

Biological Assessment of

Anguilla Fish Farm

Putnam County

NPDES #FL0278076

Sampled September 18, 2006

February 2007

Biology Section

Bureau of Laboratories

Division of Resource Assessment and Management

Quality Manual No. 870346G

NELAC Certification No. E31780

Florida Department of Environmental Protection
Fifth Year Inspection Summary

Discharger:	Anguilla Fish Farm
Physical Address:	181 School Road, Federal Point, East Palatka
County:	Putnam
NPDES Number:	FL0278076
Permit Expiration:	May 8, 2007

Toxics Sampling Inspection **(XSI)**

Date Sampled: September 18, 2006

Results: All effluent metals complied with Class III Surface Water Quality Criteria (62-302.530 F.A.C.). Aluminum and iron were detected in the effluent (43 µg/L and 99 µg/L, respectively) at levels well below applicable Class III criteria. Zinc was detected in the effluent (5.8 µg/L) and Equipment Blank (3.2 µg/L) at levels above the method detection limit (MDL) and below the practical quantitation limit (PQL).

Compliance Biomonitoring Inspection **(CBI)**

Date Sampled: September 18, 2006

Results: The effluent sample was not acutely toxic to the fish, *Cyprinella leedsi,* or to the water flea, *Ceriodaphnia dubia,* during the 48-hour acute bioassays.

Water Quality Inspection **(WQI)**

Date Sampled: September 18, 2006

Results: Fecal and total coliforms were detected in the effluent and the receiving waters at levels that complied with Class III Surface Water Quality Criteria. The effluent dissolved oxygen and conductivity levels exceeded the Class III Water Quality Criteria (62-302.530(22), (30) F.A.C.). Dissolved oxygen measured 1.3 mg/L in the effluent. The effluent conductivity was 2,520 µmhos/cm, two times the Class III Surface Water Quality Criterion. The conductivity at Test Site 1 (1,600 µmhos/cm) and Test Site 2 (1,320 µmhos/cm) also did not comply with the Class III Surface Water Quality Criterion. The effluent total nitrogen was 4.9 mg/L and total ammonia was 3.4 mg/L. Effluent unionized ammonia was 0.02 mg/L, just at the Class III Freshwater Criterion concentration (≤ 0.02 mg/L 62-302.530(3) F.A.C.). Nutrient concentrations at Test Site 1, (approximately 70 meters downstream of outfall), were considerably lower than levels measured in the effluent sample. It was difficult to assess nutrient concentrations for Test Site 2 (approximately 250 meters downstream of outfall), because the samples were improperly preserved.

Impact Bioassessment Inspection **(IBI)**

Date Sampled: September 18, 2006

Results: The AGP value of the effluent was 74.1 mg dry weight/L from a salt-adjusted sample using the saltwater algal species *Dunaliella tertiolecta* (Table 3). Raschke and Shultz (1987) found that AGP above 10.0 mg dry wt/L represent a "problem" threshold for marine receiving waters and 5.0 mg dry wt/L for fresh waters, implying nutrient enrichment. The AGP value at the downstream Test Site 1 (13.8 mg dry wt/L) was almost three times greater than the freshwater threshold. The AGP sample from Test Site 2 was 1.7 mg dry wt/L. These results suggest nutrient enrichment related to the Anguilla Fish Farm effluent near the point of discharge into the St. Johns River. Neither macroinvertebrate nor algal samples were collected for this inspection because an appropriate Control Site could not be located and the receiving water specific conductance values were above the level appropriate

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 Anguilla Fish Farm is located near Palatka in Putnam County, Florida (Appendix A). The facility is an aquatic animal production facility that grows and maintains hybrid striped bass (striped bass (*Morone saxatilis*)) and white bass (*Morone chrysops*), tilapia (*Tilapia* sp.), American eel (*Anguilla rostrata*), and other cultured fish and aquatic life. Activities at this plant include using well water for approximately 300 fish tanks and one unlined fish pond (see Facility Summary in Appendix B). The well water flows separately through the fish tanks area and unlined pond prior to discharging into a common on-site ditch from each respective area (see map in Appendix A). The on-site ditch then flows into a swamp and then to the St. Johns River, a Class III surface water of the state. District personnel believe the ditch filled in over the years and began to braid out creating the swamp as the effluent found its way to the St. Johns River. District personnel are currently working on relocating the effluent sampling compliance point because the current point is within one of the braids and the braided area is an impenetrable swamp roughly 90 meters long and 30 meters wide (Tom Kallemeyn, personal communication). The facility is authorized and designed to discharge 3.67 million gallons per day (MGD). The monthly average flow from June 2005 to August 2006 was 1.06 MGD. Flow was not recorded on the day of sampling.

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 or facility upsets within the last year. However, there have been five exceedances of the Class III Surface Water Quality unionized ammonia Criterion (62-302.530(3) F.A.C.) (Appendix B).

Methods

The purpose of this investigation was to determine the potential effects of the facility's effluent on the biota of the receiving waters. Because there was no upstream or comparable Control Site available, chemical and biological comparisons were made between the effluent and two downstream sites, Test Site 1 (located at the confluence of the effluent canal and the St. Johns River) and Test Site 2 (located in the St. Johns River approximately 250 meters downstream of the effluent canal). 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/2002so_ps.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 (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 (Shannan Bogdanov and Michael Tanski).

Results and Discussion

- Specific chemical results are reported in Tables 1, 2, and 3 and a complete list of chemical analytes can be reviewed in Appendix E. All effluent metals complied with Class III Surface Water Quality Criteria (62-302.530 F.A.C.). Aluminum and iron were detected in the effluent well below the applicable Class III criteria (43 µg/L and 99 µg/L, respectively). Zinc (5.8 µg/L) was found in the effluent at levels above the method detection limit (MDL) and below the practical quantitation limit (PQL). Zinc was also detected in the Equipment Blank at a concentration (3.2 µg/L) above the MDL and below the PQL.
- No organic pollutants were detected in the effluent or samples from Test Site 1. No samples for organic pollutants were collected from Test Site 2.
- Effluent pH complied with the Class III Surface Water Quality Criterion (62-302.530(52)(c) F.A.C.) and facility permit limits. However, the effluent conductivity and dissolved oxygen exceeded the Class III Water Quality Criteria (62-302.530 (22), (30) F.A.C.). The effluent conductivity was 2,520 µmhos/cm, two times the Class III Water Quality Criterion (<1,275 µmhos/cm, 62-302.530(22) F.A.C.). Dissolved oxygen measured 1.3 mg/L in the effluent, well below the Class III Surface Water Quality Criterion of ≥ 5.0 mg/L (62-302.530 (30) F.A.C.
- Dissolved oxygen and pH at the Test Sites complied with Class III Surface Water Quality Criteria (Table 1, 62-302.530 (30), (22) F.A.C.). The conductivity at Test Site 1 (1,600 µmhos/cm) and Test Site 2 (1,320 µmhos/cm) did not comply with the Class III Fresh Surface Water Quality specific conductance criterion (<1,275 µmhos/cm, 62-302.530(22) F.A.C). The high levels of conductivity may be attributed to tidal influences, a nearby reverse-osmosis facility that discharges to an adjacent creek or the facility's use of well water. Well water, also known as groundwater, from the area is known to have elevated levels of conductivity (personal communication, T. Kallemeyn).
- The effluent sample was not acutely toxic to the fish, *Cyprinella leedsi*, or to the water flea, *Ceriodaphnia dubia*, during 48-hour acute screening bioassays (See Table 1 for percent

