic to the water flea, *Ceriodaphnia dubia*, during the 7-day chronic screening bioassay, a failure to meet the Class III Water Quality Criterion (62-302.530(62) F.A.C., Table 1a). The effluent sample was not acutely toxic to the fish, *Pimephales promelas,* or to the water flea, *Ceriodaphnia dubia,* during the 96-hour acute bioassays. The effluent samples were not acutely or chronically toxic to the fish, *Pimephales promelas*, during the 7-day chronic screening bioassay.
- Habitat assessment scores at the control sites were 96, 106, and 131 at Six Mile Creek, Rice Creek at Bardin Road, and Etonia Creek at Bardin Road, respectively (Table 1c, data sheets in Appendix 7). Both test sites scored 95 (Rice Creek above and below the outfall). The major differences among sites were in the Primary Score for substrate availability, water velocity and extent of habitat smothering. Etonia Creek at Bardin Road had relatively high substrate diversity and availability compared to the other four sites. All sites were lightly shaded and had water flow >0.1 m/sec. Rice Creek above and below the outfall and Six Mile Creek were >2 m deep, while Etonia Creek at Bardin Road and Rice Creek at Bardin Road were <1.5 m deep. Rice Creek above and below the outfall had been dredged previously in the vicinity of the outfall. Trees and shrubs on the adjacent banks had regrown, but aquatic vegetation such as *Nuphar* had not (per P. O'Connor, FDEP Northeast District).
- Metals in water samples from all test and control sites complied with Class III Fresh Water Quality Criteria (Table 1c, FAC 62-302.530). Eight to nine metals were detected at the test sites compared with three to five metals at the control sites. At the test sites, aluminum, cadmium, iron, lead and zinc were detected above the PQL while chromium, copper, nickel and silver (Rice Creek below outfall only) were detected above the MDL but below the PQL. In contrast, at control sites aluminum and iron were found at levels above the PQL while lead and zinc (not detected at Etonia Creek at Bardin Road) were detected above the MDL but below the PQL. Absolute amounts of metals in water samples were 2-30 times higher at the test sites when compared with the control sites. Elevated metals content in water samples from the test sites were attributable to the facility's effluent, which was also enriched in metal content.

Table 1c. Class III Criteria and physical, chemical and microbiological data: receiving water sites, 12/8/2003. Table concluded.

Georgia Pacific-Palatka	Class III Stds	Rice Creek above Outfall	Rice Creek below Outfall	Rice Creek at Bardin	Etonia Creek at Bardin	Six Mile Creek above Mill Creek
Metals (µg/L unless otherwise noted)						
Aluminum	-	7530	9790	270 A	142	50
Arsenic	≤50	6 U	6 U	6 U	6 U	6 U
Cadmium	≤1.2 b	0.11	0.13	0.025 U	0.025 U	0.025 U
Calcium (mg/L)	-	33.4	38.8	19.9 A	8	48.6
Chromium-III	≤91.6 b	3.7 I	4.1 I	3 U	3 U	3 U
Copper	≤9.9 b	4.9 I	5.7 I	1 U	1 U	1 I
Iron	≤1000	707	798	483 A	332	142
Lead	≤3.5 b	1.6	1.6	0.25 A	0.15 I	0.17 I
Magnesium (mg/L)	-	5.9	6.3	6.6 A	2.8	11.3
Nickel	≤55.5 b	5.6 I	8.2 I	3 U	3 U	3 U
Selenium	≤5	1 U	1 U	1 U	1 U	1 U
Silver	≤0.07	0.02 U	0.025 I	0.02 U	0.02 U	0.02 U
Zinc	≤127.6 b	31	30	5.8 I	4 U	10 I
Nutrients (mg/L)						
Ortho-phosphate	-	0.07	0.2	0.027	0.06	0.075
Total Phosphorus	-	0.35	0.51	0.049 I	0.072	OQ
Ammonia	-	0.048	0.058	0.063	0.017 I	0.021
Unionized Ammonia	≤0.02	< 0.02 c	< 0.02 c	< 0.02 c	< 0.02 c	< 0.02 c
Nitrate+Nitrite	-	0.33	0.43	0.024	0.081	0.009 I
Total Kjeldahl Nitrogen	-	2.3	2.8	0.49	0.38	OQ
Organic Nitrogen	-	2.25 c	2.74 c	0.43 c	0.36 c	-
Total Nitrogen	-	2.63 c	3.23 c	0.51 c	0.46 c	-
General Physical and Chemical Parameters						
Habitat Assessment	-	95	95	106	131	96
Dissolved Oxygen (mg/L)	≥5	14.7	11.5	7.9	10.5	3.0
pH (S.U.)	6.0-8.5	7.6	7.6	7.3	6.7	7
Conductivity (umhos/cm)	≤1275	1407	1643	258	90	506
Temperature (C)	-	12.3	12.5	10.2	10.8	12.6
BOD (mg/L)	-	6	6	2 K	2 K	2 K
Secchi (m)	-	0.1	0.1	0.3 VOB	0.5 VOB	1.5
TSS	-	6 I	7 I	4 U	4 U	4 U
Color	-	700	700	100	50	100
Turbidity	29	24	27	3.6	0.85	0.55
Hardness (mg/L)	-	107.7 c	122.8 c	76.9 c	31.5 c	167.9 c
Microbiology (number of counts/100ml)						
Fecal Coliforms	800 s	170 AB	90 B	90 B	182 AB	40 ABJ
Total Coliforms	2400 s	91 AB	154 AB	290	600	104 J

Value exceeds or fails to meet the Class III Water Quality Criteria

b - Hardness based standards, calculated against hardness of 107.7 mg/L. Values differ for each site.

c - Value is calculated

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

B - Results based on colony counts outside the acceptable range

I - Value reported is < the practical quantitation limit, and ≥ the method detection limit

J - Estimated value

K - Actual value is known to be less than value given

O - Sampled, but analysis lost or not performed

Q - Sample held beyond normal holding time

U - Material analyzed for but not detected; value reported is the method detection limit

V - Analyte was detected in both sample and method blank

VOB - Secchi disk visible on stream bottom. Value is stream depth.

s - Single sample

- Dissolved oxygen complied with the Class III Fresh Water Quality Criterion at four of the five sites sampled (Table 1c); dissolved oxygen at the control site Six Mile Creek (3.0 mg/L) failed to meet the 5.0 mg/L level set in Chapter 62-302.530(31) (F.A.C.). The pH at all test and control sites complied with the Class III Fresh Water Quality Criterion (Table 1, 62-302.530(52) F.A.C.).

- Conductivity at the three control sites (90-506 µmhos/cm) complied with the Class III Fresh Water Quality Criterion (Table 1c). Conductivity at the two test sites (1,407 and 1,643 µmhos/cm) exceeded the Class III Fresh Water Quality Criterion of less than 50% above background or 1,275 µmhos/cm; whichever is greater (62-302.530(23) F.A.C.) The elevated conductivity measured at the test sites was attributable to the elevated conductivity of the facility's effluent.

- Turbidity values from the test sites were elevated (24, 27 NTU) compared with the control sites (0.55-3.6 NTU, Table 1c). Secchi depth at the two test sites was 0.1 m in comparison to 1.5 m at Six Mile Creek. At Rice Creek at Bardin Road and Etonia Creek at Bardin Road the Secchi disk was visible on the bottom. During a reconnaissance visit on 10/31/2003, Secchi depth was measured as 0.5 and 0.8 m at these sites (Appendix 7). Color at the two test sites was 700 PCU while control site values ranged from 50-100 PCU. Reduced Secchi depth and elevated turbidity and color at the test sites compared with the control sites were attributable to the facility's effluent.

- Fecal coliforms were not detected in the effluent (see Table 1a for results and Appendix 6 for laboratory worksheets). Fecal coliforms were detected in the receiving waters at levels that did not exceed the Class III Fresh Water Quality Criterion (62-302.530(6) F.A.C., Table 1c). Total coliforms were detected in the effluent and receiving waters at levels that did not exceed Class III Fresh Water Quality Criterion (62-302.530(7) F.A.C.) or facility permit limits.

- The effluent total nitrogen concentration was 4.27 mg/L and total phosphorus concentration was 0.74 mg/L (Table 1). Ortho-phosphate (0.12 mg/L) comprised approximately 15% of the total phosphorus present while total Kjeldahl nitrogen (TKN) was >80% of the total nitrogen (3.5 mg/L). Nutrient levels at the test sites were similar to those in the effluent and differed in the amounts and the relative proportions of compounds when compared to the control sites (Table 1). Both total nitrogen and total phosphorus were higher at the test sites than the control sites (note missing data from Six Mile Creek). More than half the total phosphorus at the control sites was in the form of ortho-phosphate compared to <40% at the test sites. There was more than five times the total nitrogen at test sites when compared to control sites, but the predominant form of nitrogen was TKN at both test and control sites. Test site levels of TKN were in the 90-95th percentile of values recorded in typical Florida streams while control site levels were similar to those at the lowest 5-10th percentile of typical Florida streams (Appendix 5, no data for Six Mile Creek). Test site levels of nitrate+nitrite were in the 80th percentile of values recorded in typical Florida streams while control site levels were similar to those at the lowest 5-40th percentile of typical Florida streams. Similarly, test site levels of total phosphorus were greater than those at the 70-80th percentile of typical Florida streams while control site levels were similar to those of the 20-30th percentile of typical Florida streams (no data for Six Mile Creek). Ammonia levels were similar at all sites (5-40th percentile). Ortho-phosphate levels at the control sites were in the 5-40th percentile of typical Florida streams, but were in the 40-70th percentile at the test sites. Elevated nutrient levels at the test sites were attributable to the facility's effluent.

- Algal growth potential (AGP) is a measure of nutrients available for algal growth (Miller *et al.* 1978). Raschke and Shultz (1987) found that AGP above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. Additionally, 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, see Appendix 3). *Psuedokirchneriella subcapitata* (formerly *Selenastrum capricornutum*) was used as the innoculant for all tests, since all water samples were from fresh water sources. We note that the apparent

Table 2. Measured and predicted algal growth potential (AGP) for total soluble nitrogen (TSIN) limitation (units mg dry weight/L): Georgia Pacific-Palatka

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Inorganic N:P ratio
Effluent 12/8/03	0.936	32 ± 6.4	7.02
Rice Creek above Outfall	0.307	14.36 ± 2.87	5.4
Rice Creek below Outfall	0.100 U	18.54 ± 3.71	2.44
Rice Creek at Bardin	5.26 A	3.31 ± 0.66	3.22
Etonia Creek at Bardin	3.93	3.72 ± 0.74	1.63
Six Mile Creek above Mill Creek	2.62	1.14 ± 0.23	0.4

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

U - Material analyzed for but not detected; value reported is the minimum detection limit

Table 3a. Periphyton composition *

Georgia Pacific-Palatka	Rice Creek above Outfall	Rice Creek below Outfall	Rice Creek at Bardin	Etonia Creek at Bardin	Six Mile Creek above Mill Cr.
Number of Taxa	34	33	22	38	40
Shannon-Weaver Diversity	3.53	3.41	2.20	2.25	2.83
Algal Density (number/cm²)	78,345	116,990	97,686	100,134	132,016
Percent Dominant Taxon	30.6	31.8	57.2	69.8	57.9
Dominant Taxon (name)	*Nitzschia*	*Gomphonema parvulum*	*Cocconeis scutellum*	*Schizothrix calcicola*	*Schizothrix calcicola*
Number of Algal Units Identified	301	305	299	311	309
Percentage Composition					
Blue-green algae	16.9	24.6	10.4	78.5	64.4
Diatoms	80.4	74.8	88.3	21.5	35.6
Green algae	0.3	0.3	1.3	0	0
Euglenoids	2.3	0.3	0	0	0
Condition of Periphytometers					
Debris on racks?	No	No	Yes	Yes	Yes
Grazers Present?	Yes	Yes	No	Yes	No
Taxa	*Gammarus*	*Gammarus*	-	*Stenoema exiguum*	-
	Parachironomus	*Parachironomus*	-	*Acerpenna pygmaea*	-
	-	-	-	*Pseudocloeon* sp.	-
	-	-	-	*Hemerodromia* sp.	-

* Data not included in discussion because of periphytometer condition on retrieval.

salinity (based on conductivity) of the effluent sample was 1.3 ppt, while all other samples were ≤0.8 ppt. The AGP values at the three control sites ranged from 2.62 to 5.26 mg dry weight/L (Table 2). Dry weight of algae at the three control sites was equal to or greater than that predicted by the amount of total suspended inorganic nitrogen (TSIN) in the sample, suggesting no growth inhibition was present. Only at Rice Creek at Bardin Road was the AGP value slightly above the 5.0 mg dry wt/L "problem" threshold. In contrast, the AGP values of the effluent and test site water samples were <1 mg dry wt/L, despite much higher nutrient availability (Tables 1, 2). No growth was measured at one test site, Rice Creek below the outfall. Estimated production was 97-100% less than predicted by available TSIN in these three samples, suggesting growth inhibition may have occurred. Additional testing would be required to make this determination, because a standard AGP test is not designed to detect algal inhibition.

- Periphytometers were deployed for 28 days at each of the five study sites (data are shown in Table 3a; see also Appendix 8). At the time of recovery, the presence/absence of grazers on periphytometers was recorded and collections of grazers made for later identification. Grazers were present on periphytometers at three of the five sites (Rice Creek above and below the outfall, Etonia Creek at Bardin Road). At the two test sites in Rice Creek near the outfall, *Gammarus*, an amphipod, and *Parachironomus*, a midge, were collected. In Etonia Creek, three Ephemeroptera taxa and a dipteran were found (Table 3a). Debris was recorded on periphytometers from each of the three control sites. No chlorophyll *a* data were collected at any site because slides were lost. Because of these confounding factors, periphyton data were not included in this analysis.

- Chlorophyll *a* was not detected in samples of the effluent and from the five test and control sites (Table 3b). We note that nutrients in the water column may or may not fuel algal production immediately, depending upon the sum of environmental conditions that limit algal growth at the site (e.g. pH, shading, turbidity, flow). In flowing streams, most algal production occurs in the form of benthic algal production, while phytoplankton production is usually dominant in lakes (Dodds 2002). Thus it is not necessarily contradictory for ambient nutrient levels in streams to be high and for no chlorophyll *a* to be detected in water samples.

- Phytoplankton assemblages at the two test sites were similar to that of the effluent (Table 3b, Appendix 11). Over 58% of each sample was composed of the filamentous blue-green alga, *Jaaginema*, with blue-green algae comprising 74-90% of the total samples. Cell density was 2,317-10,308 algal units/ml. At the three control sites, phytoplankton cells were sparse (168-309 algal units/ml). At Rice Creek at Bardin Road and Etonia Creek at Bardin Road, phytoplankton were so sparse that only 27 and 44 algal units were identified in a three-hour analysis time (FDEP SOP AB05), in contrast with the 297-306 unit counts from the other four samples. Blue-green algae comprised <28% of the total at control sites, with green algae comprising 60.8% of the total at Six Mile Creek and diatoms comprising 72-85% at the other two control sites. These differences in phytoplankton assemblages

between control and test sites are attributable to the facility's effluent.

- Quantitative measures of benthic macroinvertebrate assemblages from Hester-Dendy samplers showed severe degradation at the two test sites compared to the three control sites (Table 4, Appendix 9). Shannon-Weaver diversity (H') at the two test sites was 0.51-0.67 while control site results ranged from 2.78-3.62 (mean 3.32). Both receiving water sites in Rice Creek failed to meet the Biological Integrity Criterion (62-302.530(11) F.A.C.), since H' was reduced by 80-85% relative to the mean of the control site results. Shannon-Weaver diversity at the two test sites was in the lowest 5th percentile of values recorded at typical Florida Streams (Appendix 5) while results at the control sites were similar to data from the 40-80th percentile of typical Florida streams. Over 92% of macroinvertebrates at the two test sites were *Gammarus* sp., an amphipod; and assemblages of macroinvertebrates showed little overlap between the test and control sites. As a demonstration of the strength of these community-level differences, Figure 1 shows the individuals recovered from a single Hester-Dendy block deployed at the control site at Etonia Creek at Bardin Road (1a) and the test site at Rice Creek above the outfall (1b).
- Qualitative measures of benthic macroinvertebrate assemblages from dipnet samples indicated degradation at the two test sites; data are summarized in Tables 5 and 6 and in Appendix 10. The test sites up- and downstream of the Georgia Pacific outfall ranked "Poor" and "Very Poor", respectively. The three control sites scored "Good" (Six Mile Creek) or "Excellent" (Rice Creek at Bardin Road, Etonia Creek at Bardin Road). As in the Hester-Dendy samples, the dominant taxon at the two test sites was the amphipod *Gammarus* sp., comprising 56-60.4% of the samples and there was little overlap in macroinvertebrate assemblages between the test and control sites.
- The presence/absence of submersed, emersed and floating aquatic vegetation, water color, Secchi depth and physical/chemical parameters were measured at the two test sites, the three control sites, at the confluence of the St. Johns River and Rice Creek, and at the confluence of the St. Johns River and Six Mile Creek (Figure 2, detailed methods in Appendix 3). Sampling locations were restricted to sites with water depth <100 cm deep, boat access, and areas where the bottom was clear of sunken logs and debris. These sites were judged to be potentially suitable for the establishment of aquatic vegetation. No aquatic vegetation was recorded at the two test sites and at Etonia Creek at Bardin Road. *Nuphar luteum* was present at Rice Creek at Bardin Road, and patches of *Nupahr luteum, Salvinia minima* and *Pistia stratiotes* were present throughout the 100-m stretch sampled in Six Mile Creek (floating or emersed taxa). Submersed aquatic vegetation (SAV) is usually rare or absent in smaller creeks like Etonia Creek at Bardin Road or Rice Creek at Bardin Road, but may be intermittently present in larger streams such as Six Mile Creek (FDNR 1989, Hoyer et al. 1996). The absence of all types of aquatic vegetation at the two test sites may be related to the facility's effluent and/or to habitat alteration related to dredging by the facility.
- SAV was absent in shallow water from the mouth of Rice Creek (n = 6), from approximately 1,100 m downstream of the confluence (n = 10), and approximately 400 m upstream of the confluence with the St. Johns River (n = 4, Figure 2). Emersed vegetation was present at three of

Table 3b. Phytoplankton composition

Georgia Pacific-Palatka	Effluent 12/8/03	Rice Creek above Outfall	Rice Creek below Outfall	Rice Creek at Bardin	Etonia Creek at Bardin	Six Mile Creek above Mill Cr.
Number of Taxa	16	14	15	3	13	27
Shannon-Weaver Diversity	2.25	2.08	1.52	0.73	2.88	3.37
Chlorophyll a (µg/L)	2.8 U	2.8 U	2.8 U	0.85 U	0.85 U	0.85 U
Phaeophytin (µg/L)	2.8 U	2.8 U	2.8 U	0.85 U	0.85 U	0.85 U
Algal Density (number/ml)	10,308	2,317	7,057	168	176	309
Percent Dominant Taxon	58.7	64.0	78.1	85.1	25.0	40.8
Dominant Taxon (name)	*Jaaginema*	*Jaaginema*	*Jaaginema*	*Bacillariophyceae*	*Navicula/Jaaginema*	*Chlorophyceae*
Number of Algal Units Identified	305	306	301	27	44	297
Percentage Composition						
Blue-green algae	87.2	73.8	90.1	14.9	27.3	22.0
Cryptomonads	0.0	0.0	0.7	0.0	0.0	4.9
Diatoms	0.0	8.5	3.7	85.1	72.7	9.7
Dinoflagellates	0.0	0.0	0.0	0.0	0.0	1.9
Euglenoids	5.9	12.1	1.3	0.0	0.0	0.7
Green algae	5.9	5.6	3.3	0.0	0.0	60.8
Other	1.0	0.0	1.0	0.0	0.0	0.0

U - Material analyzed for but not detected; value reported is the method detection limit

Table 4. Macroinvertebrate Hester-Dendy Samples - Quantitative

Georgia Pacific-Palatka	Rice Creek above Outfall	Rice Creek below Outfall	Rice Creek at Bardin	Etonia Creek at Bardin	Six Mile Creek above Mill Cr.
Summary Statisics					
Shannon-Weaver Diversity	0.67	0.51	3.62	2.78	3.56
Number of Taxa	19	15	26	19	25
Florida Index	5	2	13	18	2
Number of EPT Taxa	2	3	7	6	2
Percent Dominant Taxon	92.1	93.5	34.5	35.8	19.0
Dominant Taxon (name)	*Gammarus*	*Gammarus*	*Stenacron floridense*	*Polypedilum flavum*	*Gammarus*
Dominant Taxon (group)	Amphipoda	Amphipoda	Ephemeroptera	Diptera	Amphipoda
Total Number of Individuals Counted	758	1159	148	566	195
Total Density of Individuals (#/m2)	2,005	3,066	392	1,497	516
Community Composition: Percent of total					
Amphipoda	92.2	93.5	1.4	0.2	21.5
Diptera	4.8	4.3	35.1	69.3	46.2
Ephemeroptera	1.2	0.3	43.9	16.1	23.1
Gastropoda	0.4	0.1	12.8	0.0	2.6
Isopoda	0.1	0.0	0.0	0.0	1.0
Odonata	0.4	0.2	2.0	0.0	0.5
Oligochaeta	0.0	0.0	0.0	0.0	3.6
Trichoptera	0.5	1.5	3.4	13.6	0.0
Other	0.4	0.1	1.4	0.8	1.5
Functional Feeding Groups: Percent of total					
Browser	46.0	46.8	0.7	0.1	9.5
Burrowing Deposit Feeders	0.0	0.0	0.0	0.0	3.6
Predators	1.3	0.5	6.8	2.5	1.6
Surface Deposit Feeders	4.2	4.0	38.7	32.2	40.7
Suspension Feeders	0.8	1.6	12.9	36.9	14.6
Scavenger	46.2	46.8	0.7	0.1	9.5
Scrapers	1.1	0.3	34.5	8.9	14.1
Shredders	0.4	0.1	2.4	19.4	2.3
Unknown	0.0	0.1	3.5	0.0	4.2

Values indicate failure to meet the Biological Integrity Criterion.

20 sampling points where SAV was absent (floating vegetation (unrooted) not included). Once SAV beds were identified, we noted patchy to continuous beds of SAV and other aquatic vegetation both up- and downstream of areas where SAV was absent around the mouth of Rice Creek. SAV (n = 4/11), in combination with emersed and floating aquatic vegetation (n = 11/11, both types present at every sample site), was present at the mouth of Six Mile Creek and in the adjacent areas of the St. Johns River. Taxa recorded included *Chara* spp., *Typha* spp., *Hydrilla verticillata*, *Nitella* spp., *Sagittaria* spp., *Vallisneria americana*, *Colocasia esculenta*, *Nuphar luteum*, *Salvinia minima*, *Pistia stratiotes*, *Najas guadalupensis*, *Iris* spp., *Elodea* spp., *Pontederia cordata*, *Hypnea* spp. *Eichhornia crassipes* and *Panicum* spp.

- No SAV was recorded at any sampling location with color >180 PCU or Secchi depth <68 cm. The area at the confluence of Rice Creek and the St. Johns River had elevated color (250-350 PCU) and decreased Sechhi depth (9-20 cm). This elevated color and decreased Secchi depth extended for a variable distance around the mouth of Rice Creek, and its extent over time is probably dependent on river discharge, tidal cycles and wind-driven mixing. Below the confluence of Rice Creek and the St. Johns River, color was lower (135-180 PCU) and Secchi depths were greater (70-80 cm) due to dilution with St. Johns River water. The higher color and lower Secchi depth at the mouth of Rice Creek is attributable to the facility's effluent and appears related to the absence of SAV and a reduction in the occurrence of emersed vegetation from approximately 1,500 m (0.93 miles, length of shoreline along which SAV was sampled) of nearshore shallow water similar to areas where these types of aquatic vegetation are found elsewhere along the St. Johns River.

Summary

Dioxins, including 2,3,7,8-TCDD, which is a permitted analyte, and organic pollutants were not detected in the effluent. Iron levels were elevated and close to the Class III Fresh Water

Quality Criterion (62-302.530(39) F.A.C.). Aluminum levels were high, but Florida does not currently have a fresh water quality criterion for aluminum. Iron and zinc were at the highest levels reported in DMR data for 1/1/2003 to 12/31/2003, while lead levels were almost double the highest value reported. Ten metals were routinely detected in the effluent samples. Reevaluation of monitoring frequency and permit limits for metals may be warranted based on these results.

The effluent total nitrogen concentration was 4.27 mg/L and total phosphorus concentration was 0.74 mg/L. Total nitrogen was almost 1 mg/L above the highest DMR data reported from 1/1/2003 to 12/31/2003. These nutrient releases are a cause for concern, given the large volume of effluent discharged; nutrient loadings from the facility have the potential to contribute to eutrophication of the St. Johns River. The recently adopted nutrient TMDL for the Lower St. Johns River requires a "30% reduction in the existing anthropogenic point, non point and upstream boundary nitrogen and phosphorus loads" to the freshwater portion of the Lower St. Johns River (62-304.415 F.A.C., TMDL titled "Total Maximum Daily Load for Nutrients in the Lower St. Johns River", April 23, 2004, approved USEPA, May 2004, authors: W. Magley and D. Joyner, p. 21).

Effluent conductivity exceeded the Class III Fresh Water Quality Criterion (62-302.530(23) F.A.C.) on three sample dates. Effluent turbidity exceeded the Class III Fresh Water Quality Criterion (62-302.530(70) F.A.C.). Turbidity and conductivity results were close to the averages reported in DMR data. Both DMR and FDEP data from this inspection indicate routine exceedance of specific conductance and

Table 5. Macroinvertebrate Dipnet Samples - Qualitative

Georgia Pacific-Palatka	Rice Creek above Outfall	Rice Creek below Outfall	Rice Creek at Bardin	Etonia Creek at Bardin	Six Mile Creek above Mill Cr.
Stream Condition Index (value)	17	11	31	31	25
Stream Condition Index (word)	Poor	Very Poor	Excellent	Excellent	Good
Stream Condition Index Metrics					
Number of Taxa	18	10	36	41	31
Florida Index	5	1	12	26	3
Number of EPT Taxa	0	1	5	10	2
Number of Chironomid Taxa	7	1	11	10	11
Percent Dominant Taxon	56.0	60.4	14.2	21.7	24.2
Percent Diptera	33.0	24.5	44.2	33.0	50.8
Percent Suspension Feeders and Filterers	0.5	0.0	13.8	11.8	8.5
Total Number of Individuals	109	106	120	106	124
Community Composition: Percent of total					
Dominant Taxon (name)	*Gammarus*	*Gammarus*	*Tanytarsus* sp. *S Epler*	*Microcylloepus pusillus*	*Goeldichironomus fluctuans*
Dominant Taxon (group)	Amphipoda	Amphipoda	Diptera	Coleoptera	Diptera
Amphipoda	56.9	64.2	0.8	0.0	13.7
Coleoptera	1.8	2.8	9.2	30.2	0.8
Diptera	33.0	24.5	44.2	33.0	50.8
Ephemeroptera	0.0	0.9	14.2	6.6	5.7
Gastropoda	2.8	1.9	7.5	1.9	16.1
Isopoda	0.9	0.0	9.2	0.0	0.0
Odonata	0.0	0.9	2.5	6.6	0.8
Oligochaeta	4.6	3.8	6.7	2.8	9.7
Trichoptera	0.0	0.0	0.8	10.4	0.0
Trombidiformes	0.0	0.0	0.8	4.7	0.0
Other	0.0	1.0	4.2	3.8	2.3
Functional Feeding Groups: Percent of total					
Browser	28.0	30.2	0.0	0.0	2.8
Burrowing Deposit Feeders	4.6	3.8	6.7	2.8	9.7
Predators	0.9	1.9	12.9	22.6	2.8
Surface Deposit Feeders	31.7	26.4	46.3	34.0	44.4
Suspension Feeders and Filterers	0.5	0.0	13.8	11.8	8.5
Scrapers	3.7	3.8	9.2	17.4	19.4
Scavenger	28.9	30.2	9.2	0.5	2.8
Shredders	1.8	3.8	2.1	9.9	5.6
Unknown	0.0	0.0	0.0	0.0	3.2

turbidity Class III Fresh Water Quality Criteria by this facility (see Appendix 2 for DMR data).

The effluent samples were chronically, but not acutely, toxic to the water flea, *Ceriodaphnia dubia*, during the 7-day chronic screening bioassay, a failure to meet the Class III Water Quality Criterion (62-302.530(62) F.A.C.). Four of seven previous chronic toxicity tests have shown chronic toxicity to the water flea (Appendix 2), indicating a continued failure to meet F.A.C. 62-302.530(62). This pattern is a cause for concern and monitoring should be continued as process changes are instituted at the facility.

Conductivity at the two test sites exceeded the Class III Fresh Water Quality Criterion (62-302.530(23) F.A.C.) and this elevated conductivity was attributable to the elevated conductivity of the facility's effluent. Reduced Secchi depth and elevated metal content, nutrient content, turbidity and color at the test sites compared with the control sites were attributable to the facility's effluent. The pattern of physical and chemical changes attributable to the facility's effluent at the test sites compared with the control sites is a cause for concern; additional monitoring may be warranted.

Dissolved oxygen at Six Mile Creek (3.0 mg/L) failed to meet the 5.0 mg/L level set in Chapter 62-302.530(31) F.A.C., but levels complied with the Class III Fresh Water Quality Criterion at the other four sites.

The AGP data from the test sites indicated production of 97-100% less biomass than predicted by available TSIN, suggesting growth inhibition attributable to the facility's effluent may have occurred. However, additional testing with a toxicity test designed to measure algal growth inhibition would be required to make this determination.

Data from phytoplankton, quantitative and qualitative samples of benthic macroinvertebrates and monitoring of aquatic vegetation indicate the facility's effluent has had strong negative impacts on the biota of Rice Creek and this biological degradation may have extended into adjacent areas of the St. Johns River. Both receiving water sites in Rice Creek failed to meet the Biological integrity Criterion (62-302.530(11) F.A.C.) and scored "Poor" or "Very Poor" on the Stream Condition Index. The higher color and lower Secchi depth at the mouth of Rice Creek is attributable to the facility's effluent and appears related to the absence of SAV and a reduction in the occurrence of emersed and/or floating vegetation from approximately 1,500 m of nearshore shallow water similar to areas where aquatic vegetation is found elsewhere along the St. Johns River. Biological degradation in the receiving waters related to the facility's effluent may indicate a failure to meet Chapter 62-302.530(62) F.A.C. by the facility. Additional monitoring of biological communities is warranted and effects of the facility's effluent on aquatic vegetation should be studied.

