Biological Assessment of

Anheuser Busch – Main Street Sod Farm

Duval County

NPDES #FL0041530

Sampled April 30 and May 1, 2007

April 2008

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G

NELAC Certification No. E31780

Florida Department of Environmental Protection

Fifth Year Inspection Summary

Discharger:	**Anheuser Busch – Main Street Sod Farm**
Physical Address:	**1650 North Main Street**
County:	**Duval**
NPDES Number:	**FL0041530**
Permit Expiration:	**July 28, 2008**

Toxics Sampling Inspection **(XSI)**

Date Sampled: April 30, 2007

Results: Effluent metals complied with Class III Fresh Water Quality Criteria (62-302.530, FAC) and facility permit limits. No organic priority pollutants were detected in the effluent sample.

Compliance Biomonitoring Inspection **(CBI)**

Date Sampled: April 30, 2007

Results: The effluent sample was not acutely toxic to the fish, *Cyprinella leedsi,* or to the water flea, *Ceriodaphnia dubia,* during the 96-hour acute screening bioassays.

Water Quality Inspection **(WQI)**

Date Sampled: April 30, 2007

Results: Effluent total nitrogen was 1.706 mg/L, which contributed to higher total nitrogen concentrations at both Test Sites (1.68 and 1.58 mg/L) when compared to the Control Site (0.883 mg/L). Although total suspended solids (TSS) levels in the effluent were below permit limits, effluent TSS contributed to higher TSS at Test Site 1 and Test Site 2 compared to the Control Site.

Impact Bioassessment Inspection **(IBI)**

Date Sampled: April 30 and May 1, 2007

Results: Effluent algal growth potential (AGP) was 9.7 mg dry wt/L, which is above the "problem" threshold for fresh receiving waters (5 mg dry wt/L). Phytoplankton chlorophyll *a* was elevated in the effluent (46.9 µg/L) and was higher at both Test Sites (5.8 and 7.5 µg/L) than at the Control Site (undetectable at 0.85 µg/L). The periphyton community was similar at all three in-stream sampling locations with 90-97% diatoms and 2-10% blue-green algae. The Ponar grab samples of macroinvertebrate communities were found to reflect the estuarine nature of the sampling sites, each with euryhaline components of both marine and freshwater habitats. Shannon-Weaver diversity calculated from the Ponar grab samples was comparable at the two Test Sites, which bracketed the effluent. The dominant taxa at Test Site 1 and Test Site 2 were worms and dipteran midges, macroinvertebrates considered to be tolerant to ecological disturbances.

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 Anheuser-Busch Main Street Sod Farm is located in Duval County near the intersection of Interstate 95 and Interstate 295 (see maps in Appendix A). The design flow of the wastewater system is 2.4 million gallons per day (MGD). The average flow from October 2005 through February 2007 for outfall D001 was 1.22 MGD. (facility summary provided by James M. Lucas, FDEP, Jacksonville). The farm was designed to treat 1.36 MGD of residual brewery liquor via biological uptake/assimilation by growing sod and hay crops. The brewery effluent is sprayed directly onto 350 acres of turf. A portion of the liquor may be pretreated by anaerobic digestion prior to land application. Two borrow pits (designated North and South) are designed to collect leachate and stormwater run-off from the sod farm. Runoff collects in the North borrow pit, which flows to the South borrow pit, and is discharged through four possible outfalls. Discharge from Outfall 001 is continuous, while discharge through the other outfalls is dependent upon rainfall. Effluent from Outfall 001 enters the Class III Fresh waters of the Little Cedar River, thence to the Class III Marine waters of the Broward River, thence to the St. Johns River. Outfalls 002, 003, and 004 discharge directly to the Broward River.

Surface Water Quality Criteria and facility permit limits are listed in Table 1. According to the facility's monthly discharge monitoring reports, the plant has had no permit violations in the year preceding the sampling event (Appendix B). The facility is currently under a Consent Order (order number OGC #99-1041) to reduce nitrate concentrations in ground water wells at the Main Street Sod Farm and thus to reduce impacts to the Broward River from groundwater seepage. Modifications to the Consent Order also require the facility to reduce TSS levels at outfall D001 as a part of managing hyacinths in the South Borrow Pit.

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 a control site (located in the Broward River at Harts Road in Duval County) and two test sites (Test Site 1 in Little Cedar Creek, about 50 m upstream of the outfall and Test Site 2 in Little Cedar Creek, about 50 m downstream of the outfall). Two test sites were sampled because the receiving waters are tidally influenced and therefore the effluent may move both upstream and downstream. The control site was located upstream in the Broward River rather than the Cedar River because the area further upstream of the outfall was too shallow for navigation and sampling. The area of the Broward River that was used as the Control Site was chosen because it had similar habitat to the test sites. Areas further downstream were higher in salinity. Detailed methods and their relationship to Florida Administrative Code are given in Appendix C.

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: Thomas Kallemeyn, Patrick O'Connor, Joseph Emery, and Jeremy Parrish (FDEP Northeast District), and FDEP Central Laboratory in Tallahassee. See Appendix D for the chain of custody form (sample submittal form). The report was reviewed by District representatives and the Point Source Studies Review Committee (Michael Tanski, Jennifer Paris, and Nancy Ross).

Results and Discussion

- The Test Sites are located in the Little Cedar River which is classified as a Class III Freshwater system. It is designated as such in the facility permit, and the calculated salinity (Table 1a) reflects the predominantly freshwater nature of the system. Therefore, Class III Fresh Water Quality Criteria (62-302.530, F.A.C.) are applied to both Test Sites and the effluent for this study. The Control Site is located in the Broward River which is classified as a Class III Marine system. It is designated as such in the facility permit, and the calculated salinity (Table 2) reflects the predominantly marine nature of the system. Therefore, Class III Marine Water Quality Criteria (62-302.530 F.A.C.) are applied to the Control Site for this study.

- Specific chemical results from the effluent sample are reported in Table 1 (a and b), and a complete list of chemical analytes can be reviewed in Appendix E. No organic pollutants were detected in the effluent. Effluent iron (63 µg/L) and nickel (1.33 µg/L) complied with Class III Fresh Water Quality Criteria (62-302.530, F.A.C.). The metals aluminum, arsenic and copper were found in the effluent at levels above the method detection limits (MDL) and below the practical quantitation limits (PQL) which complied with Class III Fresh Water Quality Criteria.

- Aluminum, copper and iron were detected at both Test Sites at levels that complied with Class III Fresh Water Quality Criteria. In addition, lead detected at Test Site 2 complied with Class III Fresh Water Quality Criteria. Arsenic, nickel and zinc were detected at both Test Sites at levels above the MDL but below the PQL. Chromium III was detected at Test Site 2 and lead was detected at Test Site 1 at levels above the

Table 1a. Effluent limits, Class III Freshwater Criteria and chemical, microbiological and toxicological data.

Anheuser Busch Main St. SOD Farm	Class III Criteria	Effluent Limits	Effluent	Test Site 1	Test Site 2
Organic Constituents (µg/L)					
None Detected	-	-	-	-	-
Nutrients (mg/L)					
Ortho-phosphate	-	-	0.077	0.19	0.18
Total Phosphorus	-	report	0.23	0.33	0.34
Total Ammonia	-	report	0.013 I	0.14	0.12
Un-ionized Ammonia	≤ 0.02 s	report	≤ 0.02 c	≤ 0.02 c	≤ 0.02 c
Nitrate and Nitrite	-	-	0.006 I f	0.18 f	0.18 f
Total Kjeldahl Nitrogen	-	≤ 8.0 a	1.7	1.5	1.4
Organic Nitrogen	-	-	1.687 c	1.36 c	1.28 c
Total Nitrogen	-	report	1.706 c	1.68 c	1.58 c
General Physical and Chemical Parameters					
Habitat Assessment	-		-	95	91
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0	7.2	4.2	4.6
pH (SU)	≥ 6.0 ≤ 8.5	≥ 6.0 ≤ 8.5	7.5	7.4	7.4
Conductivity (µmhos/cm)	≤ 1,275	-	2376	2252	3492
Temperature °C	-	report	23.8	22.3	22.8
Salinity	-	-	< 1.25 c	< 1.22 c	< 1.92 c
Sample Depth (m)	-	-	0.2	0.2	0.2
Chlorophyll a - corrected (µg/L)	-	-	46.9 A	5.8	7.5
Phaeophytin (µg/L)	-	-	2.5 U	1.5 U	2.1 U
Total Suspended Solids (mg/L)	-	≤ 20.0 a	12 I	12 I	18
Turbidity (NTU)	< 29 t	-	5.8	5.9	6.8
CBOD, 5 day (mg/L), N - inhibited	-	≤ 20.0 a	4 A	2.2	2.3
Flow (MGD)	-	report	1.0 **	-	-
Hardness (mg $CaCO_3$)	-	-	1390.15 c	543.55 c	746.42 c
Toxicity (96-hour acute screening bioassay, percent mortality in 100% effluent)					
Bioassay - Water flea *(Ceriodaphnia dubia)*	-	≤ 50%*	0%	-	-
Bioassay - Fish *(Cyprinella leedsi)*	-	≤ 50%*	0%	-	-

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
f - Analyte detected in field blank between MDL and PQL
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
L - Actual value is known to be greater than value given
U - Material analyzed for but not detected; value reported is the method detection limit
* LC50 ≥ 100%
** Flow is maximum daily flow for April 1-30, 2007 per DMR data

MDL and below the PQL. These levels complied with Class III Fresh Water Quality Criteria. It should be noted that magnesium, which is used to calculate hardness, was detected in the equipment blank at a level between the MDL and PQL (0.0058 µg/L).

- Iron detected at the Control Site (329 µg/L) exceeded the Class III Marine Water Quality Criterion (62-302.530(38), F.A.C.; Table 2). Aluminum was detected at the Control Site at a level which complied with the Class III Marine Water Quality Criterion (62-302.530, F.A.C.). Other metals detected at the Control Site (arsenic, cadmium, copper, lead, nickel and zinc) were all detected at levels above the MDL but below the PQL and complied with Class III Marine Water Quality Criteria.
- Effluent pH and dissolved oxygen (D.O.) complied with Class III Fresh Water Quality Criteria (Table 1a; 62-302, F.A.C.) and facility permit limits. The pH at the Test Sites complied with Class III Fresh Water Quality Criteria and pH at the Control Site complied with Class III Marine Water Quality Criteria (Table 2; 62-302, F.A.C.). D.O. was found to be below the minimum marine criterion (≥ 4.0 mg/L; 62-302.530(30), F.A.C.) at the upstream Control Site located in the Broward River (3.2 mg/L). D.O. was found to be below the fresh water criterion (≥ 5.0 mg/L; 62-302.530(30) F.A.C.) at both Test Sites (4.2 and 4.6 mg/L at Test Sites 1 and 2, respectively).

Table 1b. Effluent limits, Class III Freshwater Criteria and metals data. Class III Criteria based on hardness are presented individually for each site based on hardness at that site.

Anheuser Busch Main St. SOD Farm	Effluent Class III Criteria	Effluent Limits	Effluent	Test Site 1 Class III Criteria	Test Site 1	Test Site 2 Class III Criteria	Test Site 2
Metals (µg/L unless otherwise noted)							
Aluminum	-	-	60 I	-	389	-	586
Arsenic	≤ 50	-	1.5 I	≤ 50	1.2 I	≤ 50	1.3 I
Cadmium	≤ 0.8 b	-	0.05 U	≤ 0.76 b	0.05 U	≤ 0.76 b	0.05 U
Calcium (mg/L)	-	-	311	-	109	-	135
Chromium-III	≤ 268.2 b	-	1 U	≤ 268.22 b	1 U	≤ 268.22 b	1 I
Copper	≤ 30.5 b	-	0.32 I	≤ 30.50 b	0.8	≤ 30.50 b	0.92
Iron	≤ 1,000	-	63	≤ 1,000	747	≤ 1,000	836
Lead	≤ 18.6 b	-	0.2 U	≤ 18.58 b	0.65 I	≤ 18.58 b	0.95
Magnesium (mg/L)	-	-	149 f	-	65.9 f	-	99.4 f
Mercury	≤ 0.012	-	-	≤ 0.012	-	≤ 0.012	-
Nickel	≤ 168.5 b	-	1.33	≤ 168.54 b	0.67 I	≤ 168.54 b	0.95 I
Selenium	≤ 5.0	-	0.5 U	≤ 5.0	0.5 U	≤ 5.0	0.5 U
Silver	≤ 0.07	-	0.025 U	≤ 0.07	0.025 U	≤ 0.07	0.025 U
Zinc	≤ 387.8 b	-	5 U	≤ 387.83 b	7 I	≤ 387.83 b	8 I

Value exceeds the Class III Water Quality Criteria or permit limits

b - Value is calculated based on hardness
c - Value is calculated
f - Analyte detected in field blank between MDL and PQL
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit

- The effluent sample was not acutely toxic to the fish, *Cyprinella leedsi,* or to the water flea, *Ceriodaphnia dubia,* during the 96-hour acute screening bioassay (See Table 1a for percent mortality, Appendix F for bioassay bench sheets, and Appendix G for supporting standard reference toxicant data).

- The effluent total nitrogen (1.706 mg/L) and TKN (1.7 mg/L) concentrations contributed to elevated total nitrogen and TKN at the Test Sites (Table 1a) when compared to the Control Site (Table 2). Although other nutrient levels at the Control Site were lower compared to those at the Test Sites, the difference was not attributable to the effluent. It should be noted that nitrate-nitrite was detected in the equipment blank between the MDL and PQL (0.006 mg/L).

- 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 wt/L of the freshwater algal test species represents a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The effluent sample was tested using the freshwater species, *Pseudokirchneriella* subcapitata, and the resulting AGP was 9.7 mg dry weight/L (Table 3), which exceeded the "problem" threshold. Raschke and Shultz also established that AGP above 10.0 mg dry wt/L of the marine algal test species represents a "problem" threshold for marine receiving waters. AGP at the Control Site (5.0 mg dry wt/L) was below this threshold. Although the Test Sites were predominantly fresh water, the salinity was sufficiently high to warrant use of the salt water algal species, *Dunaliella tertiolecta,* for the AGP test. AGP at the Test Sites (6.2 and 7.5 mg dry wt/L at Test Site 1 and 2, respectively) did not exceed the marine problem threshold. The analytical chemistry suggests that the effluent and all three study sites were nitrogen-limited, and there was no evidence of growth inhibition in effluent AGP data (Table 3).

- Chlorophyll-*a* was elevated in water samples of the effluent (46.9 µg/L) and was higher at both Test Sites (5.8 µg/L and 7.5 µg/L) than at the Control Site (< 0.85 µg/L, non-detect; Table 1a and Table 2).

- There were no differences in periphyton community composition between the Control and Test Sites (Table 4, Appendix J). The communities at the three sampling sites were composed primarily of diatoms (80-97%) and a few blue-green algae (2-10%). Diatoms at the Control Site and at Test Site 2 were dominated by *Navicula* sp. Diatoms at Test Site 1 were dominated by *Nitzschia* sp.