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

Anguilla Fish Farm	Class III Stds	Effluent Limits	Effluent	Test Site 1	Test Site 2
Organic Constituents (µg/L)					
None Detected		-			
Nutrients (mg/L)					
Ortho-phosphate	-	-	0.47	0.018	0.01
Total Phosphorus	-	-	0.6	0.045 I	0.056 IY
Ammonia	-	-	3.4	0.044	0.01 UY
Unionized Ammonia	≤ 0.02	-	0.02 c	<0.02 c	<0.02 c
Nitrate+Nitrite	-	Report	0.3	0.011	O
Total Kjeldahl Nitrogen	-	Report	4.6	1.1	0.08 UY
Organic Nitrogen	-	-	1.2 c	1.06 c	-
Total Nitrogen	-	-	4.9 c	1.11 c	-
General Physical and Chemical Parameters					
Dissolved Oxygen (mg/L)	≥ 5.0	-	**1.3**	5.5	6.4
pH (S.U.)	6.0 - 8.5	6.0 - 8.5	6.9	7.4	7.6
Conductivity (umhos/cm)	≤ 1275	-	**2520**	**1600**	**1320**
Temperature (C)	-	Report	26.1	28.2	27.9
BOD (mg/L)	-	Report	6.6	3.3	3.2
TSS (mg/L)	-	Report	6 I	7 I	6 I
Turbidity (NTU)	t	-	3.2	3.8	3.7
Chlorophyll-a (µg/L)	-	-	48	25	15
Phaeophytin (µg/L)	-	-	1.5 U	1.5 U	2.5 U
Hardness (mg/L)	-	-	934.8 c	264.6 c	248 c
AGP (mg DryWt/L)	-	-	-	13.8	1.7 A
AGP-Salinity Adjusted (mg DryWt/L)	-	-	74.1	-	-
Microbiology (# counts/100ml)					
Fecal Coliforms-Membrane Filter	≤ 800 s	-	100[1]	140[1]	20[1]
Total Coliforms-Membrane Filter	≤ 2400 s	-	1900[1]	300[1]	600[1]
Toxicology Bioassays, 48-hr Acute Screening, % mortality					
Fish - *Cyprinella leedsi*	-	-	0%	-	-
Water flea - *Ceriodaphnia dubia*	-	-	0%	-	-

Value exceeds the Class III Water Quality Criteria or permit limits

[1] - Data provided by the Northeast District Lab.

c - Value is calculated

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.

O - Sampled, but analysis lost or not performed

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

Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

Table 2. Effluent limits, Class III Freshwater Criteria and metals data.

Anguilla Fish Farm	Class III Stds	Effluent Limits	Effluent	Class III Stds	Test Site 1	Class III Stds	Test Site 2
Aluminum	-	-	43	-	44	-	46
Arsenic	≤ 50	-	1.3 U	≤ 50	1.5 I	≤ 50	2.5 U
Cadmium	≤ 3.4 b*	-	0.05 U	≤ 2.44 b*	0.05 U	≤ 2.31 b*	0.05 U
Calcium (mg/L)	-	-	188	-	64.9	-	61.4
Chromium-III	≤ 268.2 b*	-	0.68 U	≤ 191 b*	0.3 U	≤ 181 b*	0.3 U
Copper	≤ 30.5 b*	-	4 U	≤ 21.4 b*	0.82	≤ 20.3 b*	10 U
Iron	≤ 1000	-	99	≤ 1000	63	≤ 1000	56
Lead	≤ 18.6 b*	-	0.2 U	≤ 11.0 b*	0.2 U	≤ 10.1 b*	0.2 U
Magnesium (mg/L)	-	-	113	-	24.9	-	23
Nickel	≤ 168.5 b*	-	1 U	≤ 119 b*	1 U	≤ 113 b*	1 U
Selenium	≤ 5	-	0.5 U	≤ 5	0.5 U	≤ 5	2.5 U
Silver	≤ 0.07	-	0.025 U	≤ 0.07	0.025 U	≤ 0.07	0.025 U
Zinc	≤ 387.8 b*	-	5.8 I	≤ 273 b*	3 U	≤ 259 b*	3 U

* Criterion calculated on a hardness value of 400 mg/L, rather than 934.8 mg/L per 62-302.
b - Value is calculated based on hardness

mortality, Appendix F for bioassay bench sheets, and Appendix G for supporting standard reference toxicant data).

- Fecal and total coliforms were detected in the effluent and receiving waters at levels that complied with Class III Water Quality Criteria (See Table 1 for results and Appendix F for laboratory worksheets).
- The effluent total nitrogen concentration was 4.9 mg/L (Table 1). Effluent total phosphorus (0.6 mg/L), ortho-phosphate (0.47 mg/L), and total ammonia concentrations (3.4 mg/L, Table 1) were elevated compared to Test Site 1. Effluent unionized ammonia was 0.02 mg/L, just at the Class III Freshwater Criterion concentration (≤ 0.02 mg/L 62-302.530 (3) F.A.C.). Nutrient levels at Test Site 1 were considerably lower than those in the effluent sample. Levels at Test Site 1 were at or below the 60th percentile when compared with levels typical of Florida streams (Appendix H). Nutrient concentrations at Test Site 2 were difficult to assess, because the samples were improperly preserved.
- Algal growth potential (AGP) is a measure of nutrients available for algal growth (Miller *et al*. 1978). Due to the high conductivity of the effluent, the AGP sample was salt-adjusted and evaluated using the saltwater algal species *Dunaliella tertiolecta*. The AGP value of the effluent was 74.1 mg dry weight/L (Table 2). Raschke and Shultz (1987) found that AGP above 10.0 mg dry wt/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication Ron Raschke, USEPA Region 4 1987). Raschke and Shultz (1987) also found that AGP above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters. Since salinity measurements at the Test Sites were <1 part per thousand, these AGP samples were analyzed using the freshwater algal species, *Pseudokirchneriella subcapitata*. The AGP value of the downstream Test Site 1 was 13.8 mg dry wt/L, almost three times the 5.0 mg dry wt/L "problem" threshold. The AGP sample from Test Site 2 (1.7 mg dry wt/L) was below this threshold. This indicates nutrient enrichment related to the Anguilla Fish Farm effluent near the point of discharge to the St. Johns River. The value at Test Site 2 indicates the effluent is sufficiently diluted by the time it travels 200 meters from the point of confluence. There was not evidence of growth inhibition in AGP data (Table 2).
- Chlorophyll-*a* was detected in the effluent and water samples from the Test Sites (Table 1). The chlorophyll-*a* concentration in the effluent was 48 µg/L. The concentrations of chlorophyll-*a* were lower at Test Site 1 and 2 (25 µg/L and 15 µg/L, respectively) as the effluent became more dilute. The chlorophyll-a levels in the effluent and Test Site 1 samples are above the 20 µg/L annual average threshold used to place freshwater streams on the planning list under the Impaired Waters Rule (62-303 F.A.C.).
- There were no algal or macroinvertebrate samples collected for this survey.