Table 6a. Stream Condition Index Metrics: Rice Creek above Outfall

Metric:	Value	5	3	1	Score
Total Number of Taxa	18	≥27	26-14	<14	3
Number of EPT Taxa	0	≥4	3-2	<2	1
Number of Chironomid Taxa	7	≥9	8-5	<5	3
Percent Contribution of Dominant Taxon	56.0	≤30	31-65	>65	3
Percent Diptera	33.0	-	≤52	>52	3
Florida Index	5	≥10	9-5	<5	3
Percent Suspension Feeders and Filterers	0.5	≥15	14-8	<8	1
Total Score		**Poor**			**17**
Interpretation of Scores		Excellent			27-33
		Good			21-26
		Poor			14-20
		Very Poor			7-13

Table 6b. Stream Condition Index Metrics: Rice Creek below Outfall

Metric:	Value	5	3	1	Score
Total Number of Taxa	10	≥27	26-14	<14	1
Number of EPT Taxa	1	≥4	3-2	<2	1
Number of Chironomid Taxa	1	≥9	8-5	<5	1
Percent Contribution of Dominant Taxon	60.4	≤30	31-65	>65	3
Percent Diptera	24.5	-	≤52	>52	3
Florida Index	1	≥10	9-5	<5	1
Percent Suspension Feeders and Filterers	0.0	≥15	14-8	<8	1
Total Score		**Very Poor**			**11**
Interpretation of Scores		Excellent			27-33
		Good			21-26
		Poor			14-20
		Very Poor			7-13

Table 6c. Stream Condition Index Metrics: Rice Creek at Bardin

Metric:	Value	5	3	1	Score
Total Number of Taxa	36	≥27	26-14	<14	5
Number of EPT Taxa	5	≥4	3-2	<2	5
Number of Chironomid Taxa	11	≥9	8-5	<5	5
Percent Contribution of Dominant Taxon	14.2	≤30	31-65	>65	5
Percent Diptera	44.2	-	≤52	>52	3
Florida Index	12	≥10	9-5	<5	5
Percent Suspension Feeders and Filterers	13.8	≥15	14-8	<8	3
Total Score		**Excellent**			**31**
Interpretation of Scores		Excellent			27-33
		Good			21-26
		Poor			14-20
		Very Poor			7-13

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Table 6d. Stream Condition Index Metrics: Etonia Creek at Bardin

Metric:	Value	5	3	1	Score
Total Number of Taxa	41	≥27	26-14	<14	5
Number of EPT Taxa	10	≥4	3-2	<2	5
Number of Chironomid Taxa	10	≥9	8-5	<5	5
Percent Contribution of Dominant Taxon	21.7	≤30	31-65	>65	5
Percent Diptera	33.0	-	≤52	>52	3
Florida Index	26	≥10	9-5	<5	5
Percent Suspension Feeders and Filterers	11.8	≥15	14-8	<8	3
Total Score		**Excellent**			**31**
Interpretation of Scores		Excellent			27-33
		Good			21-26
		Poor			14-20
		Very Poor			7-13

Table 6e. Stream Condition Index Metrics: Six Mile Creek above Mill Creek

Metric:	Value	5	3	1	Score
Total Number of Taxa	31	≥27	26-14	<14	5
Number of EPT Taxa	2	≥4	3-2	<2	3
Number of Chironomid Taxa	11	≥9	8-5	<5	5
Percent Contribution of Dominant Taxon	24.2	≤30	31-65	>65	5
Percent Diptera	50.8	-	≤52	>52	3
Florida Index	3	≥10	9-5	<5	1
Percent Suspension Feeders and Filterers	8.5	≥15	14-8	<8	3
Total Score		**Good**			**25**
Interpretation of Scores		Excellent			27-33
		Good			21-26
		Poor			14-20
		Very Poor			7-13

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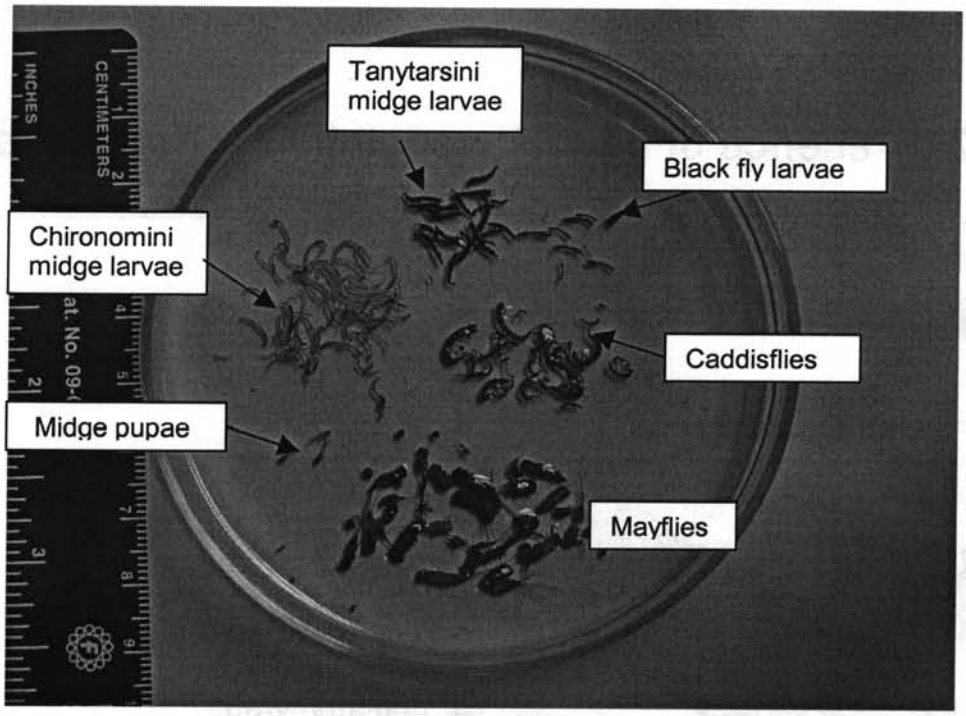


Figure 1 a. Etonia Creek at Bardin Road, macroinvertebrates from one Hester-Dendy block.

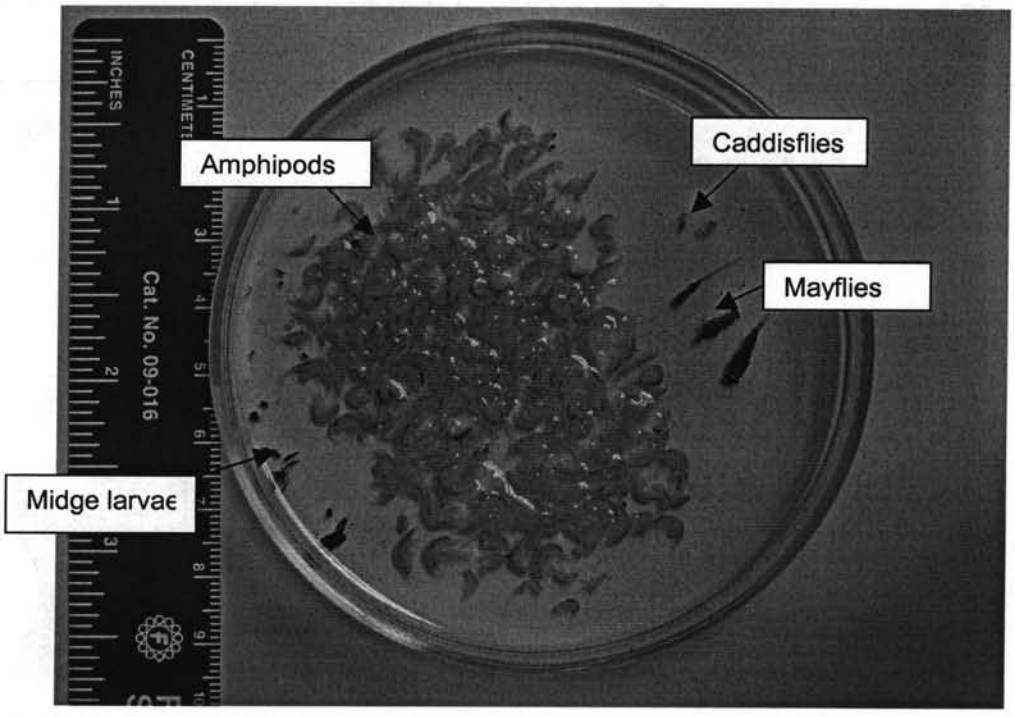
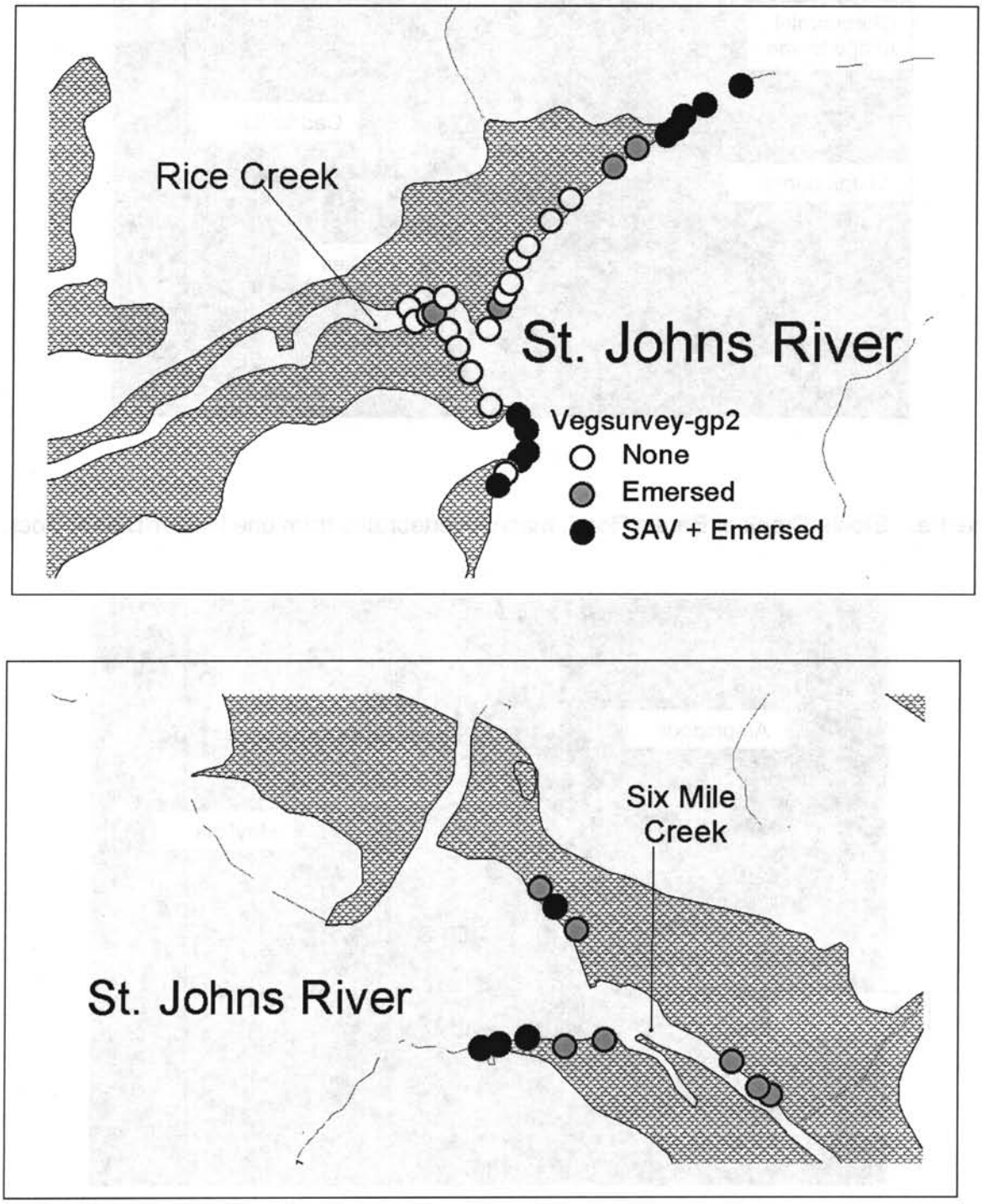


Figure 1 b. Rice Creek above outfall, macroinvertebrates from one Hester-Dendy block.

Figure 2. Presence of aquatic vegetation at study sites.

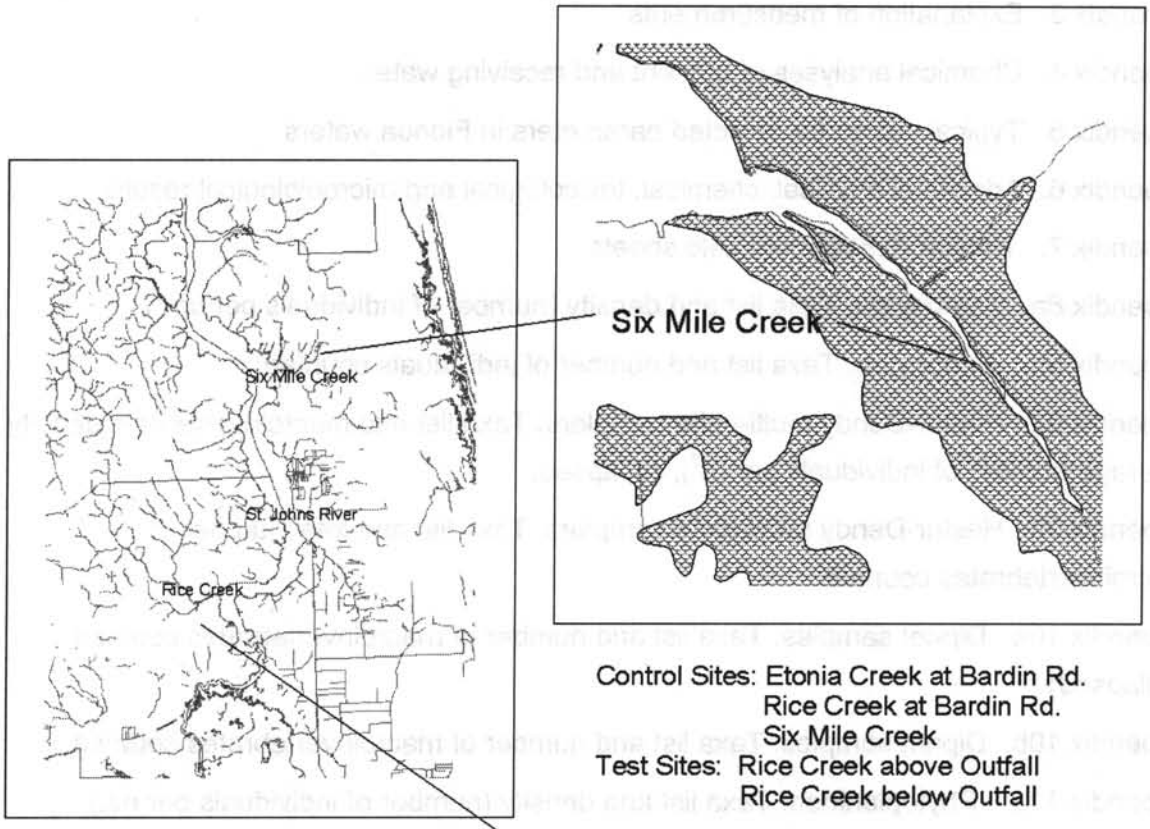


Appendices

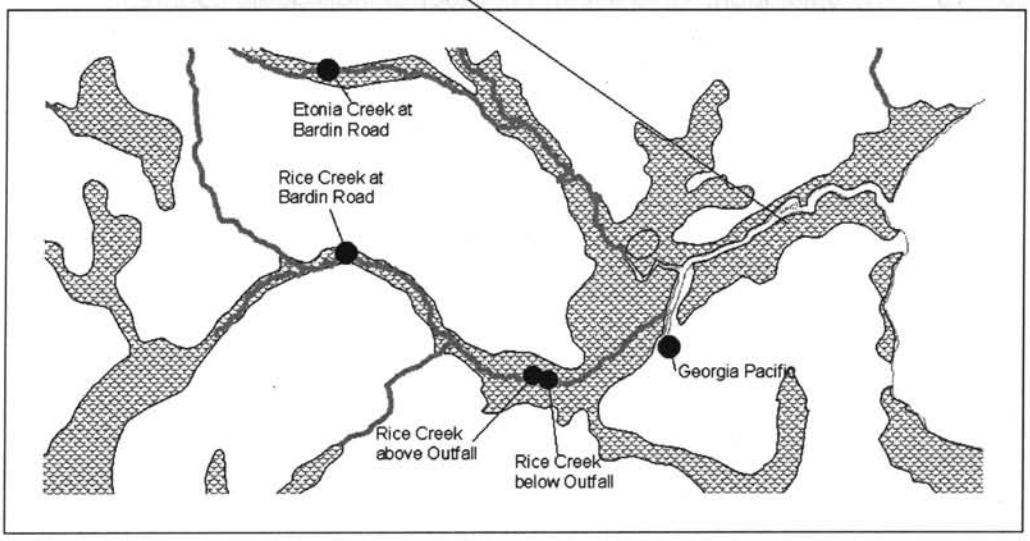
- Appendix 1. Map of facility and sampling sites
- Appendix 2. Facility summary and DMR data
- Appendix 3. Explanation of measurements
- Appendix 4. Chemical analyses of effluent and receiving water.
- Appendix 5. Typical values for selected parameters in Florida waters
- Appendix 6. Additional physical, chemical, toxicological and microbiological results
- Appendix 7. Habitat Assessment field sheets
- Appendix 8a. Periphyton: Taxa list and density (number of individuals per cm^2)
- Appendix 8b. Periphyton: Taxa list and number of individuals counted
- Appendix 9a. Hester-Dendy multi-plate samplers: Taxa list and macroinvertebrate density (average number of individuals per m^2), collapsed.
- Appendix 9b. Hester-Dendy multi-plate samplers: Taxa list and total number of macroinvertebrates counted
- Appendix 10a. Dipnet samples: Taxa list and number of macroinvertebrates counted (collapsed)
- Appendix 10b. Dipnet samples: Taxa list and number of macroinvertebrates counted
- Appendix 11a. Phytoplankton: Taxa list and density (number of individuals per mL)
- Appendix 11b. Phytoplankton: Taxa list and number of individuals counted

Appendix 1

Georgia Pacific-Palatka
Locations of study sites



Control Sites: Etonia Creek at Bardin Rd.
Rice Creek at Bardin Rd.
Six Mile Creek
Test Sites: Rice Creek above Outfall
Rice Creek below Outfall



Appendix 2

Facility Summary and DMR Data

State of Florida
Department of Environmental Protection
Facility Summary

Facility Name: Georgia-Pacific Corporation – Palatka Operations		**Prepared By:** W. Jeremy RiCharde **Date:** 11/04/03	
Location: Highway 216, Palatka	**County:** 54-Putnam	**District:** Northeast	
NPDES Permit No.: FL0002763 **Expiration Date:** 8/5/2007	**State GMS #:** **State Expiration Date:**	**Facility Type:** Industrial	
Function of Facility: Pulp & Paper mill			
Description of treatment process: The 40 MGD average wastewater treatment system provides primary clarification followed by secondary treatment consisting of 900 plus acres of facultative and aerobic lagoons. The plant also consists of a liquid oxygen injection system that injects pure oxygen into two effluent side streams at a rate which counteracts the BOD of the effluent in order to maintain a dissolved oxygen concentration of 4.0 mg/L in the summer months and 5.0 mg/L in the winter months.			
Receiving Waters: Rice Creek		**Classification:** Class III - Fresh	
Design Flow: 60 MGD	**Mean Flow:** 27 MGD From Jan 2003 thru Aug 2003	**Flow during survey:**	
Discharge is: Continuous X Intermittent Seasonal Rainfall Dependent Other			
Facility Mixing Zone Details: none			

List effluent limits:

Parameter	Limit	Frequency	Describe special permit conditions and permit modifications:
Outfall D001			
Flow (MGD)	Daily Average Report Daily Maximum Report	Continuous	
BOD_5 (mg/L)	Daily Average Report	3 days/week	24-hour composite (6 grab samples every 4 hours or continuous sampler)
	Daily Maximum Report		24-hour composite (6 grab samples every 4 hours or continuous sampler)
BOD_5 (lbs/day)	Daily Average 3500 (Jun 1 - Nov 30) 7170 (Dec 1 - May 31)	3 days/week	24-hour composite (6 grab samples every 4 hours or continuous sampler)
	Daily Maximum 7000 (June 1 - Nov 30) 14340 (Dec 1 - May 31)		24-hour composite (6 grab samples every 4 hours or continuous sampler)

TSS (mg/L)	Daily Average Report	3 days/week	24-hour composite (6 grab samples every 4 hours or continuous sampler)
	Daily Maximum Report		24-hour composite (6 grab samples every 4 hours or continuous sampler)
TSS (lbs/day)	Daily Average 5000 (June 1 – Nov 30) 10,000 (Dec 1 – May 31)	3 days/week	24-hour composite (6 grab samples every 4 hours or continuous sampler)
	Daily Maximum 10,000 (June 1 – Nov 30) 17500 (Dec 1 – May 31)		24-hour composite (6 grab samples every 4 hours or continuous sampler)
pH (S.U.)	Daily Min 6.0	5 days/week	Grab
	Daily Max 8.5		
Total Nitrogen, as N (mg/L)	Daily Max Report	1/month	Grab
TKN, as N (mg/L)	Daily Max Report	1/month	Grab
Total Ammonia, as N (mg/L)	Daily Max Report	1/month	Grab
Un-ionized Ammonia (mg/L) as NH_3	Daily Max Report	1/quarter	Calculation
Color (PCU)	Daily Max Report	1/month	Grab
Fecal Coliform (# / 100 mL)	Daily Maximum 800	1/month	Grab
	Monthly Geometric Mean 200		

Total Coliform (# / 100 mL)	Daily Max 2400 Monthly Geometric Mean 1000	1/month	Grab
Settleable Solids (mL/L/hr)	Daily Maximum 0.1	1/quarter	Grab
Iron, total recoverable (mg/L)	Daily Max Report	1/quarter	Grab
Zinc, total recov (µg/L)	Daily Max $e^{(0.8473[\ln H]+0.7614)}$	1/quarter	Grab Hardness based limit, where H is the total hardness.
Cadmium, total recov. (µg/L)	Daily Max Report	1/quarter	Grab
Lead, total recov. (µg/L)	Daily Max Report	1/quarter	Grab
Temperature (° F)	Daily Max Report	1/quarter	Grab
Total Hardness (mg/L as $CaCO_3$)	Daily Maximum Report	1/quarter	Grab
Specific Conductance (umhos/cm)	Daily Maximum Report	1/month	Grab
Turbidity (NTU)	Daily Maximum Report	1/month	Grab
Dissolved Oxygen (mg/L)	Daily Minimum Report	5 Days/Week	Grab or insitu
Oxygen Injected (lb/day)	Daily Minimum 4150 (June 1 – Nov 30) 1950 (Dec1 – May 31)	5 Days/week	Log

2,3,7,8-TCDD (pg/L)	Daily Average 0.014	1/quarter	Composite – 72 hr composite sample consisting of 3 24 hr composite samples. If the concentration is determined to be less than the minimum detection level of 10 pg/L for method 1613, compliance with this parameter is demonstrated.
COD (mg/L)	Daily Maximum Report	1/month	24 hr composite (6 samples, 1 taken every 4 hrs)
AOX (lbs/day)	Monthly Average 1077 Daily Maximum 1644	Daily	24 hr composite (6 separate samples – as above)
Acute Whole Effluent Toxicity (%)	LC_{50}>100		C. Dubia and C. Leedsi – 96 hour acute. All tests shall consist of 6 rep separate grab samples taken every 4 hours or 24 hour accumulation of a continuous sampler. If control mortality > 10%, repeat test. If unacceptable acute tox (>20% in any grab sample of 100% effluent), permittee shall conduct a minimum of 3 valid additional tests (definitive). The 1st within 7 days.
Chronic Whole Effluent Toxicity	Report		C. Dubia and Pimephales promelas. Tests shall be conducted on 0% and 100% effluent. 24 hour composite sample of final effluent. All test solutions shall be renewed daily, 2 additional composite samples collected on day 2 and 4 of test shall be used for renewals.

Description of permitted outfall: The effluent discharges into Rice Creek at D001-A. Two side streams with oxygen injection discharge at D001-B and D002-C. The combined discharge of D001-A and D001-B discharge at milepoint 3.4 (upstream from mouth). D002-C discharges at milepoint 2.4. .

List permit violations (DMR data) and plant upsets that occurred at the plant within the past year:

Describe previous impact bioassessments, WQBEL's, and previous or current enforcement actions:

WQBEL for color performed for proposed permit.

A study of the dioxin levels in fish tissue to determine if a consumption advisory is necessary in Rice Creek. Data is still being evaluated although it appears that the levels have been greatly reduced.

Toxicity tests conducted in November 2000 demonstrate chronic toxicity to CD & FM.

Biological studies conducted indicate masculization in select species, believed to be caused by endocrine disrupters identified in the effluent above naturally occurring concentrations.

No enforcement action.

Discuss MOR trends to prior data; is the trend improving or declining:

Additional Information:
Administrative Order 039-E was issued in conjunction with NPDES permit # FL0002763. All of the current monitoring requirements listed above are taken from the AO.

DMR Summary Results

01/01/2003 to 12/31/2003

Permit Number: FL0002763

Facility Name: GEORGIA-PACIFIC CORP PALATKA

Outfall Indicator: 001-1
Monitoring Location Code: 1

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 00070	TURBIDITY	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	NTU	39.0833	51	24
P 00080	COLOR	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	PT-CO	1166.6667	1500	750
P 00095	SPECIFIC CONDUCTANCE	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	UMHO/ CM	2128.8333	2426	1823
P 00300	OXYGEN, DISSOLVED (DO)	ADDMON	11/1/2002 to 10/31/2007	DAILY MN	MG/L	4.8583	7.7	2.6
P 00310	BOD, 5-DAY (20 DEG C)	3500	11/1/2002 to 10/31/2007	DAILY AV	LBS/DY	2293	2594	2016
P 00310	BOD, 5-DAY (20 DEG C)	7000	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	4859.8333	9633	3037
P 00310	BOD, 5-DAY (20 DEG C)	14340	11/1/2002 to 10/31/2007		LBS/DY	3419.5	5438	1757
P 00310	BOD, 5-DAY (20 DEG C)	7170	11/1/2002 to 10/31/2007		LBS/DY	2373.6667	3806	1494
P 00310	BOD, 5-DAY (20 DEG C)	ADDMON	11/1/2002 to 10/31/2007	DAILY AV	MG/L	11.25	14.7	9
P 00310	BOD, 5-DAY (20 DEG C)	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	18.4167	34	12
P 00400	PH	6	11/1/2002 to 10/31/2007	DAILY MN	SU	7.5667	8	7.1
P 00400	PH	8.5	11/1/2002 to 10/31/2007	DAILY MX	SU	8.0333	8.4	7.8
P 00530	SOLIDS, TOTAL SUSPENDED	10000	11/1/2002 to 10/31/2007	DAILY AV	LBS/DY	1944.1667	3167	0
P 00530	SOLIDS, TOTAL SUSPENDED	5000	11/1/2002 to 10/31/2007	DAILY AV	LBS/DY	3078.8333	4510	2085
P 00530	SOLIDS, TOTAL SUSPENDED	10000	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	6265.8333	12995	4017
P 00530	SOLIDS, TOTAL SUSPENDED	17500	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	4455.5	6587	2505
P 00530	SOLIDS, TOTAL SUSPENDED	ADDMON	11/1/2002 to 10/31/2007	DAILY AV	MG/L	12.25	20.5	0
P 00530	SOLIDS, TOTAL SUSPENDED	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	25.0833	47	13
P 00545	SOLIDS, SETTLEABLE	0.1	11/1/2002 to 10/31/2007	DAILY MX	ML/L/ HR	0	0	0
P 00600	NITROGEN, TOTAL (AS N)	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	2.818	3.7	1.66
P 00610	NITROGEN, AMMONIA TOTAL (AS N)	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	0.2181	0.91	0.02
P 00625	NITROGEN, KJELDAHL TOTAL (AS N)	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	2.5183	3.6	1.22
P 32106	CHLOROFORM	7.16	11/1/2002 to 10/31/2007	DAILY AV	LBS/DY	1.0975	1.64	0.61
P 32106	CHLOROFORM	11.96	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	1.5533	2.97	0.8
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY AV	MGD	17.3167	24.1	11.4
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MGD	27.6417	43.3	15.7
P 70353	ORGANIC HALIDES, TOTAL	1644	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	472.1714	587.1	342
P 70353	ORGANIC HALIDES, TOTAL	1077	11/1/2002 to 10/31/2007	MO AVG	LBS/DY	303.5429	348	230
P 74055	COLIFORM, FECAL GENERAL	800	11/1/2002 to 10/31/2007	DAILY MX	#/ 100ML	18.4167	100	1
P 74055	COLIFORM, FECAL GENERAL	200	11/1/2002 to 10/31/2007	MO GEOMN	#/ 100ML	10.4167	30	1
P 74056	COLIFORM, TOTAL GENERAL	2400	11/1/2002 to 10/31/2007	DAILY MX	#/ 100ML	435.25	1300	129
P 74056	COLIFORM, TOTAL GENERAL	1000	11/1/2002 to 10/31/2007	MO GEOMN	#/ 100ML	355.8333	750	129
P 81017	CHEMICAL OXYGEN DEMAND (COD)	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	315.4167	410	160

Outfall Indicator: 001-1
Monitoring Location Code: 5

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 00300	OXYGEN, DISSOLVED (DO)	4	11/1/2002 to 10/31/2007	DAILY MN	MG/L	3.2667	4.6	2.3
P 00300	OXYGEN, DISSOLVED (DO)	5	11/1/2002 to 10/31/2007	DAILY MN	MG/L	4.85	7.1	2.7
P 00398	DISSOLVED OXYGEN INJECTED	1950	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	3224	5248	2624
P 00398	DISSOLVED OXYGEN INJECTED	4150	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	4990.1667	5245	4198

Outfall Indicator: 001-1
Monitoring Location Code: B

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY AV	MGD	2.6375	2.97	2.39
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MGD	2.7583	3.49	2.46

Outfall Indicator: 001-1
Monitoring Location Code: S

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY AV	MGD	25.625	32.3	19.8
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MGD	35.9917	51.4	24.2

Outfall Indicator: 001-Q
Monitoring Location Code: 1

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 00011	TEMPERATURE, WATER DEG FAHRENHEI	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	DEG.F	68.65	80.8	60
P 00619	AMMONIA, UNIONIZED	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	0.003	0.005	0.001
P 00900	HARDNESS, TOTAL (AS CACO3)	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	156	170	140
P 00980	IRON, TOTAL RECOVERABLE	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	0.642	0.85	0.47
P 01094	ZINC, TOTAL RECOVERABLE	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	UG/L	27.6667	33	22
P 01114	LEAD, TOTAL RECOVERABLE	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	UG/L	0.84	1.3	0.38

Outfall Indicator: 001-Q
Monitoring Location Code: P

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 01094	ZINC, TOTAL RECOVERABLE	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	UG/L	154.4	166	141

Outfall Indicator: 001-Q
Monitoring Location Code: Z

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 72047	GASES, TOTAL DISSOLVED	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	81.2	83.6	78

Outfall Indicator: 002-1
Monitoring Location Code: 5

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 00398	DISSOLVED OXYGEN INJECTED	2800	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	4458.6	7249	3724
P 00398	DISSOLVED OXYGEN INJECTED	5750	11/1/2002 to 10/31/2007	DAILY MX	LBS/DY	6817.5	7243	6065

Outfall Indicator: 002-1
Monitoring Location Code: C

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY AV	MGD	5.6858	5.95	5.31
P 50050	FLOW	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MGD	5.8473	6.05	5.72
P 50050	FLOW	DELMON	11/1/2002 to 10/31/2007			-1.#IND	-1000	1000000

Outfall Indicator: 002-Q
Monitoring Location Code: Z

Parameter Code	Description	Limit	Limit Effective Dates	STAT Base	Units	AVG	MAX	MIN
P 72047	GASES, TOTAL DISSOLVED	ADDMON	11/1/2002 to 10/31/2007	DAILY MX	MG/L	71.6	87	52