- Habitat assessment scores were 111 at the Control Site and 95 and 91 at Test Site 1 and Test Site 2,

Table 2. Class III Criteria for predominantly marine waters & Control Site results

Anheuser Busch Main St. SOD Farm	Class III Criteria	Control Site	
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1500	58	
Arsenic	≤ 50	0.8	I
Cadmium	≤ 8.8	0.021	I
Calcium (mg/L)	-	89.3	
Chromium-III	-	1	U
Copper	≤ 3.7	0.58	I
Iron	≤ 300	329	
Lead	≤ 8.5	0.31	I
Magnesium (mg/L)	-	94.9	f
Nickel	≤ 8.3	0.44	I
Selenium	≤ 71	0.5	U
Silver	≤ 2.3	0.025	U
Zinc	≤ 86	7.5	I
Nutrients (mg/L)			
Ortho-phosphate	-	0.12	
Total Phosphorus	-	0.17	
Total Ammonia	-	0.082	
Un-ionized Ammonia	-	≤ 0.02	c
Nitrate and Nitrite	-	0.063	f
Total Kjeldahl Nitrogen	-	0.82	
Organic Nitrogen	-	0.738	c
Total Nitrogen	-	0.883	c
General Physical and Chemical Parameters			
Habitat Assessment	-	111	
Dissolved Oxygen (mg/L)	≥ 4.0	3.2	
pH (SU)	6.5 - 8.5	7.2	
Conductivity (µmhos/cm)	-	4642	
Temperature °C	-	22.5	
Salinity	-	4.8	c
Sample Depth (m)	-	0.4	
Chlorophyll a (µg/L)	-	0.85	U
Phaeophytin (µg/L)	-	1.5	U
Total Suspended Solids (mg/L)	-	4	I
Turbidity (NTU)	< 29 t	3	
CBOD, 5 day (mg/L), N - inhibited	-	1	AI
Hardness (mg $CaCO_3$)	-	613.78	c

Value exceeds the Class III Water Quality Criteria limits

c - Value is calculated
f - Analyte detected in field blank between MDL and PQL
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit

respectively (Tables 1a and 2; data sheets in Appendix I), which places all three sites in the Suboptimal category (Appendix C (5)). Test Sites 1 and 2 lost points for lack of habitat diversity and availability and for habitat smothering and bank instability. While the Control Site had more diversity in the types of habitat available compared to the Test Sites, it also lost points for the amount of habitat available, habitat smothering, and bank instability.

- Quantitative measures of benthic macroinvertebrate assemblages from Ponar grab samples reflect the estuarine nature of the sampling sites, each with euryhaline components of both marine and freshwater habitats. The macroinvertebrate results showed that the Control Site was dissimilar to the Test Sites. Compared to the Control Site (24,792 individuals/m2), Test Site 1 and 2 had lower macroinvertebrate densities (7,404 individuals/m2 and 8,474 individuals/m2, respectively), different dominant taxa, and higher Shannon Diversity (Table 5, Appendix K). These differences are more likely attributable to the differences in salinity between the Control Site and Test Sites and not to effects of the effluent.

Summary

Both DMR and FDEP data from this inspection indicate no permit violations or exceedances since January, 2007, by this facility. The facility is currently under consent order number OGC #99-1041, which requires the facility to take steps to reduce nitrate levels in monitoring wells around the Main Street Sod Farm. The facility is currently addressing Step 4 of a Plan of Study to reduce land application and thereby reduce groundwater nitrates at the Main Street Sod Farm. All results of the Plan of Study are due by July 28, 2008. During the period in which the facility is conducting this study, an interim level of

Table 3. Measured and predicted algal growth potential (AGP; mg dry weight/L) of the freshwater species *Psuedokirchneriella subcapitata* for total soluble nitrogen (TSIN) and total nitrogen (TN) limitation, the salt adjusted AGP for the saltwater species *Dunaliella tertiolecta*, and ratios of nitrogen to phosphorus for effluent samples collected from Anheuser Busch Main Street Sod Farm on April 30

Anheuser Busch Main St. SOD Farm					
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	9.7	0.7 ± 0.1	64.8 ± 13.0	0.2	7.4
Control Site	5.0	-	-	1.2	5.2
Test Site 1	6.2	-	-	1.7	5.1
Test Site 2	7.5	-	-	1.7	4.6

nitrate has been established of 40.0 mg/L in monitoring wells E, G, & H. This interim limit will expire on July 28, 2008, and the facility must be in compliance with all permit requirements by that same date. Groundwater monitoring was not part of the current inspection.

Total nitrogen levels in the effluent contributed to elevated levels at both Test Sites when compared to the Control Site. Although these nitrogen levels did not appear to be adversely affecting the algal or macroinvertebrate communities, the increase in dominance of more tolerant macroinvertebrates at the Test Sites (worms and dipteran midges) may be attributable to this nutrient enrichment.

Elevated levels of iron at the Control Site exceeded Class III Marine Water Quality Criteria. Dissolved oxygen levels at the Control Site were below the Class III Marine Water Quality Criterion. Although dissolved oxygen levels at the Test Sites were below the Class III Fresh Water Quality Criterion, the lower D.O. was not attributable to the effluent.

Literature Cited

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Table 4. Periphyton Composition - Qualitative.

Anheuser Busch Main St. SOD Farm	Control Site	Test Site 1	Test Site 2
Number of Wet Taxa	11	6	5
Number of Wet Algal Units Identified	305	301	301
Percent Dominant Wet Taxon	89.8	97.3	97.3
Dominant Wet Taxon Name	Bacillariophyta (Diatoms)	Bacillariophyta (Diatoms)	Bacillariophyta (Diatoms)
Number of Diatom Taxa	32	40	50
Number of Diatom Algal Units Identified	500	500	500
Percent Dominant Diatom Taxon	27.2	24.8	17.4
Dominant Diatom Taxon Name	*Navicula* sp.	*Nitzschia* sp.	*Navicula* sp.
Percentage Composition for Wet Algae			
Blue-green algae	9.5	2.3	2.7
Green algae	0.7	0.3	0.0
Diatoms	89.8	97.3	97.3

Table 5. Macroinvertebrate Petite Ponar Samples - Quantitative.

Anheuser Busch Main St. SOD Farm	Control Site	Test Site 1	Test Site 2
Summary Statistics			
Shannon-Weaver Diversity	2.21	2.72	3.30
Number of Taxa	35	25	30
Percent Dominant Taxon	60.3	35.4	28.2
Dominant Taxon Name	*Gammarus* cf. *tigrinus* (Amphipoda)	*Limnodrilus hoffmeisteri* (Oligochaeta)	*Chironomus* sp. (Diptera)
Number of samples/site	3	3	3
Total Number of Individuals (counted)	1,785	533	610
Total Number of Individuals (#/m2)	24,792	7,404	8,474
Community Composition: Percent of total			
Amphipoda	62.1	6.8	6.4
Bivalvia	0.1	0.6	0.8
Decapoda	0.0	0.4	0.2
Diptera	9.1	49.4	54.9
Gastropoda	0.6	1.7	4.6
Isopoda	7.7	1.5	4.8
Oligochaeta	19.9	35.4	10.8
Polychaeta	0.1	4.3	17.4
Other	0.5	0.0	0.2
Functional Feeding Groups: Percent of total			
Browser-Grazers	1.2	3.5	5.0
Burrowing Deposit Feeders	19.9	35.4	10.8
Piercers	0.0	0.0	0.0
Predators	0.5	2.9	7.9
Scavengers	1.6	3.7	5.1
Scrapers	0.6	1.7	4.6
Shredders	8.5	4.9	10.9
Surface Deposit Feeders	62.5	41.0	52.2
Suspension Feeders	0.2	1.7	2.2
Unknown	5.0	5.3	1.3

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Appendices

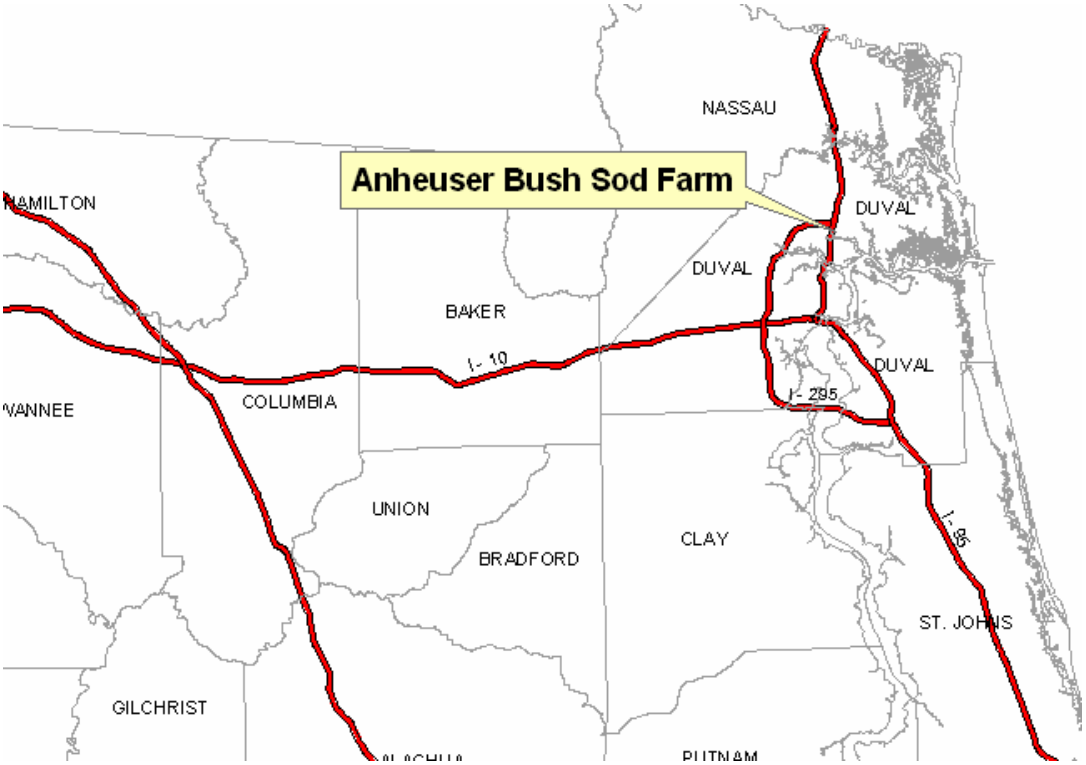
- Appendix A. Map of facility
- Appendix B. Facility summary and DMR data
- Appendix C. Explanation of measurements
- Appendix D. Chain of Custody form
- Appendix E. Chemical analyses of effluent and receiving water.
- Appendix F. Additional physical, chemical, toxicological and microbiological results
- Appendix G. Standard Reference Toxicant test data
- Appendix H. Habitat Assessment field sheets
- Appendix I1. Periphyton: Wet identification taxa list and number of individuals counted
- Appendix I2. Periphyton: Diatom identification taxa list and number of individuals counted
- Appendix J1. Ponar samples: Taxa list and number of macroinvertebrates collected
- Appendix J2. Ponar samples: Taxa list and macroinvertebrate density (average number of individuals per m^2)

Appendix A

Map of Anheuser Busch Main Street Sod Farm



Location of Anheuser Busch Sod Farm in Northeast Florida



Appendix B

Facility Summary and DMR data

Facility Introduction

TEXT:

The Anheuser Busch Main Street Sod Farm is a land application system, which receives pretreated brewery liquor as a nutrient enrichment to grow turf and forage crops on a 350-acre land application site. The liquor may be pretreated by anaerobic digestion prior to land application. A portion of the land application site is underdrained with discharge from the underdrains to the South Borrow Pit or the North Borrow Pit, which discharges to the South Barrow Pit. The South Borrow Pit also receives nanofiltration concentrate at a design flow of 1.25 MGD daily maximum. The facility has existing 2.4 MGD design daily maximum land application system (R-001) consisting of a spray irrigation field. The facility has an existing permitted discharge from the South Barrow Pit, outfall D001 to Little Cedar Creek, a Class III fresh water and ultimately to the Broward River, a Class III marine surface water. The point of discharge (outfall D001) is located approximately at latitude 30°27'10"N, longitude 81°39'00"W. The average flow from October 2005 through February 2007 for outfall D001 is 1.22 MGD. (facility summary provided by James M. Lucas, FDEP, Jacksonville)

Facility Summary

Facility Name (as it appears on permit): Anheuser Busch – Main Street Sod Farm		Former Names:
Physical Address: 11650 North Main Street	NPDES Permit No.: FL0041530 Expiration Date: July 28, 2008	Prepared By: James Lucas
County: Duval District: NED	State Permit No.: Expiration Date:	Facility Type: Land Application
Function of Facility: Land application		
Sampling Location (specify lat/longs of NPDES point): latitude 30°27'10" N, longitude 81°39'00" W		
Description of treatment process: The land application system receives untreated and / or pretreated brewery liquor as a nutrient enrichment to grow turf and forage crops on a 350-acre land application site. A portion of the liquor may be pretreated by anaerobic digestion prior to land application. A portion of the site is underdrained with discharge from the underdrains to the South Borrow Pit or the North Borrow Pit, which discharges to the South Borrow Pit. Outfall D001 is the discharge point for the South Borrow Pit.		
Receiving Waters: Little Cedar Creek and ultimately to the Broward River	Classification: Little Cedar Creek, a Class III fresh water Broward River, a Class III marine surface water.	
Temperature (C):	Design Flow: 2.40 MGD	
pH (SU):	Mean Flow: 1.22 MGD	
Conductivity (umhos/cm):	Flow During Survey:	
Dissolved Oxygen (mg/L):	Total Residual Chlorine (mg/L):	
Discharge is: Continuous X Intermittent Seasonal X Rainfall Dependent Other		
Facility Mixing Zone Details: None		
List Effluent Limits:		
Parameter and Units	Limit	Describe special permit conditions and permit modifications:
Flow (MGD)	Report Annual Average Report Daily Maximum	

BOD (mg/L)	20.0 Annual Average	
TSS (mg/L)	20.0 Annual Average	
PH (SU)	8.5 Daily Maximum 6.5 Daily Minimum	
DO (mg/L)	5.0 Daily Minimum	
TKN (mg/L)	8.0 Annual Average	
Temperature (C)	Report Daily Maximum	
TN (mg/L)	Report Annual Average Report Daily Maximum	
Total Ammonia (mg/L)	Report Daily Maximum	
Unionized Ammonia (mg/L)	Report Daily Maximum	
Total Phosphorous (mg/L)	Report Daily Maximum	
Rainfall (inches)	Report Daily Maximum	
Acute Whole Effluent Toxicity (%)	LC50>100%	
Daily Flow (MGD)	2.4 Daily Maximum	

Annual Average Hydraulics (in/wk)	1.0 Annual Average	
Annual Average Hydraulics (lb BOD/ac/day)	137.0 Annual Average	
Annual Average Solids (lb TSS/ac/day)	45.0 Annual Average	
Annual Average Nitrogen (lb TN/ac/yr)	1200.0 Annual Average	

Description of permitted outfall: 3 ft. L-H Flume

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

No permit violations have been reported in the past year.

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

The facility is currently entered into consent order number OGC #99-1041.