Summary

DMR data indicate exceedances of unionized ammonia by this facility. Re-evaluation of monitoring frequency and setting a permit limit for unionized

Table 3. Measured and predicted algal growth potential (AGP) for total soluble nitrogen (TSIN) and ortho phosphate (OP) limitation

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Predicted AGP (TN) ± 20%	Predicted AGP (TP) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	74.1 ^	140.6 ± 28.12	202.1 ± 40.42	186.2 ± 37.24	258 ± 51.6	7.87	8.17
Test Site 1	13.8	2.09 ± 0.418	7.74 ± 1.548	42.22 ± 8.444	19.35 ± 3.87	3.06	24.69
Test Site 2	1.7 ^^A	0 ± 0	4.3 ± 0.86	0 ± 0	24.08 ± 4.816	0	0

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

^ Sample was salinity adjusted based on the conductivity.

^^ Nitrogen-based ratios could not be calculated because there is no data for NO2+NO3.

ammonia may be warranted based on these results. Hopefully any processing adjustments made to comply with the limit would include a reduction in total ammonia and hence total nitrogen. Data collected for this inspection indicate exceedances of the Class III Surface Water Quality Criteria for specific conductance and dissolved oxygen. The use of well water may contribute to these exceedances. Well water, also known as groundwater, from the area is known to have elevated levels of conductivity (personal communication, T. Kallemeyn). The facility does aerate the water in the tanks, but most of it is likely consumed by the biochemical oxygen demand (BOD) of the water. The effluent BOD measured 6.6 mg/L on the day of sampling. The elevated conductivities in the receiving waters appear to be influenced by the elevated levels in the effluent, but they may also be influenced by tidal changes in the St. Johns River or from other sources in the area. There is a reverse-osmosis plant that discharges to nearby Deep Creek which is adjacent to the discharge area of the Anguilla Fish Farm (see map in Appendix A). More monitoring would be needed to make this determination and identify the sources of the conductivity.

Literature Cited

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USEPA. 2002. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. 4th Edition. EPA-821-R-02-013

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. Typical values for selected parameters in Florida waters

Appendix A

Map of Facility



Appendix B

Facility Summary and DMR data

Facility Summary

Facility Name (as it appears on permit): Anguilla Fish Farm		**Former Names:**
Physical Address: 181 School Road, Federal Point, East Palatka	**NPDES Permit No.:** FL0278076 **Expiration Date:** May 8, 2007	**Prepared By:** James Lucas
County: Putnam **District:** Northeast	**State Permit No.:** **Expiration Date:**	**Facility Type:** Fish Farm
Function of Facility: The facility is an aquatic animal production facility (fish farm)		
Sampling Location (specify lat/longs of NPDES point): 29°45'31" N, 81°31'41" W		
Description of treatment process: Well Water is used for the make-up water for approximately 300 fish tanks and one un-lined fish pond. The well water flows separately through the fish tanks area and the unlined pond prior to discharging into a common on-site ditch from each respective area.		
Receiving Waters: St. Johns River		**Classification:** Class III, fresh
Temperature (C):		**Design Flow:** 3.67
pH (SU):		**Mean Flow:** 1.06
Conductivity (umhos/cm):		**Flow During Survey:**
Dissolved Oxygen (mg/L):		**Total Residual Chlorine (mg/L):**
Discharge is: **Continuous** **Intermittent X** **Seasonal** **Rainfall Dependent** **Other**		
Facility Mixing Zone Details: none		
List Effluent Limits:		

Parameter and Units	Limit	Describe special permit conditions and permit modifications:
Flow (MGD)	Monthly Average Report	* After one year from the issue date of this permit, the monitoring data for unionized ammonia, dissolved oxygen, turbidity, and total coliform, shall be evaluated by the Permittee for compliance with the corresponding water quality standard in Chapter 62-302 FAC. After one year from the issue date of this permit, the Permittee shall provide a written report to the Department as to the status of compliance with the applicable water quality standard. If compliance is demonstrated, the Permit shall be reopened by the Department to include final effluent limits corresponding to the Chapter 62-302 water quality standard(s) for each parameter if required. If any parameter does not meet the corresponding water quality standard, the Permittee shall request applicable Department regulatory relief (e.g., mixing zone, treatment, etc.). Such regulatory relief may be
TKN (mg/L)	Daily Max Report	
Nitrate-Nitrite (mg/L)	Daily Max Report	
Total Ammonia (mg/L)	Daily Max Report*	
Unionized ammonia (mg/L)	Daily Max Report*	
Temperature (C)	Daily Max Report	
pH (Standard Units)	Daily Min-Max 6.0-8.5	

BOD (mg/L) Turbidity (NTU) Total Suspended Solids (mg/L) Total Coliforms, (#/100 ml) Dissolved Oxygen, (mg/L)	Daily Max Report Daily Maximum Report* Daily Max Report Daily Max Report* Daily Max Report*	obtained by a modification to this permit or other applicable regulatory measure. The Permittee shall comply with the applicable water quality standards referenced in Part I.A.1, or other Department regulatory relief measure by no later than 2 years from the issue date of this permit. The permit requires yearly monitoring for total phosphorous, total recoverable copper, total recoverable lead, and total recoverable silver at the end of years 1, 3, and 5 of the permit.

Description of permitted outfall: This is an existing 3.67 (design) discharge at outfall D-001, to an on-site drainage ditch thence to an unnamed swamp and then to the St. Johns River.

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

None

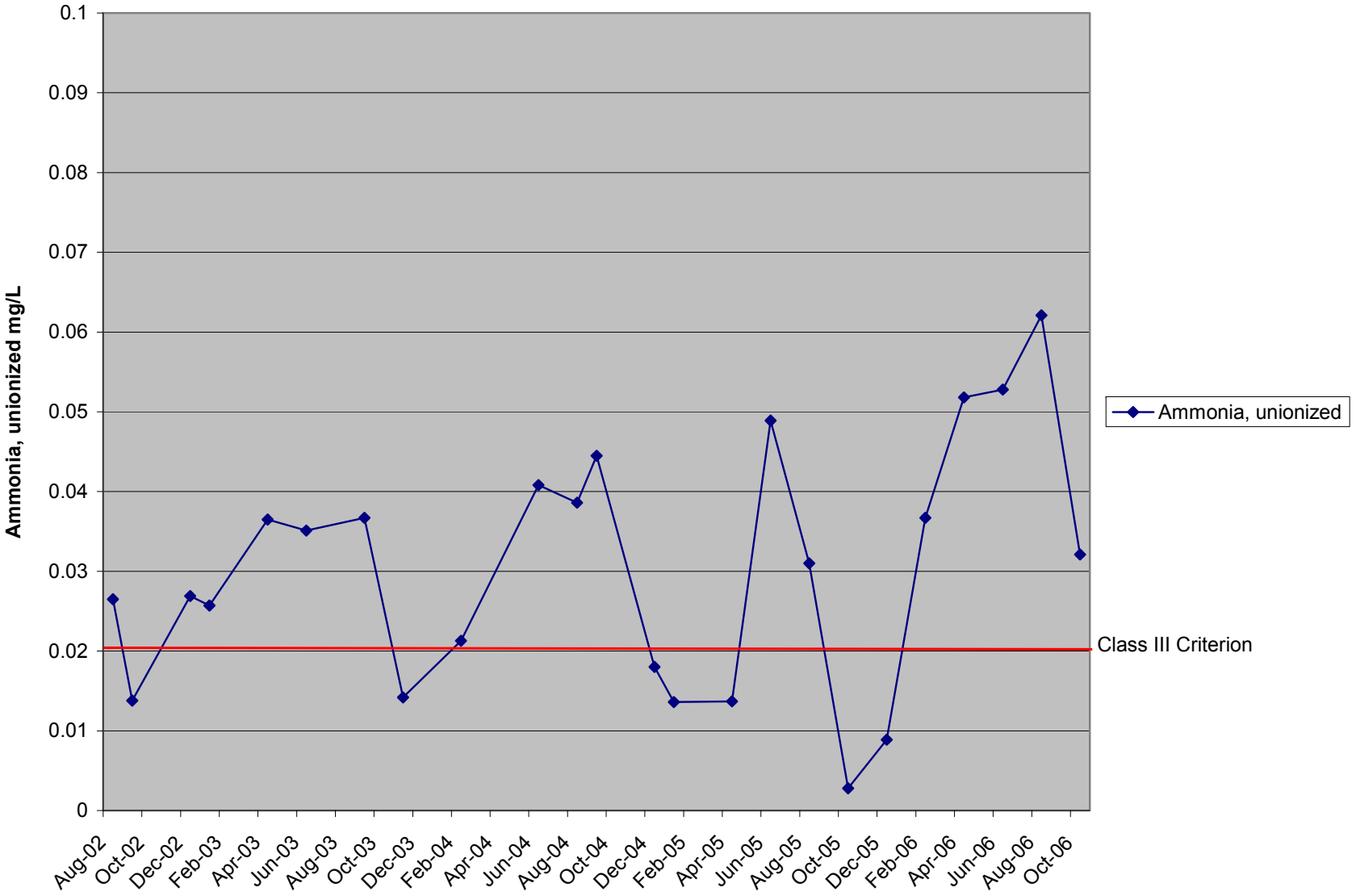
Describe previous impact bioassessments, WQBEL's, and previous or current enforcement actions:

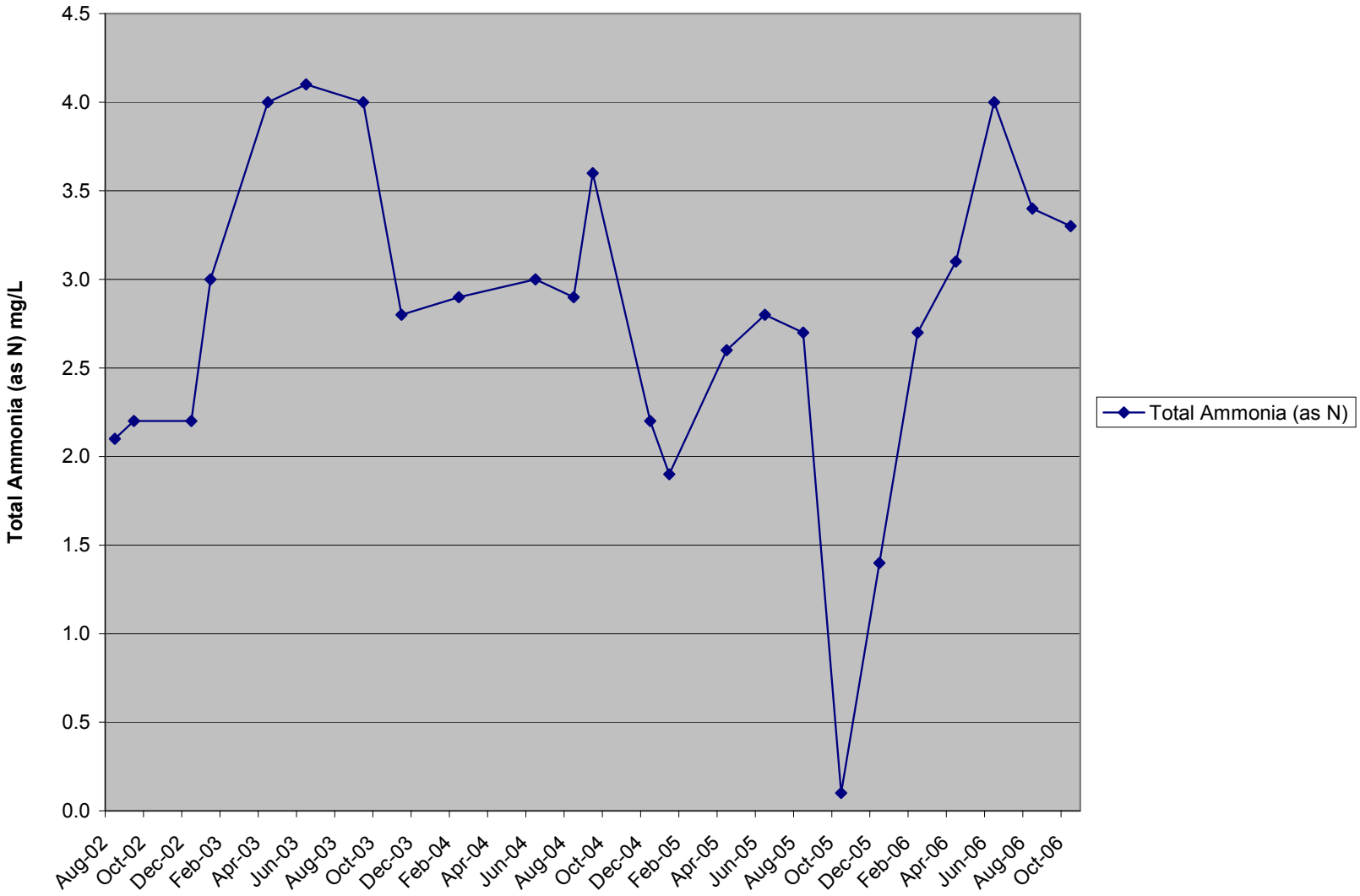
The Department used the Level I Water Quality Based Effluent Limit (WQBEL) determination process in evaluating and determining the appropriate effluent limit and monitoring requirements in Part I.A of the permit. This statement of basis serves as the Departments "Report" containing the basis for establishing the aforementioned requirements. The Department also reviewed ambient water quality in the receiving water (St. Johns River). The review included existing storet stations, Department's year 2000 305(b) report, and EPA 303(d) report. The Departments 305(b) report indicates the water quality in this area to be partially meeting water quality standards. The St. Johns River at the location of the discharge from this facility is listed on the EPA 303(d) list for lead, copper, silver and nutrients. Nutrients of concern from this discharge are total nitrogen and total phosphorus. The Department is addressing the development of a total maximum daily load for the lower St. Johns River, which then assesses the need to establish any applicable effluent nutrient limit for this discharger. The permit contains compliance monitoring of the discharge in years 1, 3, and 5 from the permit issue date to address any 303(d) related concerns. [FAC Rule 62-650.400]

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

Trends appear to be consistent and seasonally dependent.