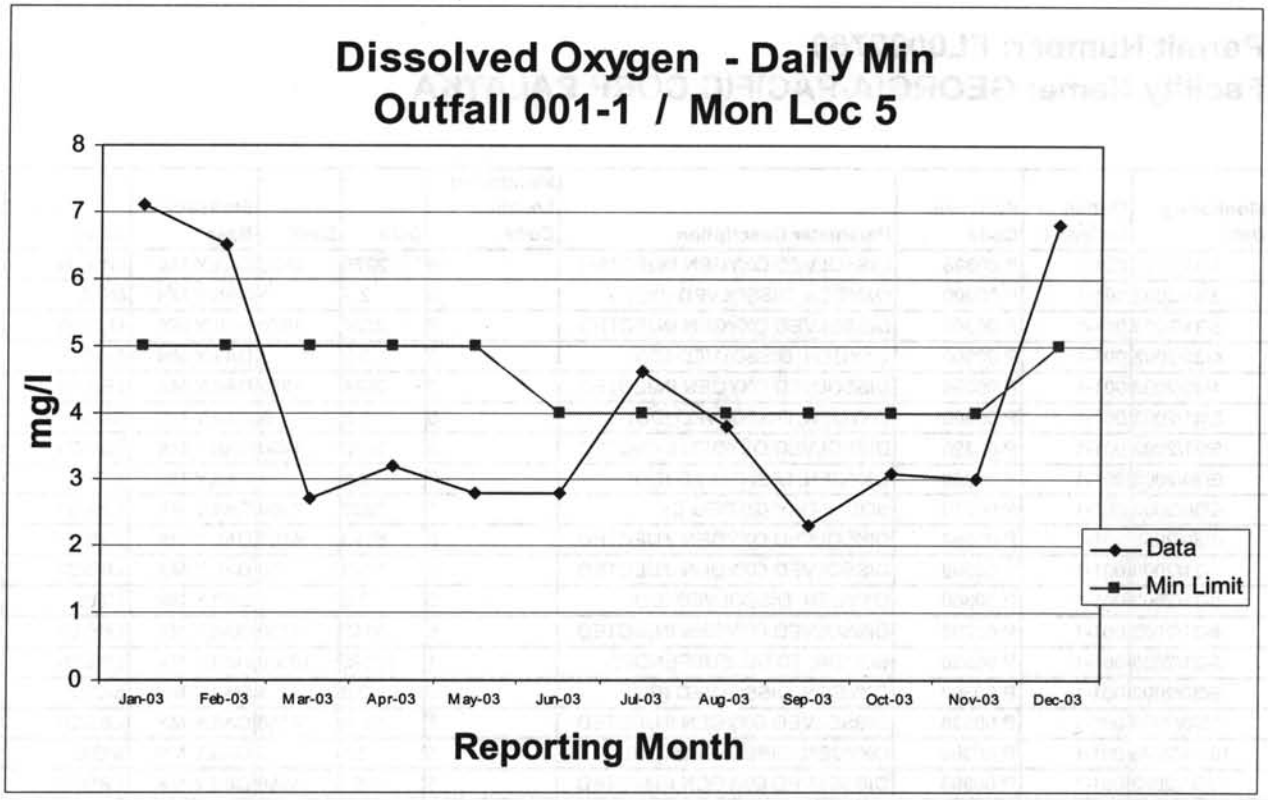
DMR Effluent Exceedances

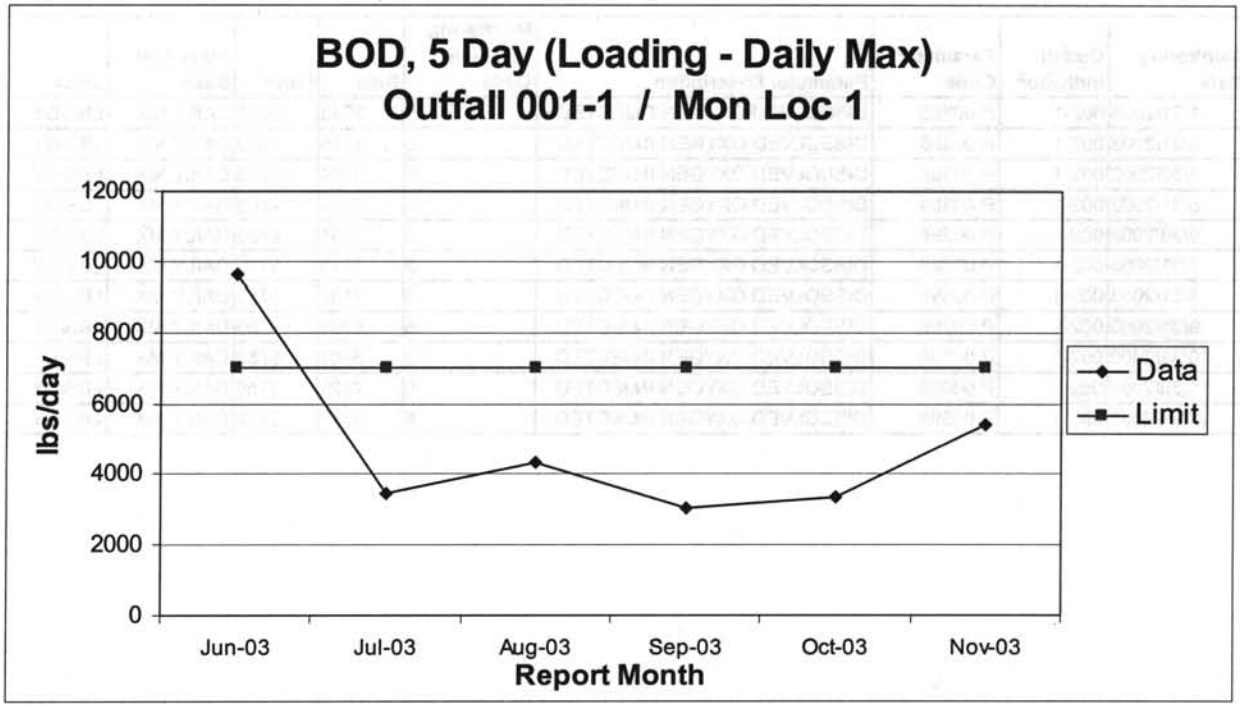
01/01/2003 to 12/31/2003

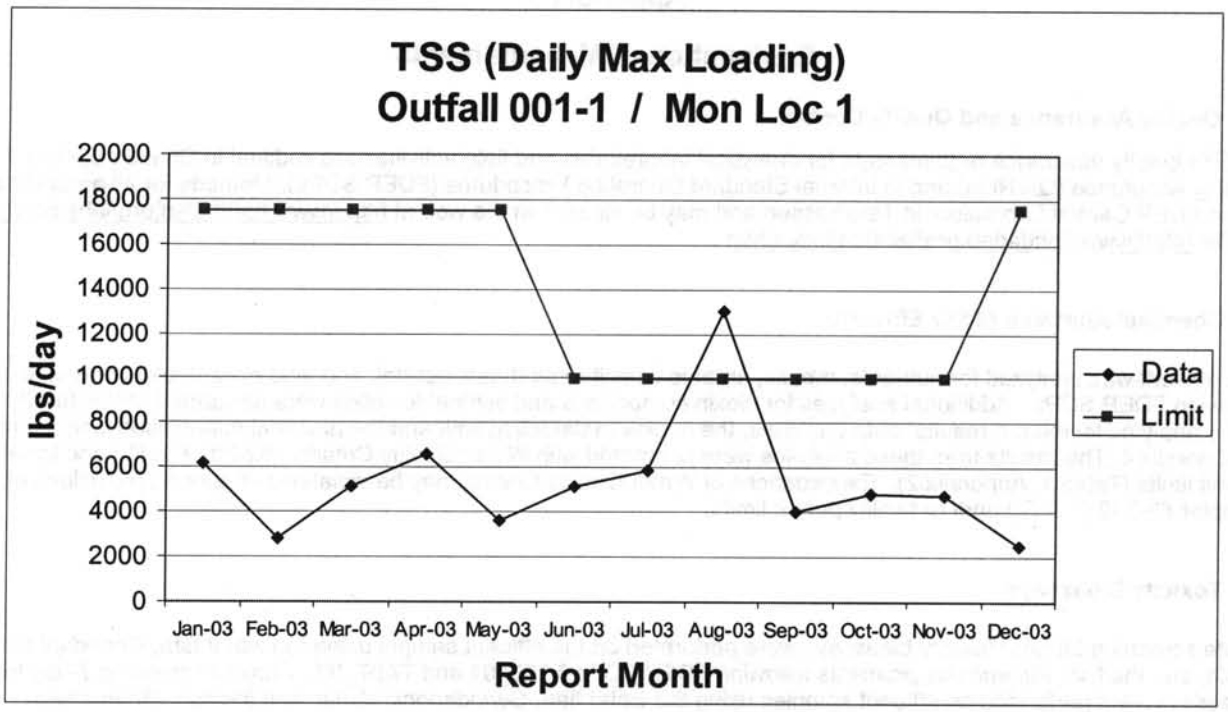
Permit Number: FL0002763
Facility Name: GEORGIA-PACIFIC CORP PALATKA

Monitoring Date	Outfall Indicator	Parameter Code	Parameter Description	Monitoring Location Code	Data	Limit	Statistical Base	Units
1/31/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	2976	1950	DAILY MX	LBS/DY
3/31/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	2.7	5	DAILY MN	MG/L
3/31/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	2624	1950	DAILY MX	LBS/DY
4/30/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	3.2	5	DAILY MN	MG/L
4/30/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	2624	1950	DAILY MX	LBS/DY
5/31/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	2.8	5	DAILY MN	MG/L
5/31/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	5248	1950	DAILY MX	LBS/DY
6/30/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	2.8	4	DAILY MN	MG/L
6/30/2003	001-1	P 00310	BOD, 5-DAY (20 DEG C)	1	9633	7000	DAILY MX	LBS/DY
6/30/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	5196	4150	DAILY MX	LBS/DY
7/31/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	5245	4150	DAILY MX	LBS/DY
8/31/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	3.8	4	DAILY MN	MG/L
8/31/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	5143	4150	DAILY MX	LBS/DY
8/31/2003	001-1	P 00530	SOLIDS, TOTAL SUSPENDED	1	12995	10000	DAILY MX	LBS/DY
9/30/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	2.3	4	DAILY MN	MG/L
9/30/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	5200	4150	DAILY MX	LBS/DY
10/31/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	3.1	4	DAILY MN	MG/L
10/31/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	4959	4150	DAILY MX	LBS/DY
11/30/2003	001-1	P 00300	OXYGEN, DISSOLVED (DO)	5	3	4	DAILY MN	MG/L
11/30/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	4198	4150	DAILY MX	LBS/DY
12/31/2003	001-1	P 00398	DISSOLVED OXYGEN INJECTED	5	2648	1950	DAILY MX	LBS/DY

Monitoring Date	Outfall Indicator	Parameter Code	Parameter Description	Monitoring Location Code	Data	Limit	Statistical Base	Units
1/31/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	3848	2800	DAILY MX	LBS/DY
3/31/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	3725	2800	DAILY MX	LBS/DY
4/30/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	3724	2800	DAILY MX	LBS/DY
5/31/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	7249	2800	DAILY MX	LBS/DY
6/30/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	7064	5750	DAILY MX	LBS/DY
7/31/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	7243	5750	DAILY MX	LBS/DY
8/31/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	7105	5750	DAILY MX	LBS/DY
9/30/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	6065	5750	DAILY MX	LBS/DY
10/31/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	6207	5750	DAILY MX	LBS/DY
11/30/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	7221	5750	DAILY MX	LBS/DY
12/31/2003	002-1	P 00398	DISSOLVED OXYGEN INJECTED	5	3747	2800	DAILY MX	LBS/DY


Dissolved Oxygen - Daily Min
Outfall 001-1 / Mon Loc 5
mg/l
0
1
2
3
4
5
6
7
8
Jan-03
Feb-03
Mar-03
Apr-03
May-03
Jun-03
Jul-03
Aug-03
Sep-03
Oct-03
Nov-03
Dec-03
Reporting Month
Data
Min Limit


BOD, 5 Day (Loading - Daily Max)
Outfall 001-1 / Mon Loc 1
lbs/day
0
2000
4000
6000
8000
10000
12000
Jun-03
Jul-03
Aug-03
Sep-03
Oct-03
Nov-03
Report Month
Data
Limit


TSS (Daily Max Loading)
Outfall 001-1 / Mon Loc 1
lbs/day
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Jan-03 Feb-03 Mar-03 Apr-03 May-03 Jun-03 Jul-03 Aug-03 Sep-03 Oct-03 Nov-03 Dec-03
Report Month
Data
Limit

Appendix 3

Explanation of Measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the FDEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.floridadep.org/labs/sop/index.htm and/or http://www.floridadep.org/labs/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 FDEP SOPs. Additional analyses for dioxin compounds and settleable solids were performed at this facility. A list of the analytes tested for, results, data qualifiers, the minimum detection limit and the practical quantitation limit are given in Appendix 4. The results from these analyses were compared with Water Quality Criteria (62-302 F.A.C.) and facility permit limits (Table 1, Appendix 2). Exceedances of Water Quality Criteria may be violations of specific provisions of Chapter 62-302 (F.A.C.) and/ or facility permit limits.

(3) Toxicity Bioassays

Acute screening 96-hour toxicity bioassays were performed on the effluent sample using the water flea, *Ceriodaphnia dubia,* and the fish, *Pimephales promelas* following FDEP SOPs TA07_01 and TA07_02. Chronic screening 7-day toxicity bioassays were performed on effluent samples using the water flea, *Ceriodaphnia dubia,* and the fish, *Pimephales promelas* following FDEP SOPs TA07_05 and TA07_09. Failure of toxicity testing may constitute a violation of 62-302.520(21), 62-302.530(62) and/or facility permit limits.

(4) Bacteriological Testing

The effluent and water from control and test sites were analyzed for the presence and concentration of total and fecal coliform bacteria following FDEP SOPs MB1_0 and MB1_1. High levels of fecal or total coliform bacteria may constitute violation of 62-302.530(6), 62-302.530(7) and/or facility permit limits.

(5) Habitat Assessment

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

(6) Algal Growth Potential

The effluent and water from control and test sites are autoclaved, filtered (0.45μm), inoculated with the unicellular green alga, *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum,* USEPA 2002*),* and incubated for 14 days (FDEP SOP TA08_05). 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 one line of evidence for violation of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C. and/or 62-302.530(48)(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 ± 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 be a violation of 62-302.530(62) F.A.C..

(7) Phytoplankton and Periphyton Assemblages

Methods: Periphyton were sampled at both control and test sites by incubating glass microscope slides in a standard periphytometer for 28 days (QA Rule SOP FS7210). Phytoplankton were sampled using a 1 L grab sample (QA Rule SOP FS7100). Periphyton and phytoplankton were subsampled and identified to the lowest practical level, usually species (FDEP SOPs AB03, AB03_1 and AB05). When periphytometers were retrieved, notes and collections were made of the presence/absence and activity of any grazers present. Macroinvertebrates collected from periphytometers were identified to the lowest practical taxonomic level, usually species (FDEP SOP IZ06).

Chlorophyll *a* Content: Chlorophyll *a* content is measured in both phytoplankton and periphyton samples to estimate algal biomass (FDEP SOP BB05). High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and may be a violation of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C. and/or 62-302.530(48)(b) F.A.C..

Algal Density: Algal density is estimated as number of natural units/ml for phytoplankton samples and number of natural units/cm^2 for periphyton 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 violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) 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 with more equitable abundance among taxa (Magurran 1988). Low diversity scores related to a facility's effluent may constitute violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) F.A.C..

(8) Benthic Macroinvertebrate Assemblages

Methods: Benthic macroinvertebrates were collected using two methods. Quantitative samples were collected from Hester-Dendy multi-plate samplers incubated for 28 days (QA Rule SOP FS7430). Qualitative collections are made using 20 dipnet sweeps (QA Rule SOP FS7420). Benthic macroinvertebrates were sorted and identified to the lowest practical taxonomic level, usually species (FDEP SOP IZ06).

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 violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) 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 violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C. and/or 62-302.530(48)(b) 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 constitutes a violation of 62-302.530(11) F.A.C..

The Florida Index: Some organisms become rare or absent as the intensity or duration of disturbance increases. The Florida Index assigns points to stream-dwelling macroinvertebrates based on their ranked sensitivity to pollution (Beck 1954). A site with a high Florida Index score is considered healthy (Ross 1990). Decreases in Florida Index points related to a facility's effluent may constitute violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) F.A.C..

Ephemeroptera/Plecoptera/Trichoptera (EPT) Taxa: This value is the number of EPT taxa present. More EPT taxa are usually present in unpolluted waters (Plafkin *et al.*, 1989, Wallace *et al.*, 1996). Decreases in the number of EPT taxa related to a facility's effluent may constitute violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) 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 (Karr and Chu 1998). Shifts in community composition related to a facility's effluent may constitute violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) 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 (FDEP 1994) and shredders (EA Engineering 1994). Changes in the proportions of functional feeding groups related to a facility's effluent may constitute violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) F.A.C..

The Stream Condition Index (SCI): The SCI is a composite macroinvertebrate metric developed for Florida. Using data from qualitative dipnet samples, the SCI assigns points to seven parameters, depending on how closely each parameter approaches an expected reference condition (QA Rule SOP LT 7200). Points are summed to yield a final SCI score (range 7-33, depending on region and index period). Included in the calculation of SCI are taxa richness, number of EPT taxa, number of Chironomid taxa, percent contribution of the dominant taxon, the Florida Index, percent contribution of Diptera, and the percent contribution of suspension and filter feeders. Scores are broken into four ordinal groups: Excellent, Good, Poor and Very Poor. A decrease in ordinal SCI score from the Control to the Test site may be evidence of degradation related to a facility's effluent. An SCI score of "Poor" or "Very Poor" related to a facility's effluent may constitute violations of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C., 62-302.530(48)(b) F.A.C. and/or 62-302.530(62) F.A.C..

(9) Statistical Comparisons

Statistical comparisons of the proportions of taxa, major groups or feeding groups were made using 95% confidence intervals on proportions. A 95% confidence interval is the range of values above and below a given proportion that has a 95% chance of containing the true proportion (Sokal and Rohlf 1995). If the 95% confidence intervals for two proportions do not overlap, then the proportion of X in sample 1 is significantly different from the proportion of X in sample 2 at $p<0.05$. A "$p<0.05$" level of significance means that there is less than a 5% chance that the true proportions in the two samples are the same. All comparisons that are labeled as significant in the text have a probability <0.05 that the proportions are the same.

(10) Survey for Submersed, Emersed and Floating Aquatic Vegetation

The presence or absence of submersed, emersed and floating aquatic vegetation was sampled at all study sites. Additionally, we sampled at the mouths of Rice Creek and Six Mile Creek, including adjacent shoreline in the St. Johns River. Submersed (or submerged) aquatic vegetation (SAV) are rooted plants that live below the water surface, emersed (or emergent) aquatic vegetation are rooted plants that extend above the water's surface, and floating aquatic vegetation are those species that flat at the water's surface and are not rooted to the bottom.

At each of the five study sites where dipnet samples were collected, meters 0, 50 and 100 of the 100 m stretch were surveyed. Presence of submersed aquatic vegetation (SAV) was recorded in a 0.25 m^2 quadrat at each sample point. Notes were made on the presence of floating or emergent vegetation in the 100 m stretch. At each location sampled, a vial of water was collected for laboratory determination of color and latitude/longtitude was recorded using GPS. We also recorded pH, conductivity, Secchi depth, water depth, water temperature and dissolved oxygen. All data were collected in a water depth of $\leq$1 m.

At the mouths of Rice Creek and Six Mile Creek, we performed additional sampling for aquatic vegetation. At ~100-200 m intervals, the boat was pointed to shore, following water depth on the sounder. When the boat reached a point that was <1.0 m deep and <2 m from the shore, the following data were collected: latitude/longitude, pH, conductivity, Secchi depth, water depth, water temperature and dissolved oxygen. Presence of SAV was determined by deploying the frotus three times. If SAV was retrieved, it was identified or a piece was collected and returned to the laboratory for identification. The number of throws where SAV was retrieved was recorded. The location was rejected if water depth was >1 m or if the bottom was littered with woody debris. Woody debris was judged to potentially interfere with the establishment and growth of SAV by (1) physically blocking the substrate and (2) mechanically damaging SAV when shifted by wave action. Data thus are a measure of the number of locations sampled where SAV was recorded and where we judged the bottom was potentially suitable for SAV growth and establishment. We also noted if floating or emergent vegetation were present at the sampling point.

Appendix 4

Chemical analysis of effluent and receiving water

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	ETONIA CREEK@BARDIN	Bio-AGP/LimNut	Algal Growth Potential	3.93	mg DryWt/L		0.1	0.3
12/08/03	ETONIA CREEK@BARDIN	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
12/08/03	ETONIA CREEK@BARDIN	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
12/08/03	ETONIA CREEK@BARDIN	Bio-Invertebrates	Macroinvert-FW-Qual-Dipnetx20-# Taxa	41	# Taxa			
12/08/03	ETONIA CREEK@BARDIN	Bio-Peri/Phyto	Periphyton-Quantitative-# Diatom Taxa	34	#Taxa			
12/08/03	ETONIA CREEK@BARDIN	Bio-Peri/Phyto	Periphyton-Quantitative-# Wet Taxa	4	#Taxa			
12/08/03	ETONIA CREEK@BARDIN	Bio-Peri/Phyto	Phytoplankton-Quantitative-# Wet Taxa	3	#Taxa			
12/08/03	ETONIA CREEK@BARDIN	Bio-Peri/Phyto	Phytoplankton-Quantitative-#Diatom Taxa	11	#Taxa			
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Aluminum	142	ug/L		7	28
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Arsenic	6	ug/L	U	6	24
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Calcium	8	mg/L		0.05	0.2
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Chromium	3	ug/L	U	3	12
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Copper	1	ug/L	U	1	4
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Iron	332	ug/L		15	60
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Lead	0.15	ug/L	I	0.05	0.2
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Magnesium	2.8	mg/L		0.02	0.08
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Nickel	3	ug/L	U	3	12
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Selenium	1	ug/L	U	1	4
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
12/08/03	ETONIA CREEK@BARDIN	Metals-Water	Zinc	4	ug/L	U	4	16
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	Ammonia-N	0.017	mg N/L	I	0.01	0.02
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	Color	50	PCU		5	5
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	NO2NO3-N	0.081	mg N/L		0.004	0.01
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	N_KJEL_TOT	0.38	mg N/L		0.06	0.2
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	O-Phosphate-P	0.06	mg P/L		0.004	0.01
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	TSS	4	mg/L	U	4	16
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	Total-P	0.072	mg P/L		0.02	0.06
12/08/03	ETONIA CREEK@BARDIN	Nutrients-Liquid	Turbidity	0.85	NTU		0.05	0.05
12/08/03	EC @ BARDIN REP-1	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	16	# Taxa			
12/08/03	EC @ BARDIN REP-2	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	12	# Taxa			
12/08/03	EC @ BARDIN REP-3	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	10	# Taxa			
12/08/03	RICE CREEK @ BARDIN	Bio-Invertebrates	Macroinvert-FW-Qual-Dipnetx20-# Taxa	37	# Taxa			
12/08/03	RICE CREEK @ BARDIN	Bio-Peri/Phyto	Periphyton-Quantitative-# Diatom Taxa	17	#Taxa			
12/08/03	RICE CREEK @ BARDIN	Bio-Peri/Phyto	Periphyton-Quantitative-# Wet Taxa	5	#Taxa			
12/08/03	RICE CREEK @ BARDIN	Bio-AGP/LimNut	Algal Growth Potential	5.26	mg DryWt/L	A	0.1	0.3
12/08/03	RICE CREEK @ BARDIN	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
12/08/03	RICE CREEK @ BARDIN	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
12/08/03	RICE CREEK @ BARDIN	Bio-Peri/Phyto	Phytoplankton-Quantitative-# Wet Taxa	3	#Taxa			
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Aluminum	270	ug/L	A	7	28
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Arsenic	6	ug/L	U	6	24
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Calcium	19.9	mg/L	A	0.05	0.2
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Chromium	3	ug/L	U	3	12

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Copper	1	ug/L	U	1	4
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Iron	483	ug/L	A	15	60
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Lead	0.25	ug/L	A	0.05	0.2
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Magnesium	6.6	mg/L	A	0.02	0.08
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Nickel	3	ug/L	U	3	12
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Selenium	1	ug/L	U	1	4
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
12/08/03	RICE CREEK @ BARDIN	Metals-Water	Zinc	5.8	ug/L	I	4	16
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	Ammonia-N	0.063	mg N/L		0.01	0.02
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	Color	100	PCU		10	10
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	NO2NO3-N	0.024	mg N/L		0.004	0.01
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	N_KJEL_TOT	0.49	mg N/L		0.06	0.2
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	O-Phosphate-P	0.027	mg P/L		0.004	0.01
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	TSS	4	mg/L	U	4	16
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	Total-P	0.049	mg P/L	I	0.02	0.06
12/08/03	RICE CREEK @ BARDIN	Nutrients-Liquid	Turbidity	3.6	NTU		0.05	0.05
12/08/03	RC @ BARDIN-REP-1	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	10	# Taxa			
12/08/03	RC @ BARDIN-REP-2	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	21	# Taxa			
12/08/03	RC @ BARDIN-REP-3	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	10	# Taxa			
12/08/03	RCABOVE OUTFALL	Bio-AGP/LimNut	Algal Growth Potential	0.307	mg DryWt/L		0.1	0.3
12/08/03	RCABOVE OUTFALL	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	2.8	ug/L	U	2.8	8.5
12/08/03	RCABOVE OUTFALL	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	2.8	ug/L	U	2.8	8.5
12/08/03	RCABOVE OUTFALL	Bio-Peri/Phyto	Phytoplankton-Quantitative-# Wet Taxa	14	#Taxa			
12/08/03	RCABOVE OUTFALL	Metals-Water	Aluminum	7530	ug/L		7	28
12/08/03	RCABOVE OUTFALL	Metals-Water	Arsenic	6	ug/L	U	6	24
12/08/03	RCABOVE OUTFALL	Metals-Water	Cadmium	0.11	ug/L		0.025	0.1
12/08/03	RCABOVE OUTFALL	Metals-Water	Calcium	33.4	mg/L		0.05	0.2
12/08/03	RCABOVE OUTFALL	Metals-Water	Chromium	3.7	ug/L	I	3	12
12/08/03	RCABOVE OUTFALL	Metals-Water	Copper	4.9	ug/L	I	2	8
12/08/03	RCABOVE OUTFALL	Metals-Water	Iron	707	ug/L		15	60
12/08/03	RCABOVE OUTFALL	Metals-Water	Lead	1.6	ug/L		0.05	0.2
12/08/03	RCABOVE OUTFALL	Metals-Water	Magnesium	5.9	mg/L		0.02	0.08
12/08/03	RCABOVE OUTFALL	Metals-Water	Nickel	5.6	ug/L	I	3	12
12/08/03	RCABOVE OUTFALL	Metals-Water	Selenium	1	ug/L	U	1	4
12/08/03	RCABOVE OUTFALL	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
12/08/03	RCABOVE OUTFALL	Metals-Water	Zinc	31	ug/L		4	16
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	Ammonia-N	0.048	mg N/L		0.01	0.02
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	Color	700	PCU		50	50
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	NO2NO3-N	0.33	mg N/L		0.004	0.01
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	N_KJEL_TOT	2.3	mg N/L		0.06	0.2
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	O-Phosphate-P	0.07	mg P/L		0.004	0.01
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	TSS	6	mg/L	I	4	16
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	Total-P	0.35	mg P/L		0.02	0.06
12/08/03	RCABOVE OUTFALL	Nutrients-Liquid	Turbidity	24	NTU		0.05	0.05
12/08/03	RICE CREEK ABOVE OUT FALL	Bio-Invertebrates	Macroinvert-FW-Qual-Dipnetx20-# Taxa	18	# Taxa			
12/08/03	RICE CREEK ABOVE OUT FALL	Bio-Peri/Phyto	Periphyton-Quantitative-# Diatom Taxa	27	#Taxa			
12/08/03	RICE CREEK ABOVE OUT FALL	Bio-Peri/Phyto	Periphyton-Quantitative-# Wet Taxa	7	#Taxa			
12/08/03	R C ABOVE OUTFALL-REP-1	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	8	# Taxa			

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	R C ABOVE OUTFALL-REP-2	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	6	# Taxa			
12/08/03	R C ABOVE OUTFALL-REP-3	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	12	# Taxa			
12/08/03	RC BELOW OUT FALL	Bio-AGP/LimNut	Algal Growth Potential	0.1	mg DryWt/L	U	0.1	0.3
12/08/03	RC BELOW OUT FALL	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	2.8	ug/L	U	2.8	8.5
12/08/03	RC BELOW OUT FALL	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	2.8	ug/L	U	2.8	8.5
12/08/03	RC BELOW OUT FALL	Bio-Peri/Phyto	Phytoplankton-Quantitative-# Wet Taxa	15	#Taxa			
12/08/03	RC BELOW OUT FALL	Metals-Water	Aluminum	9790	ug/L		7	28
12/08/03	RC BELOW OUT FALL	Metals-Water	Arsenic	6	ug/L	U	6	24
12/08/03	RC BELOW OUT FALL	Metals-Water	Cadmium	0.13	ug/L		0.025	0.1
12/08/03	RC BELOW OUT FALL	Metals-Water	Calcium	38.8	mg/L		0.05	0.2
12/08/03	RC BELOW OUT FALL	Metals-Water	Chromium	4.1	ug/L	I	3	12
12/08/03	RC BELOW OUT FALL	Metals-Water	Copper	5.7	ug/L	I	2	8
12/08/03	RC BELOW OUT FALL	Metals-Water	Iron	798	ug/L		15	60
12/08/03	RC BELOW OUT FALL	Metals-Water	Lead	1.6	ug/L		0.05	0.2
12/08/03	RC BELOW OUT FALL	Metals-Water	Magnesium	6.3	mg/L		0.02	0.08
12/08/03	RC BELOW OUT FALL	Metals-Water	Nickel	8.2	ug/L	I	3	12
12/08/03	RC BELOW OUT FALL	Metals-Water	Selenium	1	ug/L	U	1	4
12/08/03	RC BELOW OUT FALL	Metals-Water	Silver	0.025	ug/L	I	0.02	0.08
12/08/03	RC BELOW OUT FALL	Metals-Water	Zinc	30	ug/L		4	16
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	Ammonia-N	0.058	mg N/L		0.01	0.02
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	Color	700	PCU		50	50
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	NO2NO3-N	0.43	mg N/L		0.004	0.01
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	N_KJEL_TOT	2.8	mg N/L		0.06	0.2
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	O-Phosphate-P	0.2	mg P/L		0.004	0.01
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	TSS	7	mg/L	I	4	16
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	Total-P	0.51	mg P/L		0.02	0.06
12/08/03	RC BELOW OUT FALL	Nutrients-Liquid	Turbidity	27	NTU		0.05	0.05
12/08/03	RICE CREEK BELOW OUT FALL	Bio-Invertebrates	Macroinvert-FW-Qual-Dipnetx20-# Taxa	10	# Taxa			
12/08/03	RICE CREEK BELOW OUT FALL	Bio-Peri/Phyto	Periphyton-Quantitative-# Diatom Taxa	25	#Taxa			
12/08/03	RICE CREEK BELOW OUT FALL	Bio-Peri/Phyto	Periphyton-Quantitative-# Wet Taxa	8	#Taxa			
12/08/03	RC BELOW OUT FALL REP-1	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	3	# Taxa			
12/08/03	RC BELOW OUT FALL REP-2	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	10	# Taxa			
12/08/03	RC BELOW OUT FALL REP-3	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	10	# Taxa			
12/08/03	D001	Bio-AGP/LimNut	Algal Growth Potential	0.936	mg DryWt/L		0.1	0.3
12/08/03	D001	Bio-BOD	Biochemical Oxygen Demand-5 Day	9.3	mg/L			
12/08/03	D001	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	2.8	ug/L	U	2.8	8.5
12/08/03	D001	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	2.8	ug/L	U	2.8	8.5
12/08/03	D001	Bio-Peri/Phyto	Phytoplankton-Quantitative-# Wet Taxa	15	#Taxa			
12/08/03	D001	Bio-Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	LC50	L		
12/08/03	D001	Bio-Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	LC50	L		
12/08/03	D001	Bio-Toxicology	Bioassay-Chronic-Scrn-FW-C.dubia, NOEC	100	NOEC	K		
12/08/03	D001	Bio-Toxicology	Bioassay-Chronic-Scrn-FW-Fish, NOEC	100	NOEC			
12/08/03	D001	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	D001	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
12/08/03	D001	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
12/08/03	D001	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
12/08/03	D001	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
12/08/03	D001	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
12/08/03	D001	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
12/08/03	D001	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Aldrin	1.4	ug/L	UJ	1.4	5.7
12/08/03	D001	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Benzidine	95	ug/L	U	95	380
12/08/03	D001	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
12/08/03	D001	BNA-Water	Bis(2-ethylhexyl)phthalate	320	ug/L	UJ	320	1300
12/08/03	D001	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
12/08/03	D001	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
12/08/03	D001	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	Diethyl phthalate	2.2	ug/L	U	2.2	8.8
12/08/03	D001	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
12/08/03	D001	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
12/08/03	D001	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
12/08/03	D001	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.7
12/08/03	D001	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
12/08/03	D001	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	D001	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
12/08/03	D001	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	11
12/08/03	D001	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
12/08/03	D001	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	UJ	1.9	7.6
12/08/03	D001	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	UJ	1.9	7.6
12/08/03	D001	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
12/08/03	D001	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
12/08/03	D001	BNA-Water	Pentachlorophenol	2.9	ug/L	UJ	2.9	11
12/08/03	D001	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
12/08/03	D001	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	D001	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	D001	GC-Water	Alachlor	0.57	ug/L	U	0.57	2.28
12/08/03	D001	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
12/08/03	D001	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
12/08/03	D001	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
12/08/03	D001	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
12/08/03	D001	GC-Water	Butylate	0.19	ug/L	UJ	0.19	0.76
12/08/03	D001	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
12/08/03	D001	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
12/08/03	D001	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.192
12/08/03	D001	GC-Water	Ethion	0.048	ug/L	U	0.048	0.192
12/08/03	D001	GC-Water	Ethoprop	0.095	ug/L	U	0.095	0.38
12/08/03	D001	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
12/08/03	D001	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
12/08/03	D001	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
12/08/03	D001	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
12/08/03	D001	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
12/08/03	D001	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92
12/08/03	D001	GC-Water	Metribuzin	0.095	ug/L	UJ	0.095	0.38
12/08/03	D001	GC-Water	Mevinphos	0.19	ug/L	UJ	0.19	0.76
12/08/03	D001	GC-Water	Naled	0.76	ug/L	U	0.76	3.04
12/08/03	D001	GC-Water	Norflurazon	0.095	ug/L	U	0.095	0.38
12/08/03	D001	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
12/08/03	D001	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
12/08/03	D001	GC-Water	Phorate	0.048	ug/L	U	0.048	0.192
12/08/03	D001	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
12/08/03	D001	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192
12/08/03	D001	Metals-Water	Aluminum	14400	ug/L		7	28
12/08/03	D001	Metals-Water	Arsenic	6	ug/L	U	6	24
12/08/03	D001	Metals-Water	Cadmium	0.21	ug/L		0.025	0.1