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

None

Additional Information:

Appendix C

Explanation of Measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (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. A list of the analytes tested for, results, data qualifiers, the minimum detection limit and the practical quantitation limit are given in Appendix D. The results from these analyses were compared with Water Quality Criteria (62-302 F.A.C.) and facility permit limits (Table 1, Appendix B). 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 toxicity bioassays were performed on the effluent sample using the water flea, *Ceriodaphnia dubia,* and the fish, *Cyprinella leedsi* following FDEP SOPs TA07_01 and TA07_02. Failure of toxicity testing may constitute a violation of 62-302.530(20), 62-302.530(61) and/or facility permit limits. Standard reference toxicant tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

Total and fecal coliform bacteria samples were not collected at this facility due to a scheduling omission.

(5) Habitat Assessment

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

(6) Algal Growth Potential (AGP)

The 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*))* or *Dunaliella tertiolecta,* depending upon the salinity of the water sample Samples were 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 and AGP above 10.0 mg dry weight/L represents a “problem” threshold for marine waters, implying nutrient enrichment. High AGP values may constitute one line of evidence for violation of 62-302.530(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of ± 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(61) F.A.C. Expected AGP cannot be calculated for marine samples incubated with *D. tertiolecta.*

(7) Algal Periphyton Assemblages

Methods: Qualitative periphyton were sampled at both control and test sites by taking subsamples of algae from natural substrates throughout the sample reach (QA Rule FS7220. Periphyton were subsampled and identified to the lowest practical level, usually species (FDEP SOPs AB03 and AB03_).

Chlorophyll *a* Content: Chlorophyll *a* content is measured in phytoplankton 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(46) F.A.C., 62-302.530(47)(a) F.A.C. and/or 62-302.530(47)(b) F.A.C..

Algal Density: Algal density is estimated as number of natural units /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(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C..

(8) Benthic Macroinvertebrate Assemblages

Methods: Benthic macroinvertebrates were collected using a petite ponar dredge following QA Rule SOP FS7530. Three replicate ponar samples were collected at each station and sieved through a 500 μm mesh. 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(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C..

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

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(10) 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(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C..

Functional Feeding Groups: Environmental degradation may differentially affect groups of invertebrates based on how the group feeds (e.g. predators, deposit feeders, etc.). In Florida, pollution may be responsible for reducing the numbers of filter feeders (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(46) F.A.C., 62-302.530(47)(a) F.A.C., 62-302.530(47)(b) F.A.C. and/or 62-302.530(61) F.A.C..

(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.

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2007-04-20-23
ARLINGTON #2

Event ID *

Requester: Thomas Kallemeyn
Field Report Prepared By: Tom Kallemeyn
Collected By: Tom Kallemeyn
Send Final Report To Lee Banks or Tom Kallemeyn
Sampling Agency: DERM NED

Customer: NE-DIST
Project ID: SMP
PMAS:

Lab ID *	Location / Field ID / Matrix / Temp (C) / pH / Latitude / Longitude	Comp / Grab / Collection (begin) Date Time Eastern Central / Collection (end) Date Time Eastern Central	Tot Res Chlorine (mg/L) / Diss Oxygen (mg/L) / Storet Station Number	Sample Depth m ft / Salinity (PPTh) / Sp Conductance (umho/cm) / NPDES Number	Comments	Bottle Group(s)**
	Anheuser Busch OLD Sod Farm Field ID: Matrix: fresh Temp (C): 23.75 pH: 7.45 Latitude: o ' " . Longitude: o ' " .	☐ Comp ☒ Grab Collection (begin) Date 4-30-07 Time 1000 Eastern Central Collection (end) Date Time Eastern Central	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 7.23 Storet Station Number:	Sample Depth: 0.2 ☑ m ☐ ft ☐ Salinity (PPTh) ☑ Sp Conductance (umho/cm): 2376 NPDES Number:		A
	Anheuser Busch OLD SOD FARM Field ID: Matrix (Include type e.g. Salt, Fresh, etc): Temp (C): 23.75 pH: 7.45 Latitude: o ' " . Longitude: o ' " .	☐ Comp ☒ Grab Collection (begin) Date 4-30-07 Time 1005 Eastern Central Collection (end) Date Time Eastern Central	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 7.23 Storet Station Number:	Sample Depth: 0.2 ☑ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm): 2376 NPDES Number:	Comments: Toxicity	A
	50 m Down Stream Anheuser Busch old POD farm Field ID: Matrix (Include type e.g. Salt, Fresh, etc): Fresh Temp (C): 22.82 pH: 7.40 Latitude: o ' " . Longitude: o ' " .	☐ Comp ☒ Grab Collection (begin) Date 4-30-07 Time 1340 Eastern Central Collection (end) Date Time Eastern Central	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 4.57 Storet Station Number:	Sample Depth: 0.2 ☑ m ☐ ft ☐ Salinity (PPTh) ☑ Sp Conductance (umho/cm): 3492 NPDES Number:	Comments: Added Down Stream	*
	50m UpStream Anheuser Busch OLD POD farm Field ID: Matrix (Include type e.g. Salt, Fresh, etc): Fresh Temp (C): 22.3 pH: 7.42 Latitude: o ' " . Longitude: o ' " .	☐ Comp ☐ Grab Collection (begin) Date 4-30-07 Time N:15 Eastern Central Collection (end) Date Time Eastern Central	Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 4.2 Storet Station Number:	Sample Depth: 0.2 ☑ m ☐ ft ☐ Salinity (PPTh) ☑ Sp Conductance (umho/cm): 2252 NPDES Number:	Comments: Added Up Stream Transmissy AB "Old" 4:32 5-1-07 J.D. Jones Burris	*

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Kallemeyn	4-30-07 1630	DH	Tom. E	5/01/07 8:55				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-04-23-12
ARLINGTON #2

Requester: Thomas Kallemeyn

Field Report Prepared By:

Customer: NE-DIST

Collected By: Tom Kallemeyn

Send Final Report To Lee Banks or Tom Kallemeyn

Project ID: SMP

Sampling Agency: DEP NED

PMAS:

Lab ID *	Location: Equipment Blank			☐ Comp ☐ Grab	Collection (begin) Date: 4/30/07 Time: 1450 Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**: B
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc): DI	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments			
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc):	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments			
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc):	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments			
Lab ID *	Location			☐ Comp ☐ Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc):	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number	
	Latitude o ' "	Longitude o ' "		Comments			

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Kallemeyn	4-30-07 1630	DHL	Tom E	05/01/07 8:55				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

30-23 **Florida Department of Environmental Protection**

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-04-[redacted]
ARLINGTON #2

Requester: Thomas Kallemeyn
Field Report Prepared By: Tom Kallemeyn
Collected By: Tom Kallemeyn
Send Final Report To Lee Banks or Tom Kallemeyn
Sampling Agency: DEP NED

Customer: NE-DIST
Project ID: SMP
PMAS:

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Cedar Creek 500m upstream Biscayne Rd	☐ Comp ☑ Grab	Date 5/1/07 Time 1300 (Eastern) Central	Date Time Eastern Central	*
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L) 3.19	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) Fresh	Temp (C) 22.59	pH 7.18	Sample Depth 0.4 ☒ m ☐ ft	4642 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)
	Latitude o ' "	Longitude o ' "	Comments	NPDES Number	

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Cedar Creek 500m upstream Biscayne	☐ Comp ☑ Grab	Date 5/1/07 Time 1305 (Eastern) Central	Date Time Eastern Central	C
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) Fresh	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
	Latitude o ' "	Longitude o ' "	Comments 3 reps with Ponar	NPDES Number	

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Little Cedar Creek 50m upstream of POD Anheuser Busch	☐ Comp ☑ Grab	Date 4/30/07 Time 1345 1340 Eastern Central	Date Time Eastern Central	D
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
	Latitude o ' "	Longitude o ' "	Comments 3 reps with Ponar	NPDES Number	

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	Little Cedar Creek 50m below POD Anheuser Busch	☐ Comp ☒ Grab	Date 4/30/07 Time 1413 1340 Eastern Central	Date Time Eastern Central	D
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
	Latitude o ' "	Longitude o ' "	Comments 3 reps with Ponar	NPDES Number	

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	OHC 5/1/07		Tom. C	05/02/07 9:20				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Appendix E

Chemical analysis of effluent and receiving water

DATE SAMPL	FIELD ID	ANALYSIS GROUP	COMPONENT	UNITS	RESULT	REMARK	MDL	PQL
4/30/2007	EFFLUENT	BNA-Water	1,2,4-Trichlorobenzene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	1,2-Dichlorobenzene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	1,3-Dichlorobenzene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	1,4-Dichlorobenzene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	2,4,6-Trichlorophenol	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	2,4-Dichlorophenol	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	2,4-Dimethylphenol	ug/L	9.6	U	9.6	38
4/30/2007	EFFLUENT	BNA-Water	2,4-Dinitrophenol	ug/L	14	U	14	58
4/30/2007	EFFLUENT	BNA-Water	2,4-Dinitrotoluene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	2,6-Dinitrotoluene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	2-Chloronaphthalene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	2-Chlorophenol	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	2-Methyl-4,6-dinitrophenol	ug/L	2.9	U	2.9	12
4/30/2007	EFFLUENT	BNA-Water	2-Nitrophenol	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	3,3'-Dichlorobenzidine	ug/L	38	UJ	38	150
4/30/2007	EFFLUENT	BNA-Water	4,4'-DDD	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	4,4'-DDE	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	4,4'-DDT	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	4-Bromophenyl phenyl ether	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	4-Chloro-3-methylphenol	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	4-Chlorophenyl phenyl ether	ug/L	1.9	U	1.9	7.7
4/30/2007	EFFLUENT	BNA-Water	4-Nitrophenol	ug/L	14	U	14	58
4/30/2007	EFFLUENT	BNA-Water	Acenaphthene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Acenaphthylene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Aldrin	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	Anthracene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Benzidine	ug/L	96	UJ	96	380
4/30/2007	EFFLUENT	BNA-Water	Benzo(a)anthracene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Benzo(a)pyrene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Benzo(b)fluoranthene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Benzo(g,h,i)perylene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Benzo(k)fluoranthene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Bis(2-chloroethoxy)methane	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Bis(2-chloroethyl)ether	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Bis(2-chloroisopropyl)ether	ug/L	2.9	U	2.9	12
4/30/2007	EFFLUENT	BNA-Water	Bis(2-ethylhexyl)phthalate	ug/L	14	U	14	58
4/30/2007	EFFLUENT	BNA-Water	Butyl benzyl phthalate	ug/L	4.8	U	4.8	19
4/30/2007	EFFLUENT	BNA-Water	Chrysene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Di-n-butyl phthalate	ug/L	4.8	U	4.8	19
4/30/2007	EFFLUENT	BNA-Water	Di-n-octyl phthalate	ug/L	0.96	UJ	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Dibenzo(a,h)anthracene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Dieldrin	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	Diethyl phthalate	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Dimethyl phthalate	ug/L	48	UJ	48	190
4/30/2007	EFFLUENT	BNA-Water	Endosulfan I	ug/L	3.8	U	3.8	15
4/30/2007	EFFLUENT	BNA-Water	Endosulfan II	ug/L	3.8	U	3.8	15
4/30/2007	EFFLUENT	BNA-Water	Endosulfan sulfate	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	Endrin	ug/L	1.4	UJ	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	Endrin aldehyde	ug/L	3.8	U	3.8	15
4/30/2007	EFFLUENT	BNA-Water	Fluoranthene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Fluorene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Heptachlor	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	Heptachlor epoxide	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	Hexachlorobenzene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Hexachlorobutadiene	ug/L	2.9	U	2.9	12
4/30/2007	EFFLUENT	BNA-Water	Hexachlorocyclopentadiene	ug/L	2.9	U	2.9	12
4/30/2007	EFFLUENT	BNA-Water	Hexachloroethane	ug/L	2.9	U	2.9	12
4/30/2007	EFFLUENT	BNA-Water	Indeno(1,2,3-cd)pyrene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Isophorone	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	N-Nitrosodi-n-propylamine	ug/L	1.9	U	1.9	7.7
4/30/2007	EFFLUENT	BNA-Water	N-Nitrosodimethylamine	ug/L	1.9	U	1.9	7.7
4/30/2007	EFFLUENT	BNA-Water	N-Nitrosodiphenylamine/ Diphenylamine	ug/L	2.9	UJ	2.9	12
4/30/2007	EFFLUENT	BNA-Water	Naphthalene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Nitrobenzene	ug/L	1.9	U	1.9	7.7
4/30/2007	EFFLUENT	BNA-Water	Pentachlorophenol	ug/L	2.9	U	2.9	12
4/30/2007	EFFLUENT	BNA-Water	Phenanthrene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Phenol	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	Pyrene	ug/L	0.96	U	0.96	3.8
4/30/2007	EFFLUENT	BNA-Water	alpha-BHC	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	beta-BHC	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	delta-BHC	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	BNA-Water	gamma-BHC	ug/L	1.4	U	1.4	5.8
4/30/2007	EFFLUENT	Bio-AGP/LimNut	Algal Growth Potential	mg DryWt/L	9.65		0.3	0.9
4/30/2007	EFFLUENT	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	mg/L	4	A	0.2	2

Appendix E (Continued)