Additional Information:


Ammonia, unionized mg/L
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Aug-02
Oct-02
Dec-02
Feb-03
Apr-03
Jun-03
Aug-03
Oct-03
Dec-03
Feb-04
Apr-04
Jun-04
Aug-04
Oct-04
Dec-04
Feb-05
Apr-05
Jun-05
Aug-05
Oct-05
Dec-05
Feb-06
Apr-06
Jun-06
Aug-06
Oct-06
Ammonia, unionized
Class III Criterion


Total Ammonia (as N) mg/L
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Aug-02
Oct-02
Dec-02
Feb-03
Apr-03
Jun-03
Aug-03
Oct-03
Dec-03
Feb-04
Apr-04
Jun-04
Aug-04
Oct-04
Dec-04
Feb-05
Apr-05
Jun-05
Aug-05
Oct-05
Dec-05
Feb-06
Apr-06
Jun-06
Aug-06
Oct-06
Total Ammonia (as N)

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 62-302.520(21), 62-302.530(62) and/or facility permit limits. Standard reference toxicant tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

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

(5) 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*),* and incubated for 14 days (FDEP SOP TA08_05). The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a "problem" threshold for fresh receiving waters, implying nutrient enrichment. High AGP values may constitute one line of evidence for violation of 62-302.530(47) F.A.C., 62-302.530(48)(a) F.A.C. and/or 62-302.530(48)(b) F.A.C..

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

(7) Algal Phytoplankton and Periphyton Assemblages

Methods: Phytoplankton were sampled for chlorophyll *a* content using a 1 L grab sample (QA Rule SOP FS7100).

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(47) F.A.C., 62-302.530(48)(a) F.A.C. and/or 62-302.530(48)(b) F.A.C..

Appendix D

Chain of Custody form

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2006-09-18-22
Anguilla Fish Farm

Requester: Shannan Bogdanov
Field Report Prepared By: Tom Kallemeyn

Customer: NE-DIST
Collected By: Tom Kallemeyn
Send Final Report To Melissa Long

Project ID: FYI3
Sampling Agency: NED DEP

PMAS: 1163

Lab ID *	Location / Field ID / Matrix / Temp (C) / pH / Latitude / Longitude	Collection (begin) / Tot Res Chlorine (mg/L) / Diss Oxygen (mg/L) / Sample Depth / Salinity (PPTh) / Sp Conductance (umho/cm) / Comments	Collection (end)	NPDES Number	Bottle Group(s)**
	Location: Anguilla fish farm @ Pond Field ID: Matrix: fresh Temp (C): 26.12 pH: 6.62 Latitude: o ' " . Longitude: o ' " .	☐ Comp ☒ Grab Collection (begin) Date 9/18/06 Time 10:25 Eastern Central Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 1.3 Sample Depth: 0.15 ☒ m ☐ ft 2520 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) Comments: 17% DO	Collection (end) Date Time Eastern Central Storet Station Number:		A, C
	Location: Anguilla Fish farm Effluent Canal @ Confluence Field ID: Matrix: fresh Temp (C): 23.20 pH: 7.36 Latitude: 29° 45' 29.3" Longitude: 81° 31' 42.5"	☐ Comp ☒ Grab Collection (begin) Date 9/18/06 Time 11:15 Eastern Central Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 5.5 Sample Depth: 0.5 ☒ m ☐ ft 1600 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) Comments: 70.8% DO Sample from Boat	Collection (end) Date Time Eastern Central Storet Station Number:	NPDES Number:	A
	Location: St. John River 200m from Anguilla east Canal Field ID: Matrix: fresh Temp (C): 27.9 pH: 7.56 Latitude: 29° 45' 37.3" Longitude: 81° 31' 44.2"	☐ Comp ☐ Grab Collection (begin) Date Time Eastern Central Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): 6.49 Sample Depth: ☒ m ☐ ft 1320 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) Comments:	Collection (end) Date Time Eastern Central Storet Station Number:	NPDES Number:	A
	Location: Equipment Blank Field ID: Matrix (Include type e.g. Salt, Fresh, etc): Temp (C): pH: Latitude: o ' " . Longitude: o ' " .	☐ Comp ☒ Grab Collection (begin) Date 9/18/06 Time 11:55 Eastern Central Tot Res Chlorine (mg/L): Diss Oxygen (mg/L): Sample Depth: ☐ m ☐ ft ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm) Comments: 2 bottles, Jimmy Deutsch (JD) 10:05 9.19.06	Collection (end) Date Time Eastern Central Storet Station Number:	NPDES Number:	B

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Tom Kallem	9/18/06	FH					SK	9.19.06 9:00am

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

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Appendix E

Chemical analysis of effluent and receiving water

DATE	SITE LOCATION	FIELD ID	ANALYSIS GROUP	COMPONENT	RESULT	UNITS	REMARK	MDL	PQL
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	UJ	38	150
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Benzidine	95	ug/L	U	95	380
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15

9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	11
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	11
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	Bio-AGP/LimNut	Algal Growth Potential-Salinity Adjusted	74.1	mg DryWt/L		3	3
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	Bio-BOD	Biochemical Oxygen Demand-5 Day	6.6	mg/L			
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	48	ug/L		0.85	2.6
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	1.5	ug/L	U	1.5	4.5
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Alachlor	0.57	ug/L	UJ	0.57	2.3
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Azinphos Methyl	0.19	ug/L	UJ	0.19	0.76
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Butylate	0.19	ug/L	UJ	0.19	0.76
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Ethion	0.048	ug/L	U	0.048	0.19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Ethoprop	0.095	ug/L	UJ	0.095	0.38
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Metalaxyl	0.24	ug/L	UJ	0.24	0.96
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.9
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Metribuzin	0.095	ug/L	U	0.095	0.38
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Naled	0.76	ug/L	U	0.76	3
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Norflurazon	0.14	ug/L	U	0.14	0.56
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Phorate	0.048	ug/L	UJ	0.048	0.19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	GC-Water	Simazine	0.048	ug/L	U	0.048	0.19
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	Metals-Water	Aluminum	43	ug/L		4	16
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	Metals-Water	Arsenic	1.3	ug/L	U	1.3	5.2
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2

9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Calcium	188	mg/L		0.02	0.08
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Chromium	0.68	ug/L	U	0.68	2.7
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Copper	4	ug/L	U	4	16
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Iron	99	ug/L		5	20
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Lead	0.2	ug/L	U	0.2	0.8
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Magnesium	113	mg/L		0.01	0.04
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Nickel	1	ug/L	U	1	4
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Selenium	0.5	ug/L	U	0.5	2
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Metals-Water	Zinc	5.8	ug/L	I	3	12
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Nutrients-Liquid	Ammonia-N	3.4	mg N/L		0.5	1
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Nutrients-Liquid	Kjeldahl Nitrogen	4.6	mg N/L		0.16	0.4
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Nutrients-Liquid	NO2NO3-N	0.3	mg N/L		0.004	0.01
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Nutrients-Liquid	O-Phosphate-P	0.47	mg P/L		0.032	0.08
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Nutrients-Liquid	TSS	6	mg/L	I	4	16
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Nutrients-Liquid	Total-P	0.6	mg P/L		0.02	0.06
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Nutrients-Liquid	Turbidity	3.2	NTU		0.05	0.05
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Bio-Toxicology	Bioassay-Acute-Scrn-FW-C.dubia, LC50	100	LC50	L		
9/18/06	EFFLUENT	ANGUILLA FISH FARM EFF		Bio-Toxicology	Bioassay-Acute-Scrn-FW-Fish, LC50	100	LC50	L		
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	UJ	38	150
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Benzidine	95	ug/L	U	95	380
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF	@ CONF WITH SJR	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19