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	D001	Metals-Water	Calcium	50.4	mg/L		0.05	0.2
12/08/03	D001	Metals-Water	Chromium	8.2	ug/L	I	3	12
12/08/03	D001	Metals-Water	Copper	8.9	ug/L	I	5	20
12/08/03	D001	Metals-Water	Iron	889	ug/L		15	60
12/08/03	D001	Metals-Water	Lead	2.1	ug/L		0.05	0.2
12/08/03	D001	Metals-Water	Magnesium	6.7	mg/L		0.02	0.08
12/08/03	D001	Metals-Water	Nickel	15	ug/L		3	12
12/08/03	D001	Metals-Water	Selenium	1	ug/L	U	1	4
12/08/03	D001	Metals-Water	Silver	0.04	ug/L	I	0.02	0.08
12/08/03	D001	Metals-Water	Zinc	33	ug/L	J	4	16
12/08/03	D001	Nutrients-Liquid	Ammonia-N	0.072	mg N/L	A	0.01	0.02
12/08/03	D001	Nutrients-Liquid	Color	1200	PCU		100	100
12/08/03	D001	Nutrients-Liquid	NO2NO3-N	0.77	mg N/L	A	0.04	0.1
12/08/03	D001	Nutrients-Liquid	N_KJEL_TOT	3.5	mg N/L	A	0.12	0.4
12/08/03	D001	Nutrients-Liquid	O-Phosphate-P	0.12	mg P/L		0.004	0.01
12/08/03	D001	Nutrients-Liquid	TSS	11	mg/L	I	4	16
12/08/03	D001	Nutrients-Liquid	Total-P	0.74	mg P/L		0.02	0.06
12/08/03	D001	Nutrients-Liquid	Turbidity	36	NTU		0.05	0.05
12/08/03	D001	Overflow	1,2,3,4,6,7,8-HpCDD	6.3	pg/L	U		
12/08/03	D001	Overflow	1,2,3,4,6,7,8-HpCDF	4.2	pg/L	U		
12/08/03	D001	Overflow	1,2,3,4,7,8,9-HpCDF	6.7	pg/L	U		
12/08/03	D001	Overflow	1,2,3,4,7,8-HxCDD	5.3	pg/L	U		
12/08/03	D001	Overflow	1,2,3,4,7,8-HxCDF	3.1	pg/L	U		
12/08/03	D001	Overflow	1,2,3,6,7,8-HxCDD	5.4	pg/L	U		
12/08/03	D001	Overflow	1,2,3,6,7,8-HxCDF	2.8	pg/L	U		
12/08/03	D001	Overflow	1,2,3,7,8,9-HxCDD	5.1	pg/L	U		
12/08/03	D001	Overflow	1,2,3,7,8,9-HxCDF	3	pg/L	U		
12/08/03	D001	Overflow	1,2,3,7,8-PeCDD	7.3	pg/L	U		
12/08/03	D001	Overflow	1,2,3,7,8-PeCDF	4.6	pg/L	U		
12/08/03	D001	Overflow	2,3,4,6,7,8-HxCDF	2.7	pg/L	U		
12/08/03	D001	Overflow	2,3,4,7,8-PeCDF	5.4	pg/L	U		
12/08/03	D001	Overflow	2,3,7,8-TCDD	3.3	pg/L	U		
12/08/03	D001	Overflow	2,3,7,8-TCDF	3.3	pg/L	U		
12/08/03	D001	Overflow	OCDD	10	pg/L	U		
12/08/03	D001	Overflow	OCDF	8.2	pg/L	U		
12/08/03	D001	Overflow	Settleable solids	0.5	ml/L/hr	UQ		
12/08/03	D001	Overflow	Total HpCDD	6.3	pg/L	U		
12/08/03	D001	Overflow	Total HpCDF	6.7	pg/L	U		
12/08/03	D001	Overflow	Total HxCDD	5.4	pg/L	U		
12/08/03	D001	Overflow	Total HxCDF	3.1	pg/L	U		
12/08/03	D001	Overflow	Total PeCDD	7.3	pg/L	U		
12/08/03	D001	Overflow	Total PeCDF	5.4	pg/L	U		
12/08/03	D001	Overflow	Total TCDD	3.3	pg/L	U		
12/08/03	D001	Overflow	Total TCDF	3.3	pg/L	U		
12/08/03	EQUIP BLANK	Bio-BOD	Biochemical Oxygen Demand-5 Day	0.2	mg/L	U		
12/08/03	EQUIP BLANK	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	EQUIP BLANK	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
12/08/03	EQUIP BLANK	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
12/08/03	EQUIP BLANK	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
12/08/03	EQUIP BLANK	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
12/08/03	EQUIP BLANK	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
12/08/03	EQUIP BLANK	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
12/08/03	EQUIP BLANK	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Aldrin	1.4	ug/L	UJ	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Benzidine	95	ug/L	U	95	380
12/08/03	EQUIP BLANK	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
12/08/03	EQUIP BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	320	ug/L	UJ	320	1300
12/08/03	EQUIP BLANK	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
12/08/03	EQUIP BLANK	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
12/08/03	EQUIP BLANK	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	Diethyl phthalate	2.2	ug/L	U	2.2	8.8
12/08/03	EQUIP BLANK	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
12/08/03	EQUIP BLANK	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
12/08/03	EQUIP BLANK	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
12/08/03	EQUIP BLANK	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
12/08/03	EQUIP BLANK	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	EQUIP BLANK	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
12/08/03	EQUIP BLANK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	11
12/08/03	EQUIP BLANK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
12/08/03	EQUIP BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	UJ	1.9	7.6
12/08/03	EQUIP BLANK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	UJ	1.9	7.6
12/08/03	EQUIP BLANK	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
12/08/03	EQUIP BLANK	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
12/08/03	EQUIP BLANK	BNA-Water	Pentachlorophenol	2.9	ug/L	UJ	2.9	11
12/08/03	EQUIP BLANK	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
12/08/03	EQUIP BLANK	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
12/08/03	EQUIP BLANK	GC-Water	Alachlor	0.57	ug/L	U	0.57	2.28
12/08/03	EQUIP BLANK	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
12/08/03	EQUIP BLANK	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
12/08/03	EQUIP BLANK	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
12/08/03	EQUIP BLANK	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
12/08/03	EQUIP BLANK	GC-Water	Butylate	0.19	ug/L	UJ	0.19	0.76
12/08/03	EQUIP BLANK	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
12/08/03	EQUIP BLANK	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
12/08/03	EQUIP BLANK	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.192
12/08/03	EQUIP BLANK	GC-Water	Ethion	0.048	ug/L	U	0.048	0.192
12/08/03	EQUIP BLANK	GC-Water	Ethoprop	0.095	ug/L	U	0.095	0.38
12/08/03	EQUIP BLANK	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
12/08/03	EQUIP BLANK	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
12/08/03	EQUIP BLANK	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
12/08/03	EQUIP BLANK	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
12/08/03	EQUIP BLANK	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
12/08/03	EQUIP BLANK	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92
12/08/03	EQUIP BLANK	GC-Water	Metribuzin	0.095	ug/L	UJ	0.095	0.38
12/08/03	EQUIP BLANK	GC-Water	Mevinphos	0.19	ug/L	UJ	0.19	0.76
12/08/03	EQUIP BLANK	GC-Water	Naled	0.76	ug/L	U	0.76	3.04
12/08/03	EQUIP BLANK	GC-Water	Norflurazon	0.095	ug/L	U	0.095	0.38
12/08/03	EQUIP BLANK	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
12/08/03	EQUIP BLANK	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
12/08/03	EQUIP BLANK	GC-Water	Phorate	0.048	ug/L	U	0.048	0.192
12/08/03	EQUIP BLANK	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
12/08/03	EQUIP BLANK	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/08/03	EQUIP BLANK	Metals-Water	Aluminum	7	ug/L	U	7	28
12/08/03	EQUIP BLANK	Metals-Water	Arsenic	6	ug/L	U	6	24
12/08/03	EQUIP BLANK	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
12/08/03	EQUIP BLANK	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
12/08/03	EQUIP BLANK	Metals-Water	Chromium	3	ug/L	U	3	12
12/08/03	EQUIP BLANK	Metals-Water	Copper	1	ug/L	U	1	4
12/08/03	EQUIP BLANK	Metals-Water	Iron	15	ug/L	U	15	60
12/08/03	EQUIP BLANK	Metals-Water	Lead	0.05	ug/L	U	0.05	0.2
12/08/03	EQUIP BLANK	Metals-Water	Magnesium	0.02	mg/L	U	0.02	0.08
12/08/03	EQUIP BLANK	Metals-Water	Nickel	3	ug/L	U	3	12
12/08/03	EQUIP BLANK	Metals-Water	Selenium	1	ug/L	U	1	4
12/08/03	EQUIP BLANK	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
12/08/03	EQUIP BLANK	Metals-Water	Zinc	4	ug/L	U	4	16
12/08/03	EQUIP BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
12/08/03	EQUIP BLANK	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
12/08/03	EQUIP BLANK	Nutrients-Liquid	N_KJEL_TOT	0.06	mg N/L	U	0.06	0.2
12/08/03	EQUIP BLANK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
12/08/03	EQUIP BLANK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
12/08/03	EQUIP BLANK	Overflow	1,2,3,4,6,7,8-HpCDD	6	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,4,6,7,8-HpCDF	4.3	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,4,7,8,9-HpCDF	6.1	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,4,7,8-HxCDD	4.4	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,4,7,8-HxCDF	3	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,6,7,8-HxCDD	4.6	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,6,7,8-HxCDF	2.7	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,7,8,9-HxCDD	4.3	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,7,8,9-HxCDF	3	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,7,8-PeCDD	8.1	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	1,2,3,7,8-PeCDF	5.1	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	2,3,4,6,7,8-HxCDF	2.4	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	2,3,4,7,8-PeCDF	5.8	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	2,3,7,8-TCDD	4	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	2,3,7,8-TCDF	2.9	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	OCDD	10	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	OCDF	9.9	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total HpCDD	6	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total HpCDF	6.1	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total HxCDD	4.6	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total HxCDF	3	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total PeCDD	8.1	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total PeCDF	5.8	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total TCDD	4	pg/L	U		
12/08/03	EQUIP BLANK	Overflow	Total TCDF	2.9	pg/L	U		
12/08/03	SMC-CONTROL REP-1	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	16	# Taxa			
12/08/03	SMC-CONTROL REP-2	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	12	# Taxa			
12/08/03	SMC-CONTROL REP-3	Bio-Invertebrates	Macroinvert-FW-Quan-ArtSubstr-# Taxa	16	# Taxa			
12/08/03	SIX MILE CREEK-CONTROL	Bio-Peri/Phyto	Periphyton-Quantitative-# Diatom Taxa	36	#Taxa			
12/08/03	SIX MILE CREEK-CONTROL	Bio-Peri/Phyto	Periphyton-Quantitative-# Wet Taxa	4	#Taxa			

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Bio-AGP/LimNut	Algal Growth Potential	2.62	mg DryWt/L		0.1	0.3
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Bio-Invertebrates	Macroinvert-FW-Qual-Dipnetx20-# Taxa	31	# Taxa			
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Bio-Peri/Phyto	Phytoplankton-Quantitative-# Wet Taxa	27	#Taxa			
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Aluminum	50	ug/L		7	28
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Arsenic	6	ug/L	U	6	24
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Calcium	48.6	mg/L		0.05	0.2
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Chromium	3	ug/L	U	3	12
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Copper	1	ug/L	I	1	4
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Iron	142	ug/L		15	60
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Lead	0.17	ug/L	I	0.05	0.2
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Magnesium	11.3	mg/L		0.02	0.08
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Nickel	3	ug/L	U	3	12
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Selenium	1	ug/L	U	1	4
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Metals-Water	Zinc	10	ug/L	I	4	16
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	Ammonia-N	0.021	mg N/L		0.01	0.02
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	Color	100	PCU		10	10
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	NO2NO3-N	0.009	mg N/L	I	0.004	0.01
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	N_KJEL_TOT		mg N/L	OQ		
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	O-Phosphate-P	0.075	mg P/L		0.004	0.01
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	TSS	4	mg/L	U	4	16
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	Total-P		mg P/L	OQ	0.02	0.06
12/09/03	6 MILE CREEK ABOVE MILL CREEK	Nutrients-Liquid	Turbidity	0.55	NTU		0.05	0.05
12/10/03	D-001	BNA-Water	1,2,4,5-Tetrachlorobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	1,3,5-Trinitrobenzene	3.8	ug/L	UJ	3.8	15
12/10/03	D-001	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	1,3-Dinitrobenzene	1.9	ug/L	U	1.9	7.6
12/10/03	D-001	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	1,4-Naphthoquinone	19	ug/L	U	19	76
12/10/03	D-001	BNA-Water	1-Naphthylamine	9.5	ug/L	UJ	9.5	38
12/10/03	D-001	BNA-Water	2,3,4,6-Tetrachlorophenol	1.9	ug/L	UJ	1.9	7.6
12/10/03	D-001	BNA-Water	2,4,5-Trichlorophenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
12/10/03	D-001	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
12/10/03	D-001	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2,6-Dichlorophenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2-Acetylaminofluorene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/10/03	D-001	BNA-Water	2-Methylnaphthalene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2-Naphthylamine	9.5	ug/L	UJ	9.5	38
12/10/03	D-001	BNA-Water	2-Nitroaniline	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	2-Picoline	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
12/10/03	D-001	BNA-Water	3,3'-Dimethylbenzidine	19	ug/L	UJ	19	76
12/10/03	D-001	BNA-Water	3-Methylcholanthrene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	3-Nitroaniline	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	4-Aminobiphenyl	3.8	ug/L	UJ	3.8	15
12/10/03	D-001	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	4-Chloroaniline	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
12/10/03	D-001	BNA-Water	4-Nitroaniline	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
12/10/03	D-001	BNA-Water	5-Nitro-o-toluidine	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	7,12-Dimethylbenz(a)anthracene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Acetophenone	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Aldrin	1.4	ug/L	UJ	1.4	5.7
12/10/03	D-001	BNA-Water	Aniline	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Benzidine	95	ug/L	U	95	380
12/10/03	D-001	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Benzyl alcohol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
12/10/03	D-001	BNA-Water	Bis(2-ethylhexyl)phthalate	320	ug/L	UJ	320	1300
12/10/03	D-001	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
12/10/03	D-001	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
12/10/03	D-001	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Dibenzofuran	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	Diethyl phthalate	2.2	ug/L	U	2.2	8.8
12/10/03	D-001	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/10/03	D-001	BNA-Water	Dimethylaminoazobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Dinoseb	3.8	ug/L	UJ	3.8	15
12/10/03	D-001	BNA-Water	Diphenylamine	2.9	ug/L	U	2.9	11
12/10/03	D-001	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
12/10/03	D-001	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
12/10/03	D-001	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.7
12/10/03	D-001	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
12/10/03	D-001	BNA-Water	Ethyl methanesulfonate	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
12/10/03	D-001	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	11
12/10/03	D-001	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
12/10/03	D-001	BNA-Water	Hexachloropropene	1.9	ug/L	UJ	1.9	7.6
12/10/03	D-001	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Isosafrole	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Methapyrilene	3.8	ug/L	U	3.8	15
12/10/03	D-001	BNA-Water	Methyl methanesulfonate	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	BNA-Water	N-Nitrosodi-n-butylamine	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	UJ	1.9	7.6
12/10/03	D-001	BNA-Water	N-Nitrosodiethylamine	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	UJ	1.9	7.6
12/10/03	D-001	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
12/10/03	D-001	BNA-Water	N-Nitrosomethylethylamine	1.9	ug/L	U	1.9	7.6
12/10/03	D-001	BNA-Water	N-Nitrosomorpholine	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	BNA-Water	N-Nitrosopiperidine	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	N-Nitrosopyrrolidine	1.9	ug/L	U	1.9	7.6
12/10/03	D-001	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
12/10/03	D-001	BNA-Water	Nitroquinoline-1-oxide	19	ug/L	UJ	19	76
12/10/03	D-001	BNA-Water	Pentachlorobenzene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Pentachloroethane	48	ug/L	U	48	190
12/10/03	D-001	BNA-Water	Pentachloronitrobenzene	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	BNA-Water	Pentachlorophenol	2.9	ug/L	UJ	2.9	11
12/10/03	D-001	BNA-Water	Phenacetin	3.8	ug/L	U	3.8	11
12/10/03	D-001	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	Pyridine	3.8	ug/L	UJ	3.8	15
12/10/03	D-001	BNA-Water	Safrole	0.95	ug/L	U	0.95	3.8
12/10/03	D-001	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/10/03	D-001	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
12/10/03	D-001	BNA-Water	m,p-Cresols	1.9	ug/L	U	1.9	7.6
12/10/03	D-001	BNA-Water	o-Cresol	1.9	ug/L	U	1.9	7.6
12/10/03	D-001	BNA-Water	o-Toluidine	0.95	ug/L	UJ	0.95	3.8
12/10/03	D-001	GC-Water	Alachlor	0.57	ug/L	U	0.57	2.28
12/10/03	D-001	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
12/10/03	D-001	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
12/10/03	D-001	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
12/10/03	D-001	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
12/10/03	D-001	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
12/10/03	D-001	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
12/10/03	D-001	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
12/10/03	D-001	GC-Water	Diazinon	0.048	ug/L	U	0.048	0.192
12/10/03	D-001	GC-Water	Ethion	0.048	ug/L	U	0.048	0.192
12/10/03	D-001	GC-Water	Ethoprop	0.095	ug/L	U	0.095	0.38
12/10/03	D-001	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
12/10/03	D-001	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
12/10/03	D-001	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
12/10/03	D-001	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
12/10/03	D-001	GC-Water	Metalaxyl	0.24	ug/L	UJ	0.24	0.96
12/10/03	D-001	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92
12/10/03	D-001	GC-Water	Metribuzin	0.095	ug/L	U	0.095	0.38
12/10/03	D-001	GC-Water	Mevinphos	0.19	ug/L	UJ	0.19	0.76
12/10/03	D-001	GC-Water	Naled	0.76	ug/L	U	0.76	3.04
12/10/03	D-001	GC-Water	Norflurazon	0.095	ug/L	U	0.095	0.38
12/10/03	D-001	GC-Water	Parathion Ethyl	0.14	ug/L	UJ	0.14	0.56
12/10/03	D-001	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
12/10/03	D-001	GC-Water	Phorate	0.048	ug/L	UJ	0.048	0.192
12/10/03	D-001	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
12/10/03	D-001	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192
12/10/03	D-001	Metals-Water	Aluminum	14300	ug/L		7	28
12/10/03	D-001	Metals-Water	Arsenic	1.3	ug/L	I	0.75	3
12/10/03	D-001	Metals-Water	Cadmium	0.21	ug/L		0.025	0.1
12/10/03	D-001	Metals-Water	Calcium	49.9	mg/L		0.05	0.2
12/10/03	D-001	Metals-Water	Chromium	7.2	ug/L	I	3	12
12/10/03	D-001	Metals-Water	Copper	8.3	ug/L	I	5	20
12/10/03	D-001	Metals-Water	Iron	899	ug/L		15	60
12/10/03	D-001	Metals-Water	Lead	2.2	ug/L		0.05	0.2
12/10/03	D-001	Metals-Water	Magnesium	6.7	mg/L		0.02	0.08
12/10/03	D-001	Metals-Water	Nickel	14	ug/L		3	12
12/10/03	D-001	Metals-Water	Selenium	1	ug/L	U	1	4
12/10/03	D-001	Metals-Water	Silver	0.039	ug/L	I	0.02	0.08
12/10/03	D-001	Metals-Water	Zinc	35	ug/L		4	16
12/10/03	D-001	Nutrients-Liquid	Ammonia-N	0.097	mg N/L		0.01	0.02
12/10/03	BLANK	BNA-Water	1,2,4,5-Tetrachlorobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	1,2,4-Trichlorobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	1,2-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	1,3,5-Trinitrobenzene	3.8	ug/L	UJ	3.8	15

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/10/03	BLANK	BNA-Water	1,3-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	1,3-Dinitrobenzene	1.9	ug/L	U	1.9	7.7
12/10/03	BLANK	BNA-Water	1,4-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	1,4-Naphthoquinone	19	ug/L	U	19	77
12/10/03	BLANK	BNA-Water	1-Naphthylamine	9.6	ug/L	UJ	9.6	38
12/10/03	BLANK	BNA-Water	2,3,4,6-Tetrachlorophenol	1.9	ug/L	UJ	1.9	7.7
12/10/03	BLANK	BNA-Water	2,4,5-Trichlorophenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2,4,6-Trichlorophenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2,4-Dichlorophenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
12/10/03	BLANK	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	58
12/10/03	BLANK	BNA-Water	2,4-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2,6-Dichlorophenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2,6-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2-Acetylaminofluorene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2-Chloronaphthalene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2-Chlorophenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
12/10/03	BLANK	BNA-Water	2-Methylnaphthalene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2-Naphthylamine	9.6	ug/L	UJ	9.6	38
12/10/03	BLANK	BNA-Water	2-Nitroaniline	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2-Nitrophenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	2-Picoline	0.96	ug/L	UJ	0.96	3.8
12/10/03	BLANK	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
12/10/03	BLANK	BNA-Water	3,3'-Dimethylbenzidine	19	ug/L	UJ	19	77
12/10/03	BLANK	BNA-Water	3-Methylcholanthrene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	3-Nitroaniline	0.96	ug/L	UJ	0.96	3.8
12/10/03	BLANK	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	4-Aminobiphenyl	3.8	ug/L	UJ	3.8	15
12/10/03	BLANK	BNA-Water	4-Bromophenyl phenyl ether	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	4-Chloro-3-methylphenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	4-Chloroaniline	0.96	ug/L	UJ	0.96	3.8
12/10/03	BLANK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.7
12/10/03	BLANK	BNA-Water	4-Nitroaniline	0.96	ug/L	UJ	0.96	3.8
12/10/03	BLANK	BNA-Water	4-Nitrophenol	14	ug/L	U	14	58
12/10/03	BLANK	BNA-Water	5-Nitro-o-toluidine	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	7,12-Dimethylbenz(a)anthracene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Acenaphthene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Acenaphthylene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Acetophenone	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Aldrin	1.4	ug/L	UJ	1.4	5.8
12/10/03	BLANK	BNA-Water	Aniline	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Anthracene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Benzidine	96	ug/L	U	96	380
12/10/03	BLANK	BNA-Water	Benzo(a)anthracene	0.96	ug/L	U	0.96	3.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/10/03	BLANK	BNA-Water	Benzo(a)pyrene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Benzo(b)fluoranthene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Benzo(g,h,i)perylene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Benzo(k)fluoranthene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Benzyl alcohol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Bis(2-chloroethoxy)methane	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Bis(2-chloroethyl)ether	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
12/10/03	BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	320	ug/L	UJ	320	1300
12/10/03	BLANK	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
12/10/03	BLANK	BNA-Water	Chrysene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
12/10/03	BLANK	BNA-Water	Di-n-octyl phthalate	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Dibenzo(a,h)anthracene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Dibenzofuran	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	Diethyl phthalate	2.2	ug/L	U	2.2	8.7
12/10/03	BLANK	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
12/10/03	BLANK	BNA-Water	Dimethylaminoazobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Dinoseb	3.8	ug/L	UJ	3.8	15
12/10/03	BLANK	BNA-Water	Diphenylamine	2.9	ug/L	U	2.9	12
12/10/03	BLANK	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
12/10/03	BLANK	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
12/10/03	BLANK	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.8
12/10/03	BLANK	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
12/10/03	BLANK	BNA-Water	Ethyl methanesulfonate	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Fluoranthene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Fluorene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	Hexachlorobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
12/10/03	BLANK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	12
12/10/03	BLANK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
12/10/03	BLANK	BNA-Water	Hexachloropropene	1.9	ug/L	UJ	1.9	7.7
12/10/03	BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Isophorone	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Isosafrole	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Methapyrilene	3.8	ug/L	U	3.8	15
12/10/03	BLANK	BNA-Water	Methyl methanesulfonate	0.96	ug/L	UJ	0.96	3.8
12/10/03	BLANK	BNA-Water	N-Nitrosodi-n-butylamine	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	UJ	1.9	7.7
12/10/03	BLANK	BNA-Water	N-Nitrosodiethylamine	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	UJ	1.9	7.7
12/10/03	BLANK	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	12
12/10/03	BLANK	BNA-Water	N-Nitrosomethylethylamine	1.9	ug/L	U	1.9	7.7
12/10/03	BLANK	BNA-Water	N-Nitrosomorpholine	0.96	ug/L	UJ	0.96	3.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/10/03	BLANK	BNA-Water	N-Nitrosopiperidine	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	N-Nitrosopyrrolidine	1.9	ug/L	U	1.9	7.7
12/10/03	BLANK	BNA-Water	Naphthalene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.7
12/10/03	BLANK	BNA-Water	Nitroquinoline-1-oxide	19	ug/L	UJ	19	77
12/10/03	BLANK	BNA-Water	Pentachlorobenzene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Pentachloroethane	48	ug/L	U	48	190
12/10/03	BLANK	BNA-Water	Pentachloronitrobenzene	0.96	ug/L	UJ	0.96	3.8
12/10/03	BLANK	BNA-Water	Pentachlorophenol	2.9	ug/L	UJ	2.9	12
12/10/03	BLANK	BNA-Water	Phenacetin	3.8	ug/L	U	3.8	12
12/10/03	BLANK	BNA-Water	Phenanthrene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Phenol	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Pyrene	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	Pyridine	3.8	ug/L	UJ	3.8	15
12/10/03	BLANK	BNA-Water	Safrole	0.96	ug/L	U	0.96	3.8
12/10/03	BLANK	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.8
12/10/03	BLANK	BNA-Water	m,p-Cresols	1.9	ug/L	U	1.9	7.7
12/10/03	BLANK	BNA-Water	o-Cresol	1.9	ug/L	U	1.9	7.7
12/10/03	BLANK	BNA-Water	o-Toluidine	0.96	ug/L	UJ	0.96	3.8
12/10/03	BLANK	GC-Water	Alachlor	0.67	ug/L	U	0.67	2.68
12/10/03	BLANK	GC-Water	Ametryn	0.056	ug/L	U	0.056	0.224
12/10/03	BLANK	GC-Water	Atrazine	0.056	ug/L	U	0.056	0.224
12/10/03	BLANK	GC-Water	Azinphos Methyl	0.056	ug/L	U	0.056	0.224
12/10/03	BLANK	GC-Water	Bromacil	0.22	ug/L	U	0.22	0.88
12/10/03	BLANK	GC-Water	Butylate	0.22	ug/L	U	0.22	0.88
12/10/03	BLANK	GC-Water	Chlorpyrifos Ethyl	0.056	ug/L	U	0.056	0.224
12/10/03	BLANK	GC-Water	Chlorpyrifos Methyl	0.11	ug/L	U	0.11	0.44
12/10/03	BLANK	GC-Water	Diazinon	0.056	ug/L	U	0.056	0.224
12/10/03	BLANK	GC-Water	Ethion	0.056	ug/L	U	0.056	0.224
12/10/03	BLANK	GC-Water	Ethoprop	0.11	ug/L	U	0.11	0.44
12/10/03	BLANK	GC-Water	Fenamiphos	0.22	ug/L	U	0.22	0.88
12/10/03	BLANK	GC-Water	Fonofos	0.11	ug/L	U	0.11	0.44
12/10/03	BLANK	GC-Water	Hexazinone	0.11	ug/L	U	0.11	0.44
12/10/03	BLANK	GC-Water	Malathion	0.17	ug/L	U	0.17	0.68
12/10/03	BLANK	GC-Water	Metalaxyl	0.28	ug/L	UJ	0.28	1.12
12/10/03	BLANK	GC-Water	Metolachlor	0.56	ug/L	U	0.56	2.24
12/10/03	BLANK	GC-Water	Metribuzin	0.11	ug/L	U	0.11	0.44
12/10/03	BLANK	GC-Water	Mevinphos	0.22	ug/L	UJ	0.22	0.88
12/10/03	BLANK	GC-Water	Naled	0.89	ug/L	U	0.89	3.56
12/10/03	BLANK	GC-Water	Norflurazon	0.11	ug/L	U	0.11	0.44
12/10/03	BLANK	GC-Water	Parathion Ethyl	0.17	ug/L	UJ	0.17	0.68
12/10/03	BLANK	GC-Water	Parathion Methyl	0.11	ug/L	U	0.11	0.44
12/10/03	BLANK	GC-Water	Phorate	0.056	ug/L	UJ	0.056	0.224
12/10/03	BLANK	GC-Water	Prometryn	0.17	ug/L	U	0.17	0.68
12/10/03	BLANK	GC-Water	Simazine	0.056	ug/L	U	0.056	0.224

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/10/03	BLANK	Metals-Water	Aluminum	7	ug/L	U	7	28
12/10/03	BLANK	Metals-Water	Arsenic	0.75	ug/L	U	0.75	3
12/10/03	BLANK	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
12/10/03	BLANK	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
12/10/03	BLANK	Metals-Water	Chromium	3	ug/L	U	3	12
12/10/03	BLANK	Metals-Water	Copper	1	ug/L	U	1	4
12/10/03	BLANK	Metals-Water	Iron	15	ug/L	U	15	60
12/10/03	BLANK	Metals-Water	Lead	0.05	ug/L	U	0.05	0.2
12/10/03	BLANK	Metals-Water	Magnesium	0.02	mg/L	U	0.02	0.08
12/10/03	BLANK	Metals-Water	Nickel	3	ug/L	U	3	12
12/10/03	BLANK	Metals-Water	Selenium	1	ug/L	U	1	4
12/10/03	BLANK	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
12/10/03	BLANK	Metals-Water	Zinc	4	ug/L	U	4	16
12/10/03	BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,2,4,5-Tetrachlorobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,2,4-Trichlorobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,2-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,3,5-Trinitrobenzene	3.8	ug/L	U	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,3-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,3-Dinitrobenzene	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,4-Dichlorobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1,4-Naphthoquinone	19	ug/L	U	19	77
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	1-Naphthylamine	9.6	ug/L	UJ	9.6	38
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,3,4,6-Tetrachlorophenol	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,4,5-Trichlorophenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,4,6-Trichlorophenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,4-Dichlorophenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	58
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,4-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,6-Dichlorophenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2,6-Dinitrotoluene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Acetylaminofluorene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Chloronaphthalene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Chlorophenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Methylnaphthalene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Naphthylamine	9.6	ug/L	UJ	9.6	38
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Nitroaniline	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Nitrophenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	2-Picoline	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	3,3'-Dimethylbenzidine	19	ug/L	U	19	77
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	3-Methylcholanthrene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	3-Nitroaniline	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4-Aminobiphenyl	3.8	ug/L	U	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4-Bromophenyl phenyl ether	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4-Chloro-3-methylphenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4-Chloroaniline	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4-Nitroaniline	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	4-Nitrophenol	14	ug/L	U	14	58
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	5-Nitro-o-toluidine	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	7,12-Dimethylbenz(a)anthracene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Acenaphthene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Acenaphthylene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Acetophenone	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Aniline	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Anthracene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Benzidine	96	ug/L	UJ	96	380
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Benzo(a)anthracene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Benzo(a)pyrene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Benzo(b)fluoranthene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Benzo(g,h,i)perylene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Benzo(k)fluoranthene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Benzyl alcohol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Bis(2-chloroethoxy)methane	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Bis(2-chloroethyl)ether	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	58
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Chrysene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Di-n-octyl phthalate	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Dibenzo(a,h)anthracene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Dibenzofuran	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Diethyl phthalate	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Dimethylaminoazobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Dinoseb	3.8	ug/L	U	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Diphenylamine	2.9	ug/L	U	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Ethyl methanesulfonate	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Fluoranthene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Fluorene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.8

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Hexachlorobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	UJ	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Hexachloropropene	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Indeno(1,2,3-cd)pyrene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Isophorone	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Isosafrole	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Methapyrilene	3.8	ug/L	U	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Methyl methanesulfonate	0.96	ug/L	UJ	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosodi-n-butylamine	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosodiethylamine	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosomethylethylamine	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosomorpholine	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosopiperidine	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	N-Nitrosopyrrolidine	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Naphthalene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Nitroquinoline-1-oxide	19	ug/L	U	19	77
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Pentachlorobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Pentachloroethane	48	ug/L	U	48	190
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Pentachloronitrobenzene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Phenacetin	3.8	ug/L	U	3.8	12
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Phenanthrene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Phenol	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Pyrene	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Pyridine	3.8	ug/L	UJ	3.8	15
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	Safrole	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.8
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	m,p-Cresols	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	o-Cresol	1.9	ug/L	U	1.9	7.7
12/12/03	GEORGIA PACIFIC FYI	BNA-Water	o-Toluidine	0.96	ug/L	U	0.96	3.8
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.32
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Chlorpyrifos Methyl	0.097	ug/L	U	0.097	0.388