DATE SAMPL	FIELD ID	ANALYSIS GROUP	COMPONENT	UNITS	RESULT	REMARK	MDL	PQL
4/30/2007	EFFLUENT	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	ug/L	46.9	A	1.4	4.3
4/30/2007	EFFLUENT	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	ug/L	2.5	U	2.5	7.5
4/30/2007	EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	LC50	100	L		
4/30/2007	EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	LC50	100	L		
4/30/2007	EFFLUENT	GC-Water	Alachlor	ug/L	0.58	U	0.58	2.3
4/30/2007	EFFLUENT	GC-Water	Ametryn	ug/L	0.049	U	0.049	0.2
4/30/2007	EFFLUENT	GC-Water	Atrazine	ug/L	0.049	U	0.049	0.2
4/30/2007	EFFLUENT	GC-Water	Azinphos Methyl	ug/L	0.19	U	0.19	0.76
4/30/2007	EFFLUENT	GC-Water	Bromacil	ug/L	0.19	U	0.19	0.76
4/30/2007	EFFLUENT	GC-Water	Butylate	ug/L	0.19	U	0.19	0.76
4/30/2007	EFFLUENT	GC-Water	Chlorpyrifos Ethyl	ug/L	0.049	U	0.049	0.2
4/30/2007	EFFLUENT	GC-Water	Chlorpyrifos Methyl	ug/L	0.097	U	0.097	0.39
4/30/2007	EFFLUENT	GC-Water	Diazinon	ug/L	0.049	U	0.049	0.2
4/30/2007	EFFLUENT	GC-Water	Ethion	ug/L	0.049	U	0.049	0.2
4/30/2007	EFFLUENT	GC-Water	Ethoprop	ug/L	0.097	U	0.097	0.39
4/30/2007	EFFLUENT	GC-Water	Fenamiphos	ug/L	0.19	U	0.19	0.76
4/30/2007	EFFLUENT	GC-Water	Fonofos	ug/L	0.097	U	0.097	0.39
4/30/2007	EFFLUENT	GC-Water	Hexazinone	ug/L	0.097	U	0.097	0.39
4/30/2007	EFFLUENT	GC-Water	Malathion	ug/L	0.15	U	0.15	0.6
4/30/2007	EFFLUENT	GC-Water	Metalaxyl	ug/L	0.24	U	0.24	0.96
4/30/2007	EFFLUENT	GC-Water	Metolachlor	ug/L	0.49	U	0.49	2
4/30/2007	EFFLUENT	GC-Water	Metribuzin	ug/L	0.097	U	0.097	0.39
4/30/2007	EFFLUENT	GC-Water	Mevinphos	ug/L	0.19	U	0.19	0.76
4/30/2007	EFFLUENT	GC-Water	Naled	ug/L	0.78	U	0.78	3.1
4/30/2007	EFFLUENT	GC-Water	Norflurazon	ug/L	0.15	U	0.15	0.6
4/30/2007	EFFLUENT	GC-Water	Parathion Ethyl	ug/L	0.15	U	0.15	0.6
4/30/2007	EFFLUENT	GC-Water	Parathion Methyl	ug/L	0.097	U	0.097	0.39
4/30/2007	EFFLUENT	GC-Water	Phorate	ug/L	0.049	U	0.049	0.2
4/30/2007	EFFLUENT	GC-Water	Prometryn	ug/L	0.15	U	0.15	0.6
4/30/2007	EFFLUENT	GC-Water	Simazine	ug/L	0.049	U	0.049	0.2
4/30/2007	EFFLUENT	Metals-Water	Aluminum	ug/L	60	I	20	80
4/30/2007	EFFLUENT	Metals-Water	Arsenic	ug/L	1.5	I	0.5	2
4/30/2007	EFFLUENT	Metals-Water	Cadmium	ug/L	0.05	U	0.05	0.2
4/30/2007	EFFLUENT	Metals-Water	Calcium	mg/L	311		0.04	0.16
4/30/2007	EFFLUENT	Metals-Water	Chromium	ug/L	1	U	1	4
4/30/2007	EFFLUENT	Metals-Water	Copper	ug/L	0.32	I	0.2	0.8
4/30/2007	EFFLUENT	Metals-Water	Iron	ug/L	63		5	20
4/30/2007	EFFLUENT	Metals-Water	Lead	ug/L	0.2	U	0.2	0.8
4/30/2007	EFFLUENT	Metals-Water	Magnesium	mg/L	149		0.01	0.04
4/30/2007	EFFLUENT	Metals-Water	Nickel	ug/L	1.33		0.25	1
4/30/2007	EFFLUENT	Metals-Water	Selenium	ug/L	0.5	U	0.5	2
4/30/2007	EFFLUENT	Metals-Water	Silver	ug/L	0.025	U	0.025	0.1
4/30/2007	EFFLUENT	Metals-Water	Zinc	ug/L	5	U	5	20
4/30/2007	EFFLUENT	Nutrients-Liquid	Ammonia-N	mg N/L	0.013	I	0.01	0.02
4/30/2007	EFFLUENT	Nutrients-Liquid	Kjeldahl Nitrogen	mg N/L	1.7		0.08	0.2
4/30/2007	EFFLUENT	Nutrients-Liquid	NO2NO3-N	mg N/L	0.006	I	0.004	0.01
4/30/2007	EFFLUENT	Nutrients-Liquid	O-Phosphate-P	mg P/L	0.077		0.004	0.01
4/30/2007	EFFLUENT	Nutrients-Liquid	TSS	mg/L	12	I	4	16
4/30/2007	EFFLUENT	Nutrients-Liquid	Total-P	mg P/L	0.23		0.02	0.06
4/30/2007	EFFLUENT	Nutrients-Liquid	Turbidity	NTU	5.8		0.05	0.05
5/1/2007	CONTROL SITE	Bio-AGP/LimNut	Algal Growth Potential	mg DryWt/L	4.96		3	3
5/1/2007	CONTROL SITE	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	mg/L	1	AI	0.2	2
5/1/2007	CONTROL SITE	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	ug/L	0.85	U	0.85	2.6
5/1/2007	CONTROL SITE	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	ug/L	1.5	U	1.5	4.5
5/1/2007	CONTROL SITE (REP 1)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	24			
5/1/2007	CONTROL SITE (REP 2)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	18			
5/1/2007	CONTROL SITE (REP 3)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	14			
5/1/2007	CONTROL SITE	Bio-Peri/Phyto	Periphyton-Qualitative-# Diatom Taxa	# Taxa	32			
5/1/2007	CONTROL SITE	Bio-Peri/Phyto	Periphyton-Qualitative-# Wet Taxa	#Taxa	10			
5/1/2007	CONTROL SITE	Metals-Water	Aluminum	ug/L	58		5	20
5/1/2007	CONTROL SITE	Metals-Water	Arsenic	ug/L	0.8	I	0.5	2
5/1/2007	CONTROL SITE	Metals-Water	Cadmium	ug/L	0.021	I	0.02	0.08
5/1/2007	CONTROL SITE	Metals-Water	Calcium	mg/L	89.3		0.02	0.08
5/1/2007	CONTROL SITE	Metals-Water	Chromium	ug/L	1	U	1	4
5/1/2007	CONTROL SITE	Metals-Water	Copper	ug/L	0.58	I	0.25	1
5/1/2007	CONTROL SITE	Metals-Water	Iron	ug/L	329		5	20
5/1/2007	CONTROL SITE	Metals-Water	Lead	ug/L	0.31	I	0.2	0.8
5/1/2007	CONTROL SITE	Metals-Water	Magnesium	mg/L	94.9		0.005	0.02
5/1/2007	CONTROL SITE	Metals-Water	Nickel	ug/L	0.44	I	0.25	1
5/1/2007	CONTROL SITE	Metals-Water	Selenium	ug/L	0.5	U	0.5	2
5/1/2007	CONTROL SITE	Metals-Water	Silver	ug/L	0.025	U	0.025	0.1
5/1/2007	CONTROL SITE	Metals-Water	Zinc	ug/L	7.5	I	5	20
5/1/2007	CONTROL SITE	Nutrients-Liquid	Ammonia-N	mg N/L	0.082		0.01	0.02
5/1/2007	CONTROL SITE	Nutrients-Liquid	Kjeldahl Nitrogen	mg N/L	0.82		0.08	0.2

Appendix E (Continued)

DATE SAMPLI	FIELD ID	ANALYSIS GROUP	COMPONENT	UNITS	RESULT	REMARK	MDL	PQL
5/1/2007	CONTROL SITE	Nutrients-Liquid	NO2NO3-N	mg N/L	0.063		0.004	0.01
5/1/2007	CONTROL SITE	Nutrients-Liquid	O-Phosphate-P	mg P/L	0.12		0.008	0.02
5/1/2007	CONTROL SITE	Nutrients-Liquid	TSS	mg/L	4	I	4	16
5/1/2007	CONTROL SITE	Nutrients-Liquid	Total-P	mg P/L	0.17		0.02	0.06
5/1/2007	CONTROL SITE	Nutrients-Liquid	Turbidity	NTU	3		0.05	0.05
4/30/2007	TEST SITE 1	Bio-AGP/LimNut	Algal Growth Potential	mg DryWt/L	6.19		3	3
4/30/2007	TEST SITE 1	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	mg/L	2.2		0.2	2
4/30/2007	TEST SITE 1	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	ug/L	5.8		0.85	2.6
4/30/2007	TEST SITE 1	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	ug/L	1.5	U	1.5	4.5
4/30/2007	TEST SITE 1	Bio-Peri/Phyto	Periphyton-Qualitative-# Diatom Taxa	# Taxa	41			
4/30/2007	TEST SITE 1	Bio-Peri/Phyto	Periphyton-Qualitative-# Wet Taxa	#Taxa	5			
4/30/2007	TEST SITE 1 (REP 1)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	19			
4/30/2007	TEST SITE 1 (REP 2)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	13			
4/30/2007	TEST SITE 1 (REP 3)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	10			
4/30/2007	TEST SITE 1	Metals-Water	Aluminum	ug/L	389		20	80
4/30/2007	TEST SITE 1	Metals-Water	Arsenic	ug/L	1.2	I	0.5	2
4/30/2007	TEST SITE 1	Metals-Water	Cadmium	ug/L	0.05	U	0.05	0.2
4/30/2007	TEST SITE 1	Metals-Water	Calcium	mg/L	109		0.02	0.08
4/30/2007	TEST SITE 1	Metals-Water	Chromium	ug/L	1	U	1	4
4/30/2007	TEST SITE 1	Metals-Water	Copper	ug/L	0.8		0.2	0.8
4/30/2007	TEST SITE 1	Metals-Water	Iron	ug/L	747		5	20
4/30/2007	TEST SITE 1	Metals-Water	Lead	ug/L	0.65	I	0.2	0.8
4/30/2007	TEST SITE 1	Metals-Water	Magnesium	mg/L	65.9		0.005	0.02
4/30/2007	TEST SITE 1	Metals-Water	Nickel	ug/L	0.67	I	0.25	1
4/30/2007	TEST SITE 1	Metals-Water	Selenium	ug/L	0.5	U	0.5	2
4/30/2007	TEST SITE 1	Metals-Water	Silver	ug/L	0.025	U	0.025	0.1
4/30/2007	TEST SITE 1	Metals-Water	Zinc	ug/L	7	I	5	20
4/30/2007	TEST SITE 1	Nutrients-Liquid	Ammonia-N	mg N/L	0.14		0.01	0.02
4/30/2007	TEST SITE 1	Nutrients-Liquid	Kjeldahl Nitrogen	mg N/L	1.5		0.08	0.2
4/30/2007	TEST SITE 1	Nutrients-Liquid	NO2NO3-N	mg N/L	0.18		0.004	0.01
4/30/2007	TEST SITE 1	Nutrients-Liquid	O-Phosphate-P	mg P/L	0.19		0.008	0.02
4/30/2007	TEST SITE 1	Nutrients-Liquid	TSS	mg/L	12	I	4	16
4/30/2007	TEST SITE 1	Nutrients-Liquid	Total-P	mg P/L	0.33		0.02	0.06
4/30/2007	TEST SITE 1	Nutrients-Liquid	Turbidity	NTU	5.9		0.05	0.05
4/30/2007	TEST SITE 2	Bio-AGP/LimNut	Algal Growth Potential	mg DryWt/L	7.47		3	3
4/30/2007	TEST SITE 2	Bio-BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	mg/L	2.3		0.2	2
4/30/2007	TEST SITE 2	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	ug/L	7.5		1.2	3.7
4/30/2007	TEST SITE 2	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	ug/L	2.1	U	2.1	6.4
4/30/2007	TEST SITE 2	Bio-Peri/Phyto	Periphyton-Qualitative-# Diatom Taxa	# Taxa	51			
4/30/2007	TEST SITE 2	Bio-Peri/Phyto	Periphyton-Qualitative-# Wet Taxa	#Taxa	4			
4/30/2007	TEST SITE 2 (REP 1)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	16			
4/30/2007	TEST SITE 2 (REP 2)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	12			
4/30/2007	TEST SITE 2 (REP 3)	Bio-Invertebrates	Macroinvert-Marine-Quan-NatSubstr-# Taxa	# Taxa	18			
4/30/2007	TEST SITE 2	Metals-Water	Aluminum	ug/L	586		20	80
4/30/2007	TEST SITE 2	Metals-Water	Arsenic	ug/L	1.3	I	0.5	2
4/30/2007	TEST SITE 2	Metals-Water	Cadmium	ug/L	0.05	U	0.05	0.2
4/30/2007	TEST SITE 2	Metals-Water	Calcium	mg/L	135		0.02	0.08
4/30/2007	TEST SITE 2	Metals-Water	Chromium	ug/L	1	I	1	4
4/30/2007	TEST SITE 2	Metals-Water	Copper	ug/L	0.92		0.2	0.8
4/30/2007	TEST SITE 2	Metals-Water	Iron	ug/L	836		5	20
4/30/2007	TEST SITE 2	Metals-Water	Lead	ug/L	0.95		0.2	0.8
4/30/2007	TEST SITE 2	Metals-Water	Magnesium	mg/L	99.4		0.005	0.02
4/30/2007	TEST SITE 2	Metals-Water	Nickel	ug/L	0.95	I	0.25	1
4/30/2007	TEST SITE 2	Metals-Water	Selenium	ug/L	0.5	U	0.5	2
4/30/2007	TEST SITE 2	Metals-Water	Silver	ug/L	0.025	U	0.025	0.1
4/30/2007	TEST SITE 2	Metals-Water	Zinc	ug/L	8	I	5	20
4/30/2007	TEST SITE 2	Nutrients-Liquid	Ammonia-N	mg N/L	0.12		0.01	0.02
4/30/2007	TEST SITE 2	Nutrients-Liquid	Kjeldahl Nitrogen	mg N/L	1.4		0.08	0.2
4/30/2007	TEST SITE 2	Nutrients-Liquid	NO2NO3-N	mg N/L	0.18		0.004	0.01
4/30/2007	TEST SITE 2	Nutrients-Liquid	O-Phosphate-P	mg P/L	0.18		0.008	0.02
4/30/2007	TEST SITE 2	Nutrients-Liquid	TSS	mg/L	18		4	16
4/30/2007	TEST SITE 2	Nutrients-Liquid	Total-P	mg P/L	0.34		0.02	0.06
4/30/2007	TEST SITE 2	Nutrients-Liquid	Turbidity	NTU	6.8		0.05	0.05
4/30/2007	EQUIPMENT BLANK	Metals-Water	Aluminum	ug/L	20	U	20	80
4/30/2007	EQUIPMENT BLANK	Metals-Water	Arsenic	ug/L	0.5	U	0.5	2
4/30/2007	EQUIPMENT BLANK	Metals-Water	Cadmium	ug/L	0.05	U	0.05	0.2
4/30/2007	EQUIPMENT BLANK	Metals-Water	Calcium	mg/L	0.02	U	0.02	0.08
4/30/2007	EQUIPMENT BLANK	Metals-Water	Chromium	ug/L	1	U	1	4
4/30/2007	EQUIPMENT BLANK	Metals-Water	Copper	ug/L	0.2	U	0.2	0.8
4/30/2007	EQUIPMENT BLANK	Metals-Water	Iron	ug/L	5	U	5	20
4/30/2007	EQUIPMENT BLANK	Metals-Water	Lead	ug/L	0.2	U	0.2	0.8
4/30/2007	EQUIPMENT BLANK	Metals-Water	Magnesium	mg/L	0.0058	I	0.005	0.02
4/30/2007	EQUIPMENT BLANK	Metals-Water	Nickel	ug/L	0.25	U	0.25	1
4/30/2007	EQUIPMENT BLANK	Metals-Water	Selenium	ug/L	0.5	U	0.5	2

Appendix E (Continued)

DATE SAMPL	FIELD ID	ANALYSIS GROUP	COMPONENT	UNITS	RESULT	REMARK	MDL	PQL
4/30/2007	EQUIPMENT BLANK	Metals-Water	Silver	ug/L	0.025	U	0.025	0.1
4/30/2007	EQUIPMENT BLANK	Metals-Water	Zinc	ug/L	5	U	5	20
4/30/2007	EQUIPMENT BLANK	Nutrients-Liquid	Ammonia-N	mg N/L	0.01	U	0.01	0.02
4/30/2007	EQUIPMENT BLANK	Nutrients-Liquid	Kjeldahl Nitrogen	mg N/L	0.08	U	0.08	0.2
4/30/2007	EQUIPMENT BLANK	Nutrients-Liquid	NO2NO3-N	mg N/L	0.006	I	0.004	0.01
4/30/2007	EQUIPMENT BLANK	Nutrients-Liquid	O-Phosphate-P	mg P/L	0.004	U	0.004	0.01
4/30/2007	EQUIPMENT BLANK	Nutrients-Liquid	TSS	mg/L	4	U	4	16
4/30/2007	EQUIPMENT BLANK	Nutrients-Liquid	Total-P	mg P/L	0.02	U	0.02	0.06
4/30/2007	EQUIPMENT BLANK	Nutrients-Liquid	Turbidity	NTU	0.05		0.05	0.05

FDEP Biology Section - Acute Screen Bioassay Bench Sheets

Facility: Anheuser Busch- Main Street Sod Farm (ou3)

Address: 11650 North Main Street

City: Jacksonville County: Duval

Contact/District: Tom Kallemeyn / Northeast

NPDES Permit #: FL0041530

LIMS Job #: TLH-20070505-01-16-01 LIMS Sample #: 1005570

Lims Data Entry: 5/7/07 MF Data Entry Verification: 5/8/07

Sample Collection: Date: 4/30/07 Time: 1000

Hold Time Start: Date: 4/30/07 Time: 1000

Comments:

Instructions (for below): Circle appropriate wording. If yes is circled, complete blanks.