9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	11
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	11
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Bio-AGP/LimNut	Algal Growth Potential	13.8	mg DryWt/L		0.3	0.9
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Bio-BOD	Biochemical Oxygen Demand-5 Day	3.3	mg/L			
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	25	ug/L		0.85	2.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	1.5	ug/L	U	1.5	4.5
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Alachlor	0.58	ug/L	UJ	0.58	2.3
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Ametryn	0.049	ug/L	U	0.049	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Atrazine	0.049	ug/L	U	0.049	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Azinphos Methyl	0.19	ug/L	UJ	0.19	0.76
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Butylate	0.19	ug/L	UJ	0.19	0.76
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Chlorpyrifos Ethyl	0.049	ug/L	U	0.049	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Chlorpyrifos Methyl	0.097	ug/L	U	0.097	0.39
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Diazinon	0.049	ug/L	UJ	0.049	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Ethion	0.049	ug/L	U	0.049	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Ethoprop	0.097	ug/L	UJ	0.097	0.39
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Fonofos	0.097	ug/L	U	0.097	0.39
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Hexazinone	0.097	ug/L	U	0.097	0.39
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Malathion	0.15	ug/L	U	0.15	0.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Metalaxyl	0.24	ug/L	UJ	0.24	0.96
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Metolachlor	0.49	ug/L	U	0.49	2

9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Metribuzin	0.097	ug/L	U	0.097	0.39
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Naled	0.78	ug/L	U	0.78	3.1
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Norflurazon	0.15	ug/L	U	0.15	0.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Parathion Ethyl	0.15	ug/L	U	0.15	0.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Parathion Methyl	0.097	ug/L	U	0.097	0.39
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Phorate	0.049	ug/L	UJ	0.049	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Prometryn	0.15	ug/L	U	0.15	0.6
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	GC-Water	Simazine	0.049	ug/L	U	0.049	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Aluminum	44	ug/L		4	16
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Arsenic	1.5	ug/L	I	1.3	5.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Calcium	64.9	mg/L		0.02	0.08
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Chromium	0.3	ug/L	U	0.3	1.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Copper	0.82	ug/L		0.2	0.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Iron	63	ug/L		5	20
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Lead	0.2	ug/L	U	0.2	0.8
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Magnesium	24.9	mg/L		0.005	0.02
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Nickel	1	ug/L	U	1	4
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Metals-Water	Zinc	3	ug/L	U	3	12
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Nutrients-Liquid	Ammonia-N	0.044	mg N/L		0.01	0.02
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Nutrients-Liquid	Kjeldahl Nitrogen	1.1	mg N/L		0.08	0.2
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Nutrients-Liquid	NO2NO3-N	0.011	mg N/L		0.004	0.01
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Nutrients-Liquid	O-Phosphate-P	0.018	mg P/L		0.004	0.01
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Nutrients-Liquid	TSS	7	mg/L	I	4	16
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Nutrients-Liquid	Total-P	0.045	mg P/L	I	0.02	0.06
9/18/06	TEST SITE 1	ANGUILLA FISH FARM EFF @ CONF WITH SJR	Nutrients-Liquid	Turbidity	3.8	NTU		0.05	0.05
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	UJ	38	150
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Benzidine	95	ug/L	U	95	380

9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Endrin	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	11
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	UJ	2.9	11
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	11
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Alachlor	0.57	ug/L	UJ	0.57	2.3
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Azinphos Methyl	0.19	ug/L	UJ	0.19	0.76
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Butylate	0.19	ug/L	UJ	0.19	0.76
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Ethion	0.048	ug/L	U	0.048	0.19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Ethoprop	0.095	ug/L	UJ	0.095	0.38

9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Metalaxyl	0.24	ug/L	UJ	0.24	0.96
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.9
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Metribuzin	0.095	ug/L	U	0.095	0.38
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Naled	0.76	ug/L	U	0.76	3
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Norflurazon	0.14	ug/L	U	0.14	0.56
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Phorate	0.048	ug/L	UJ	0.048	0.19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	GC-Water	Simazine	0.048	ug/L	U	0.048	0.19
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Aluminum	4	ug/L	U	4	16
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Arsenic	0.5	ug/L	U	0.5	2
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Calcium	0.02	mg/L	U	0.02	0.08
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Chromium	0.3	ug/L	U	0.3	1.2
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Copper	0.2	ug/L	U	0.2	0.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Iron	5	ug/L	U	5	20
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Lead	0.2	ug/L	U	0.2	0.8
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Magnesium	0.005	mg/L	U	0.005	0.02
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Nickel	1	ug/L	U	1	4
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Selenium	0.5	ug/L	U	0.5	2
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Metals-Water	Zinc	3.2	ug/L	I	3	12
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	U	0.01	0.02
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Nutrients-Liquid	Kjeldahl Nitrogen	0.08	mg N/L	U	0.08	0.2
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
9/18/06	EQUIPMENT BLANK	EQUIPMENT BLANK	Nutrients-Liquid	Total-P	0.02	mg P/L	U	0.02	0.06
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Bio-AGP/LimNut	Algal Growth Potential	1.7	mg DryWt/L	A	0.3	0.9
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Bio-BOD	Biochemical Oxygen Demand-5 Day	3.2	mg/L			
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	15	ug/L		1.4	4.3
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	2.5	ug/L	U	2.5	7.5
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Aluminum	46	ug/L		4	16
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Arsenic	2.5	ug/L	U	2.5	10
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Cadmium	0.05	ug/L	U	0.05	0.2
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Calcium	61.4	mg/L		0.02	0.08
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Chromium	0.3	ug/L	U	0.3	1.2
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Copper	10	ug/L	U	10	40
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Iron	56	ug/L		5	20
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Lead	0.2	ug/L	U	0.2	0.8
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Magnesium	23	mg/L		0.005	0.02
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Nickel	1	ug/L	U	1	4
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Selenium	2.5	ug/L	U	2.5	10
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Silver	0.025	ug/L	U	0.025	0.1
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Metals-Water	Zinc	3	ug/L	U	3	12
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Nutrients-Liquid	Ammonia-N	0.01	mg N/L	UY	0.01	0.02
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Nutrients-Liquid	Kjeldahl Nitrogen	0.08	mg N/L	UY	0.08	0.2
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Nutrients-Liquid	NO2NO3-N		mg N/L	O	4	10
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Nutrients-Liquid	O-Phosphate-P	0.01	mg P/L		0.004	0.01
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Nutrients-Liquid	TSS	6	mg/L	I	4	16
9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Nutrients-Liquid	Total-P	0.056	mg P/L	IY	0.02	0.06

9/18/06	TEST SITE 2	SJR 200 M FROM ANGUILLA EFF	Nutrients-Liquid	Turbidity		3.7	NTU	0.05	0.05

Appendix F

Additional physical, chemical, toxicological and microbiological results

	Time	Depth	Depth	Temp	Cond	Secchi	Sal	pH	DO	DO%	T. Coliform	F. Coliform
Anquilla Fish Farm POD Compliance Sampling Point	10:25	0.3	0.15	26.1	2520	.3l	1.29	6.92	1.3	17	1900	100
Anguilla Fish Farm Effluent Confluence with St. Johns	11:15	1	0.5	28.2	1600	1l	0.8	7.36	5.5	70.8	300	140
SJR Control	11:30	3	1.5	27.9	1320	1.5	0.6	7.56	6.42	82.5	600	20

Data provided by Tom Kallemeyn from the Northeast District Lab.