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Diazinon	0.048	ug/L	U	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Ethion	0.048	ug/L	U	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Ethoprop	0.097	ug/L	U	0.097	0.388
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Fonofos	0.097	ug/L	U	0.097	0.388
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Hexazinone	0.097	ug/L	U	0.097	0.388
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Metalaxyl	0.24	ug/L	UJ	0.24	0.96
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Metribuzin	0.097	ug/L	U	0.097	0.388
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Mevinphos	0.19	ug/L	UJ	0.19	0.76
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Naled	0.78	ug/L	U	0.78	3.12
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Norflurazon	0.097	ug/L	U	0.097	0.388
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Parathion Ethyl	0.14	ug/L	UJ	0.14	0.56
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Parathion Methyl	0.097	ug/L	U	0.097	0.388
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Phorate	0.048	ug/L	UJ	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
12/12/03	GEORGIA PACIFIC FYI	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Aluminum	14500	ug/L		7	28
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Arsenic	1.1	ug/L	I	0.75	3
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Cadmium	0.21	ug/L		0.025	0.1
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Calcium	49.7	mg/L		0.05	0.2
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Copper	8.5	ug/L	I	5	20
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Iron	905	ug/L		15	60
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Lead	2.3	ug/L		0.05	0.2
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Magnesium	6.6	mg/L		0.02	0.08
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Nickel	14	ug/L		3	12
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Selenium	1	ug/L	U	1	4
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Silver	0.041	ug/L	I	0.02	0.08
12/12/03	GEORGIA PACIFIC FYI	Metals-Water	Zinc	36	ug/L		4	16
12/12/03	GEORGIA PACIFIC FYI	Nutrients-Liquid	Ammonia-N	0.093	mg N/L		0.01	0.02
12/12/03	EQUIP BLK	BNA-Water	1,2,4,5-Tetrachlorobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	1,2,4-Trichlorobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	1,2-Dichlorobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	1,3,5-Trinitrobenzene	4	ug/L	U	4	16
12/12/03	EQUIP BLK	BNA-Water	1,3-Dichlorobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	1,3-Dinitrobenzene	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	1,4-Dichlorobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	1,4-Naphthoquinone	20	ug/L	U	20	81
12/12/03	EQUIP BLK	BNA-Water	1-Naphthylamine	10	ug/L	UJ	10	40
12/12/03	EQUIP BLK	BNA-Water	2,3,4,6-Tetrachlorophenol	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	2,4,5-Trichlorophenol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2,4,6-Trichlorophenol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2,4-Dichlorophenol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2,4-Dimethylphenol	51	ug/L	U	51	200
12/12/03	EQUIP BLK	BNA-Water	2,4-Dinitrophenol	15	ug/L	U	15	61
12/12/03	EQUIP BLK	BNA-Water	2,4-Dinitrotoluene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2,6-Dichlorophenol	1	ug/L	U	1	4

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/12/03	EQUIP BLK	BNA-Water	2,6-Dinitrotoluene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2-Acetylaminofluorene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2-Chloronaphthalene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2-Chlorophenol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2-Methyl-4,6-dinitrophenol	3	ug/L	U	3	12
12/12/03	EQUIP BLK	BNA-Water	2-Methylnaphthalene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2-Naphthylamine	10	ug/L	UJ	10	40
12/12/03	EQUIP BLK	BNA-Water	2-Nitroaniline	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2-Nitrophenol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	2-Picoline	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	3,3'-Dichlorobenzidine	40	ug/L	U	40	160
12/12/03	EQUIP BLK	BNA-Water	3,3'-Dimethylbenzidine	20	ug/L	U	20	81
12/12/03	EQUIP BLK	BNA-Water	3-Methylcholanthrene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	3-Nitroaniline	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	4-Aminobiphenyl	4	ug/L	U	4	16
12/12/03	EQUIP BLK	BNA-Water	4-Bromophenyl phenyl ether	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	4-Chloro-3-methylphenol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	4-Chloroaniline	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	4-Nitroaniline	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	4-Nitrophenol	15	ug/L	U	15	61
12/12/03	EQUIP BLK	BNA-Water	5-Nitro-o-toluidine	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	7,12-Dimethylbenz(a)anthracene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Acenaphthene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Acenaphthylene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Acetophenone	1	ug/L	I	1	4
12/12/03	EQUIP BLK	BNA-Water	Aldrin	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	Aniline	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Anthracene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Benzidine	100	ug/L	UJ	100	400
12/12/03	EQUIP BLK	BNA-Water	Benzo(a)anthracene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Benzo(a)pyrene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Benzo(b)fluoranthene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Benzo(g,h,i)perylene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Benzo(k)fluoranthene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Benzyl alcohol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Bis(2-chloroethoxy)methane	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Bis(2-chloroethyl)ether	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Bis(2-chloroisopropyl)ether	3	ug/L	U	3	12
12/12/03	EQUIP BLK	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	61
12/12/03	EQUIP BLK	BNA-Water	Butyl benzyl phthalate	5.1	ug/L	U	5.1	20
12/12/03	EQUIP BLK	BNA-Water	Chrysene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Di-n-butyl phthalate	5.1	ug/L	U	5.1	20
12/12/03	EQUIP BLK	BNA-Water	Di-n-octyl phthalate	1	ug/L	U	1	4

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/12/03	EQUIP BLK	BNA-Water	Dibenzo(a,h)anthracene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Dibenzofuran	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	Diethyl phthalate	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Dimethyl phthalate	51	ug/L	U	51	200
12/12/03	EQUIP BLK	BNA-Water	Dimethylaminoazobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Dinoseb	4	ug/L	U	4	16
12/12/03	EQUIP BLK	BNA-Water	Diphenylamine	3	ug/L	U	3	12
12/12/03	EQUIP BLK	BNA-Water	Endosulfan I	4	ug/L	U	4	16
12/12/03	EQUIP BLK	BNA-Water	Endosulfan II	4	ug/L	U	4	16
12/12/03	EQUIP BLK	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	Endrin	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	Endrin aldehyde	4	ug/L	U	4	16
12/12/03	EQUIP BLK	BNA-Water	Ethyl methanesulfonate	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Fluoranthene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Fluorene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	Hexachlorobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Hexachlorobutadiene	3	ug/L	U	3	12
12/12/03	EQUIP BLK	BNA-Water	Hexachlorocyclopentadiene	3	ug/L	UJ	3	12
12/12/03	EQUIP BLK	BNA-Water	Hexachloroethane	3	ug/L	U	3	12
12/12/03	EQUIP BLK	BNA-Water	Hexachloropropene	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	Indeno(1,2,3-cd)pyrene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Isophorone	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Isosafrole	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Methapyrilene	4	ug/L	U	4	16
12/12/03	EQUIP BLK	BNA-Water	Methyl methanesulfonate	1	ug/L	UJ	1	4
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosodi-n-butylamine	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosodiethylamine	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosodiphenylamine	3	ug/L	UJ	3	12
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosomethylethylamine	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosomorpholine	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosopiperidine	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	N-Nitrosopyrrolidine	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	Naphthalene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Nitrobenzene	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	Nitroquinoline-1-oxide	20	ug/L	U	20	81
12/12/03	EQUIP BLK	BNA-Water	Pentachlorobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Pentachloroethane	51	ug/L	U	51	200
12/12/03	EQUIP BLK	BNA-Water	Pentachloronitrobenzene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Pentachlorophenol	3	ug/L	U	3	12
12/12/03	EQUIP BLK	BNA-Water	Phenacetin	4	ug/L	U	4	12
12/12/03	EQUIP BLK	BNA-Water	Phenanthrene	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Phenol	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	Pyrene	1	ug/L	U	1	4

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
12/12/03	EQUIP BLK	BNA-Water	Pyridine	4	ug/L	UJ	4	16
12/12/03	EQUIP BLK	BNA-Water	Safrole	1	ug/L	U	1	4
12/12/03	EQUIP BLK	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	6.1
12/12/03	EQUIP BLK	BNA-Water	m,p-Cresols	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	o-Cresol	2	ug/L	U	2	8.1
12/12/03	EQUIP BLK	BNA-Water	o-Toluidine	1	ug/L	U	1	4
12/12/03	EQUIP BLK	GC-Water	Alachlor	0.6	ug/L	U	0.6	2.4
12/12/03	EQUIP BLK	GC-Water	Ametryn	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	GC-Water	Atrazine	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	GC-Water	Azinphos Methyl	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	GC-Water	Bromacil	0.2	ug/L	U	0.2	0.8
12/12/03	EQUIP BLK	GC-Water	Butylate	0.2	ug/L	U	0.2	0.8
12/12/03	EQUIP BLK	GC-Water	Chlorpyrifos Ethyl	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	GC-Water	Chlorpyrifos Methyl	0.1	ug/L	U	0.1	0.4
12/12/03	EQUIP BLK	GC-Water	Diazinon	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	GC-Water	Ethion	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	GC-Water	Ethoprop	0.1	ug/L	U	0.1	0.4
12/12/03	EQUIP BLK	GC-Water	Fenamiphos	0.2	ug/L	U	0.2	0.8
12/12/03	EQUIP BLK	GC-Water	Fonofos	0.1	ug/L	U	0.1	0.4
12/12/03	EQUIP BLK	GC-Water	Hexazinone	0.1	ug/L	U	0.1	0.4
12/12/03	EQUIP BLK	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
12/12/03	EQUIP BLK	GC-Water	Metalaxyl	0.25	ug/L	UJ	0.25	1
12/12/03	EQUIP BLK	GC-Water	Metolachlor	0.5	ug/L	U	0.5	2
12/12/03	EQUIP BLK	GC-Water	Metribuzin	0.1	ug/L	U	0.1	0.4
12/12/03	EQUIP BLK	GC-Water	Mevinphos	0.2	ug/L	UJ	0.2	0.8
12/12/03	EQUIP BLK	GC-Water	Naled	0.8	ug/L	U	0.8	3.2
12/12/03	EQUIP BLK	GC-Water	Norflurazon	0.1	ug/L	U	0.1	0.4
12/12/03	EQUIP BLK	GC-Water	Parathion Ethyl	0.15	ug/L	UJ	0.15	0.6
12/12/03	EQUIP BLK	GC-Water	Parathion Methyl	0.1	ug/L	U	0.1	0.4
12/12/03	EQUIP BLK	GC-Water	Phorate	0.05	ug/L	UJ	0.05	0.2
12/12/03	EQUIP BLK	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
12/12/03	EQUIP BLK	GC-Water	Simazine	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	Metals-Water	Aluminum	7	ug/L	U	7	28
12/12/03	EQUIP BLK	Metals-Water	Arsenic	0.75	ug/L	U	0.75	3
12/12/03	EQUIP BLK	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
12/12/03	EQUIP BLK	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
12/12/03	EQUIP BLK	Metals-Water	Copper	1	ug/L	U	1	4
12/12/03	EQUIP BLK	Metals-Water	Iron	15	ug/L	U	15	60
12/12/03	EQUIP BLK	Metals-Water	Lead	0.05	ug/L	U	0.05	0.2
12/12/03	EQUIP BLK	Metals-Water	Magnesium	0.02	mg/L	U	0.02	0.08
12/12/03	EQUIP BLK	Metals-Water	Nickel	3	ug/L	U	3	12
12/12/03	EQUIP BLK	Metals-Water	Selenium	1	ug/L	U	1	4
12/12/03	EQUIP BLK	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
12/12/03	EQUIP BLK	Metals-Water	Zinc	4	ug/L	U	4	16
12/12/03	EQUIP BLK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02

Appendix 5

Typical Values for Selected Parameters in Florida Waters

Percentile Distribution (1617 stations)

TEST SITE- Rice Creek above Outfall

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	Measured
Periphyton Chlorophyll *a* (mg/m^2)	0.31	0.43	0.77	1.04	2.16	2.94	6.45	10.51	17.00	39.51	60.85	**ND**
Hester-Dendy Diversity	**0.84**	2.12	2.48	2.74	2.88	3.09	3.25	3.40	3.52	3.76	3.90	**0.67**
Hester-Dendy Taxa Richness	6	6.5	9	11.5	13	15	**17**	21.5	26	29	32	**19**
Dipnet Taxa Richness	9	12	**17**	20	22	24.5	26	28	31	37	53	**18**
Total Kjeldahl Nitrogen	0.30	0.39	0.56	0.73	0.87	1.00	1.11	1.26	1.49	**1.93**	2.80	**2.3**
Total Ammonia	0.02	0.02	**0.04**	0.05	0.06	0.08	0.11	0.14	0.20	0.34	0.60	**0.048**
Nitrate plus Nitrite	0.01	0.01	0.03	0.05	0.07	0.10	0.14	0.20	**0.32**	0.64	1.05	**0.33**
Total Phosphorus	0.02	0.03	0.05	0.06	0.10	0.13	0.18	**0.25**	0.39	0.74	1.51	**0.35**
Orthophosphate	0.01	0.01	0.03	0.04	**0.05**	0.08	0.11	0.17	0.27	0.59	1.37	**0.07**
Turbidity (NTU)	0.60	0.90	1.20	1.45	2.10	2.80	3.60	4.50	6.65	10.45	**16.30**	**24**

TEST SITE- Rice Creek below Outfall

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	Measured
Periphyton Chlorophyll *a* (mg/m^2)	0.31	0.43	0.77	1.04	2.16	2.94	6.45	10.51	17.00	39.51	60.85	**ND**
Hester-Dendy Diversity	**0.84**	2.12	2.48	2.74	2.88	3.09	3.25	3.40	3.52	3.76	3.90	**0.51**
Hester-Dendy Taxa Richness	6	6.5	9	11.5	13	**15**	17	21.5	26	29	32	**15**
Dipnet Taxa Richness	**9**	12	17	20	22	24.5	26	28	31	37	53	**10**
Total Kjeldahl Nitrogen	0.30	0.39	0.56	0.73	0.87	1.00	1.11	1.26	1.49	1.93	**2.80**	**2.8**
Total Ammonia	0.02	0.02	0.04	**0.05**	0.06	0.08	0.11	0.14	0.20	0.34	0.60	**0.058**
Nitrate plus Nitrite	0.01	0.01	0.03	0.05	0.07	0.10	0.14	0.20	**0.32**	0.64	1.05	**0.43**
Total Phosphorus	0.02	0.03	0.05	0.06	0.10	0.13	0.18	0.25	**0.39**	0.74	1.51	**0.51**
Orthophosphate	0.01	0.01	0.03	0.04	0.05	0.08	0.11	**0.17**	0.27	0.59	1.37	**0.2**
Turbidity (NTU)	0.60	0.90	1.20	1.45	2.10	2.80	3.60	4.50	6.65	10.45	**16.30**	**27**

Taxa richness and diversity values are for benthic macroinvertebrates. Hester-Dendy sample= benthic macroinvertebrates collected from a standardized multi-plate sampler. Dipnet taxa richness = number of taxa collected in standardized dipnet sweep samples. Diversity = Shannon-Weaver H'. NTU = Nephelometric turbidity units. Adapted from Joe Hand, FDER, personal communication, 1991 (data collected 1980-1989). ND = No data.

CONTROL SITE- Rice Creek at Bardin Road

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	Measured
Periphyton Chlorophyll *a* (mg/m^2)	0.31	0.43	0.77	1.04	2.16	2.94	6.45	10.51	17.00	39.51	60.85	**ND**
Hester-Dendy Diversity	0.84	2.12	2.48	2.74	2.88	3.09	3.25	3.40	**3.52**	3.76	3.90	**3.62**
Hester-Dendy Taxa Richness	6	6.5	9	11.5	13	15	17	21.5	**26**	29	32	**26**
Dipnet Taxa Richness	9	12	17	20	22	24.5	26	28	**31**	37	53	**36**
Total Kjeldahl Nitrogen	0.30	**0.39**	0.56	0.73	0.87	1.00	1.11	1.26	1.49	1.93	2.80	**0.49**
Total Ammonia	0.02	0.02	0.04	0.05	**0.06**	0.08	0.11	0.14	0.20	0.34	0.60	**0.063**
Nitrate plus Nitrite	0.01	**0.01**	0.03	0.05	0.07	0.10	0.14	0.20	0.32	0.64	1.05	**0.024**
Total Phosphorus	0.02	0.03	**0.5**	0.06	0.10	0.13	0.18	0.25	0.39	0.74	1.51	**0.049 I**
Orthophosphate	0.01	**0.01**	0.03	0.04	0.05	0.08	0.11	0.17	0.27	0.59	1.37	**0.027**
Turbidity (NTU)	0.60	0.90	1.20	1.45	2.10	2.80	**3.60**	4.50	6.65	10.45	16.30	**3.6**

CONTROL SITE- Etonia Creek at Bardin Road

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	Measured
Periphyton Chlorophyll *a* (mg/m^2)	0.31	0.43	0.77	1.04	2.16	2.94	6.45	10.51	17.00	39.51	60.85	**ND**
Hester-Dendy Diversity	0.84	2.12	2.48	**2.74**	2.88	3.09	3.25	3.40	3.52	3.76	3.90	**2.78**
Hester-Dendy Taxa Richness	6	6.5	9	11.5	13	15	**17**	21.5	26	29	32	**19**
Dipnet Taxa Richness	9	12	17	20	22	24.5	26	28	31	**37**	53	**41**
Total Kjeldahl Nitrogen	**0.30**	0.39	0.56	0.73	0.87	1.00	1.11	1.26	1.49	1.93	2.80	**0.38**
Total Ammonia	**0.02**	0.02	0.04	0.05	0.06	0.08	0.11	0.14	0.20	0.34	0.60	**0.017 I**
Nitrate plus Nitrite	0.01	0.01	0.03	0.05	**0.07**	0.10	0.14	0.20	0.32	0.64	1.05	**0.081**
Total Phosphorus	0.02	0.03	0.05	**0.06**	0.10	0.13	0.18	0.25	0.39	0.74	1.51	**0.072**
Orthophosphate	0.01	0.01	0.03	0.04	**0.05**	0.08	0.11	0.17	0.27	0.59	1.37	**0.06**
Turbidity (NTU)	**0.60**	0.90	1.20	1.45	2.10	2.80	3.60	4.50	6.65	10.45	16.30	**0.85**

Taxa richness and diversity values are for benthic macroinvertebrates. Hester-Dendy sample= benthic macroinvertebrates collected from a standardized multi-plate sampler. Dipnet taxa richness = number of taxa collected in standardized dipnet sweep samples. Diversity = Shannon-Weaver H'. NTU = Nephelometric turbidity units. Adapted from Joe Hand, FDER, personal communication, 1991 (data collected 1980-1989). ND = No data.

CONTROL SITE- Six Mile Creek

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	Measured
Periphyton Chlorophyll *a* (mg/m^2)	0.31	0.43	0.77	1.04	2.16	2.94	6.45	10.51	17.00	39.51	60.85	**ND**
Hester-Dendy Diversity	0.84	2.12	2.48	2.74	2.88	3.09	3.25	3.40	**3.52**	3.76	3.90	**3.56**
Hester-Dendy Taxa Richness	6	6.5	9	11.5	13	15	17	**21.5**	26	29	32	**25**
Dipnet Taxa Richness	9	12	17	20	22	24.5	26	28	**31**	37	53	**31**
Total Kjeldahl Nitrogen	0.30	0.39	0.56	0.73	0.87	1.00	1.11	1.26	1.49	1.93	2.80	**ND**
Total Ammonia	0.02	**0.02**	0.04	0.05	0.06	0.08	0.11	0.14	0.20	0.34	0.60	**0.021**
Nitrate plus Nitrite	**0.01**	0.01	0.03	0.05	0.07	0.10	0.14	0.20	0.32	0.64	1.05	**0.009 I**
Total Phosphorus	0.02	0.03	0.05	0.06	0.10	0.13	0.18	0.25	0.39	0.74	1.51	**ND**
Orthophosphate	0.01	0.01	0.03	0.04	**0.05**	0.08	0.11	0.17	0.27	0.59	1.37	**0.075**
Turbidity (NTU)	**0.60**	0.90	1.20	1.45	2.10	2.80	3.60	4.50	6.65	10.45	16.30	**0.55**

Taxa richness and diversity values are for benthic macroinvertebrates. Hester-Dendy sample= benthic macroinvertebrates collected from a standardized multi-plate sampler. Dipnet taxa richness = number of taxa collected in standardized dipnet sweep samples. Diversity = Shannon-Weaver H'. NTU = Nephelometric turbidity units. Adapted from Joe Hand, FDER, personal communication, 1991 (data collected 1980-1989). ND = No data.

Appendix 6

Additional physical, chemical, toxicological and microbiological results

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT
7825 BAYMEADOWS WAY, SUIT B-200 **Comp.QAP # 880236**
JACKSONVILLE, FL 32256-7577

SAMPLE ID : 031123C STATION : DATE: 12/08/03 TIME: 12:55
SAMPLE SOURCE Georgia Pacific SAMPLER: Long/Richarde/Berges/Ali
STATION Final Effluent
LOCATION:
PROGRAM MOD.: IW COMPLIANCE: ☒ ENFORCEMENT: ☐
FIELD MEASUREMENTS

Tot. Depth:		Sample Depth:		W.Temp. °C:	16.7
Conductivity: µmoh/cm (EPA 120.1) :	2250	Diss. Oxygen (EPA 360.1)	8.33	EPA 170.1	
Stream Velocity:		Salinity:		T.R.C.:	
pH:(EPA 150.1)	7.96	Secchi:		EPA 330.5	

WEATHER CONDITIONS:

LABORATORY MEASUREMENTS

		Unit	Analysis Date/Time	Analyst	Remarks
Turbidity (NTU) : EPA 180.1	40	NTU	12/10/03 - 09:45	BA	
Color (PtCo): EPA 110.2	2000	PCU	12/10/03 - 10:15	BA	
B.O.D : SM 5210-B	11	Mg/L	12/10/03 - 09:00	BA	
C.B.O.D : SM 5210-B		Mg/L			
Tot. S.S : EPA 160.2	11	Mg/L	12/12/03 - 08:30	BA	
Vol. S.S: EPA 160.4		Mg/L			
Fix S.S:		Mg/L			

COMMENTS:

Sample Custody
Sample Released to: Jeremy Parrish Date: 12/08/03

Preservation: Ice Time: 16:15

Reported by: Bipin Adhyaru ext. 3224 Date:: 12/15/2003

K = Actual value is known to be less than the value given.
A = Value is the mean of two or more determinations.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond the accepted holding time.
T = Value reported is less than the laboratory method detection limit.
U = Indicates that the compound was analyzed for but not detected.
Y = The laboratory analysis was from an unpreserved or improperly preserved sample.
REJ = Data is rejected and should not be used.
L = Off - scale high. Actual value is known to be greater than value given
J = Estimated value; value not accurate.
PQL = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Results for NELAP accredited tests contained in this report meet the requirement specified for the National Environmental Accreditation Program.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT
7825 BAYMEADOWS WAY, SUIT B-200 **Comp.QAP # 880236**
JACKSONVILLE, FL 32256-7577

SAMPLE ID : 031124C STATION : DATE: 12/08/03 TIME: 11:20
SAMPLE SOURCE Georgia Pacific SAMPLER: Evans/O'Connor
STATION Rice creek above POD
LOCATION:
PROGRAM MOD.: IW COMPLIANCE: ☒ ENFORCEMENT: ☐
FIELD MEASUREMENTS

Tot. Depth:	7.5	Sample Depth:	3.7	W.Temp. °C:	12.3
Conductivity: µmoh/cm (EPA 120.1) :	1407	Diss. Oxygen (EPA 360.1)	14.7	EPA 170.1	
Stream Velocity:		Salinity:	0.7	T.R.C.:	
pH:(EPA 150.1)	7.64	Secchi:	0.1	EPA 330.5	

WEATHER CONDITIONS:

LABORATORY MEASUREMENTS

		Unit	Analysis Date/Time	Analyst	Remarks
Turbidity (NTU) : EPA 180.1	24	NTU	12/10/03 - 09:45	BA	
Color (PtCo): EPA 110.2	1250	PCU	12/10/03 - 10:15	BA	
B.O.D : SM 5210-B	6	Mg/L	12/10/03 - 09:00	BA	
C.B.O.D : SM 5210-B		Mg/L			
Tot. S.S : EPA 160.2	8	Mg/L	12/12/03 - 08:30	BA	
Vol. S.S: EPA 160.4		Mg/L			
Fix S.S:		Mg/L			

COMMENTS:

Sample Custody
Sample Released to: Jeremy Parrish Date: 12/08/03

Preservation: Ice Time: 16:15

Reported by: Bipin Adhyaru ext. 3224 Date:: 12/15/2003

K = Actual value is known to be less than the value given.
A = Value is the mean of two or more determinations.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond the accepted holding time.
T = Value reported is less than the laboratory method detection limit.
U = Indicates that the compound was analyzed for but not detected.
Y = The laboratory analysis was from an unpreserved or improperly preserved sample.
REJ = Data is rejected and should not be used.
L = Off - scale high. Actual value is known to be greater than value given
J = Estimated value; value not accurate.
PQL = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Results for NELAP accredited tests contained in this report meet the requirement specified for the National Environmental Accreditation Program.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT
7825 BAYMEADOWS WAY, SUIT B-200 **Comp.QAP # 880236**
JACKSONVILLE, FL 32256-7577

SAMPLE ID : 031125C STATION : DATE: 12/08/03 TIME: 13:30
SAMPLE SOURCE Georgia Pacific SAMPLER: Evans/O'Connor
STATION Rice creek below POD
LOCATION:
PROGRAM MOD.: IW COMPLIANCE: ☒ ENFORCEMENT: ☐
FIELD MEASUREMENTS

Tot. Depth:	8.2	Sample Depth:	4.1	W.Temp. °C:	12.5
Conductivity: µmoh/cm (EPA 120.1) :	1643	Diss. Oxygen (EPA 360.1)	11.5	EPA 170.1	
Stream Velocity:		Salinity:	0.8	T.R.C.:	
pH:(EPA 150.1)	7.60	Secchi:	0.1	EPA 330.5	

WEATHER CONDITIONS:

LABORATORY MEASUREMENTS

		Unit	Analysis Date/Time	Analyst	Remarks
Turbidity (NTU) : EPA 180.1	30	NTU	12/10/03 - 09:45	BA	
Color (PtCo): EPA 110.2	1250	PCU	12/10/03 - 10:15	BA	
B.O.D : SM 5210-B	6	Mg/L	12/10/03 - 09:00	BA	
C.B.O.D : SM 5210-B		Mg/L			
Tot. S.S : EPA 160.2	9	Mg/L	12/12/03 - 08:30	BA	
Vol. S.S: EPA 160.4		Mg/L			
Fix S.S:		Mg/L			

COMMENTS:

Sample Custody
Sample Released to: Jeremy Parrish Date: 12/08/03

Preservation: Ice Time: 16:15

Reported by: Bipin Adhyaru ext. 3224 Date:: 12/15/2003

K = Actual value is known to be less than the value given.
A = Value is the mean of two or more determinations.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond the accepted holding time.
T = Value reported is less than the laboratory method detection limit.
U = Indicates that the compound was analyzed for but not detected.
Y = The laboratory analysis was from an unpreserved or improperly preserved sample.
REJ = Data is rejected and should not be used.
L = Off - scale high. Actual value is known to be greater than value given
J = Estimated value; value not accurate.
PQL = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Results for NELAP accredited tests contained in this report meet the requirement specified for the National Environmental Accreditation Program.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT
7825 BAYMEADOWS WAY, SUIT B-200 **Comp.QAP # 880236**
JACKSONVILLE, FL 32256-7577

SAMPLE ID : 031121C STATION : DATE: 12/08/03 TIME: 10:30
SAMPLE SOURCE Georgia Pacific SAMPLER: Kallemeyn/Jordan
STATION Rice cr. @ borden creek road
LOCATION:
PROGRAM MOD.: IW COMPLIANCE: ☒ ENFORCEMENT: ☐
FIELD MEASUREMENTS

Tot. Depth:	1.2 m	Sample Depth:	0.6 m	W.Temp. °C:	10.16
Conductivity: µmoh/cm (EPA 120.1) :	258	Diss. Oxygen (EPA 360.1)		EPA 170.1	
Stream Velocity:	0.1	Salinity:		T.R.C.:	
pH:(EPA 150.1)	7.31	Secchi:	0.2 L	EPA 330.5	

WEATHER CONDITIONS:

LABORATORY MEASUREMENTS

		Unit	Analysis Date/Time	Analyst	Remarks
Turbidity (NTU) : EPA 180.1	4.8	NTU	12/10/03 - 09:45	BA	
Color (PtCo): EPA 110.2	150	PCU	12/10/03 - 10:15	BA	
B.O.D : SM 5210-B	2 K	Mg/L	12/10/03 - 09:00	BA	
C.B.O.D : SM 5210-B		Mg/L			
Tot. S.S : EPA 160.2	4	Mg/L	12/12/03 - 08:30		
Vol. S.S: EPA 160.4		Mg/L			
Fix S.S:		Mg/L			

COMMENTS:

Sample Custody
Sample Released to: Jeremy Parrish Date: 12/08/03

Preservation: Ice Time: 16:15

Reported by: Bipin Adhyaru ext. 3224 Date:: 12/15/2003

K = Actual value is known to be less than the value given.
A = Value is the mean of two or more determinations.
O = Sampled, but analysis lost or not performed.
Q = Sample held beyond the accepted holding time.
T = Value reported is less than the laboratory method detection limit.
U = Indicates that the compound was analyzed for but not detected.
Y = The laboratory analysis was from an unpreserved or improperly preserved sample.
REJ = Data is rejected and should not be used.
L = Off - scale high. Actual value is known to be greater than value given
J = Estimated value; value not accurate.
PQL = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Results for NELAP accredited tests contained in this report meet the requirement specified for the National Environmental Accreditation Program.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT
7825 BAYMEADOWS WAY, SUIT B-200 **Comp.QAP # 880236**
JACKSONVILLE, FL 32256-7577

SAMPLE ID : 031122C STATION : DATE: 12/08/03 TIME: 12:30
SAMPLE SOURCE Georgia Pacific SAMPLER: Kallemeyn/Jordan
STATION Etonia cr. @ Borden rd.
LOCATION:
PROGRAM MOD.: IW COMPLIANCE: ☒ ENFORCEMENT: ☐
FIELD MEASUREMENTS

Tot. Depth:	3.0 m	Sample Depth:	1.5 m	W.Temp. °C:	10.77
Conductivity: µmoh/cm (EPA 120.1) :	90	Diss. Oxygen (EPA 360.1)	10.46	EPA 170.1	
Stream Velocity:		Salinity:		T.R.C.:	
pH:(EPA 150.1)	6.72	Secchi:	0.5 L	EPA 330.5	

WEATHER CONDITIONS:

LABORATORY MEASUREMENTS

		Unit	Analysis Date/Time	Analyst	Remarks
Turbidity (NTU) : EPA 180.1	1.0	NTU	12/10/03 - 09:45	BA	
Color (PtCo): EPA 110.2	80	PCU	12/10/03 - 10:15	BA	
B.O.D : SM 5210-B	2 K	Mg/L	12/10/03 - 09:00	BA	
C.B.O.D : SM 5210-B		Mg/L			
Tot. S.S : EPA 160.2	2 K	Mg/L	12/12/03 - 08:30		
Vol. S.S: EPA 160.4		Mg/L			
Fix S.S:		Mg/L			

COMMENTS:

Sample Custody
Sample Released to: Jeremy Parrish Date: 12/08/03

Preservation: Ice Time: 16:15

Reported by: Bipin Adhyaru ext. 3224 Date:: 12/15/2003

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STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT
7825 BAYMEADOWS WAY, SUIT B-200 **Comp.QAP # 880236**
JACKSONVILLE, FL 32256-7577

SAMPLE ID : 031127 STATION : 20030178 DATE: 12/09/03 TIME: 12:00
SAMPLE SOURCE Georgia Pacific SAMPLER: Evans/O'Connor
STATION 6 mile creek above mill cr.
LOCATION:
PROGRAM MOD.: IW COMPLIANCE: ☒ ENFORCEMENT: ☐
FIELD MEASUREMENTS

Tot. Depth:	13.7	Sample Depth:	6.85	W.Temp. °C:	12.6
Conductivity: µmoh/cm (EPA 120.1) :	506	Diss. Oxygen (EPA 360.1)	2.98	EPA 170.1	
Stream Velocity:	0.25	Salinity:	0.25	T.R.C.:	
pH:(EPA 150.1)	6.96	Secchi:	1.5	EPA 330.5	

WEATHER CONDITIONS:

LABORATORY MEASUREMENTS

		Unit	Analysis Date/Time	Analyst	Remarks
Turbidity (NTU) : EPA 180.1	0.5	NTU	12/10/03 - 09:45	BA	
Color (PtCo): EPA 110.2	150	PCU	12/10/03 - 10:15	BA	
B.O.D : SM 5210-B	2 K	Mg/L	12/10/03 - 09:00	BA	
C.B.O.D : SM 5210-B		Mg/L			
Tot. S.S : EPA 160.2	2 K	Mg/L	12/12/03 - 08:30		
Vol. S.S: EPA 160.4		Mg/L			
Fix S.S:		Mg/L			

COMMENTS:

Sample Custody
Sample Released to: Jeremy Parrish Date: 12/08/03

Preservation: Ice Time: 16:15

Reported by: Bipin Adhyaru ext. 3224 Date:: 12/15/2003

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A = Value is the mean of two or more determinations.
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Q = Sample held beyond the accepted holding time.
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L = Off - scale high. Actual value is known to be greater than value given
J = Estimated value; value not accurate.
PQL = The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Results for NELAP accredited tests contained in this report meet the requirement specified for the National Environmental Accreditation Program.