Test Type: Screen

Static / (Static Renewal) / Flow-through

Test Duration: 48 (96) Hours.

Light Intensity : 50 - 100 ft. candles.

Photoperiod : 16 hours light 8 hours dark.

Test 1 validation: **Test 1:** SOP TA 07_01

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Test 2 validation: **Test 2:** SOP TA 07_02

Control survival ≥90%: (Yes) No

Temperature Range ≤3°C: (Yes) No

Initial sample handling:

PH adjustment : yes (no) Initial pH: ____ NaOH N HCl N ____ Drops mL Final pH: ____

Aeration : (yes) no Initial DO: 10.5 mg/L Final DO: 8.7 mg/L Duration: 15 minutes Rate: ~100 bubbles/min

Salinity adjusted (Test 1): yes (no) Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine

Salinity adjusted (Test 2): yes (no) Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine

Dechlorination: yes (no) ____mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: ____

Temperature Range °C

Incubator # 2 Range 24.0-26.4

Room B246: 25.1 - 26.2

Waterbath: n/a

Sample Validation:

Temperature: Shipped ≤6°C (Yes) No Hand Delivered: Cooling (received °C < collected °C) Yes No

Holding Time: ≤36 Hours (Yes) No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Investigators' Signatures

James Parish

Paula P. Michaelis

Bruce Neelon

Marshall Faircloth

Nicole Williams

REVIEWER

Water Quality Parameters	20% DMW	Moderately Hard Water/ (Well Water)	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A		NDT Measured		Tom Kallemeyn	BA
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03				<0.03	HACH	BA	BA
Alkalinity (mg/L as $CaCO_3$):	89	145				~~<0.03~~ 142	HACH	BA	BA
Hardness (mg/L as $CaCO_3$):	95	169				647	HACH	BA	BA
Total Ammonia (mg/L as N):	<0.017	<0.017				<0.017	DENVER	BA	BA
Salinity (ppth):	<1	<1				~1.3	YSI / Mettler	SD	BA

V 1.4 9/12/05

Appendix F (Continued)

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 1005570 Test #: 1/2 Test Started: Date 5/1/07 Time: 13:15
Organism: C.dubia SOP #: TA 07_01 Test Ended: Date 5-5-07 Time: 1030
Organism Batch: 1-7-07 Diluent/ Batch: DMW / 4-30-07
Organism Age: < 24 Hr. Food: YCT P. subcapitata Artemia
Chamber Size: 30 mL Batch: 1-7-07 (2-7-07) —
Test Volume: 20 mL Feeding: (Prior to test) (Prior to renewal), Daily

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
ctrl	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5	5	5	5	5	5
	D	D	5	5	4 1D	4	4	4
100%	A	A	5	5	5	5	5	5
	B	B	5	5	5	5	5	5
	C	C	5 10	5	5	5	5	5
	D	D	5	5	5	5	5	5
Organisms loaded by: JK	Checked by:		[redacted]	JD	BA	BA	BA	BA

Loading Verified by: JD

Comments:

m = missing d = dead BR = before renewal AR = after renewal

Test Results:

% mortality in 100% sample: Ø

LC_{50}: > 100% If Calculated: 95% CI________ Method:________

Screening Tests:

Report LC50 as >100%, =100%, or <100%.

Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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Appendix F (Continued

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 1005570 **Test #:** 2/2 **Test Started:** Date 5/1/07 Time: 12:00
Organism: C. dubia **SOP #:** TA 07_02 **Test Ended:** Date 5.5.07 Time: 1000
Organism Batch: 5-1-07 **Diluent/ Batch:** Well / 5-1-07
Organism Age: 13 days **Food:** YCT *P. subcapitata* *Artemia* (Lot # ESL-536-90)
Chamber Size: 1000 mL **Batch:** — — 59-07 / 4-07
Test Volume: 500 mL **Feeding:** (Prior to test) (Prior to renewal) - Daily

Concentration	Replicate	Chamber #	0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
ctrl	A	C9	5	5	5	5	5	5
	B	C10	5	5	5	5	5	5
	C	C11	5	5	5	5	5	5
	D	C12	5	5	5	5	5	5
100%	A	C13	5	5	5	5	5	5
	B	C14	5	5	5	5	5	5
	C	C15	5	5	5	5	5	5
	D	C16	5	5	5	5	5	5
Organisms loaded by: JD		Checked by:	[redacted]	JD	JD	JD	JD	BA

Loading Verified by: PRV

Comments:

m = missing d = dead BR = before renewal AR = after renewal

Test Results:
% mortality in 100% sample: Ø
LC_{50}: >100% If Calculated: 95% CI______ Method:______

Screening Tests:
Report LC50 as >100%, =100%, or <100%.
Substitue highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration).

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FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 1005570 Test #: 1 of 2

TEST SOP #: TA07_01 Test Species: (Ceriodaphnia dubia) Cyprinella leedsi Pimephales promelas Americamysis bahia Menidia beryllina Other:_____

Concentration Ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A		M	M		M
pH (S.U.)	BA 8.2		8.1	8.2		8.0
Temperature °C	25.2		24.0	24.5		24.3
Dissolved Oxygen mg/L	7.7		7.3	7.2		7.4
Conductivity (µmhos) mmhos	175		230	175		195
(initials) Measured by:	BA		BA	BA		BA
(initials) Recorded by:	BA		BA	BA		BA

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A		M	M		M
pH (S.U.)	7.5		8.2	7.2		8.1
Temperature °C	25.6		24.7	25.1		24.2
Dissolved Oxygen mg/L	7.7		7.6	7.5		7.6
Conductivity µmhos (mmhos)	2.34		2.63	2.38		2.56
(initials) Measured by:	BA		BA	BA		BA
(initials) Recorded by:	BA		BA	BA		BA

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

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V 2.0 2/24/04

Page

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 1005570 **Test #:** 2 of 2

TEST SOP #: TA07_02 **Test Species:** *Ceriodaphnia dubia* (*Cyprinella leedsi*) *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration ctrl	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	7.9	8.2	8.2	8.0	7.9	8.1
Temperature °C	24.6	24.5	25.0	24.2	24.8	24.0
Dissolved Oxygen mg/L	8.4	7.1	6.9	7.6	6.2	5.9
Conductivity (µmhos) mmhos	270	275	271	268	268	281
(initials) Measured by:	JD	~~PDV~~	JD	JD	BA	BA
(initials) Recorded by:	JD	~~PDV~~	JD	JD	BA	BA

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C	C	D	A
pH (S.U.)	7.5	7.9	8.1	7.3	7.7	7.9
Temperature °C	25.8	24.5	24.9	25.1	24.7	24.1
Dissolved Oxygen mg/L	8.4	7.2	7.1	8.3	6.6	6.4
Conductivity µmhos (mmhos)	2.35	2.30	2.35	2.38	2.33	2.44
(initials) Measured by:	JD	~~PDV~~	JD	JD	BA	BA
(initials) Recorded by:	JD	~~PDV~~	JD	JD	BA	BA

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Concentration	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate						
pH (S.U.)						
Temperature °C						
Dissolved Oxygen mg/L						
Conductivity µmhos mmhos						
(initials) Measured by:						
(initials) Recorded by:						

Comments:

Appendix G

Standard Reference Toxicant data

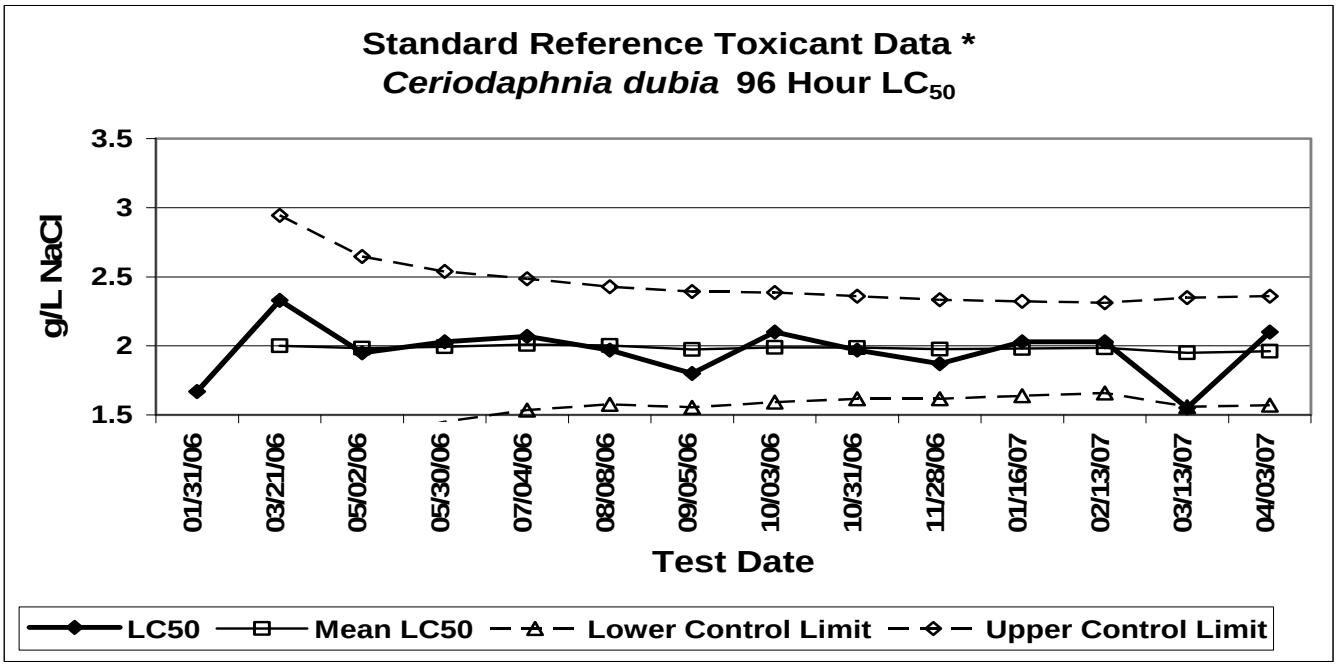
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/31/06	1.67				
03/21/06	2.33	2.00	0.47	1.07	2.94
05/02/06	1.95	1.98	0.33	1.32	2.65
05/30/06	2.03	2.00	0.27	1.45	2.54
07/04/06	2.07	2.01	0.24	1.54	2.48
08/08/06	1.97	2.00	0.21	1.58	2.43
09/05/06	1.80	1.97	0.21	1.56	2.39
10/03/06	2.10	1.99	0.20	1.59	2.39
10/31/06	1.97	1.99	0.19	1.62	2.36
11/28/06	1.87	1.98	0.18	1.62	2.33
01/16/07	2.03	1.98	0.17	1.64	2.32
02/13/07	2.03	1.99	0.16	1.66	2.31
03/13/07	1.55	1.95	0.20	1.56	2.35
04/03/07	2.10	1.96	0.19	1.57	2.36

Lower Control Limit = mean - 2 * Std Dev
Upper Control Limit = mean + 2 * Std Dev

CV = 9.69
EPA reference 75th quartile CV = 29%



* Fewer than 20 data points due to recent initiation of 96 hour SRT testing.

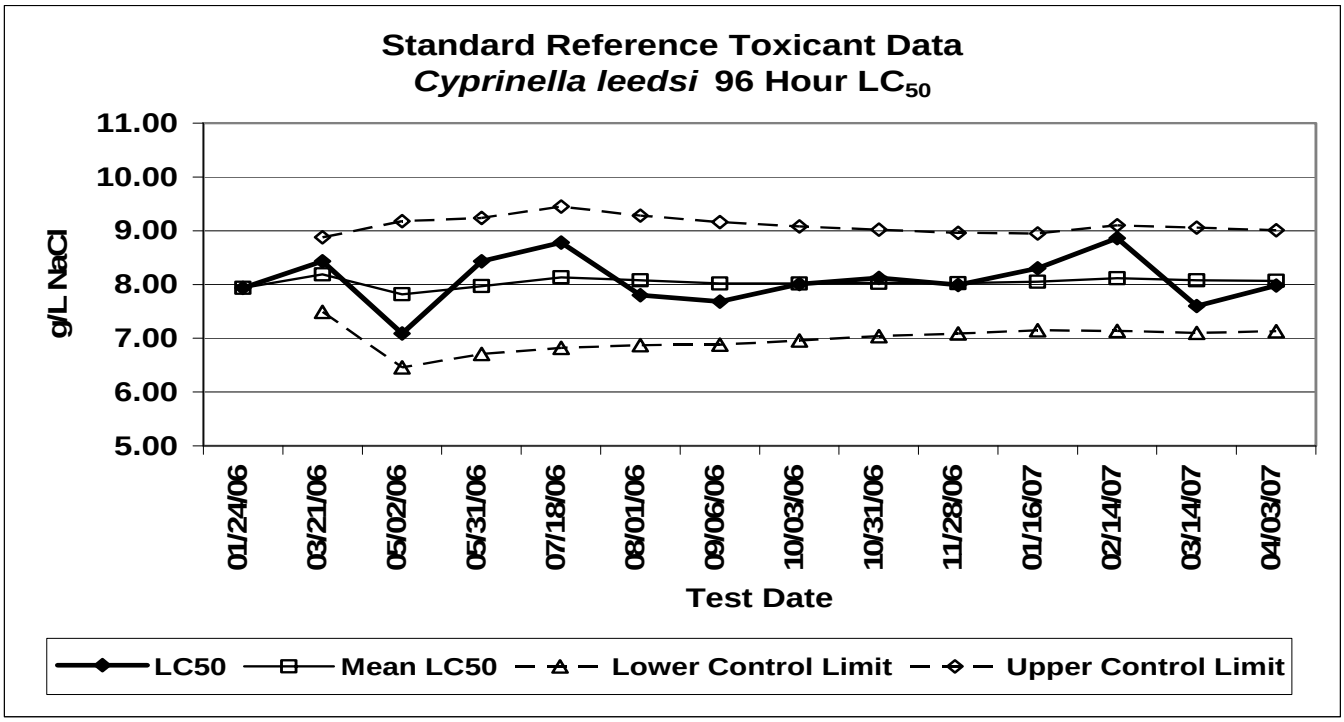
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
01/24/06	7.94	7.94			
03/21/06	8.43	8.19	0.35	7.49	8.88
05/02/06	7.09	7.82	0.68	6.46	9.18
05/31/06	8.43	7.97	0.63	6.71	9.24
07/18/06	8.78	8.13	0.66	6.82	9.45
08/01/06	7.80	8.08	0.60	6.87	9.28
09/06/06	7.68	8.02	0.57	6.88	9.16
10/03/06	8.01	8.02	0.53	6.96	9.08
10/31/06	8.12	8.03	0.49	7.04	9.02
11/28/06	7.99	8.03	0.49	7.09	8.96
01/16/07	8.30	8.05	0.45	7.15	8.95
02/14/07	8.86	8.12	0.49	7.14	9.10
03/14/07	7.60	8.08	0.49	7.10	9.06
04/03/07	7.98	8.07	0.47	7.13	9.01

Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

CV = 5.82
EPA reference 75th quartile CV = 19%



* Fewer than 20 data points due to recent initiation of 96 hour SRT testing.