FDEP Biology Section - Acute Screen Bioassay Bench Sheets

~~9:00~~ 11:15 DA 9-19-06

Facility: Anguilla Fish Farm

Address : 181 School Rd, Federal Point

City: East Palatka **County:** Putnam

Contact/District: Tom Kullem~~ey~~N NE-D

NPDES Permit #: FL FI0278076

LIMS Job #: TLH-2006-09-19-08-01 **LIMS Sample #:** 951238

Lims Data Entry: 9-24-06MF Data Entry Verification: 9.25.06 SD

Sample Collection: Date: 9-18-06 Time: ~~16:30~~

Hold Time Start: Date: 9-18-06 Time: 11:15

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: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~ ____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 23.4 - 25.8

Room B246: 24.2 - 25.3

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 Daniels

Bruce Neelan

Marshall Faircloth

Erin Levy

Nijole Wellendorf

REVIEWER

Water Quality Parameters	20% DMW 24-06	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	N/A	Not	Measured	—	BA
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03				<0.03	HACH	BA	MF
Alkalinity (mg/L as $CaCO_3$):	84	142				112	HACH	aw	BA
Hardness (mg/L as $CaCO_3$):	86	131				928	HACH	aw	BA
Total Ammonia (mg/L as N):	<0.017	<0.017				3.26	DENVER	MF	DA
Salinity (ppth):	<1	<1				1.31	YSI (Mettler)	BA	MF

V 1.4 9/12/05

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 951238 **Test #:** 1 **Test Started:** Date 9-19-06 Time: 12:45
Organism: C. dubia **SOP #:** TA 07_ 01 **Test Ended:** Date 9-21-06 Time: 12:00
Organism Batch: 39-06 **Diluent/ Batch:** DMW / 24-06
Organism Age: <24 hrs **Food:** YCT *P. subcapitata* *Artemia*
Chamber Size: 30 mL **Batch:** 2-06 4-06 —
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			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
100%	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
Organisms loaded by: BA		Checked by:	[redacted]	BA	BA			

Loading Verified by: JD

Comments:

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

Test Results:
% mortality in 100% sample: 0%
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).

V 2.1 11/01/2005

FDEP Biology Section - Bioassay Survival Sheet

LIMS Sample #: 951238 **Test #:** 2 **Test Started:** Date 9-19-06 Time: 13:00
Organism: C. leedsi **SOP #:** TA 07_02 **Test Ended:** Date 9-21-06 Time: 12:05
Organism Batch: 22-06 **Diluent/ Batch:** Well H_2O 9-19-06
Organism Age: 12 days **Food:** YCT *P. subcapitata* *Artemia*
Chamber Size: 1000 mL **Batch:** — — 951-536-90
Test Volume: 500 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	A1	5	5	5			
	B	A2	5	5	5			
	C	A4	5	5	5			
	D	A6	5	5	5			
100%	A	A7	5	5	5			
	B	A10	5	5	5			
	C	A11	5	5	5			
	D	A12	5	5	5			
Organisms loaded by: JD Loading Verified by: BA		Checked by:	[redacted]	BA	BA			

Comments:

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

Test Results:
% mortality in 100% sample: 0%
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).

V 2.1 11/01/2005

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 951238 **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	M		Replicate M A M 9-25-06			
pH (S.U.)	8.2		8.2			
Temperature °C	25.6		24.0			
Dissolved Oxygen mg/L	6.5		7.9			
Conductivity ~~µmhos~~ ~~mmhos~~ (A)	1727		2.08	strong mark		
(initials) Measured by:	BA		BA			
(initials) Recorded by:	BA		BA			

Comments: (A) umhos is unit for control water. MF 9-24-06
M - meter vial MF 9-25-06

Concentration: 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		Replicate M A	9-25-06 MF		
pH (S.U.)	7.5		8.3			
Temperature °C	25.4		24.0			
Dissolved Oxygen mg/L	5.2		8.0			
Conductivity µmhos (mmhos)	2.59		2.80			
(initials) Measured by:	BA		BA			
(initials) Recorded by:	BA		BA			

Comments: M - meter vial MF 9-25-06

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:

000014

V 2.0 2/24/04

FDEP Biology Section - Bioassay Parameter Sheet

LIMS Sample # : 951238 **Test #:** 2 of 2

TEST SOP #: TA0702 **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			
pH (S.U.)	7.8	7.8	8.3			
Temperature °C	24.9	24.7	24.5			
Dissolved Oxygen mg/L	7.1	7.0	7.0			
Conductivity (µmhos) mmhos	289	253	263			
(initials) Measured by:	BA	BA	BA			
(initials) Recorded by:	BA	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			
pH (S.U.)	7.4	8.0	8.4			
Temperature °C	25.3	24.5	24.3			
Dissolved Oxygen mg/L	5.1	7.7	8.6			
Conductivity µmhos (mmhos)	2.65	2.57	2.60			
(initials) Measured by:	BA	BA	BA			
(initials) Recorded by:	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:

V 2.0 2/24/04

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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: 9/18/06

Shipped to: FL. DEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia					
Menidia beryllina					
Cyprinella leedsi	100+	11	CL 060907		
Pimephales promelas	150+	12	CL 060906		

Packed by: _____

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

Appendix G

Standard Reference Toxicant data

FDEP Biology Section - 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: Definitive
Static / Static Renewal
Test Page 1 of 2

Diluent/ Batch#: DMW / 23-06
Toxicant/ Batch# NaCl / 12-06

Test Beginning: Date: 9-5-06 Time: 1240
Test Ending: Date: 9-9-06 Time: 1430

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	81	Hach	ew
Hardness (mg/L as CaCO3):	80	Hach	ew
Total Ammonia (mg/L as N):	<0.07	Denver	BA
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 37-06 ~~37-06~~ <24 hrs BA
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT P.*subcapitata* Artemia
Food Batch: 2-06 4-06 –
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. µg/L (B)	Rep.	Chamber#	Number Live 0 hr	24 hr	48 hr	~~48 hr~~	~~72 hr~~	~~96 hr~~	pH (SU) 0 hr	24 hr	48 hr	~~48 hr~~	~~72 hr~~	~~96 hr~~	Temperature (° C) 0 hr	24 hr	48 hr	~~48 hr~~	~~72 hr~~	~~96 hr~~	D.O. (mg/l) 0 hr	24 hr	48 hr	~~48 hr~~	~~72 hr~~	~~96 hr~~	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhom/cm) 0 hr	24 hr	48 hr	~~48 hr~~	~~72 hr~~	96 hr
Control	A	A	5	5	5				8.0		7.9				24.4		24.1				7.1		7.6				170.8		0,190			
	B	B	5	5	5																						0.171(A)					
	C	C	5	5	5																											
	D	D	5	5	5																											
1.5	A	A	5	5	5				7.9		7.9				24.9		24.1				7.0		7.4				2.94		3.34			
	B	B	5	5	5																											
	C	C	5	5	5																											
	D	D	5	5	5																											
2.0	A	A	5	3 2D	2 1D				8.0		7.9				24.9		24.2				7.1		7.4				3.82		4.48			
	B	B	5	5	2 3D																											
	C	C	5	5	3 2D																											
	D	D	5	4 1D	1 3D																											
2.5	A	A	5	4 1D	0 4D				8.0		7.9				24.9		24.2				7.1		7.2				4.72		5.47			
	B	B	5	5	0 5D																											
	C	C	5	3 2D	0 3D																											
	D	D	5	4 1D	0 4D																											
3.0	A	A	5	4 1D	0 4D				8.0		7.9				24.8		24.2				7.1		7.2				5.59		6.81			
	B	B	5	3 2D	0 3D																											
	C	C	5	4 1D	0 4D																											
	D	D	5	2 3D	0 2D																											
4.0	A	A	5	0 5D	–				8.0		7.9				24.8		24.2				7.1		7.3				7.29		8.71			
	B	B	5	0 5D	–																											
	C	C	5	0 5D	–																											
	D	D	5	1 4D	0 1D																											
	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 Pardue
James Daniels
Marshall Faircloth
Nicki Wellenkamp
REVIEWER