Table 1. Data recorded during the 96-hour acute screening renewal bioassay of a sample of effluent from Georgia-Pacific Corporation - Palatka Operations, Highway 216, Palatka, Putnam County, Florida, NPDES# FL0002763, performed from 9 to 13, December, 2003.

Facility:	Georgia-Pacific Corporation - Palatka Operations		NPDES #:	FL0002763	Facility Type:	Pulp and Paper Mill	Analysts: Christa Pierini
Location:	Highway 216, Palatka		Contact/District:	O'Connor/NE			Sarah Prichard
County:	Putnam		Test type:	static renewal acute screen			Josh Ayres
Sample Collection Date:	12/8/2003	Time: 1200	# tests:	2	Receiving Water:	Class III fresh	James Daniels
Test Beginning Date:	12/9/2003	Time: 1500	Chlorination Type:	nonchlorinated		Rice Creek	
Test Ending Date:	12/13/2003	Time: 1120	FDEP SOP#:	TA07 01 / 02		Page 1 of 2	Reviewer: Julie Espy

Organism: *Ceriodaphnia dubia* (water flea) | Life stage: <24 hours | Chamber size: 30 mL | [A]Feeding: YCT/Algae | Food Batch #: YCT 3/P, sub. 20

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature (C)			Diss. Oxygen (mg/L)			[B] Conductivity	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/20	5	5	5	8.2	-	8.1	24.2	-	24.0	8.0	-	6.3	0.221	0.200
Control B	0/20	5	5	5	-	-	8.1	-	-	24.0	-	-	6.6	-	0.185
Control C	0/20	5	5	5	-	-	8.1	-	-	24.1	-	-	6.9	-	0.190
Control D	0/20	5	5	5	-	-	8.1	-	-	24.0	-	-	6.9	-	0.209
100% A	20/0	5	5	5	8.2	-	8.8	24.5	-	24.0	7.2	-	7.0	2.24	2.37
100% B	20/0	5	5	5	-	-	8.9	-	-	24.2	-	-	7.3	-	2.55
100% C	20/0	5	5	5	-	-	8.8	-	-	24.0	-	-	7.0	-	2.68
100% D	20/0	5	5	5	-	-	8.8	-	-	24.0	-	-	7.0	-	2.78

[A]Organisms fed prior to testing.
[B]Conductivity value is uncorrected mmhos/cm.
Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0 - 25.5°C.
Incubator #3 temperature range for the test period was 23.0 - 24.0°C.
Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light : 8 hours of dark.

LIMS	
Job number:	TLH-2003-12-09-03
sample number:	721779

Data Transcription Verification
date: 2/4/04
by: James Daniels/Josh Ayres

Total Residual Cl2	mg/L	Method
Field 100% sample:	-	-
Lab 100% sample:	0.02	Hach
Control water:	0.01	Hach

Ammonia	Total (mg/L)	Unionized (mg/L)
Control water:	<0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control water:	85	94
100% Sample:	468	146

Organism: *Ceriodaphnia dubia* (water flea) | Life stage: <24 hours | Chamber size: 30 mL | [C]Feeding: YCT/Algae | Food Batch #: YCT 3/P, sub. 20

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature (C)			Diss. Oxygen (mg/L)			[D]Conductivity	
Concentrations	Volume(mL)	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	96 hr
Control A	0/20	5	5	5	8.1	-	8.3	24.3	-	24.2	7.3	-	8.0	0.165	0.204
Control B	0/20	5	5	5	-	-	8.3	-	-	24.2	-	-	7.9	-	0.191
Control C	0/20	5	5	5	-	-	8.3	-	-	24.2	-	-	7.8	-	0.191
Control D	0/20	5	5	5	-	-	8.3	-	-	24.0	-	-	7.8	-	0.208
100% A	20/0	5	5	4	8.1	-	8.9	24.1	-	24.3	7.1	-	7.9	2.15	2.65
100% B	20/0	5	5	5	-	-	8.9	-	-	24.5	-	-	7.8	-	2.46
100% C	20/0	5	5	5	-	-	8.9	-	-	24.3	-	-	7.8	-	2.65
100% D	20/0	5	5	5	-	-	8.9	-	-	24.2	-	-	7.8	-	2.81

[C]Organisms fed prior to testing.
[D]Conductivity value is uncorrected mmhos/cm.
Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0 - 25.5°C.
Incubator #3 temperature range for the test period was 23.0 - 24.0°C.
Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light : 8 hours of dark.

Mortality	Percent
Control water:	0%
100 % sample:	5%

[E]Salinity	ppt
Control water:	<1
100 % sample:	1.2

[E]salinity based on conductivity and temperature.

Table 1. concluded. Data recorded during the 96-hour acute screening renewal bioassay of a sample of effluent from Georgia-Pacific Corporations - Palatka Operations, Highway 216, Palatka, Putnam County, Florida, NPDES# FL0002763, performed from 9 to 13, December, 2003.

Facility:	Georgia-Pacific Corp. - Palatka Operations		NPDES #:	FL0002763	Facility Type:	Pulp and Paper Mill	Analysts: Christa Pierini
Location:	Highway 216, Palatka		Contact/District:	O'Connor/NE			Sarah Prichard
County:	Putnam		Test type:	static renewal acute screen			Scott Andree
Sample Collection Date:	12/8/2003	Time: 1200	# tests:	2	Receiving Water:	Class III fresh	James Daniels
Test Beginning Date:	12/9/2003	Time: 1500	Chlorination Type:	nonchlorinated		Rice Creek	
Test Ending Date:	12/13/2003	Time: 1120	FDEP SOP#:	TA07 01 / 02		Page 2 of 2	Reviewer: Julie Espy

Organism: *Pimephales promelas* (fish) Life stage: 8 days [A]Feeding: *Artemia*
Chamber size: 1000 ml Food Batch #: 0194025G

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature (°C)			Diss. Oxygen (mg/L)			[B]Conductivity	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/20	5	5	5	8.0	8.0	7.7	24.0	24.2	24.5	8.0	7.4	7.2	0.305	0.307
Control B	0/20	5	5	5	8.1	8.0	7.7	24.0	24.2	24.3	8.0	7.5	7.1	0.295	0.300
Control C	0/20	5	5	5	8.1	8.0	7.7	24.0	24.3	24.9	8.0	7.5	7.0	0.290	0.301
Control D	0/20	5	5	5	8.1	8.0	7.7	24.0	24.2	24.2	8.0	7.6	7.0	0.295	0.301
100% A	20/0	5	5	5	8.2	8.5	8.6	24.5	24.2	24.0	7.7	7.6	7.0	2.15	2.28
100% B	20/0	5	5	5	8.2	8.5	8.6	24.3	24.6	24.6	7.7	7.4	6.6	2.30	2.41
100% C	20/0	5	5	5	8.2	8.5	8.6	24.1	24.5	24.5	7.7	7.2	6.3	2.30	2.40
100% D	20/0	5	5	5	8.2	8.5	8.6	24.2	24.1	24.6	7.7	7.1	6.3	2.30	2.42

[A]Organisms fed prior to testing.
[B]Conductivity value is uncorrected mmhos/cm
Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0 - 25.5°C.
Incubator #3 temperature range for the test period was 23.0 - 24.0°C.
Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light : 8 hours of dark.

LIMS	
Job number:	TLH-2003-12-09-03
sample number:	721779

Data Transcription Verification
date: 2/4/04
by: James Daniels/Josh Ayres

Total Residual Cl2	mg/L	Method
Field 100% sample:	-	-
Lab 100% sample:	0.02	Hach
Control water:	0.01	Hach

Ammonia	Total (mg/L)	Unionized (mg/L)
Control water:	<0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control water:	65	82
100% Sample:	468	146

Organism: *Pimephales promelas* (fish) Life stage: 8 days [C]Feeding: *Artemia*
Chamber size: 1000 ml Food Batch #: 0194025G

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature (°C)			Diss. Oxygen (mg/L)			[D]Conductivity	
Concentrations	Volume(mL)	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	72 hr	96 hr	48 hr	96 hr
Control A	0/500	5	5	5	8.1	7.6	7.9	24.0	25.4	24.7	7.5	7.5	7.5	0.290	0.318
Control B	0/500	5	5	5	8.1	7.6	7.9	24.0	24.8	24.9	7.5	7.3	7.4	0.290	0.320
Control C	0/500	5	5	5	8.1	7.6	7.9	24.0	24.5	25.0	7.5	7.0	7.2	0.291	0.320
Control D	0/500	5	5	5	8.1	7.6	7.9	24.1	24.3	25.6	7.7	6.9	7.2	0.295	0.328
100% A	500/0	5	5	5	8.2	8.4	8.6	24.2	24.3	25.2	7.2	6.9	7.2	2.20	2.50
100% B	500/0	5	5	5	8.2	8.4	8.6	24.1	24.1	25.5	7.1	6.8	6.9	2.29	2.55
100 % C	500/0	5	5	5	8.2	8.4	8.6	24.1	24.8	24.6	7.0	6.6	6.6	2.30	2.49
100% D	500/0	5	5	5	8.2	8.4	8.6	24.1	24.3	25.2	7.1	6.5	6.6	2.29	2.57

[C]Organisms fed prior to testing.
[D]Conductivity value is uncorrected mmhos/cm
Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0 - 25.5°C.
Incubator #3 temperature range for the test period was 23.0 - 24.0°C.
Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light : 8 hours of dark.

Mortality	Percent
Control water:	0%
100 % sample:	0%

[E]Salinity	ppt
Control water:	<1
100 % sample:	1.2

[E]salinity based on conductivity and temperature.

Table 2. Data recorded during the chronic screening bioassays of a sample of effluent from Georgia-Pacific Corporation - Palatka Operations, Highway 216, Palatka, Putnam County, Florida, NPDES# FL0002763 performed from 9 to 16 December, 2003.

Facility:	**Georgia-Pacific Corp. - Palatka Operations**		**NPDES #:**	**FL0002763**	**Facility Type:**	**Pulp and Paper Mill**	**Analysts:** Christa Pierini
Location:	Highway 216, Palatka		**Contact/District:**	O'Connor/NE			James Daniels
County:	Putnam		**Test type:**	chronic renewal screen			Marshall Faircloth
Sample #1 Collection Date:	12/8/2003	**Time:** 1300	**# tests:**	2	**Receiving Water:**	Class III fresh	Josh Ayres
Sample #2 Collection Date:	12/10/2003	**Time:** 1220	**Chlorination Type:**	nonchlorinated		Rice Creek	
Sample #3 Collection Date:	12/12/2003	**Time:** 0845					
Test Beginning Date:	12/9/2003	**Time:** 1500				**Page 1 of 3**	
Test Ending Date:	12/17/2003	**Time:** 1315	**FDEP SOP#:**	TA07_05			**Reviewer:** Julie Espy

Organism: *Ceriodaphnia dubia* — Life stage: <24 hrs — [A]Feeding: YCT/Algae — Chamber size: 30mL — Food Batch #: #3/#20

Concentrations	Sample/Diluent Volume(mL)	# Young 0 hr	24 hr	48 hr	72 hr	96 hr	120 hr	144 hr	168 hr	192 hr	Total
Control A	0/20	0	0	0	0	4	6	10	0	3	23
Control B	0/20	0	0	0	0	0	2	9	0	10	21
Control C	0/20	0	0	0	0	7	6	7	0	12	32
Control D	0/20	0	0	0	0	1	-	-	-	-	1
Control E	0/20	0	0	0	0	6	10	0	12	0	28
Control F	0/20	0	0	0	0	2	8	1	8	15	34
Control G	0/20	0	0	0	0	4	0	7	8	0	19
Control H	0/20	0	0	0	0	6	0	3	0	4	13
Control I	0/20	0	0	0	0	0	0	3	6	0	9
Control J	0/20	0	0	0	0	3	0	9	9	14	35
100% A	20/0	0	0	0	0	4	0	0	0	3	7
100% B	20/0	0	0	0	0	1	3	0	0	0	4
100% C	20/0	0	0	0	0	0	0	1	0	0	1
100% D	20/0	0	0	0	0	0	3	1	0	0	4
100% E	20/0	0	0	0	0	0	0	1	0	12	13
100% F	20/0	0	0	0	0	1	4	1	1	2	9
100% G	20/0	0	0	0	0	0	0	0	1	0	1
100% H	20/0	0	0	0	0	0	2	0	0	0	2
100% I	20/0	0	0	0	0	1	2	0	1	0	4
100% J	20/0	0	0	0	0	1	3	0	2	0	6

Organism:	*Ceriodaphnia dubia*		**After Renewal "new sample"**				**Before Renewal "old sample"**	
Concentration	Surrogate	Hour	pH	[B]Temp. (°C)	[C]DO (mg/L)	[D]Conductivity	pH	[C]DO (mg/L)
Control	A	0	8.1	24.1	7.7	0.180	-	-
100%			8.2	25.1	7.3	2.35	-	-
Control	B	24	8.1	24.1	7.9	0.188	8.0	7.8
100%			8.4	24.0	7.9	2.32	8.8	7.7
Control	C	48	8.2	25.1	7.5	0.178	8.1	7.0
100%			8.1	24.9	7.4	2.24	8.2	7.1
Control	D	72	8.2	24.6	7.6	0.174	8.1	7.7
100%			8.1	25.1	7.5	2.34	8.7	7.6
Control	E	96	8.1	24.3	7.7	0.163	7.8	7.0
100%			8.1	24.3	7.7	2.31	8.7	7.2
Control	F	120	8.1	24.6	8.2	0.170	8.0	7.6
100%			8.1	24.5	6.5	2.28	8.6	7.3
Control	G	144	8.3	24.5	7.3	0.173	8.0	6.9
100%			8.2	24.6	7.1	2.27	8.6	7.2
Control	H	168	8.2	24.5	7.6	0.171	8.1	7.5
100%			8.4	24.0	7.5	2.24	8.7	7.2
Control	I	168	-	-	-	-	7.9	8.0
100%			-	-	-	-	8.7	7.7

Test Results	**Method**	**NOEC**
Survival	t test	100%
Reproduction	t test	<100%

Test Statistics	**t value**	**Probability**
Survival	1.0000	>0.05
Reproduction	4.3531	<0.05

Adult Mortality	**Percent**
Control	10.0%
100%	0.0%

Total Young	**# Young**	**Young per Adult**
Control	215	21.5
100%	51	5.1

LIMS	
Job number 1:	TLH-2003-12-09-03
sample number 1:	721780
Job number 2:	TLH-2003-12-11-39
sample number 2:	722931
Job number 3:	TLH-2003-12-17-53
sample number 3:	724675

Data Transcription Verification
date: 2/4/04
by: James Daniels/Josh Ayres

Total Residual Cl2	**mg/L**	**Method**
Field:	-	-
Control water #43:	0.00	Hach
Control water #44:	0.00	Hach
Lab Sample 1:	0.02	Hach
Lab Sample 2:	0.02	Hach
Lab Sample 3:	0.04	Hach

Ammonia	**Total (mg/L)**	**Unionized (mg/L)**
Control water #43:	<0.017	<0.017
Control water #44:	<0.017	<0.017
100% Sample 1:	<0.017	<0.017
100% Sample 2:	<0.017	<0.017
100% Sample 3:	<0.017	<0.017

Alk & Hardness	**Alkalinity (mg/L)**	**Hardness (mg/L)**
Control water #43:	85	94
Control water #44:	68	73
100% Sample 1:	468	142
100% Sample 2:	463	150
100% Sample 3:	450	144

[A] Organisms were fed daily.

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.

[C] DO = dissolved oxygen.

[D] Conductivity value is uncorrected mmhos/cm.

Room Temperature range for the test period was 24.5 - 26.0°C.

Incubator #3 temperature range for the test period was 24.0 - 25.0°C.

Light Intensity during the test was 50-100 foot candles.

Photoperiod during the test was 16 hours of light : 8 hours of dark.

Table 2. continued — Data recorded during the chronic screening bioassays of a sample of effluent from Georgia-Pacific Corporation - Palatka Operations, Highway 216, Palatka, Putnam County, Florida, NPDES# FL0002763 performed from 9 to 16 December, 2003.

Facility:	Georgia Pacific Corp. - Palatka Operations		NPDES #:	FL0002763	Facility Type:	Pulp and Paper Mill	Analysts: Christa Pierini, James Daniels, Marshall Faircloth, Josh Ayres
Location:	Highway 216, Palatka		Contact/District:	O'Connor/NE			
County:	Putnam		Test type:	chronic renewal screen			
Sample #1 Collection Date:	12/8/2003	Time: 1300	# tests:	2	Receiving Water:	Class III fresh Rice Creek	
Sample #2 Collection Date:	12/10/2003	Time: 1220	Chlorination Type:	nonchlorinated			
Sample #3 Collection Date:	12/12/2003	Time: 0845					
Test Beginning Date:	12/9/2003	Time: 1500					
Test Ending Date:	12/16/2003	Time: 1215	FDEP SOP#:	TA07_09			Reviewer: Julie Espy

Organism: *Pimephales promelas* — Life stage: 24 hours — [A]Feeding: *Artemia* — Chamber size: 1000 mL — Food Batch #: 0194025G

Concentration	Sample/Diluent Volume(mL)	Survival: Number alive 0 hr	24 hr	48 hr	72 hr	96 hr	120 hr	144 hr	168 hr
Control A	0/500	10	10	10	9	9	9	9	9
Control B	0/500	10	10	10	10	10	10	10	10
Control C	0/500	10	10	10	10	10	10	10	10
Control D	0/500	10	10	10	10	10	10	10	10
100% A	500/0	10	10	10	10	10	10	10	10
100% B	500/0	10	10	10	10	10	10	10	10
100% C	500/0	10	10	10	10	10	10	10	10
100% D	500/0	10	10	10	10	10	10	10	10

[A] Organisms were fed daily.

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.

[C] DO = dissolved oxygen.

[D] Conductivity value is uncorrected mmhos/cm.

Room Temperature range for the test period was 24.5 - 26.0°C.

Light Intensity during the test was 50-100 foot candles.

Incubator #3 temperature range for the test period was 24.0 - 25.0°C.

Photoperiod during the test was 16 hours of light : 8 hours of dark.

Test statistic	Method	NOEC
Survival	t test	100%

Test statistic	t test value	Probability
Survival	1.0000	p>0.05

Mortality	Percent
Control	2.5%
100%	0.0%

LIMS	
Job number 1:	TLH-2003-12-09-03
sample number 1:	721780
Job number 2:	TLH-2003-12-11-39
sample number 2:	722931
Job number 3:	TLH-2003-12-17-53
sample number 3:	724675

Data Transcription Verification
date: 2/4/04
by: James Daniels/Josh Ayres

Total Resid. Chlorine	mg/L	Method
Field:	-	-
Lab Sample 1:	0.02	Hach
Lab Sample 2:	0.02	Hach
Lab Sample 3:	0.04	Hach
Control water:	0.01	Hach

Ammonia	Total (mg/L)	Unionized (mg/L)
Control water :	<0.017	<0.017
100% Sample 1:	<0.017	<0.017
100% Sample 2:	<0.017	<0.017
100% Sample 3:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control water:	65	82
100% Sample 1:	468	142
100% Sample 2:	463	150
100% Sample 3:	450	144

Salinity[E]	ppt
100% sample:	1.2
Control:	<1

[E] Salinity based on conductivity and temperature.

Concentration	Replicate	Hour	Before Renewal pH	Temp. (°C)[B]	DO (mg/L)[C]	Conductivity[D]	After Renewal pH	Temp. (°C)[B]	DO (mg/L)[C]	Conductivity[D]
Control	A	0	8.1	24.1	7.6	0.320	-	-	-	-
100%			8.2	24.5	7.2	2.30	-	-	-	-
Control	B	24	8.1	24.2	7.4	0.275	8.0	24.2	7.2	0.278
100%			8.4	24.7	7.4	2.10	8.3	24.8	7.5	3.16
Control	C	48	7.7	24.0	7.1	0.284	7.9	24.0	7.5	0.331
100%			8.5	24.4	5.7	2.26	8.1	24.0	7.5	2.08
Control	D	72	7.8	24.2	6.7	0.300	8.1	24.0	7.6	0.295
100%			8.3	24.2	6.3	2.09	8.1	24.4	7.9	2.06
Control	A	96	7.3	24.4	5.0	0.309	7.8	24.4	7.4	0.291
100%			8.3	24.5	5.1	2.25	8.1	24.4	6.7	2.24
Control	B	120	7.6	24.0	7.0	0.305	7.7	24.0	7.0	0.305
100%			8.3	24.0	5.4	2.29	8.2	24.1	6.4	2.30
Control	C	144	7.7	25.2	6.1	0.312	8.0	24.6	7.2	0.304
100%			8.3	25.1	5.0	2.18	8.2	24.8	7.3	2.16
Control	D	168	7.7	24.0	6.3	0.320	-	-	-	-
100%			8.3	24.1	5.7	2.26	-	-	-	-

Table 2. concluded Data recorded during the chronic screening bioassays of a sample of effluent from Georgia-Pacific Corporation - Palatka Operations, Highway 216, Palatka, Putnam County, Florida, NPDES# FL0002763 performed from 9 to 16 December, 2003.

Facility: **Georgia Pacific Corp. - Palatka Operations** NPDES #: **FL0002763** Facility Type: **Pulp and Paper Mill** Analysts: Christa Pierini, James Daniels, Marshall Faircloth, Josh Ayres

Location: Highway 216, Palatka Contact/District: O'Connor/NE

County: Putnam Test type: chronic renewal screen

Sample #1 Collection Date: 12/8/2003 Time: 1300 # tests: 2 Receiving Water: Class III fresh

Sample #2 Collection Date: 12/10/2003 Time: 1220 Chlorination Type: nonchlorinated Rice Creek

Sample #3 Collection Date: 12/12/2003 Time: 0845

Test Beginning Date: 12/9/2003 Time: 1500 **Page 3 of 3**

Test Ending Date: 12/16/2003 Time: 1215 FDEP SOP#: TA07_09 Reviewer: Julie Espy

Tare weighing Date: 5/6/2003

Final weighing Date: 5/9/2003

Test Species		A	B	B-A	C	(B-A)/10[A]
Pimepales promelas		Pan weight (g)	Dry weight of pan + larvae (g)	Total dry weight of larvae (g)	Initial number of larve	Mean dry weight/larva (mg)
Concentration	Rep #					
Control A	E1	0.02557	0.02823	0.00266	10	0.266
Control B	E2	0.02478	0.02953	0.00475	10	0.475
Control C	E3	0.02467	0.02862	0.00395	10	0.395
Control D	E4	0.02670	0.03153	0.00483	10	0.483
100% A	E5	0.02517	0.03185	0.00668	10	0.668
100% B	E6	0.02900	0.03547	0.00647	10	0.647
100% C	E7	0.03620	0.04375	0.00755	10	0.755
100% D	E8	0.02425	0.03203	0.00778	10	0.778

Test statistic	Method	NOEC
Biomass	t test	100%

Test statistic	t test value	Probability
Biomass	5.1465	$p<0.05$

[A] Mean dry weight is determined by dividing the total dry weight per replicate by the number of larve originally loaded in that replicate.

STATE OF FLORIDA
DEPT. OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT

Division of Water Facilities
Surface Water Section

MICROBIOLOGICAL ANALYSIS REPORT

S.M. 9222B/S.M. 9222D

Comp.QAP#880236

NAME OF SURVEY			COLLECTOR
Georgia Pacific			Long
DATE: COLLECTED	**RECEIVED**	**PROCESS START**	**COMPLETED**
12/8/03	16:15 12/8/03	17:00 12/8/03	16:30 12/9/03
SURVEY TYPE	**SAMPLE TYPE**	**COUNTY**	**ANALYTICAL METHOD**
Industrial Compliance	Effluent grab	Putnam	Membrane Filter
ANALYST	**COMMENTS**		
Parrish			

LAB NO.	STORET NO.	SITE LOCATION	COLL TIME	SET UP TIME	TOTAL COLIFORM #/100ML	TOTAL COLIFORM CODE	FECAL COLIFORM #/100ML	FECAL COLIFORM CODE
031123		Georgia Pacific-effluent	12:55	17:12	280		10	U

Results for NELAP accredited tests contained in this report meet the requirements for the National Environmental Accreditation Program.

RESULTS APPROVED BY:	DATE
Jeremy Parrish	12/16/03

PAGE 1
STATE OF FLORIDA

DEPT. OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT

MICROBIOLOGICAL ANALYSIS REPORT

REMARK CODES

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
I - Value reported is less than the minimum quantitation limit, and greater than or equal to the minimum detection 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 value reported is the minimum detection limit.
V - Analyte was detected in both sample and method blank.
Z - Colonies were too numerous to count (TNTC).
Examples: 20 colonies from 1ml of sample would be reported as 2000 / 100ml.
2 colonies from 1ml of sample would be reported as 200B / 100ml.
30 colonies from 1ml of sample that exceeded holding time would be reported as 3000Q / 100ml.

SURVEY TYPE: Ambient Monitoring--Trend Reference Stream Reference Lake BioReconn.
Permit Compliance--5th Year 3rd Year CSI CEI PAI RI Complaint
Potable Water-- Sanitary Survey Facility Inspection.
Special Project. Response Operation.

SAMPLE TYPE: Suface Water Ground Water Potable Water Treated Effluent Untreated Effluent Sediment Sludge Soil

STATE OF FLORIDA
DEPT. OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT

Division of Water Facilities
Surface Water Section

MICROBIOLOGICAL ANALYSIS REPORT

S.M. 9222B/S.M. 9222D

Comp.QAP#880236

NAME OF SURVEY			COLLECTOR
Rice Creek			O'Connor
DATE: COLLECTED	**RECEIVED**	**PROCESS START**	**COMPLETED**
12/8/03	16:15 12/8/03	16:21 12/8/03	16:30 12/9/03
SURVEY TYPE	**SAMPLE TYPE**	**COUNTY**	**ANALYTICAL METHOD**
Industrial Compliance	Surface Water	Putnam	Membrane Filter
ANALYST	**COMMENTS**		
Parrish			

LAB NO.	STORET NO.	SITE LOCATION	COLL TIME	SET UP TIME	TOTAL COLIFORM		FECAL COLIFORM	
					#/100ML	CODE	#/100ML	CODE
031121	20030254	Rice Creek @Borden	10:30	16:29	290		90	B
031122	20030253	Etonia creek @Borden	12:45	16:47	600		182	AB
031124		Rice Creek above GP	11:20	16:40	91	AB	170	AB
031125		Rice Creek below GP	13:30	16:47	154	AB	90	B

Results for NELAP accredited tests contained in this report meet the requirements for the National Environmental Accreditation Program.

RESULTS APPROVED BY:	DATE
Jeremy Parrish	12/16/03

Note: STORET 20030253 = 20030260

STORET 20030254 = 20030253

Corrected 2 VI 2004, SCL and JKE

STATE OF FLORIDA
DEPT. OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT

MICROBIOLOGICAL ANALYSIS REPORT

REMARK CODES

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30 colonies from 1ml of sample that exceeded holding time would be reported as 3000Q / 100ml.

SURVEY TYPE: Ambient Monitoring--Trend Reference Stream Reference Lake BioReconn.
Permit Compliance--5th Year 3rd Year CSI CEI PAI RI Complaint
Potable Water-- Sanitary Survey Facility Inspection.
Special Project. Response Operation.

SAMPLE TYPE: Suface Water Ground Water Potable Water Treated Effluent Untreated Effluent
Sediment Sludge Soil

STATE OF FLORIDA
DEPT. OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT

Division of Water Facilities
Surface Water Section

MICROBIOLOGICAL ANALYSIS REPORT

S.M. 9222B/S.M. 9222D

Comp.QAP#880236

NAME OF SURVEY			COLLECTOR
Six Mile Creek			O'connor
DATE: COLLECTED	**RECEIVED**	**PROCESS START**	**COMPLETED**
12/9/03	17:00 12/9/03	17:45 12/9/03	11:00 12/12/03
SURVEY TYPE	**SAMPLE TYPE**	**COUNTY**	**ANALYTICAL METHOD**
Permit compliance 5YI	Surface Water	Putnam	Membrane Filter
ANALYST	**COMMENTS**		
O'Connor			

LAB NO.	STORET NO.	SITE LOCATION	COLL TIME	SET UP TIME	TOTAL COLIFORM		FECAL COLIFORM	
					#/100ML	CODE	#/100ML	CODE
031127	20030178	6 mile creek-above Miller	12:00	17:55	104	J	40	ABJ

Results for NELAP accredited tests contained in this report meet the requirements for the National Environmental Accreditation Program.

RESULTS APPROVED BY:	DATE
Jeremy Parrish	12/16/03

PAGE 1

STATE OF FLORIDA
DEPT. OF ENVIRONMENTAL PROTECTION
NORTHEAST DISTRICT

MICROBIOLOGICAL ANALYSIS REPORT

REMARK CODES

A - Value reported is the mean of two or more determinations.
B - Results based on colony counts outside the acceptable range.
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SURVEY TYPE: Ambient Monitoring--Trend Reference Stream Reference Lake BioReconn.
Permit Compliance--5th Year 3rd Year CSI CEI PAI RI Complaint
Potable Water-- Sanitary Survey Facility Inspection.
Special Project. Response Operation.

SAMPLE TYPE: Suface Water Ground Water Potable Water Treated Effluent Untreated Effluent
Sediment Sludge Soil

Non Conformance Report **F.D.E.P N.E. district Lab**

Sample #	Event / date	NCR ID #	NCR type/category	Initials / Date
031127	Sixmile(IWFYI5)	20030001	Method, Incubation	JP 12/15/03

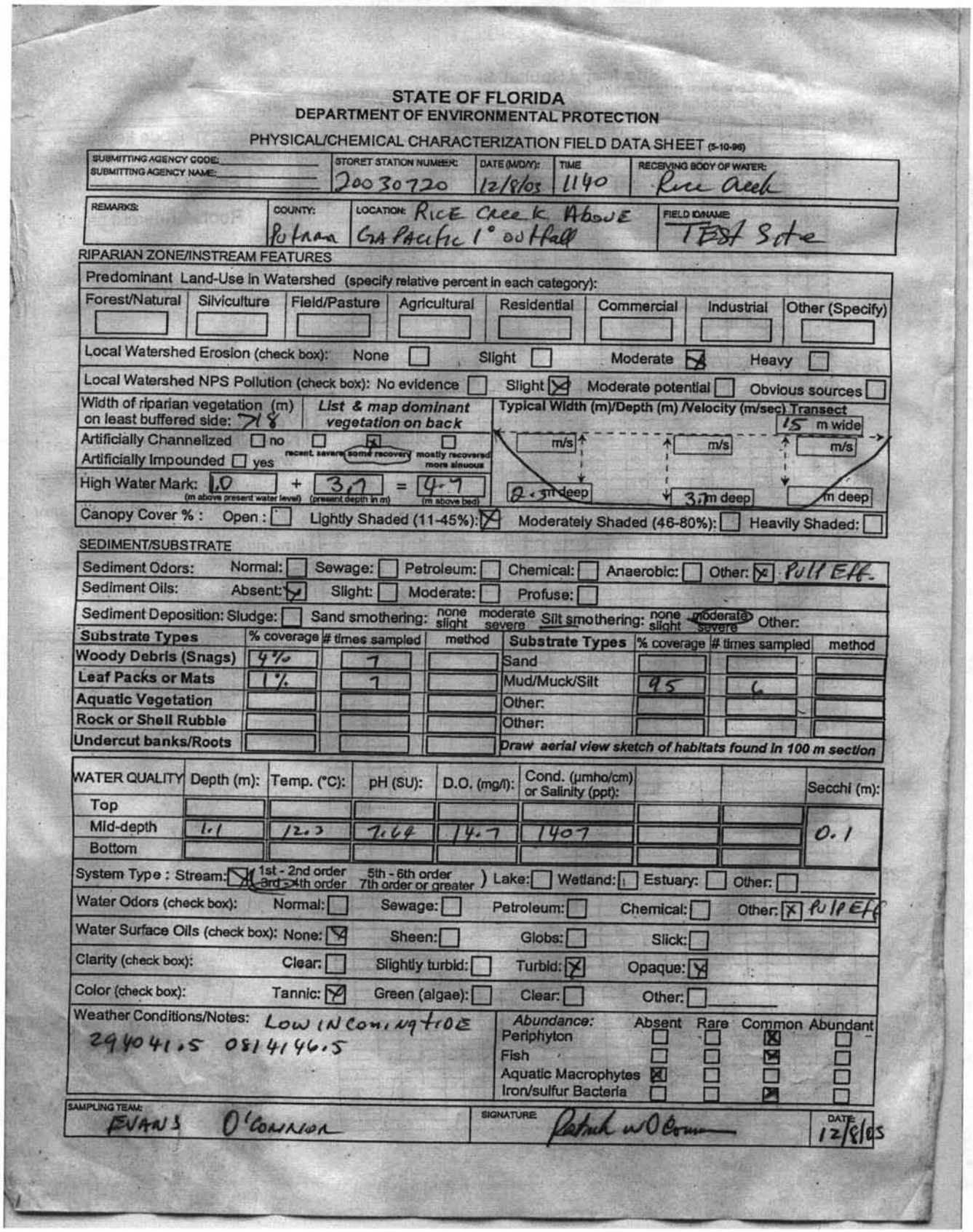
Observation:
Samples were forgot to be read at normal incubation time of 24 +-2hrs..