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* (Method 2007.0) *Menidia beryllina* (Method 2006.0) *Hyalella azteca* (Method 100.1 EPA-600-R-99-064)
Ceriodaphnia dubia (Method 2002.0) *Cyprinella leedsi* (Method 2000.0) *Pimephales promelas* (Method 2000.0) *Other:* _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (96 hour renewal)
Test Page 1 of 2

Diluent/ Batch #: DMW / 4-2-07
Toxicant/ Batch#: NaCl 4-3-07

Test Beginning: Date: 4-3-07 Time: 11:00
Test Ending: Date: 4-7-07 Time: 9:00

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	78	Hach	BA
Hardness (mg.L as $CaCO_3$):	88	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 13-97 / <24hrs
Feeding: (Prior to test) (Prior to renewal) / Daily
Food: YCT *P.subcapitata* Artemia: Lot # _____
Food Batch: 1-1-07 02-9-07 0hr — 24hr — 48hr — 72hr —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr (48 hr)	Number Live 24 hr (72 hr)	Number Live 48 hr (96 hr)	pH (SU) 0 hr (48 hr)	pH (SU) 24 hr (72 hr)	pH (SU) 48 hr (96 hr)	Temperature (°C) 0 hr (48 hr)	Temperature (°C) 24 hr (72 hr)	Temperature (°C) 48 hr (96 hr)	D.O. (mg/L) 0 hr (48 hr)	D.O. (mg/L) 24 hr (72 hr)	D.O. (mg/L) 48 hr (96 hr)	Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr (48 hr)	Uncorrected Conductivity 24 hr (72 hr)	Uncorrected Conductivity 48 hr (96 hr)
Control	A	A	5	5	5	7.9		7.8	25.2		24.0	7.9		7.6	174		0.210
	B	B	5	5	5										0.174 BA		
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.0		7.8	25.3		24.0	7.6		7.6	2.96		3.13
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	5	5	5	8.1		7.8	25.3		24.0	7.5		7.5	3.84		4.14
	B	B	5	5	5												
	C	C	5	5	4 1D												
	D	D	5	5	5												
2.5	A	A	5	5	1 4D	8.1		7.8	25.2		24.0	7.6		7.4	4.72		5.1
	B	B	5	5	3 2D												
	C	C	5	5	2 3D												
	D	D	5	5	1 4D												
3.0	A	A	5	4 1D	0 1D	8.1		7.8	25.1		24.0	7.6		7.4	5.61		6.08
	B	B	5	5	0 5D												
	C	C	5	5	0 5D												
	D	D	5	4 1D	0 4D												
4.0	A	A	5	0 5D	-	8.1	7.9	-	25.0	24.5	-	7.7	6.4	-	7.5	7.9	-
	B	B	3	0 5D	-												
	C	C	5	0 5D	-												
	D	D	5	0 5D	-												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA
Recorded by:			BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA	BA

Investigators' Signatures
Brad Acker
James Daniel
Patsy Vichaikul
Marshall Faircloth

Nigel Wollenberg
REVIEWER

Concentrations prepared by: BA
Loading verified by: PV
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.7 max. 26.3 mean 26.0
Incubator # ___ min. _____ max. _____ mean _____
Room B246 min. 24.9 max. 26.3 mean 25.6

Comments:

Statistics: Method: Spearman-Karber
48 hr 96 hour LC_{50}: 2.37
95% Confidence Interval: lower 2.25 upper 2.49

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revised 08/24/06 SP

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-[illegible]

Test Type: 48 hour non-renewal / 96 hour renewal

Test Page 2 of 2

Diluent/ Batch #: DMW / 4-2-07
Toxicant/ Batch#: NaCl / 4-3-07

Test Beginning: Date: 4-3-07 Time: 1400
Test Ending: Date: 4-7-07 Time: 09:00

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	78	Hach	~~BA~~
Hardness (mg.L as $CaCO_3$):	88	Hach	~~BA~~
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	21	Mettler	BA

Organism Batch #/ Age: 13-07 / <24hrs
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT *P.subcapitata* Artemia: Lot #_____
Food Batch: 1-1-07 02-07-07 0hr 24hr 48hr 72hr
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc µg/L 24hr	Rep.	Chamber #	Number Live 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	pH (SU) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Temperature (°C) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	D.O. (mg/L) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr	Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr / 48 hr	24 hr / 72 hr	48 hr / 96 hr
Control	A	A	5	5	5	8.0		8.2	24.0		24.0	7.3		7.9	0.173		0.195
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.1		8.1	24.0		24.0	7.5		7.8	2.96		3.21
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	5	5	5	8.1		8.1	24.0		24.0	7.4		7.8	3.83		4.24
	B	B	5	4ID	4												
	C	C	4	2ID	2												
	D	D	5	5	4ID												
2.5	A	A	1	0ID	-	8.1		8.1	24.0		24.0	7.4		7.1	4.61		5.29
	B	B	3	1ID	0ID												
	C	C	2	1ID	0ID												
	D	D	1	1	0ID												
3.0	A	A	-	-	-	-		-	-		-	-		-	-		-
	B	B	-	-	-												
	C	C	-	-	-												
	D	D	-	-	-												
4.0	A	A	-	-	-	-		-	-		-	-		-	-		-
	B	B	-	-	-												
	C	C	-	-	-												
	D	D	-	-	-												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	BA	BA		BA	BA		BA	BA		BA	BA		BA
Recorded by:			BA	BA	BA	BA		BA	BA		BA	BA		BA	BA		BA

Investigators' Signatures
Bruce Mears
James Daniel
Patsy Vichaivat
Marshall Faircloth

Nicki Wellendorf
REVIEWER

Concentrations prepared by: BA
Loading verified by: ~~BA~~
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 25.7 max. 26.3 mean 26.0
Incubator # ___ min. _____ max. _____ mean _____
Room B246 min. 24.9 max. 26.3 mean 25.6

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 2.10
95% Confidence Interval: lower 2.00 upper 2.20

PAGE 000000

revised 08/24/06 SP

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal (96 hour renewal)
Test Page 1 of 2

Diluent/ Batch #: Well / 4-2-07
Toxicant/ Batch#: NaCl / 4-2-07

Test Beginning: Date: 4.3.07 Time: 12:45
Test Ending: Date: 4-7-07 Time: 8:50

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	133	Hach	PPV
Hardness (mg.L as $CaCO_3$):	146	Hach	PPV
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	DG

Organism Batch #/ Age: A-3-07 / 13 DAYS
Feeding: (Prior to test) (Prior to renewal) Daily
Food: YCT *P.subcapitata* Artemia: Lot # 6SL-S36-90
Food Batch: — — 0hr 10-07 24hr — 48hr 42-07 72hr —
Chamber size: 100 mL
Test volume: 500 mL per replicate

Conc µg/L ~~mg/L~~	Rep.	Chamber #	Number Live 0 hr ~~48 hr~~	24 hr ~~72 hr~~	48 hr ~~96 hr~~	pH (SU) 0 hr ~~48 hr~~	24 hr ~~72 hr~~	48 hr ~~96 hr~~	Temperature (°C) 0 hr ~~48 hr~~	24 hr ~~72 hr~~	48 hr ~~96 hr~~	D.O. (mg/L) 0 hr ~~48 hr~~	24 hr ~~72 hr~~	48 hr ~~96 hr~~	Uncorrected Conductivity µmhom/cm (mmhos/cm) 0 hr ~~48 hr~~	24 hr ~~72 hr~~	48 hr ~~96 hr~~
Control	A	B1	10	10	10	7.7		7.9	24.8		24.8	7.5		6.5	0.401		0.369
	B	B7	10	10	10		8.0			24.0			5.8			0.479	
	C																
	D																
6	A	B3	10	10	9/10	7.7		7.8	24.8		25.1	7.3		6.4	10.2		11.2
	B	B4	10	10	9/10		7.9			24.1			6.0			10.8	
	C																
	D																
7	A	B5	10	10	10	7.7		7.8	24.9		25.2	7.3		6.4	11.6		13.5
	B	B6	10	10	10		7.9			24.1			6.0			12.7	
	C																
	D																
8	A	B7	10	8/9	8	7.7		7.8	24.9		25.3	7.1		6.5	13.7		13.9
	B	B8	10	8/9	8		7.9			24.0			5.6			13.9	
	C																
	D																
9	A	B9	10	3/9	9/10	7.8		7.8	24.9		25.3	7.2		6.5	15.4		16.8
	B	B10	10	5/9	3/9		7.9			24.0			5.4			15.2	
	C																
	D																
10	A	B11	10	0/10	—	7.7		—	24.9		—	7.2		—	13.1		—
	B	B12	10	0/10	—		7.9	—		24.1	—		5.5	—		12.1	—
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	JD	JD	JD	PPV	JD	JD	JD	JD	JD	PPV	JD	JD	PPV
Recorded by:			JD	JD	JD	JD	JD	PPV	JD	JD	JD	JD	JD	PPV	JD	JD	PPV

Investigators' Signatures
James Daniels
Bruce Parker
Patsy Vichaikal
Marshall Faircloth

Nicole Wellendorf
REVIEWER

Concentrations prepared by: JD
Loading verified by: PK
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 1 min. 25.7 max. 26.3 mean 26.0
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.9 max. 26.5 mean 25.6

Comments:

Statistics: Method: Spearman-Karber
(48)/ 96 hour LC_{50}: 8.50
95% Confidence Interval: lower 8.21 upper 8.80

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revised 08/24/06 SP

FDEP Biology Laboratory - Acute SRT Bench Sheet

Test Organism: *Americamysis bahia* Method 2007.0 | *Menidia beryllina* Method 2006.0 | *Hyalella azteca* Method 100.1 EPA-600-R-99-064
Ceriodaphnia dubia Method 2002.0 | *Cyprinella leedsi* Method 2000.0 | *Pimephales promelas* Method 2000.0 | Other: _____

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / 96 hour renewal
Test Page 2 of 2

Diluent/ Batch #: well 1-4-2-07
Toxicant/ Batch#: NaCl 1-4-2-07

Test Beginning: Date: 4.3.07 Time: 12:45
Test Ending: Date: 4-7-07 Time: 8:50

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	133	Hach	PPV
Hardness (mg.L as $CaCO_3$):	146	Hach	PPV
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 4-3-07 / 13 DAYS
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT *P.subcapitata* Artemia: Lot # GSL-536-90
Food Batch: — —
0hr 40.07 24hr — 48hr 12 ~72hr —
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. g/L µg/L ~~mg/L~~	Rep.	Chamber #	Number Live ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	pH (SU) ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	Temperature (°C) ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	D.O. (mg/L) ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr	Uncorrected Conductivity µmhom/cm ~~mmhos/cm~~ ~~0 hr~~ 48 hr	~~24 hr~~ 72 hr	~~48 hr~~ 96 hr
Control	A	B1	10	10	10	8.0		8.2	24.0		25.3	7.7		7.5	0.268		0.278
	B	B2	10	10	10		8.1			24.3			7.2			0.274	
	C																
	D																
6	A	B3	9	9	9	7.8		8.2	24.1		25.6	7.3		7.2	10.0		10.3
	B	B4	9	9	9		8.0			24.9			7.0			10.3	
	C																
	D																
7	A	B5	10	10	9 1D	7.9		8.2	24.0		25.1	7.4		7.2	12.0		12.4
	B	B6	10	10	9 1D		8.1			24.6			7.0			12.5	
	C																
	D																
8	A	B7	8	8	6 2D	7.9		8.2	24.0		25.1	7.5		7.2	13.8		14.2
	B	B8	8	8	5 3D		8.1			24.7			6.9			14.1	
	C																
	D																
9	A	B9	2	1 1D	0 1D	8.0		8.2	24.0		25.8	7.5		7.2	15.5		16.0
	B	B10	3	2 1D	0 2D		8.1			24.5			6.9			15.7	
	C																
	D																
10	A	B11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	B	B12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JJ	JD	BA	PPV	PPV	PPV	PPV	PPV	BA	PPV	PPV	PPV	PPV	PPV	PPV
Recorded by:			JJ	JD	BA	PPV	PPV	PPV	PPV	PPV	BA	PPV	PPV	PPV	PPV	PPV	PPV

Investigators' Signatures
James Daniels
Brett Redfern
Patsy Vickaryous
Marshall Faircloth
Nicole Wellenstein
REVIEWER

Concentrations prepared by: JD
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 25.7 max 26.3 mean 26.0
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.9 max 26.3 mean 25.6

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 7.98
95% Confidence Interval: lower 7.7 upper 8.28

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revised 08/24/06 SP

MBL Aquaculture
4569 Samuel Street
Sarasota, Florida 34233
TEL: (800) 889-0384
FAX: (941) 922-3874
EMAIL: sales@mblaquaculture.com
WEB: www.MBLAquaculture.com

NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 4/2/07

Shipped to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	400+	4 Days	MSC070319	25°C	~15 ‰
Menidia beryllina	200+	11 Days	SSC070311	25°C	~15 ‰
Cyprinella leedsi	150+	12 Days	CLC070321	25°C	
Pimephales promelas	150+	8 Days	FHC070315-1520	25°C	

Packed by: Frank Gary

Shipped Via: FedEx

Notes: _____

Thank you for your order

Appendix H

Habitat Assessment Field Sheets

Control

FDEP-SOP-001/01: Form FD 9000-3 (June 1, 2001)

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: DEP SUBMITTING AGENCY NAME: NED	STORET STATION NUMBER:	DATE (M/D/Y): 5/1/07	TIME	RECEIVING BODY OF WATER: STR
REMARKS: 30 27 7.31 81 40 29.3	COUNTY: Duval	LOCATION: Creek 500m up stream of Dyscain		FIELD ID/NAME: Control

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: >8m

List & map dominant Vegetation on back

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

m/s | m/s | m/s

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)

m deep | m deep | 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 severe Silt smothering: none 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 Rubbie				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	0.2	22.5	7.18	3.19	4642			0.4
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: per phone Sent 4 Snow

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

SAMPLING TEAM: Kellemeyer, Taylor

SIGNATURE: [signature] DATE: 5/1/07

FDEP-SOP-001/01: Form FD 9000-5 (June 1, 2001)

STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y): 5/1/07	RECEIVING BODY OF WATER:

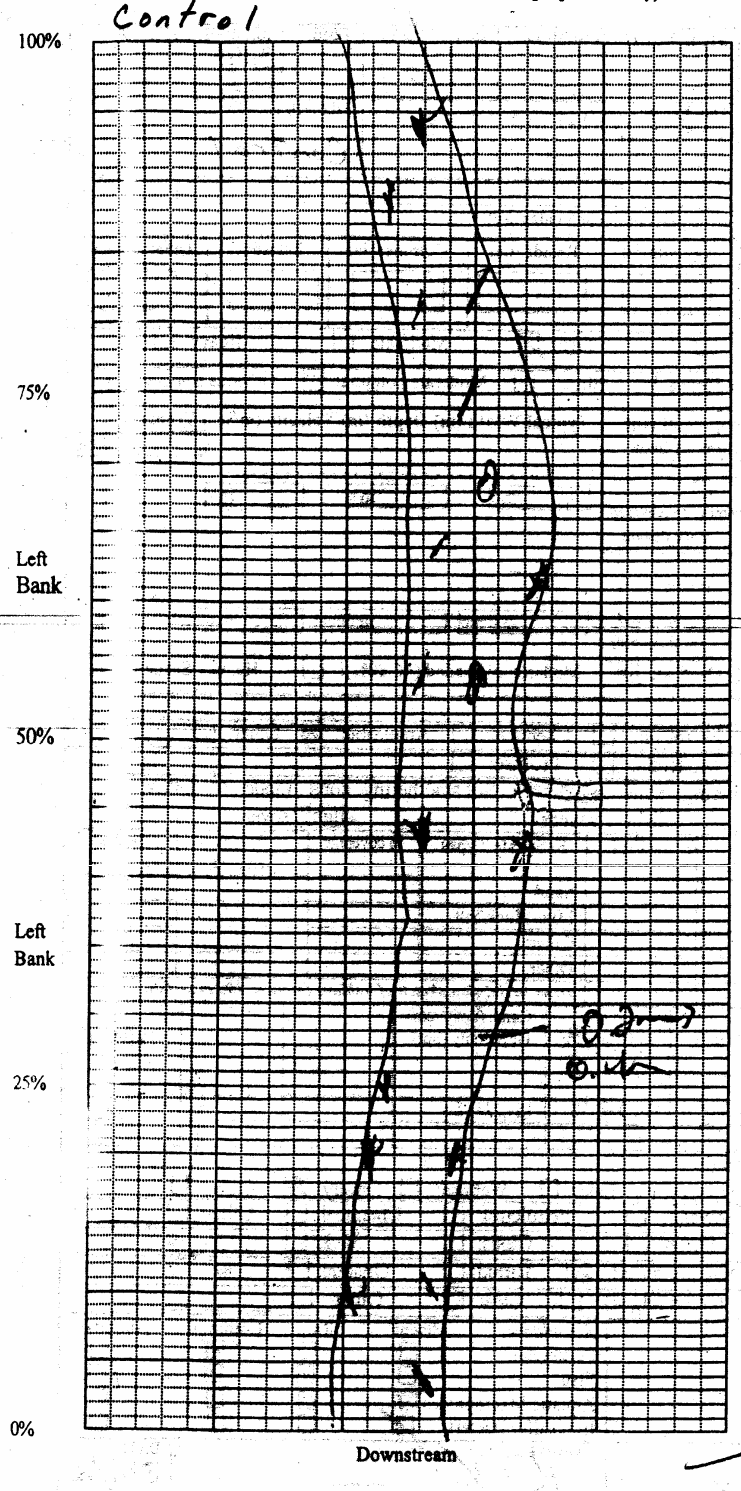
REMARKS:	COUNTY:	LOCATION: Cedar R Basin Upstream	FIELD ID/NAME: Control

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 16	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 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 9	Less than 20% of habitats affected by sand or silt accumulation	20%-50% of habitats affected by sand or silt accumulation	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
Primary Score 93	20 19 18 17 16	15 14 13 12 11		
Secondary Habitat Components **Artificial Channelization** 20	No artificial channelization or dredging. Stream with normal, sinuous pattern 20 19 18 17 16	Many 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) 12m 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	Over 80% of riparian surfaces consist of native plants, including trees, understory shrubs, or non-woody machrophytes. 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 ozone 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 streambank 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
Secondary Score 68				

111 **TOTAL SCORE**

ANALYSIS DATE: 5-1-07	ANALYST: [illegible]	SIGNATURE: Tom Kallema

Stream/River Habitat Sketch Sheet, Form FD 9000-4 (June 1, 2001)
Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).



Substrates: Code key, draw proportionate habitat abundance.

- ☐ Snags
- ☐ Roots/undercut banks
- ☐ Leaf Packs (or mats)
- ☐ Macrophytes
- ☐ _____
- ☐ _____
- ☐ _____

Velocity:
Note where velocity ~~measures were taken.~~

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

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

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

Plants observed/other notes:
Sagittaria

8 snags
5 logs
4 leaf 400/20 .05
3 mats
20

DEP-SOP-001/01: Form FD 9000-3 (December 11, 2001) Test

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y): 7/30/07	TIME: 1400	RECEIVING BODY OF WATER:
REMARKS: 30 27 11.6 / 81 39 10.86	COUNTY: Duval	LOCATION: 50m upstream of POD Glen Cr.		FIELD ID/NAME: Test #1

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 + 0.5 = 1.5
(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	0.13 m/s	m/s
m deep	0.5 m deep	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)	10			SAND	10		
LEAF PACKS OR MATS				MUD/MUCK/SILT	80		poker
AQUATIC VEGETATION	20			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								
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: In Tidally influenced area

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

SAMPLING TEAM: Kullerney, Ocomo- SIGNATURE: Kullerney DATE: 7/30/07

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

~~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): 4/30	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: Duval	LOCATION: 50m Up Stream of Pod Cedar Cr	FIELD ID/NAME: Test #1

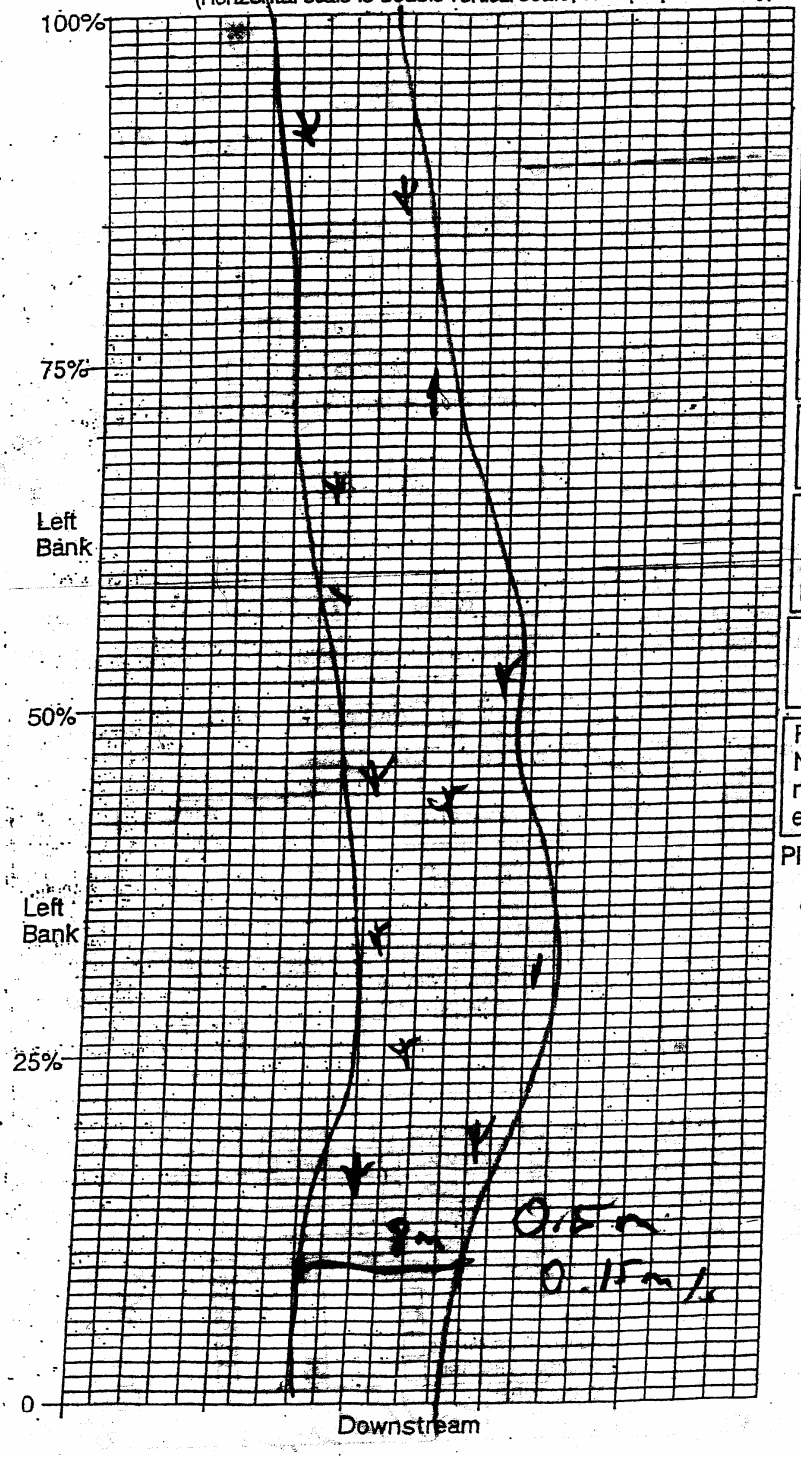
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Substrate Diversity 7	Four or more productive habitats present [snags, tree roots/undercut banks, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three productive habitats present. Adequate habitat. 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 unst or smothered 5 4 3 2 1
Substrate Availability 4	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 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, a severe problem, pools abs 5 4 3 2 1
Secondary Habitat Components Artificial Channelization 15	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 instrean habitat highly alter 5 4 3 2 1
Bank Stability Right Bank 4 Left Bank 4	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 9 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: 4/30/07	ANALYST: Kolkmeyer	SIGNATURE:

50 m upstream

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



Field ID: Test #1

Substrates: Code key, draw proportionate habitat abundar
- ☐ Snags
- ☐ Roots/undercut banks
- ☐ Leaf Packs (or mats)
- ☐ Macrophytes
- ☐ _____
- ☐ _____
- ☐ _____

Velocity:
Note where velocity measures were taken.

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

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

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

Plants observed/other notes:
cladium.

10
3
13

TEST

DEP-SOP-001/01: Form FD 9000-3 (December 11, 2001)

PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SUBMITTING AGENCY CODE: / SUBMITTING AGENCY NAME:	STORET STATION NUMBER:	DATE (M/D/Y):	TIME	RECEIVING BODY OF WATER:
		1330	4/30/...	

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
30 27 7.13 81 39 10.30	Duval	50m Down Stream of DOD Cedar Cr	Test #2

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

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

m wide

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

ARTIFICIALLY IMPOUNDED ☐ yes

m/s	0.15 m/s	m/s

HIGH WATER MARK: 1.4 + 0.4 = ____ (m above present water level) (present depth in m) (m above bed)

m deep	0.8 m deep	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 (circled) SEVERE SILT SMOTHERING: NONE SLIGHT MODERATE (circled) SEVERE OTHER: ____

SUBSTRATE TYPE	% COVERAGE	# TIMES SAMPLED	METHOD	SUBSTRATE TYPES	% COVERAGE	# TIMES SAMPLED	METHOD
WOODY DEBRIS (SNAGS)	1.0			SAND	10		
LEAF PACKS OF MATS				MUD/MUCK/SILT	87		poor
AQUATIC VEGETATION	2.0			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~~								
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: Kellemeyer, OConnor

SIGNATURE: [signature]

DATE: 4/30/...

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

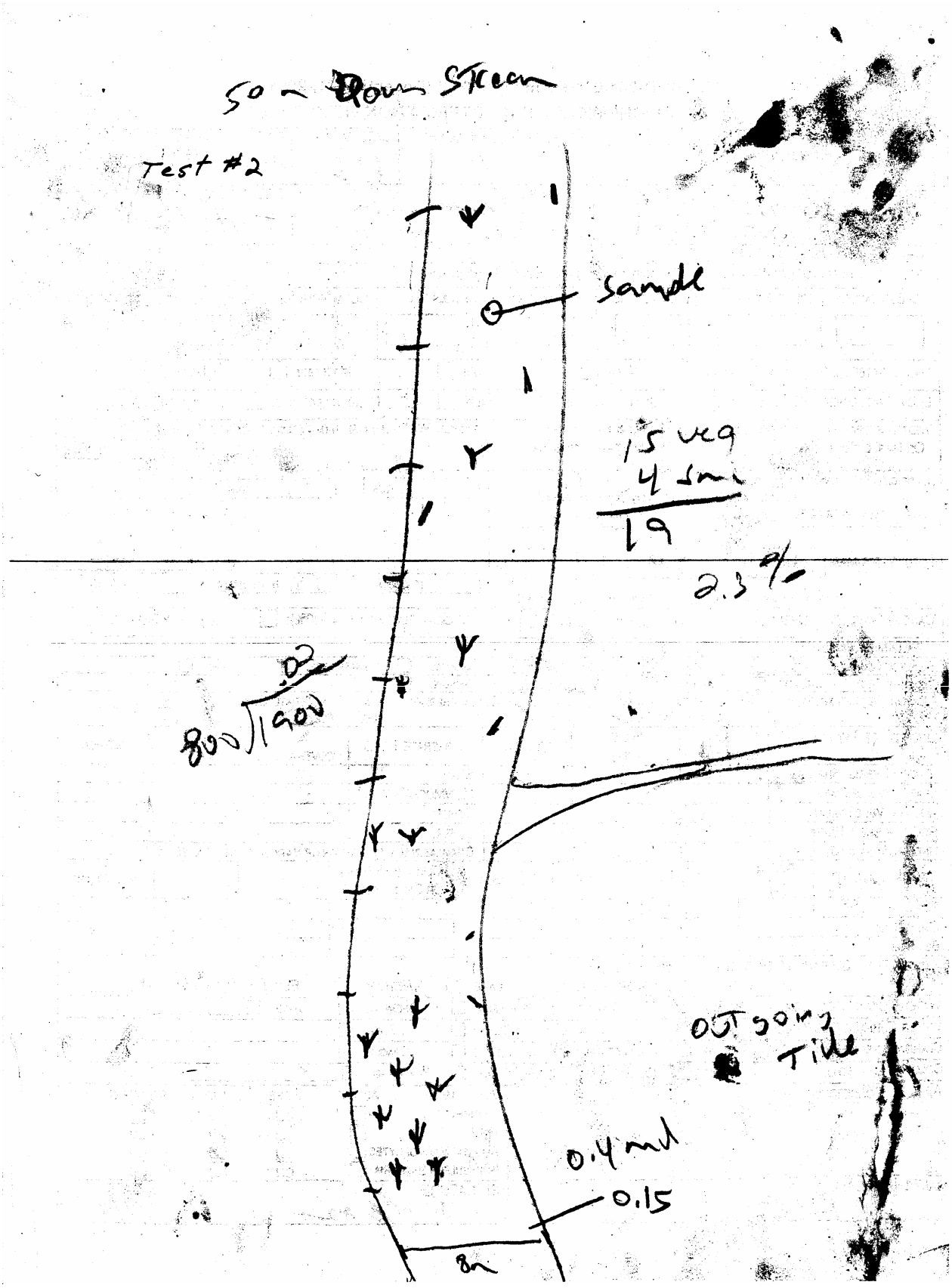
~~STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION~~
STREAM/RIVER HABITAT ASSESSMENT FIELD SHEET