Resolution:
Samples were read at a later date and results coded with J for estimation, as they were incubated longer than 24 +- 2hrs.

Authorized by /Date:
Jeremy Parrish
Contact # 904-807-3300

Appendix 7

Habitat Assessment Field Sheets.



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (5-10-96)

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	TIME	RECEIVING BODY OF WATER:
	20030720	12/8/05	1140	Rice Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Putnam	Rice Creek Above GA Pacific 1° outfall	TEST Site

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Land-Use in Watershed (specify relative percent in each category):

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

Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☒ Moderate potential ☐ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: 718

List & map dominant vegetation on back

Artificially Channelized ☐ no ☐ recent, severe ☒ some recovery ☐ mostly recovered, more sinuous

Artificially Impounded ☐ yes

High Water Mark: 1.0 (m above present water level) + 3.7 (present depth in m) = 4.7 (m above bed)

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

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

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: ☐ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☒ PULP Eff.

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: none slight moderate severe Silt smothering: none slight moderate severe Other:

Substrate Types	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)	4%	7		Sand			
Leaf Packs or Mats	1%	7		Mud/Muck/Silt	95	6	
Aquatic Vegetation				Other:			
Rock or Shell Rubble				Other:			
Undercut banks/Roots				*Draw aerial view sketch of habitats found in 100 m section*			

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):			Secchi (m):
Top								
Mid-depth	1.1	12.3	7.64	14.7	1407			0.1
Bottom								

System Type : Stream: ☒ (1st - 2nd order / 3rd - 4th order / 5th - 6th order / 7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☐ Other: ☐

Water Odors (check box): Normal: ☐ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☒ PULP Eff

Water Surface Oils (check box): None: ☒ Sheen: ☐ Globs: ☐ Slick: ☐

Clarity (check box): Clear: ☐ Slightly turbid: ☐ Turbid: ☒ Opaque: ☒

Color (check box): Tannic: ☒ Green (algae): ☐ Clear: ☐ Other: ☐

Weather Conditions/Notes: Low Incoming Tide
29 40 41.5 081 41 46.5

Abundance:	Absent	Rare	Common	Abundant
Periphyton	☐	☐	☒	☐
Fish	☐	☐	☒	☐
Aquatic Macrophytes	☒	☐	☐	☐
Iron/sulfur Bacteria	☐	☐	☒	☐

SAMPLING TEAM:	SIGNATURE:	DATE:
EVANS O'CONNOR	Patrick O'Connor	12/8/05

DEP-SOP-001/01: Form FD 9000-5 (December 11, 2001)

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
	200307 20	12/8/03	RICE Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Putnam	GA Pacific POO RICE Creek ~~before~~ ABOVE	TEST Site

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity 8	Four or more productive habitats present [snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 3	Greater than 30% productive habitat present at site 20 19 18 17 16	16% to 30% productive habitat, by aerial extent 15 14 13 12 11	6% to 15% productive habitat 10 9 8 7 6	Less than 5% productive habitat 5 4 3 2 1
Water Velocity 14	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec 5 4 3 2 1
Habitat Smothering 4 Primary Score 31	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16	20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11	Smothering of 50%-80% of the habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, as severe problem, pools absent 5 4 3 2 1
Secondary Habitat Components Artificial Channelization 14	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern 15 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 5 Left Bank 5	Stable. No evidence of erosion or bank failure. Little potential for future problems. 10 9	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 8 7 6	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 5 4	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of native vegetation (least buffered side) greater than 18 m 10 9	Width of native vegetation (least buffered side) 12 to 18 m 8 7 6	Width of native vegetation 6 to 12 m, human activities still close to system 5 4	Less than 6 m of native buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score 95 64	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions 10 9	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 8 7 6	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 5 4	Less than 25% of stream bank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less 3 2 1

95 TOTAL SCORE

ANALYSIS DATE:	ANALYST:	SIGNATURE:
12/8/03	O'Connor	

DEP-SOP-001/01: Form FD 9000-3 (June 20 2001)
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	TIME	RECEIVING BODY OF WATER:
	20030721	12/8/03	1410	Rice Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Putnam	Rice Creek below GA Pacific 10 outfall	TEST

RIPARIAN ZONE/STREAM FEATURES

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

FOREST/NATURAL	SILVICULTURE	FIELD/PASTURE	AGRICULTURAL	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER (SPECIFY)

LOCAL WATERSHED EROSION (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

LOCAL WATERSHED NPS POLLUTION (check box): No evidence ☐ Slight ☒ Moderate potential ☐ Obvious sources ☐

WIDTH OF RIPARIAN VEGETATION (m) On least buffered side: >18

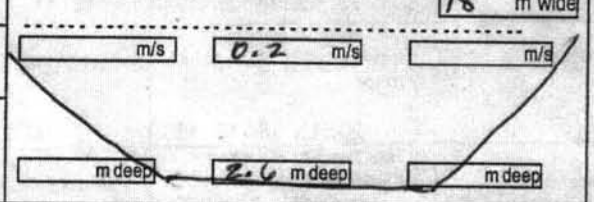
LIST & MAP DOMINANT VEGETATION ON BACK

ARTIFICIALLY CHANNELIZED ☐ no ☐ recent, severe ☑ some recovery ☐ mostly recovered more sinuous

ARTIFICIALLY IMPOUNDED ☐ yes

HIGH WATER MARK: 0.3 (m above present water level) + 2.6 (present depth in m) = 2.9 (m above bed)

TYPICAL WIDTH (M) DEPTH (M)/VELOCITY (M/SEC) TRANSECT



CANOPY COVER %: OPEN: ☐ LIGHTLY SHADED (11-45%): ☒ MODERATELY SHADED (46-80%): ☐ HEAVILY SHADED: ☐

SEDIMENT/SUBSTRATE

SEDIMENT ODORS: NORMAL: ☐ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ ANAEROBIC: ☐ OTHER: ☒ PULP EFF

SEDIMENT OILS: ABSENT: ☒ SLIGHT: ☐ MODERATE: ☐ PROFUSE: ☐

SEDIMENT DEPOSITION: SLUDGE: ☐ SAND SMOTHERING: NONE SLIGHT MODERATE SEVERE — SILT SMOTHERING: NONE SLIGHT (MODERATE) SEVERE OTHER: _____

SUBSTRATE TYPE	% COVERAGE	# TIMES SAMPLED	METHOD	SUBSTRATE TYPES	% COVERAGE	# TIMES SAMPLED	METHOD
WOODY DEBRIS (SNAGS)	4	7		SAND			
LEAF PACKS OF MATS	1	7		MUD/MUCK/SILT	95	6	
AQUATIC VEGETATION				OTHER:			
ROCK OR SHELL RUBBLE				OTHER:			
UNDERCUT BANKS/ROOTS				DRAW AERIAL VIEW SKETCH OF HABITATS FOUND IN 100 M SECTION			

WATER QUALITY	DEPTH (M):	TEMP. (°C):	PH (SU):	D.O. (MG/L):	COND. (UMHO/CM) OR SALINITY (PPT):			SECCHI (M):
TOP								
MID-DEPTH	2.6	12.5	7.6	16.5	1643			0.1
BOTTOM								

SYSTEM TYPE: STREAM: 1ST-2ND ORDER ☐ 3RD-4TH ORDER ☐ 5TH – 6TH ORDER ☐ 7TH ORDER OR GREATER ☐ LAKE: ☐ WETLAND: ☐ ESTUARY: ☐ OTHER: ☐ _____

WATER ODORS (CHECK BOX): NORMAL: ☐ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ OTHER: ☒ PULP EFF

WATER SURFACE OILS (CHECK BOX): NONE: ☒ SHEEN: ☐ GLOBS: ☐ SLICK: ☐

CLARITY (CHECK BOX): CLEAR: ☐ SLIGHTLY TURBID: ☐ TURBID: ☐ OPAQUE: ☒

COLOR (CHECK BOX): TANNIC: ☒ GREEN (ALGAE): ☐ CLEAR: ☐ OTHER: ☐ _____

WEATHER CONDITIONS/NOTES: Almost high INCOMING TIDE
2940 46.4 0814 13 6.0

ABUNDANCE:	ABSENT	RARE	COMMON	ABUNDANT
PERIPHYTON	☐	☐	☒	☐
FISH	☐	☐	☒	☐
AQUATIC MACROPHYTES	☒	☐	☐	☐
IRON/SULFUR BACTERIA	☐	☐	☒	☐

SAMPLING TEAM: EVANS, O'Connor

SIGNATURE: Patrick O'Connor

DATE: 12/08/03

DEP-SOP-001/01: Form FD 9000-5 (December 11, 2001)

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
		12/05/03	Rice Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Putnam	Rice Creek below GA Pacific 10 Outfall	TEST

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 7	Four or more productive habitats present [snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 5	Greater than 30% productive habitat present at site 20 19 18 17 16	16% to 30% productive habitat, by aerial extent 15 14 13 12 11	6% to 15% productive habitat 10 9 8 7 6	Less than 5% productive habitat 5 4 3 2 1
Water Velocity 13	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec 5 4 3 2 1
Habitat Smothering 7 Primary Score 32	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16	20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11	Smothering of 50%-80% of the habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, as severe problem, pools absent 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 13	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern 15 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 5 Left Bank 5	Stable. No evidence of erosion or bank failure. Little potential for future problems. 10 9	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 8 7 6	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 5 4	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of native vegetation (least buffered side) greater than 18 m 10 9	Width of native vegetation (least buffered side) 12 to 18 m 8 7 6	Width of native vegetation 6 to 12 m. human activities still close to system 5 4	Less than 6 m of native buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score 63	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions 10 9	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 8 7 6	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 5 4	Less than 25% of stream bank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less 3 2 1

95 **TOTAL SCORE**

ANALYSIS DATE:	ANALYST:	SIGNATURE:
12/8/03	O'Connor	Patrick O'Connor

DEP-SOP-001/01: Form FD 9000-3 (June 20 2001)
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	TIME	RECEIVING BODY OF WATER:
		12-8-03		

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Putnam	Rice Creek @ Bardin	

RIPARIAN ZONE/STREAM FEATURES

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

FOREST/NATURAL	SILVICULTURE	FIELD/PASTURE	AGRICULTURAL	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER (SPECIFY)

LOCAL WATERSHED EROSION (check box): None ☐ Slight ☐ Moderate ☐ Heavy ☐

LOCAL WATERSHED NPS POLLUTION (check box): No evidence ☐ Slight ☐ Moderate potential ☐ Obvious sources ☐

WIDTH OF RIPARIAN VEGETATION (m) On least buffered side: >18

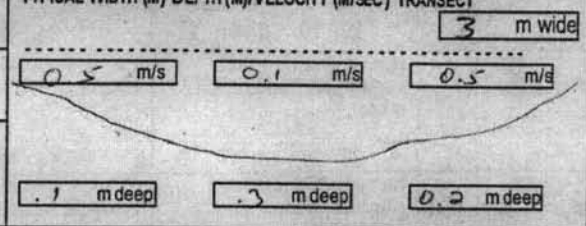
LIST & MAP DOMINANT VEGETATION ON BACK

ARTIFICIALLY CHANNELIZED ☒ no ☐ recent, ☐ severe ☐ some recovery ☐ mostly recovered

ARTIFICIALLY IMPOUNDED ☐ yes more sinuous

HIGH WATER MARK: 1.0 (m above present water level) + 0.3 (present depth in m) = 1.3 (m above bed)

TYPICAL WIDTH (M) DEPTH (M)/VELOCITY (M/SEC) TRANSECT



CANOPY COVER %: OPEN: ☐ LIGHTLY SHADED (11-45%): ☐ MODERATELY SHADED (46-80%): ☐ HEAVILY SHADED: ☐

SEDIMENT/SUBSTRATE

SEDIMENT ODORS: NORMAL: ☐ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ ANAEROBIC: ☑ OTHER: ☐

SEDIMENT OILS: ABSENT: ☑ SLIGHT: ☐ MODERATE: ☐ PROFUSE: ☐

SEDIMENT DEPOSITION: SLUDGE: ☐ SAND SMOTHERING: (NONE) SLIGHT MODERATE SEVERE SILT SMOTHERING: NONE SLIGHT (MODERATE) SEVERE OTHER:

SUBSTRATE TYPE	% COVERAGE	# TIMES SAMPLED	METHOD	SUBSTRATE TYPES	% COVERAGE	# TIMES SAMPLED	METHOD
WOODY DEBRIS (SNAGS)	4	7	Dip net	SAND			
LEAF PACKS OF MATS	4	7	Dip net	MUD/MUCK/SILT	92	6	Dip net
AQUATIC VEGETATION				OTHER:			
ROCK OR SHELL RUBBLE				OTHER:			
UNDERCUT BANKS/ROOTS				DRAW AERIAL VIEW SKETCH OF HABITATS FOUND IN 100 M SECTION			

WATER QUALITY	DEPTH (M):	TEMP. (°C):	PH (SU):	D.O. (MG/L):	COND. (UMHO/CM) OR SALINITY (PPT):			SECCHI (M):
TOP								
MID-DEPTH	0.617	10.16	7.31	78.6	258, 0.12 ppt			0.3 L
BOTTOM								

SYSTEM TYPE: STREAM: 1ST-2ND ORDER ☐ 3RD-4TH ORDER ☐ 5TH – 6TH ORDER ☐ 7TH ORDER OR GREATER ☐ LAKE: ☐ WETLAND: ☐ ESTUARY: ☐ OTHER: ☐

WATER ODORS (CHECK BOX): NORMAL: ☑ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ OTHER: ☐

WATER SURFACE OILS (CHECK BOX): NONE: ☑ SHEEN: ☐ GLOBS: ☐ SLICK: ☐

CLARITY (CHECK BOX): CLEAR: ☑ SLIGHTLY TURBID: ☐ TURBID: ☐ OPAQUE: ☐

COLOR (CHECK BOX): TANNIC: ☑ GREEN (ALGAE): ☐ CLEAR: ☐ OTHER: ☐

WEATHER CONDITIONS/NOTES:

ABUNDANCE:	ABSENT	RARE	COMMON	ABUNDANT
PERIPHYTON	☐	☑	☐	☐
FISH	☑	☑	☐	☐
AQUATIC MACROPHYTES	☐	☑	☐	☐
IRON/SULFUR BACTERIA	☑	☐	☐	☐

SAMPLING TEAM: Kallemeyn / Jordan

SIGNATURE: R G Kallemeyn

DATE:

DEP-SOP-001/01: Form FD 9000-5 (December 11, 2001)

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
		12-8-03	St. Johns River

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Putnam	Rice Creek @ Bardin Rd	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 9	Four or more productive habitats present [snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 7	Greater than 30% productive habitat present at site 20 19 18 17 16	16% to 30% productive habitat, by aerial extent 15 14 13 12 11	6% to 15% productive habitat 10 9 8 7 6	Less than 5% productive habitat 5 4 3 2 1
Water Velocity 8	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec 5 4 3 2 1
Habitat Smothering 8 Primary Score 32	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16	20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11	Smothering of 50%-80% of the habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, as severe problem, pools absent 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 18	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern 15 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 9	Stable. No evidence of erosion or bank failure. Little potential for future problems. 10 9	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 8 7 6	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 5 4	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of native vegetation (least buffered side) greater than 18 m 10 9	Width of native vegetation (least buffered side) 12 to 18 m 8 7 6	Width of native vegetation 6 to 12 m, human activities still close to system 5 4	Less than 6 m of native buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 9 Left Bank 9 Secondary Score 74	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions 10 9	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 8 7 6	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 5 4	Less than 25% of stream bank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less 3 2 1

106 TOTAL SCORE

ANALYSIS DATE:	ANALYST:	SIGNATURE:
12-8-03	T Kallemeyn	

DEP-SOP-001/01: Form FD 9000-3 (June 20 2001)

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	TIME	RECEIVING BODY OF WATER:
		12/8/03	12:30	

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	Putnam	Etonia Creek @ Burden Rd.	

RIPARIAN ZONE/STREAM FEATURES

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

FOREST/NATURAL	SILVICULTURE	FIELD/PASTURE	AGRICULTURAL	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	OTHER (SPECIFY)

LOCAL WATERSHED EROSION (check box): None ☐ Slight ☐ Moderate ☐ Heavy ☐

LOCAL WATERSHED NPS POLLUTION (check box): No evidence ☐ Slight ☐ Moderate potential ☐ Obvious sources ☐

WIDTH OF RIPARIAN VEGETATION (m) On least buffered side:

LIST & MAP DOMINANT VEGETATION ON BACK

ARTIFICIALLY CHANNELIZED ☐ no ☐ recent, ☐ severe ☐ some recovery ☐ mostly recovered

ARTIFICIALLY IMPOUNDED ☐ yes more sinuous

HIGH WATER MARK [ ] + [ ] = [ ]
(m above present water level) (present depth in m) (m above bed)

TYPICAL WIDTH (M) DEPTH (M)/VELOCITY (M/SEC) TRANSECT

m wide

m/s 0.4 m/s 0.2 m/s

1.0 m deep 1.5 m deep 0.5 m deep

CANOPY COVER %: OPEN: ☐ LIGHTLY SHADED (11-45%): ☐ MODERATELY SHADED (46-80%): ☐ HEAVILY SHADED: ☐

SEDIMENT/SUBSTRATE

SEDIMENT ODORS: NORMAL: ☑ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ ANAEROBIC: ☐ OTHER: ☐

SEDIMENT OILS: ABSENT: ☑ SLIGHT: ☐ MODERATE: ☐ PROFUSE: ☐

SEDIMENT DEPOSITION: SLUDGE: ☐ SAND SMOTHERING: NONE (SLIGHT) MODERATE SEVERE SILT SMOTHERING: (NONE) SLIGHT MODERATE SEVERE OTHER:

SUBSTRATE TYPE	% COVERAGE	# TIMES SAMPLED	METHOD	SUBSTRATE TYPES	% COVERAGE	# TIMES SAMPLED	METHOD
WOODY DEBRIS (SNAGS)				SAND			
LEAF PACKS OF MATS				MUD/MUCK/SILT			
AQUATIC VEGETATION				OTHER:			
ROCK OR SHELL RUBBLE				OTHER:			
UNDERCUT BANKS/ROOTS				DRAW AERIAL VIEW SKETCH OF HABITATS FOUND IN 100 M SECTION			

WATER QUALITY	DEPTH (M):	TEMP. (°C):	PH (SU):	D.O. (MG/L):	COND. (UMHO/CM) OR SALINITY (PPT):			SECCHI (M):
TOP								
MID-DEPTH	.35	10.77	6.72	10.46	90			1.50
BOTTOM								

SYSTEM TYPE: STREAM: 1ST-2ND ORDER ☐ 3RD-4TH ORDER ☐ 5TH – 6TH ORDER ☐ 7TH ORDER OR GREATER ☐ 94.1-% LAKE: ☐ WETLAND: ☐ ESTUARY: ☐ OTHER: ☐

WATER ODORS (CHECK BOX): NORMAL: ☑ SEWAGE: ☐ PETROLEUM: ☐ CHEMICAL: ☐ OTHER: ☐

WATER SURFACE OILS (CHECK BOX): NONE: ☑ SHEEN: ☐ GLOBS: ☐ SLICK: ☐

CLARITY (CHECK BOX): CLEAR: ☑ SLIGHTLY TURBID: ☐ TURBID: ☐ OPAQUE: ☐

COLOR (CHECK BOX): TANNIC: ☑ GREEN (ALGAE): ☐ CLEAR: ☐ OTHER: ☐

WEATHER CONDITIONS/NOTES:

ABUNDANCE:	ABSENT	RARE	COMMON	ABUNDANT
PERIPHYTON	☐	☑	☐	☐
FISH	☐	☑	☐	☐
AQUATIC MACROPHYTES	☑	☐	☐	☐
IRON/SULFUR BACTERIA	☑	☐	☐	☐

SAMPLING TEAM: Kallemeyn / Jordan

SIGNATURE: Kallemeyn

DATE: 12-8-03

DEP-SOP-001/01: Form FD 9000-5 (December 11, 2001)

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (MM/DD/YY): 12-8-03	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: Putnam	LOCATION: E Tonia Cr @ Bardin Rd	FIELD ID/NAME:

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 14	Four or more productive habitats present [snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 9	Greater than 30% productive habitat present at site 20 19 18 17 16	16% to 30% productive habitat, by aerial extent 15 14 13 12 11	6% to 15% productive habitat 10 9 8 7 6	Less than 5% productive habitat 5 4 3 2 1
Water Velocity 18	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec 5 4 3 2 1
Habitat Smothering 17 Primary Score 59	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16	20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11	Smothering of 50%-80% of the habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, as severe problem, pools absent 5 4 3 2 1
Secondary Habitat Components **Artificial Channelization** 19	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern 15 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 7	Stable. No evidence of erosion or bank failure. Little potential for future problems. 10 9	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 8 7 6	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 5 4	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 3 2 1
Riparian Buffer Zone Width Right Bank 9 Left Bank 10	Width of native vegetation (least buffered side) greater than 18 m 10 9	Width of native vegetation (least buffered side) 12 to 18 m 8 7 6	Width of native vegetation 6 to 12 m. human activities still close to system 5 4	Less than 6 m of native buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score 73	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions 10 9	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 8 7 6	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 5 4	Less than 25% of stream bank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less 3 2 1

131 TOTAL SCORE

ANALYSIS DATE: 12-8-03	ANALYST: Kallemeyn	SIGNATURE: TC Kallemeyn

Att.
Joy Jackson
MS# 6515

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (5-10-96)

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	TIME	RECEIVING BODY OF WATER:
		12/09/03	1210	6 mile Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	St Johns	6 mile Creek above Mill Creek	Control

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Land-Use in Watershed (specify relative percent in each category):

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

Local Watershed Erosion (check box): None ☐ Slight ☐ Moderate ☒ Heavy ☐

Local Watershed NPS Pollution (check box): No evidence ☐ Slight ☐ Moderate potential ☒ Obvious sources ☐

Width of riparian vegetation (m) on least buffered side: >18

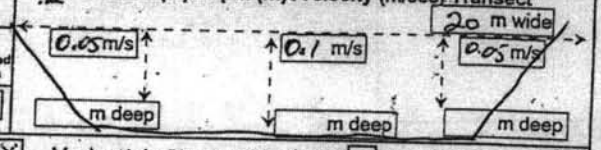
List & map dominant vegetation on back

Artificially Channelized ☐ no ☐ ☐ ☐ ☐ recent, severe / some recovery / mostly recovered, more sinuous

Artificially Impounded ☐ yes

High Water Mark: 0.3 (m above present water level) + 1.00 (present depth in m) = ____ (m above bed)

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



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

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Anaerobic: ☐ Other: ☐

Sediment Oils: Absent: ☒ Slight: ☐ Moderate: ☐ Profuse: ☐

Sediment Deposition: Sludge: ☐ Sand smothering: none / slight / moderate / severe Silt smothering: none / slight / moderate / severe Other:

Substrate Types	% coverage	# times sampled	method	Substrate Types	% coverage	# times sampled	method
Woody Debris (Snags)	2			Sand			
Leaf Packs or Mats	2			Mud/Muck/Silt	96		
Aquatic Vegetation				Other:			
Rock or Shell Rubble				Other:			
Undercut banks/Roots							

Draw aerial view sketch of habitats found in 100 m section

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):			Secchi (m):
Top								
Mid-depth	2.0	12.6	6.96	2.98	506			1.5
Bottom								

System Type : Stream: ☒ (1st - 2nd order / 3rd - 4th order / 5th - 6th order / 7th order or greater) Lake: ☐ Wetland: ☐ Estuary: ☐ Other: ☐

Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐

Water Surface Oils (check box): None: ☒ Sheen: ☐ Globs: ☐ Slick: ☐

Clarity (check box): Clear: ☒ Slightly turbid: ☐ Turbid: ☐ Opaque: ☐

Color (check box): Tannic: ☒ Green (algae): ☐ Clear: ☐ Other: ☐

Weather Conditions/Notes: Incoming tide

Abundance:	Absent	Rare	Common	Abundant
Periphyton	☐	☐	☒	☐
Fish	☐	☐	☒	☐
Aquatic Macrophytes	☐	☒	☐	☐
Iron/sulfur Bacteria	☐	☒	☐	☐

SAMPLING TEAM:	SIGNATURE:	DATE:
Evans O'Connor		12/9/03

Att.
Joy Jackson
MS# 6515

DEP-SOP-001/01: Form FD 9000-5 (December 11, 2001)

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION
STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
		12/09/03	6 mile Creek

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
	St Johns	6 mile Creek Above Mill Creek	control

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity 6	Four or more productive habitats present [snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 12 11	Two productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 5	Greater than 30% productive habitat present at site 20 19 18 17 16	16% to 30% productive habitat, by aerial extent 15 14 13 12 11	6% to 15% productive habitat 10 9 8 7 6	Less than 5% productive habitat 5 4 3 2 1
Water Velocity 11	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec 20 19 18 17 16	Max. observed at typical transect: 0.1 to 0.25 m/sec 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec 5 4 3 2 1
Habitat Smothering 6 Primary Score 28	Less than 20% of habitats affected by sand or silt accumulation 20 19 18 17 16	20%-50% of habitats affected by sand or silt accumulation 15 14 13 12 11	Smothering of 50%-80% of the habitats with sand or silt, pools shallow, frequent sediment movement 10 9 8 7 6	Smothering of >80% of habitats with sand or silt, as severe problem, pools absent 5 4 3 2 1
Secondary Habitat Components Artificial Channelization 18	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	May have been channelized in the past (>20 yrs), but mostly recovered, fairly good sinuous pattern 15 14 13 12 11	Channelized, somewhat recovered, but > 80% of area affected 10 9 8 7 6	Artificially channelized, box-cut banks, straight, instream habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 5 Left Bank 5	Stable. No evidence of erosion or bank failure. Little potential for future problems. 10 9	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 8 7 6	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 5 4	Unstable. Many (60%-80%) raw, eroded areas. Obvious bank sloughing. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of native vegetation (least buffered side) greater than 18 m 10 9	Width of native vegetation (least buffered side) 12 to 18 m 8 7 6	Width of native vegetation 6 to 12 m. human activities still close to system 5 4	Less than 6 m of native buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score 68	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody macrophytes. Normal, expected plant community for given sunlight & habitat conditions 10 9	50% to 80% of riparian zone is vegetated, and/or one class of plants normally expected for the sunlight & habitat conditions is not represented. Some disruption in community evident. 8 7 6	25% to 50% of riparian zone is vegetated, and/or one or two expected classes of plants are not represented. Patches of bare soil or closely cropped vegetation, disruption obvious. 5 4	Less than 25% of stream bank surfaces are vegetated and/or poor plant community (e.g. grass monoculture or exotics) present. Vegetation removed to stubble height of 2 inches or less 3 2 1

96 **TOTAL SCORE**

ANALYSIS DATE:	ANALYST:	SIGNATURE:
12/9/03	O'Connor	

Appendix 8a

Taxa list and density (number/cm^2) for periphyton collected from glass microscope slides incubated for 28 days upstream and downstream of the GP Palatka facility discharge, 12/8-9/2003.

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Bacillariophyta					
Achnanthes exigua	-	384	327	1,288	-
Achnanthes hungarica	260	384	-	-	427
Achnanthes lanceolata	-	767	653	644	1,282
Achnanthes sp.	-	384	-	322	854
Amphora libyca	-	-	327	-	-
Aulacoseira sp.	-	-	-	-	427
Bacillaria paxillifer	260	384	-	-	2,136
Bacillariophyceae	781	1,151	653	644	854
Bacillariophyta sp.	1,562	384	-	644	1,282
Brachysira vitrea	-	384	327	-	-
Caloneis bacillum	-	384	-	-	427
Caloneis sp.	-	-	-	-	427
Capartogramma crucicula	-	-	-	322	-
Cocconeis placentula	521	-	-	-	427
Cocconeis scutellum	1,041	-	55,867	-	-
Cocconeis sp.	781	-	1,634	3,864	2,991
Coscinodiscophyceae	-	-	-	322	427
Cyclotella sp.	-	384	-	-	427
Cyclotella stelligera	-	384	-	-	-
Cymbellaceae	521	1,534	-	322	427
Diploneis ovalis	260	-	-	-	-
Diploneis sp.	260	384	-	-	427
Encyonema evergladianum	-	-	-	322	427
Encyonema neomesianum	-	-	-	-	427
Encyonema silesiacum	-	384	-	322	427
Encyonema sp.	260	-	-	-	0
Encyonopsis microcephala	-	-	-	-	427
Eunotia minor	-	-	1,634	-	-
Eunotia sp.	3,904	6,137	17,642	966	1,709
Fragilaria pinnata	-	-	-	322	427
Fragilaria sp.	-	-	-	322	-
Fragilariaceae	-	-	-	1,932	2,991
Frustulia sp.	-	-	-	322	427
Gomphonema affine	260	1,534	-	-	-
Gomphonema gracile	521	384	-	-	427
Gomphonema parvulum	15,357	37,207	-	644	2,136
Gomphonema sp.	5,726	11,891	-	1,610	2,136
Gyrosigma sp.	260	-	-	-	-
Hippodonta capitata	-	-	-	322	-
Hippodonta sp.	521	-	-	322	-
Luticola sp.	-	-	327	-	-
Mastogloia smithii	-	-	-	-	427
Mastogloia sp.	-	384	327	-	427
Melosira sp.	-	-	-	322	-

(continued on next page)

Appendix 8a (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Navicula clementis	-	-	-	322	-
Navicula constans	-	-	-	-	427
Navicula minima	521	-	-	322	854
Navicula pusilla	-	-	-	-	427
Navicula rhynchocephala	-	-	-	322	-
Navicula sp.	3,384	-	2,614	966	6,836
Navicula subrhynchocephala	-	-	-	322	-
Naviculaceae	-	-	-	644	-
Naviculales sp.	-	-	327	-	-
Nitzschia amphibia	-	-	327	322	-
Nitzschia flexa	260	-	-	-	-
Nitzschia frustulum	260	-	-	-	-
Nitzschia nana	521	4,603	-	-	-
Nitzschia palea	-	1,151	-	-	-
Nitzschia reversa	260	-	-	-	-
Nitzschia sigma	-	-	327	-	-
Nitzschia sp.	23,946	15,726	2,614	644	11,108
Pinnularia sp.	-	-	327	322	427
Rhopalodia sp.	-	-	-	-	427
Sellaphora sp.	-	-	-	322	427
Stauroneis sp.	260	-	-	322	-
Surirella sp.	521	384	-	322	-
Synedra ulna	-	-	-	322	-
Tryblionella sp.	-	384	-	-	-
Chlorophycota					
Chlamydomonas	-	384	-	-	-
Chlorella sp.	-	-	980	-	-
Mougeotia sp.	260	-	327	-	-
Cyanophycota					
Cyanobium parvum	-	4,219	-	-	3,418
Cyanobium plancticum	-	1,151	-	-	-
Jaaginema sp.	6,507	15,343	-	5,152	3,845
Merismopedia minima	781	-	-	-	-
Microcystis sp.	-	-	-	1,288	-
Planktolyngbya sp.	-	384	327	-	-
Schizothrix calcicola	-	-	-	69,869	76,475
Schizothrix sp.	4,165	6,521	9,475	-	-
Synechocystis	1,822	1,151	327	2,254	1,282
Euglenophycota					
Phacus sp.	1,041	384	-	-	-
Strombomonas urceolata	781	-	-	-	-

Appendix 8b

Taxa list and number of individuals counted for periphyton collected from glass microscope slides incubated for 28 days upstream and downstream of the GP Palatka facility discharge, 12/8-9-2003.