SUBMITTING AGENCY CODE: SUBMITTING AGENCY NAME:		STORET STATION NUMBER:	DATE (MM/DD/YY): 1330	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: Del	LOCATION: 50m Downstream of Pod Cutler Rd		FIELD ID/NAME: Test #2

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 i obvious, substrates unst 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 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 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, a severe problem, pools abs 5 4 3 2 1
Secondary Habitat Components Artificial Channelization 15	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, instrean habitat highly altered 5 4 3 2 1
Bank Stability Right Bank 4 Left Bank 4	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

91 TOTAL SCORE

ANALYSIS DATE: 4/30/07	ANALYST: Kellman	SIGNATURE: Kell


50 - Down Stream
Test #2
Sample
1.5 veg
4 sm
19
2.3 %
.02
800 / 1900
OUTGOING
TIDE
0.4 mud
0.15
8m

Appendix I-1

Wet Identification taxa list and number of individuals counted for qualitative natural periphyton collections from samples from a Control Site and two Test Sites near the Anheuser Busch Old Sod Farm facility discharge, (April 30 and May 1, 2007)

	Control Site	Test Site 1	Test Site 2
Bacillariophyta			
Bacillariophyta	274	293	293
Chlorophycota			
Chlamydomonas sp.	1	-	-
Chlorella sp.	1	-	-
Cosmarium sp.	-	1	-
Cyanophycota			
Aphanocapsa sp.	1	1	-
Cyanobium parvum	2	-	-
Cyanobium plancticum	2	-	-
Jaaginema sp.	1	1	4
Komvophoron jovis	-	-	1
Oscillatoria sp.	8	-	-
Oscillatoria tenuis	-	2	2
Phormidium aerugineo-caeruleum	-	3	-
Planktolyngbya sp.	2	-	-
Planktothrix sp.	4	-	1
Synechocystis sp.	9	-	-

Appendix I-2

Diatom identification taxa list and number of individuals counted for qualitative natural periphyton collections from samples from a Control Site and two Test Sites near the Anheuser Busch Old Sod Farm facility discharge, (April 30 and May 1, 2007)

	Control Site	Test Site 1	Test Site 2
Bacillariophyceae			
Achnanthes sp	30	10	12
Achnanthes clevei	-	-	1
Achnanthes exigua	-	-	2
Achnanthes hungarica	-	-	14
Achnanthes lanceolata	2	1	1
Achnanthes lanceolata rostrata	-	2	-
Amphora sp	1	8	13
Amphora veneta	-	-	1
Bacillaria paxillifer	39	40	63
Bacillariophyceae	44	14	14
Caloneis sp	12	4	5
Caloneis bacillum	10	1	-
Cocconeis fluviatilis	3	-	3
Cocconeis placentula	7	52	13
Diadesmis contenta	46	6	10
Diploneidaceae	-	-	4
Diploneis sp	9	19	-
Diploneis elliptica	-	-	21
Diploneis oblongella	1	-	-
Diploneis parma	1	-	-
Diploneis pseudovalis	-	-	1
Entomoneis	1	-	-
Eunotia sp	-	1	-
Fallacia sp	1	1	1
Gomphonema sp	2	3	8
Hippodonta sp	4	12	15
Hippodonta capitata	-	1	-
Hippodonta hungarica	6	2	4

Appendix I-2 (continued)

Luticola mutica	-	2	-
Navicula sp	136	50	87
Navicula cryptocephala	-	2	-
Navicula germainii	-	-	2
Navicula minima	-	-	2
Navicula peregrina	-	-	1
Navicula radiosa	-	-	1
Naviculaceae	9	-	2
Nitzschia sp	67	124	74
Nitzschia amphibia	1	3	-
Nitzschia gracilis	-	-	1
Nitzschia lorenziana	1	-	-
Nitzschia recta	-	-	2
Nitzschia sigma	2	3	9
Nitzschia subacicularis	-	-	2
Pinnularia sp	-	-	4
Planothidium sp	6	3	3
Planothidium delicatulum	12	-	7
Rhopalodia sp	-	-	1
Surirella sp	2	2	-
Thalassionema nitzschioides	-	-	1
Tryblionella sp	17	15	32
Tryblionella punctata	-	-	1
Coscinodiscophyceae			
Anaulus sp	18	-	2
Aulacoseira sp	-	1	-
Coscinodiscophyceae	-	7	3
Cyclotella sp	-	2	-
Cyclotella meneghiniana	-	14	10
Cyclotella striata	-	2	8
Cymatosira belgica	5	2	11
Paralia sulcata	-	5	2
Fragilariophyceae			
Delphineis sp	-	1	-
Fragilaria sp	1	1	3
Fragilaria berolinensis	-	4	-
Fragilaria brevistriata	-	2	-

Appendix I-2 (continued)

Fragilaria construens	-	-	7
Fragilaria geocollegarum	-	-	1
Fragilaria martyi	-	-	1
Fragilaria pinnata	4	-	-
Fragilaria pinnata trigona	-	1	-
Fragilariaceae	-	8	6
Synedra fasciculata	-	69	8

Appendix J-1

Benthic macroinvertebrates collected from ponar samples from a Control Site and two Test Sites near the Anheuser Busch Old Sod Farm facility (April 30 and May 1, 2007). Taxa collected and total number of individuals counted (n = 3 samples/site).

	Control Site	Test Site 1	Test Site 2
Annelida			
Undetermined Annelida	-	1	-
Hirudinea			
Mooreobdella sp.	1	-	-
Oligochaeta			
Aulodrilus pigueti	52	-	-
Enchytraeidae	1	-	-
Ilyodrilus templetoni	6	-	-
Limnodrilus hoffmeisteri	17	9	-
Limnodrilus profundicola	2	-	-
Tubificidae	275	179	66
Eclipidrilus palustris	2	-	-
Polychaeta			
Laeonereis culveri	-	9	52
Ampharetidae	-	3	-
Dipolydora socialis	-	-	2
Hobsonia florida	1	11	51
Streblospio benedicti	-	-	1
Arthropoda			
Arachnida			
Acariformes			
Unionicola sp.	1	-	-
Crustacea			
Amphipoda			
Apocorophium lacustre	-	4	4
Gammarus sp.	-	1	23
Gammarus cf. tigrinus	1077	22	-
Gammarus mucronatus	27	-	-
Hyalella sp.	-	1	-
Hyalella azteca	-	-	1
Melita sp.	5	-	1
Melita nitida	-	8	-
Melitidae	-	-	10
Decapoda			
Callinectes sapidus	-	1	-
Xanthidae	-	1	1
Isopoda			
Caecidotea sp.	7	-	-
Cassidinidea ovalis	120	2	2
Cyathura polita	9	1	9
Edotea triloba	-	5	18
Sphaeroma walkeri	1	-	-
Uromunna reynoldsi	1	-	-

Appendix J-1 (Continued)

	Control Site	Test Site 1	Test Site 2
Insecta			
Coleoptera			
Dubiraphia vittata	2	-	-
Diptera			
Ceratopogonidae	4	-	-
Chironomidae	3	-	4
Chironomus sp.	-	172	170
Cladotanytarsus sp. f epler	82	3	2
Cryptochironomus sp.	3	-	1
Cryptotendipes sp.	-	1	-
Dicrotendipes modestus	-	1	-
Dicrotendipes simpsoni	2	-	3
Goeldichironomus carus	-	-	1
Nanocladius sp.	1	-	-
Paralauterborniella nigrohalterale	-	1	-
Paratanytarsus sp.	1	1	-
Polypedilum sp.	2	-	3
Polypedilum halterale grp.	55	45	119
Polypedilum illinoense grp.	5	2	3
Procladius sp.	-	10	20
Procladius (holotanypus) sp.	2	25	5
Stenochironomus sp.	1	-	-
Tanytarsus sp.	-	1	-
Tanytarsus sp. G Epler	1	1	2
Tanytarsus sp. N Epler	-	-	1
Tanytarsus sp. T Epler	-	-	1
Megaloptera			
Sisyridae	1	-	-
Odonata			
Aphylla williamsoni	1	-	-
Trichoptera			
Oecetis sp.	-	-	1
Mollusca			
Bivalvia			
Bivalvia	-	1	-
Lucinidae	1	2	4
Mulinia lateralis	-	-	1
Gastropoda			
Ancylidae	1	-	-
Ellobiidae	-	-	1
Gastropoda	5	2	-
Littoridinops sp.	4	7	27
Platyhelminthes			
Undetermined Platyhelminthes	3	-	-

…

Appendix J-2

Benthic macroinvertebrates collected from ponar samples from a Control Site and two Test Sites near the Anheuser Busch Old Sod Farm facility (April 30 and May 1, 2007). Taxa collected and density (average number of number individuals/m^2) rounded to the nearest individual (n = 3 samples/site). See SOP LT 7100 sect. 4.2.1 for method on collapsing taxa

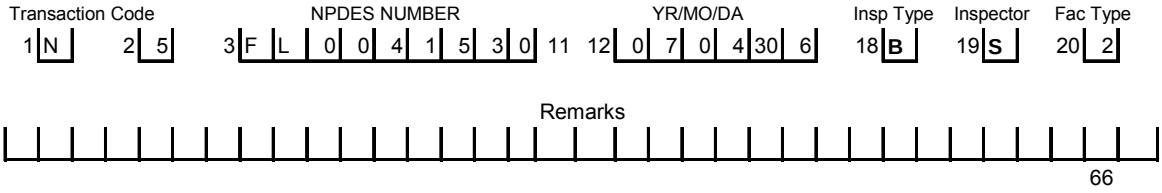
	Control Site	Test Site 1	Test Site 2
Annelida			
Hirudinea			
Mooreobdella sp.	14	-	-
Oligochaeta			
Aulodrilus pigueti	3,302	-	-
Eclipidrilus palustris	28	-	-
Enchytraeidae	14	-	-
Ilyodrilus templetoni	381	-	-
Limnodrilus hoffmeisteri	1,079	2,624	-
Limnodrilus profundicola	127	-	-
Tubificidae	-	-	917
Polychaeta			
Dipolydora socialis	-	-	28
Hobsonia florida	14	195	708
Laeonereis culveri	-	126	722
Streblospio benedicti	-	-	14
Arthropoda			
Arachnida			
Acariformes			
Unionicola sp.	14	-	-
Crustacea			
Amphipoda			
Apocorophium lacustre	-	56	56
Gammarus sp.	-	-	320
Gammarus cf. tigrinus	14,958	320	-
Gammarus mucronatus	375	-	-
Hyalella sp.	-	14	-
Hyalella azteca	-	-	14
Melita sp.	70	-	153
Melita nitida	-	111	-
Decapoda			
Callinectes sapidus	-	14	-
Xanthidae	-	14	14
Isopoda			
Caecidotea sp.	97	-	-
Cassidinidea ovalis	1,667	28	28
Cyathura polita	125	14	125
Edotea triloba	-	69	250
Sphaeroma walkeri	14	-	-
Uromunna reynoldsi	14	-	-

Appendix J-2 (Continued)

	Control Site	Test Site 1	Test Site 2
Insecta			
Coleoptera			
Dubiraphia vittata	28	-	-
Diptera			
Ceratopogonidae	56	-	-
Chironomus sp.	-	2,389	2,390
Cladotanytarsus sp. f epler	1,161	42	28
Cryptochironomus sp.	42	-	14
Cryptotendipes sp.	-	14	-
Dicrotendipes modestus	-	14	-
Dicrotendipes simpsoni	28	-	42
Goeldichironomus carus	-	-	14
Nanocladius sp.	14	-	-
Paralauterborniella nigrohalterale	-	14	-
Paratanytarsus sp.	14	14	-
Polypedilum halterale grp.	805	625	1,714
Polypedilum illinoense grp.	73	28	43
Procladius (holotanypus) sp.	28	347	70
Procladius sp.	-	139	281
Stenochironomus sp.	14	-	-
Tanytarsus sp. G Epler	14	28	28
Tanytarsus sp. N Epler	-	-	14
Tanytarsus sp. T Epler	-	-	14
Megaloptera			
Sisyridae	14	-	-
Odonata			
Aphylla williamsoni	14	-	-
Trichoptera			
Oecetis sp.	-	-	14
Mollusca			
Gastropoda			
Ancylidae	28	-	-
Ellobiidae	-	-	14
Littoridinops sp.	111	125	375
Bivalvia			
Lucinidae	14	42	56
Mulinia lateralis	-	-	14
Platyhelminthes			
Undetermined Platyhelminthes	42	-	-

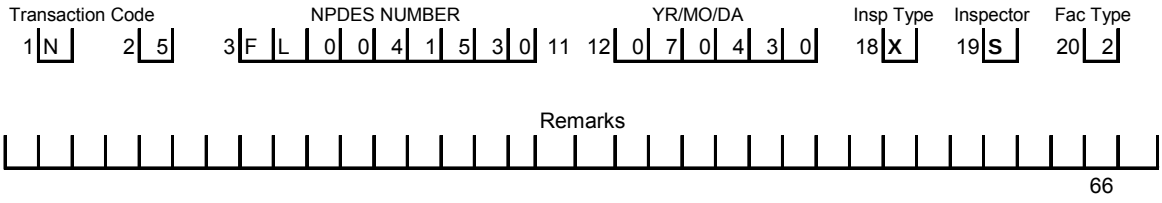
The Bioassay of the Anheuser Busch Main Street Sod Farm effluent sampled on April 30, 2007, NPDES #FL0041530

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



The Priority Pollutants Analysis for Bioassay of the Anheuser Busch Main Street Sod Farm effluent sampled on April 30, 2007, NPDES #FL0041530

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



Biological Analyses of the Anheuser Busch Maint Street Sod Farm effluent sampled on April 30, 2007, NPDES #FL0041530

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