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Bacillariophyta					
Achnanthes exigua	-	1	1	4	-
Achnanthes hungarica	1	1	-	-	1
Achnanthes lanceolata	-	2	2	2	3
Achnanthes sp.	-	1	-	1	2
Amphora libyca	-	-	1	-	-
Aulacoseira sp.	-	-	-	-	1
Bacillaria paxillifer	1	1	-	-	5
Bacillariophyceae	3	3	2	2	2
Bacillariophyta sp.	6	1	-	2	3
Brachysira vitrea	-	1	1	-	-
Caloneis bacillum	-	1	-	-	1
Caloneis sp.	-	-	-	-	1
Capartogramma crucicula	-	-	-	1	-
Cocconeis placentula	2	-	-	-	1
Cocconeis scutellum	4	-	171	-	-
Cocconeis sp.	3	-	5	12	7
Coscinodiscophyceae	-	-	-	1	1
Cyclotella sp.	-	1	-	-	1
Cyclotella stelligera	-	1	-	-	-
Cymbellaceae	2	4	-	1	1
Diploneis ovalis	1	-	-	-	-
Diploneis sp.	1	1	-	-	1
Encyonema evergladianum	-	-	-	1	1
Encyonema neomesianum	-	-	-	-	1
Encyonema silesiacum	-	1	-	1	1
Encyonema sp.	1	-	-	-	-
Encyonopsis microcephala	-	-	-	-	1
Eunotia minor	-	-	5	-	-
Eunotia sp.	15	16	54	3	4
Fragilaria pinnata	-	-	-	1	1
Fragilaria sp.	-	-	-	1	-
Fragilariaceae	-	-	-	6	7
Frustulia sp.	-	-	-	1	1
Gomphonema affine	1	4	-	-	-
Gomphonema gracile	2	1	-	-	1
Gomphonema parvulum	59	97	-	2	5
Gomphonema sp.	22	31	-	5	5
Gyrosigma sp.	1	-	-	-	-
Hippodonta capitata	-	-	-	1	-
Hippodonta sp.	2	-	-	1	-
Luticola sp.	-	-	1	-	-
Mastogloia smithii	-	-	-	-	1
Mastogloia sp.	-	1	1	-	1
Melosira sp.	-	-	-	1	-

(continued on next page)

Appendix 8b (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Navicula clementis	-	-	-	1	-
Navicula constans	-	-	-	-	1
Navicula minima	2	-	-	1	2
Navicula pusilla	-	-	-	-	1
Navicula rhynchocephala	-	-	-	1	-
Navicula sp.	13	-	8	3	16
Navicula subrhynchocephala	-	-	-	1	-
Naviculaceae	-	-	-	2	-
Naviculales sp.	-	-	1	-	-
Nitzschia amphibia	-	-	1	1	-
Nitzschia flexa	1	-	-	-	-
Nitzschia frustulum	1	-	-	-	-
Nitzschia nana	2	12	-	-	-
Nitzschia palea	-	3	-	-	-
Nitzschia reversa	1	-	-	-	-
Nitzschia sigma	-	-	1	-	-
Nitzschia sp.	92	41	8	2	26
Pinnularia sp.	-	-	1	1	1
Rhopalodia sp.	-	-	-	-	1
Sellaphora sp.	-	-	-	1	1
Stauroneis sp.	1	-	-	1	-
Surirella sp.	2	1	-	1	-
Synedra ulna	-	-	-	1	-
Tryblionella sp.	-	1	-	-	-
Chlorophycota					
Chlamydomonas	-	1	-	-	-
Chlorella sp.	-	-	3	-	-
Mougeotia sp.	1	-	1	-	-
Cyanophycota					
Cyanobium parvum	-	11	-	-	8
Cyanobium plancticum	-	3	-	-	-
Jaaginema sp.	25	40	-	16	9
Merismopedia minima	3	-	-	-	-
Microcystis sp.	-	-	-	4	-
Planktolyngbya sp.	-	1	1	-	-
Schizothrix calcicola	-	-	-	217	179
Schizothrix sp.	16	17	29	-	-
Synechocystis	7	3	1	7	3
Euglenophycota					
Phacus sp.	4	1	-	-	-
Strombomonas urceolata	3	-	-	-	-

Appendix 9a

Benthic macroinvertebrates collected from Hester-Dendy artificial substrates incubated upstream and downstream of the GP Palatka facility for 28 days (12/8-9/2003). Taxa collected and density (average number of individuals/m^2) rounded to the nearest individual (n = 3 samples). See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Annelida					
Hirudinea					
Helobdella stagnalis	-	-	-	-	3
Undetermined Hirudinea	3	-	-	-	-
Oligochaeta					
Dero digitata complex	-	-	-	-	16
Dero pectinata	-	-	-	-	3
Arthropoda					
Arachnida					
Acariformes					
Hygrobates sp.	-	-	-	3	-
Crustacea					
Amphipoda					
Gammarus sp.	1,847	2,868	5	3	98
Hyalella azteca	3	-	-	-	13
Isopoda					
Caecidotea sp.	3	-	-	-	-
Cassidinidea sp.	-	-	-	-	5
Insecta					
Coleoptera					
Ancyronyx variegatus	-	-	3	-	-
Ectopria thoracica	-	3	-	-	-
Helichus sp.	3	-	-	-	-
Microcylloepus pusillus	-	-	-	11	-
Stenelmis sp.	-	3	-	-	-
Diptera					
Ablabesmyia rhamphe grp.	-	-	3	-	3
Ceratopogonidae	-	-	-	-	3
Chironomidae	11	26	37	77	42
Chironomus sp.	-	-	-	-	21
Cladotanytarsus sp.	-	-	-	-	3
Corynoneura sp.	-	-	-	16	-
Corynoneura sp. C Epler	-	-	8	-	-
Dicrotendipes simpsoni	5	-	-	-	37
Dicrotendipes sp.	3	3	-	-	3
Goeldichironomus amazonicus	11	66	-	-	-
Goeldichironomus cf. natans	-	-	-	-	3
Goeldichironomus fluctuans	-	-	-	-	26
Gymnometriocnemus sp.	-	-	-	-	11
Hemerodromia sp.	-	-	5	69	-
Megistocera sp.	-	-	-	-	3
Nanocladius sp.	32	16	-	-	-
Parachironomus carinatus	26	16	-	-	-
Pentaneura inconspicua	-	-	3	-	-
Polypedilum beckae	-	-	-	-	3
Polypedilum fallax	-	-	3	3	-
Polypedilum flavum	-	-	5	484	-
Polypedilum illinoense grp.	5	3	3	-	-
Polypedilum sp.	-	-	3	3	-

(continued on next page)

Appendix 9a (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Rheocricotopus robacki	-	-	-	37	-
Rheotanytarsus exiguus grp.	-	-	-	204	-
Simulium sp.	-	-	-	130	-
Stelechomyia perpulchra	-	-	-	3	-
Stenochironomus	3	-	-	-	-
Tanytarsus sp.	-	-	-	5	3
Tanytarsus sp. A Epler	-	-	16	-	-
Tanytarsus sp. L Epler	-	-	5	-	3
Tanytarsus sp. M Epler	-	-	3	-	-
Tanytarsus sp. S Epler	-	-	21	-	-
Tanytarsus sp. T Epler	-	3	24	-	71
Thienemanniella similis	-	-	-	5	-
Thienemanniella sp.	-	-	-	3	-
Tribelos fuscicornis	-	-	-	-	5
Ephemeroptera					
Acerpenna pygmaea	-	-	21	11	-
Caenis sp.	-	3	-	-	82
Eurylophella sp.	-	-	5	-	-
Leptophlebia bradleyi	-	-	3	-	37
Stenacron floridense	-	-	108	-	-
Stenacron sp.	24	5	26	-	-
Stenonema exiguum	-	-	8	212	-
Stenonema sp.	-	-	-	19	-
Odonata					
Argia tibialis	-	-	8	-	-
Enallagma sp.	-	-	-	-	3
Ischnura ramburi	3	-	-	-	-
Ischnura sp.	-	3	-	-	-
Nasiaeschna pentacantha	5	3	-	-	-
Trichoptera					
Cernotina sp.	-	-	8	-	-
Cheumatopsyche sp.	-	-	-	188	-
Chimarra sp.	-	-	-	8	-
Cyrnellus fraternus	8	45	-	-	-
Lype diversa	-	-	-	3	-
Mayatrichia ayama	-	-	-	5	-
Nyctiophylax sp.	-	-	5	-	-
Polycentropodidae	3	-	-	-	-
Cnidaria					
Hydrozoa					
Hydra sp.	3	-	-	-	-
Mollusca					
Gastropoda					
Amnicola dalli	-	-	29	-	-
Ancylidae	3	-	5	-	-
Laevapex peninsulae	-	-	8	-	-
Micromenetus dilatatus	-	-	-	-	3
Micromenetus sp.	3	3	-	-	8
Physa sp.	3	-	-	-	-
Planorbella sp.	-	-	-	-	3
Viviparus georgianus	-	-	8	-	-
Platyhelminthes					
Undetermined Platyhelminthes	-	-	3	-	5

Appendix 9b

Benthic macroinvertebrates collected from Hester-Dendy artificial substrates incubated upstream and downstream of the GP Palatka facility for 28 days (12/8-9/2003). Taxa collected and total number of individuals counted (n = 3 samples).

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Annelida					
Hirudinea					
Helobdella stagnalis	-	-	-	-	1
Undetermined Hirudinea	1	-	-	-	-
Oligochaeta					
Dero digitata complex	-	-	-	-	6
Dero pectinata	-	-	-	-	1
Arthropoda					
Arachnida					
Acariformes					
Hygrobates sp.	-	-	-	1	-
Crustacea					
Amphipoda					
Gammarus sp.	698	1084	2	1	37
Hyalella azteca	1	-	-	-	5
Isopoda					
Caecidotea sp.	1	-	-	-	-
Cassidinidea sp.	-	-	-	-	2
Insecta					
Coleoptera					
Ancyronyx variegatus	-	-	1	-	-
Ectopria thoracica	-	1	-	-	-
Helichus sp.	1	-	-	-	-
Microcylloepus pusillus	-	-	-	4	-
Stenelmis sp.	-	1	-	-	-
Diptera					
Ablabesmyia rhamphe grp.	-	-	1	-	1
Ceratopogonidae	-	-	-	-	1
Chironomidae	4	10	14	29	16
Chironomus sp.	-	-	-	-	8
Cladotanytarsus sp.	-	-	-	-	1
Corynoneura sp.	-	-	-	6	-
Corynoneura sp. C Epler	-	-	3	-	-
Dicrotendipes simpsoni	2	-	-	-	14
Dicrotendipes sp.	1	1	-	-	1
Goeldichironomus amazonicus	4	25	-	-	-
Goeldichironomus cf. natans	-	-	-	-	1
Goeldichironomus fluctuans	-	-	-	-	10
Gymnometriocnemus sp.	-	-	-	-	4
Hemerodromia sp.	-	-	2	26	-
Megistocera sp.	-	-	-	-	1
Nanocladius sp.	12	6	-	-	-
Parachironomus carinatus	10	6	-	-	-
Pentaneura inconspicua	-	-	1	-	-
Polypedilum beckae	-	-	-	-	1
Polypedilum fallax	-	-	1	1	-
Polypedilum flavum	-	-	2	183	-
Polypedilum illinoense grp.	2	1	1	-	-
Polypedilum sp.	-	-	1	1	-

(contunued on next page)

Appendix 9b (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Rheocricotopus robacki	-	-	-	14	-
Rheotanytarsus exiguus grp.	-	-	-	77	-
Simulium sp.	-	-	-	49	-
Stelechomyia perpulchra	-	-	-	1	-
Stenochironomus	1	-	-	-	-
Tanytarsus sp.	-	-	-	2	1
Tanytarsus sp. A Epler	-	-	6	-	-
Tanytarsus sp. L Epler	-	-	2	-	1
Tanytarsus sp. M Epler	-	-	1	-	-
Tanytarsus sp. S Epler	-	-	8	-	-
Tanytarsus sp. T Epler	-	1	9	-	27
Thienemanniella similis	-	-	-	2	-
Thienemanniella sp.	-	-	-	1	-
Tribelos fuscicornis	-	-	-	-	2
Ephemeroptera					
Acerpenna pygmaea	-	-	8	4	-
Caenis sp.	-	1	-	-	31
Eurylophella sp.	-	-	2	-	-
Leptophlebia bradleyi	-	-	1	-	14
Stenacron floridense	-	-	41	-	-
Stenacron sp.	9	2	10	-	-
Stenonema exiguum	-	-	3	80	-
Stenonema sp.	-	-	-	7	-
Odonata					
Argia tibialis	-	-	3	-	-
Enallagma sp.	-	-	-	-	1
Ischnura ramburi	1	-	-	-	-
Ischnura sp.	-	1	-	-	-
Nasiaeschna pentacantha	2	1	-	-	-
Trichoptera					
Cernotina sp.	-	-	3	-	-
Cheumatopsyche sp.	-	-	-	71	-
Chimarra sp.	-	-	-	3	-
Cyrnellus fraternus	3	17	-	-	-
Lype diversa	-	-	-	1	-
Mayatrichia ayama	-	-	-	2	-
Nyctiophylax sp.	-	-	2	-	-
Polycentropodidae	1	-	-	-	-
Cnidaria					
Hydrozoa					
Hydra sp.	1	-	-	-	-
Mollusca					
Gastropoda					
Amnicola dalli	-	-	11	-	-
Ancylidae sp.	1	-	2	-	-
Laevapex peninsulae	-	-	3	-	-
Micromenetus dilatatus	-	-	-	-	1
Micromenetus sp.	1	1	-	-	3
Physa sp.	1	-	-	-	-
Planorbella sp.	-	-	-	-	1
Viviparus georgianus	-	-	3	-	-
Platyhelminthes					
Undetermined Platyhelminthes	-	-	1	-	2

Appendix 10a

Qualitative benthic macroinvertebrate collections (n = 20 discrete dipnet sweeps) upstream and downstream of the GP Palatka facility (12/8-9/2003). Taxa list and number of individuals counted (collapsed). See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa.

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Annelida					
Hirudinea					
Desserobdella phalera	-	-	-	-	1
Oligochaeta					
Dero digitata complex	1	-	1	-	5
Dero vaga	3	4	-	-	6
Eclipidrilus palustris	-	-	2	-	-
Enchytraeidae	-	-	2	-	-
Limnodrilus hoffmeisteri	-	-	1	1	-
Limnodrilus sp.	1	-	-	-	1
Pristina aequiseta	-	-	1	-	-
Slavina appendiculata	-	-	1	2	-
Arthropoda					
Arachnida					
Acariformes					
Arrenurus sp.	-	-	-	1	-
Hygrobates sp.	-	-	-	1	-
Lebertia sp.	-	-	-	1	-
Sperchonopsis sp.	-	-	-	2	-
Unionicola sp.	-	-	1	-	-
Crustacea					
Amphipoda					
Crangonyx sp.	-	-	1	-	-
Gammarus sp.	61	64	-	-	7
Hyalella azteca	1	4	-	-	10
Decapoda					
Procambarus sp.	-	-	-	1	-
Isopoda					
Caecidotea sp.	1	-	11	-	-
Insecta					
Coleoptera					
Ancyronyx variegatus	-	-	2	8	-
Dubiraphia vittata	-	-	5	-	-
Dytiscidae	-	-	-	-	1
Helichus sp.	-	3	-	-	-
Microcylloepus pusillus	2	-	-	23	-
Neoporus sp.	-	-	-	1	-
Stenelmis sp.	-	-	4	-	-
Collembola					
Collembola	-	-	-	1	-
Diptera					
Ablabesmyia mallochi	-	-	2	1	-
Ablabesmyia rhamphe grp.	-	-	1	2	-
Anopheles sp.	-	-	-	-	1
Atrichopogon sp.	-	-	-	1	-
Ceratopogonidae	1	-	-	-	-
Chironomus sp.	-	-	-	-	5
Corynoneura lobata	-	-	3	-	-
Dasyhelea sp.	-	-	-	-	1

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Appendix 10a (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Dicrotendipes simpsoni	-	-	-	-	10
Dicrotendipes sp.	1	-	-	-	-
Ephydridae	-	1	-	-	-
Goeldichironomus amazonicus	28	25	-	-	-
Goeldichironomus cf. natans	-	-	-	-	1
Goeldichironomus fluctuans	-	-	-	-	30
Hemerodromia sp.	-	-	2	2	-
Kiefferulus sp.	1	-	-	-	-
Larsia decolorata	-	-	-	-	1
Megistocera sp.	-	-	-	-	1
Nanocladius sp.	1	-	-	-	-
Pagastiella sp.	-	-	1	-	-
Palpomyia/bezzia grp.	-	-	7	-	1
Parachironomus carinatus	1	-	-	-	-
Paratanytarsus sp.	-	-	-	-	1
Pentaneura inconspicua	-	-	-	6	-
Polypedilum flavum	-	-	-	11	-
Polypedilum halterale grp.	-	-	-	-	3
Polypedilum illinoense grp.	1	-	-	-	-
Polypedilum scalaenum grp.	-	-	2	-	-
Polypedilum trigonum	-	-	-	-	1
Rheocricotopus robacki	-	-	-	1	-
Rheotanytarsus exiguus grp.	-	-	-	3	-
Simulium sp.	-	-	-	1	-
Stempellinella sp.	-	-	2	-	-
Stenochironomus sp.	1	-	3	2	-
Tanytarsus sp. L Epler	-	-	-	2	-
Tanytarsus sp. M Epler	-	-	-	1	-
Tanytarsus sp. O Epler	-	-	6	-	-
Tanytarsus sp. S Epler	-	-	17	-	-
Tanytarsus sp. T Epler	-	-	6	-	2
Thienemanniella lobapodema	-	-	1	-	-
Tipulidae	1	-	-	-	-
Tribelos fuscicornis	-	-	-	-	2
Tribelos sp.	-	-	-	2	-
Zavreliella marmorata	-	-	-	-	3
Ephemeroptera					
Caenis sp.	-	1	1	-	3
Eurylophella sp.	-	-	4	1	-
Hexagenia sp.	-	-	4	-	-
Leptophlebia bradleyi	-	-	-	-	4
Leptophlebiidae	-	-	-	1	-
Pseudocloeon sp.	-	-	-	2	-
Stenacron sp.	-	-	8	-	-
Stenonema sp.	-	-	-	1	-
Tricorythodes albilineatus	-	-	-	2	-
Odonata					
Argia sedula	-	-	2	-	-
Argia tibialis	-	-	-	4	-
Calopteryx sp.	-	-	-	1	-
Enallagma sp.	-	1	-	-	-
Gomphidae	-	-	1	-	-
Ischnura sp.	-	-	-	-	1
Macromia sp.	-	-	-	1	-
Progomphus obscurus	-	-	-	1	-

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Appendix 10a (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Trichoptera					
Cernotina sp.	-	-	1	1	-
Cheumatopsyche sp.	-	-	-	5	-
Hydroptila sp.	-	-	-	1	-
Nectopsyche pavida	-	-	-	1	-
Triaenodes sp.	-	-	-	3	-
Cnidaria					
Hydrozoa					
Cordylophora sp.	-	1	-	-	-
Mollusca					
Bivalvia					
Corbicula fluminea	-	-	-	2	-
Sphaeriidae(mollusca)	-	-	-	-	2
Undetermined Bivalvia	-	-	1	-	-
Gastropoda					
Amnicola dalli	-	-	-	-	4
Ancylidae	1	-	-	1	8
Hydrobiidae	-	-	8	1	-
Micromenetus dilatatus	-	-	-	-	6
Micromenetus floridensis	-	-	-	-	1
Micromenetus sp.	-	2	-	-	-
Planorbidae	2	-	1	-	-
Pyrgophorus platyrachis	-	-	-	-	1
Nemertea					
Prostoma sp.	-	-	4	-	-

Appendix 10b

Qualitative benthic macroinvertebrate collections (n = 20 discrete dipnet sweeps) upstream and downstream of the GP Palatka facility (12/8-9/2003). Taxa list and number of individuals counted.

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Annelida					
Hirudinea					
Desserobdella phalera	-	-	-	-	1
Oligochaeta					
Dero digitata complex	1	-	1	-	5
Dero vaga	3	4	-	-	6
Eclipidrilus palustris	-	-	1	-	-
Eclipidrilus sp.	-	-	1	-	-
Enchytraeidae	-	-	2	-	-
Limnodrilus hoffmeisteri	-	-	1	1	-
Limnodrilus sp.	1	-	-	-	1
Pristina aequiseta	-	-	1	-	-
Slavina appendiculata	-	-	1	2	-
Arthropoda					
Arachnida					
Acariformes					
Arrenurus sp.	-	-	-	1	-
Hygrobates sp.	-	-	-	1	-
Lebertia sp.	-	-	-	1	-
Sperchonopsis sp.	-	-	-	2	-
Unionicola sp.	-	-	1	-	-
Crustacea					
Amphipoda					
Crangonyx sp.	-	-	1	-	-
Gammarus sp.	61	64	-	-	7
Hyalella azteca	1	4	-	-	10
Decapoda					
Procambarus sp.	-	-	-	1	-
Isopoda					
Caecidotea sp.	1	-	11	-	-
Insecta					
Coleoptera					
Ancyronyx variegatus	-	-	2	8	-
Dubiraphia vittata	-	-	5	-	-
Dytiscidae	-	-	-	-	1
Helichus sp.	-	3	-	-	-
Microcylloepus pusillus	2	-	-	23	-
Neoporus sp.	-	-	-	1	-
Stenelmis sp.	-	-	4	-	-
Collembola					
Collembola sp.	-	-	-	1	-
Diptera					
Ablabesmyia mallochi	-	-	2	1	-
Ablabesmyia rhamphe grp.	-	-	1	2	-
Anopheles sp.	-	-	-	-	1
Atrichopogon sp.	-	-	-	1	-
Ceratopogonidae	1	-	5	-	-
Chironomidae	-	-	4	4	-
Chironomus sp.	-	-	-	-	5
Corynoneura lobata	-	-	3	-	-
Dasyhelea sp.	-	-	-	-	1

(continued on next page)

Appendix 10b (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Dicrotendipes simpsoni	-	-	-	-	10
Dicrotendipes sp.	1	-	-	-	-
Ephydridae	-	1	-	-	-
Goeldichironomus amazonicus	27	24	-	-	-
Goeldichironomus cf. natans	-	-	-	-	1
Goeldichironomus fluctuans	-	-	-	-	30
Goeldichironomus sp.	1	1	-	-	-
Hemerodromia sp.	-	-	2	2	-
Kiefferulus sp.	1	-	-	-	-
Larsia decolorata	-	-	-	-	1
Megistocera sp.	-	-	-	-	1
Nanocladius sp.	1	-	-	-	-
Pagastiella sp.	-	-	1	-	-
Palpomyia/bezzia grp.	-	-	2	-	1
Parachironomus carinatus	1	-	-	-	-
Paratanytarsus sp.	-	-	-	-	1
Pentaneura inconspicua	-	-	-	5	-
Polypedilum flavum	-	-	-	8	-
Polypedilum halterale grp.	-	-	-	-	2
Polypedilum illinoense grp.	1	-	-	-	-
Polypedilum scalaenum grp.	-	-	2	-	-
Polypedilum sp.	-	-	-	-	1
Polypedilum trigonum	-	-	-	-	1
Rheocricotopus robacki	-	-	-	1	-
Rheotanytarsus exiguus grp.	-	-	-	3	-
Simulium sp.	-	-	-	1	-
Stempellinella sp.	-	-	2	-	-
Stenochironomus sp.	1	-	3	2	-
Tanytarsus sp. l epler	-	-	-	2	-
Tanytarsus sp. m epler	-	-	-	1	-
Tanytarsus sp. o epler	-	-	5	-	-
Tanytarsus sp. s epler	-	-	15	-	-
Tanytarsus sp. t epler	-	-	5	-	2
Thienemanniella lobapodema	-	-	1	-	-
Tipulidae	1	-	-	-	-
Tribelos fuscicornis	-	-	-	-	2
Tribelos sp.	-	-	-	2	-
Zavreliella marmorata	-	-	-	-	3
Ephemeroptera					
Caenis sp.	-	1	1	-	3
Eurylophella sp.	-	-	4	1	-
Hexagenia sp.	-	-	4	-	-
Leptophlebia bradleyi	-	-	-	-	4
Leptophlebiidae	-	-	-	1	-
Pseudocloeon sp.	-	-	-	2	-
Stenacron sp.	-	-	8	-	-
Stenonema sp.	-	-	-	1	-
Tricorythodes albilineatus	-	-	-	2	-
Odonata					
Argia sedula	-	-	2	-	-
Argia tibialis	-	-	0	4	-
Calopteryx sp.	-	-	-	1	-
Enallagma sp.	-	1	-	-	-
Gomphidae	-	-	1	-	-
Ischnura sp.	-	-	-	-	1

(continued on next page)

Appendix 10b (continued)

	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Macromia sp.	-	-	-	1	-
Progomphus obscurus	-	-	-	1	-
Trichoptera					
Cernotina sp.	-	-	1	1	-
Cheumatopsyche sp.	-	-	-	5	-
Hydroptila sp.	-	-	-	1	-
Nectopsyche pavida	-	-	-	1	-
Triaenodes sp.	-	-	-	3	-
Cnidaria					
Hydrozoa					
Cordylophora sp.	-	1	-	-	-
Mollusca					
Bivalvia					
Corbicula fluminea	-	-	-	1	-
Sphaeriidae(mollusca)	-	-	-	-	2
Undetermined Bivalvia	-	-	1	1	-
Gastropoda					
Amnicola dalli	-	-	-	-	4
Ancylidae	1	-	-	1	7
Hydrobiidae	-	-	8	1	-
Micromenetus dilatatus	-	-	-	-	5
Micromenetus floridensis	-	-	-	-	1
Micromenetus sp.	-	2	-	-	-
Planorbidae	1	-	1	-	-
Pyrgophorus platyrachis	-	-	-	-	1
Undetermined Gastropoda	1	-	-	-	2
Nemertea					
Prostoma	-	-	4	-	-

Appendix 11a

Taxa list and density (number/mL) for phytoplankton collected upstream and downstream of the GP Palatka facility discharge, 12/8-9/2003.

	Outfall	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Bacillariophyta						
Achnanthes lanceolata	-	-	-	-	4	-
Achnanthes sp.	-	-	-	-	4	-
Bacillariophyceae	-	197	258	143	40	18
Coscinodiscophyceae	-	-	-	-	4	-
Cyclotella sp.	-	-	-	-	-	8
Cymbellaceae	-	-	-	-	4	-
Fragilaria construens	-	-	-	-	8	-
Frustulia rhomboides	-	-	-	-	4	-
Mastogloia sp.	-	-	-	-	4	-
Navicula sp.	-	-	-	-	44	2
Nitzschia sp.	-	-	-	-	4	2
Pinnularia sp.	-	-	-	-	8	-
Chlorophycota						
Ankistrodesmus falcatus	-	53	-	-	-	2
Ankistrodesmus sp.	34	-	47	-	-	-
Carteria sp.	-	-	-	-	-	9
Chlamydomonas sp.	101	38	23	-	-	22
Chlorella sp.	338	-	23	-	-	10
Chlorococcum sp.	-	23	-	-	-	-
Chlorophyceae	34	-	-	-	-	126
Mougeotia sp.	-	-	70	-	-	-
Oocystis sp.	-	15	-	-	-	-
Planktosphaeria sp.	-	-	-	-	-	1
Scenedesmus quadricauda	-	-	-	-	-	1
Selenastrum sp.	101	-	70	-	-	17
Chrysophyta						
Chrysophyceae	-	-	70	-	-	-
Mallomonas sp.	101	-	-	-	-	-
Cryptophycophyta						
Chroomonas sp.	-	-	-	-	-	3
Cryptomonas sp.	-	-	47	-	-	12
Cyanophycota						
Chroococcaceae	34	-	-	-	-	-
Cyanobium parvum	270	30	188	-	-	2
Cyanobium plancticum	1,217	-	-	-	-	29
Jaaginema sp.	6,051	1,483	5,511	6	44	16
Merismopedia minima	980	-	70	-	-	5
Merismopedia tenuissima	-	-	-	-	-	2
Microcystis sp.	-	-	-	-	-	6
Planktolyngbya sp.	169	98	258	19	4	4
Pseudanabaena sp.	-	-	-	-	-	1
Rhabdoderma sp.	-	-	-	-	-	2
Rhabdogloea sp.	270	91	211	-	-	1
Synechocystis sp.	-	8	117	-	-	-
Euglenophycota						
Euglena sp.	135	8	-	-	-	1
Phacus sp.	439	144	94	-	-	-
Strombomonas sp.	34	23	-	-	-	-
Trachelomonas sp.	-	106	-	-	-	1
Pyrrophycophyta						
Glenodinium sp.	-	-	-	-	-	6

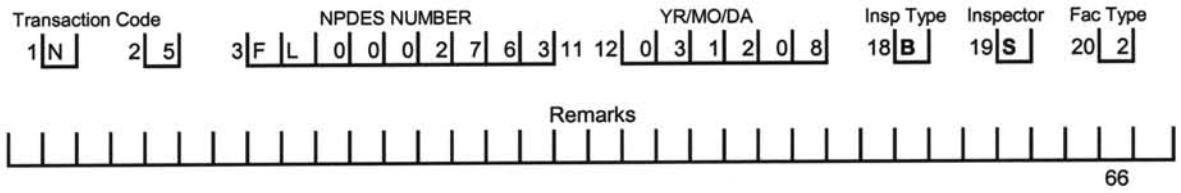
Appendix 11b

Taxa list and number of individuals counted for phytoplankton collected upstream and downstream of the GP Palatka facility discharge, 12/8-9/2003.

	Outfall	Rice Creek Above Outfall	Rice Creek Below Outfall	Rice Creek at Bardin Rd.	Etonia Creek at Bardin Rd.	Six Mile Creek
Bacillariophyta						
Achnanthes lanceolata	-	-	-	-	1	-
Achnanthes sp.	-	-	-	-	1	-
Bacillariophyceae	-	26	11	23	10	17
Coscinodiscophyceae	-	-	-	-	1	-
Cyclotella sp.	-	-	-	-	-	8
Cymbellaceae	-	-	-	-	1	-
Fragilaria construens	-	-	-	-	2	-
Frustulia rhomboides	-	-	-	-	1	-
Mastogloia sp.	-	-	-	-	1	-
Navicula sp.	-	-	-	-	11	2
Nitzschia sp.	-	-	-	-	1	2
Pinnularia sp.	-	-	-	-	2	-
Chlorophycota						
Ankistrodesmus falcatus	-	7	-	-	-	2
Ankistrodesmus sp.	1	-	2	-	-	-
Carteria sp.	-	-	-	-	-	9
Chlamydomonas sp.	3	5	1	-	-	21
Chlorella sp.	10	-	1	-	-	10
Chlorococcum sp.	-	3	-	-	-	-
Chlorophyceae	1	-	-	-	-	120
Mougeotia sp.	-	-	3	-	-	-
Oocystis sp.	-	2	-	-	-	-
Planktosphaeria sp.	-	-	-	-	-	1
Scenedesmus quadricauda	-	-	-	-	-	1
Selenastrum sp.	3	-	3	-	-	16
Chrysophyta						
Chrysophyceae	-	-	3	-	-	-
Mallomonas sp.	3	-	-	-	-	-
Cryptophycophyta						
Chroomonas sp.	-	-	-	-	-	3
Cryptomonas sp.	-	-	2	-	-	11
Cyanophycota						
Chroococcaceae	1	-	-	-	-	-
Cyanobium parvum	8	4	8	-	-	2
Cyanobium plancticum	36	-	-	-	-	28
Jaaginema sp.	179	196	235	1	11	15
Merismopedia minima	29	-	3	-	-	5
Merismopedia tenuissima	-	-	-	-	-	2
Microcystis sp.	-	-	-	-	-	6
Planktolyngbya sp.	5	13	11	3	1	4
Pseudanabaena sp.	-	-	-	-	-	1
Rhabdoderma sp.	-	-	-	-	-	2
Rhabdogloea sp.	8	12	9	-	-	1
Synechocystis sp.	-	1	5	-	-	-
Euglenophycota						
Euglena sp.	4	1	-	-	-	1
Phacus sp.	13	19	4	-	-	-
Strombomonas sp.	1	3	-	-	-	-
Trachelomonas sp.	-	14	-	-	-	1
Pyrrophycophyta						
Glenodinium sp.	-	-	-	-	-	6

The Bioassay of Georgia Pacific-Palatka effluent sampled on December 8, 2003, NPDES #FL0002763.

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



The Priority Pollutants Analysis for Bioassay of Georgia Pacific-Palatka effluent sampled on December 8, 2003, NPDES #FL0002763.

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