Concentrations prepared by: BA
Loading verified by: JD.
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.1 max. 26.3 mean 25.5
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.5 max. 25.4 mean 24.9

Remarks: (A) written in uhmos/cm at 0hr, corrected BA 9-6-06

Statistical Results: Method: Spearman-Karber
(B) / 96 hour LC50: 1.92
95% Confidence Interval: lower 1.81 upper 2.03

Revised 02/21/06

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FDEP Biology Section - 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: Definitive
Static / **Static Renewal**
Test Page 1 of 2

Diluent/ Batch#: DMW / 23-06
Toxicant/ Batch# NaCl / 12-06

Test Beginning: Date: 9-5-06 Time: 1240
Test Ending: Date: 9-9-06 Time: 1430

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	81	Hach	cw
Hardness (mg/L as CaCO3):	80	Hach	cw
Total Ammonia (mg/L as N):	<0.017	Denver	BA
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 37-06 / <24 hrs
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT, P.*subcapitata*, Artemia
Food Batch: 2-06, 4-06, —
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. µg/L (1)	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 Cond. (mmhos/cm) 0 hr / 48 hr	UNCORRECTED Cond. (mmhos/cm) 24 hr / 72 hr	UNCORRECTED Cond. (mmhos/cm) 48 hr / 96 hr
Control	A	A	5	4 D	4	8.0		8.1	24.9		24.8	7.9		8.4	0.171		0.187
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	7.9		8.0	25.2		24.7	7.5		8.3	2.95		3.21
	B	B	5	5	5												
	C	C	5	5	4 D												
	D	D	5	5	4 D												
2.0	A	A	2	1 D	1	8.0		8.1	25.3		24.7	7.5		8.3	3.86		4.22
	B	B	2	2	1 D												
	C	C	3	2 D	1 D												
	D	D	1	1	1												
2.5	A	A	—	—	—	8.0		—	25.2		—	7.4		-	4.72		—
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
3.0	A	A	—	—	—	8.0		—	25.0		—	7.5		-	5.57		—
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
4.0	A	A	—	—	—	8.0		—	24.7		—	7.4		-	7.28		—
	B	B	—	—	—												
	C	C	—	—	—												
	D	D	—	—	—												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	BA	MF	BA		MF	BA		MF	BA		MF	BA		MF
Recorded by:			BA	BA	MF	BA		MF	BA		MF	BA		MF	BA		MF

Investigators' Signatures
Bill Hubick
James Davis
Marshall Faircloth
Gin Mya
Nicki Willendy
REVIEWER

Concentrations prepared by: BA
Loading verified by: —
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.1 max. 26.3 mean 25.5
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.5 max. 25.4 mean 24.9

Remarks:

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 1.80
95% Confidence Interval: lower 1.71 upper 1.90

Revised 02/21/06

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FDEP Biology Section - 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: Definitive
Static / Static Renewal
Test Page 1 of 2

Diluent/ Batch#: Well H2O / 9-6-06
Toxicant/ Batch# NACL / 13-06

Test Beginning: Date: 9-6-06 Time: 1330
Test Ending: Date: 9-10-06 Time: 12:15

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	134	Hach	EW
Hardness (mg/L as CaCO3):	130	Hach	EW
Total Ammonia (mg/L as N):	<0.017	Denver	BA
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 20-06 / 12 days
Feeding: Prior to test / Prior to renewal / Daily
Food: YCT P.*subcapitata* Artemia
Food Batch: — — GSL-536-90
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc µg/L (a/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 Cond. (mmhos/cm) 0 hr (48 hr)	UNCORRECTED Cond. (µmhom/cm) 24 hr (72 hr)	UNCORRECTED Cond. (µmhom/cm) 48 hr (96 hr)
(A) Control	A	D23 (B)	10	10	10	7.8		8.1	24.3		24.3	7.7		7.6	0.371		0.375
	B	D24	10	10	10		8.1			24.2			7.2			0.298	
	C																
	D																
6.0	A	D15	10	10	10	7.9		8.1	24.2		25.1	7.4		7.2	10.50		10.5
	B	D16	10	9 10	8 10		8.0			24.6			6.7			10.1	
	C																
	D																
7.0	A	D17	10	9 10	7 20	7.9		8.1	24.4		25.2	7.4		7.1	12.51		12.5
	B	D18	10	10	10		8.0			24.7			6.8			11.9	
	C																
	D																
8.0	A	D19	10	8 20	6 20	7.9		8.1	24.4		24.4	7.2		7.1	13.83		13.9
	B	D20	10	8 20	5 30		8.0			24.7			6.8			13.6	
	C																
	D																
9.0	A	D21	10	2 80	1 10	7.9		8.2	24.4		25.0	7.1		7.1	15.52		16.0
	B	D22	10	0 100	—		8.0			24.7			6.7			15.5	
	C																
	D																
(A) 10.0	A	D23 (B)	10	0 100	—	7.9			24.4			7.1			16.90		16.9
	B	D24	10	2 80	1 10		8.0	8.2		24.6	24.6		6.4	6.9		16.8	16.9
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	JD	EW	JD	BA	EW	BA	EW	EW	JD	BA	EW	JD	BA
Recorded by:			JD	JD	JD	EW	JD	BA	EW	BA	EW	EW	JD	BA	EW	JD	BA

Investigators' Signatures
Brian Adams
Eric Sipp
James Daniels
Marshall Sanchez
Nicole Millard
REVIEWER

Concentrations prepared by: JD
Loading verified by: EW
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.9 max. 26.3 mean 25.5
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.5 max. 25.4 mean 24.9

Remarks: (A) wrong chamber # EW 9-6-06
(B) Transcription error BA 9-8-06

Statistical Results: Method: Spearman-Karber
(48) 96 hour LC50: 7.93
95% Confidence Interval: lower 7.57 upper 8.32

Revised 02/21/06

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FDEP Biology Section - 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: Definitive
Static / Static Renewal
Test Page 2 of 2

Diluent/ Batch#: 4/11 H20 / 9-6-06
Toxicant/ Batch# NaCl / 13-06

Test Beginning: Date: 9-6-06 Time: 1330
Test Ending: Date: 9/10/06 Time: 12:15

Organism Batch #/ Age: 20-061 / 12-days

Water Quality Parameters:	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	BA
Alkalinity (mg/L as $CaCO_3$):	134	Hach	aw
Hardness (mg/L as CaCO3):	130	Hach	aw
Total Ammonia (mg/L as N):	<0.017	Denver	BA
Salinity (ppth):	<1	Mettler	BA

Feeding: Prior to test / Prior to renewal / Daily
Food: YCT *P.subcapitata* Artemia
Food Batch: – – 954-536-40
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L (g/L)	Rep.	Chamber#	Number Live 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	pH (SU) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	Temperature (° C) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	D.O. (mg/l) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhom/cm) 0 hr / 24 hr / 48 hr (48 hr / 72 hr / 96 hr)
Control	A	D23	+10 9 / 9 10 / 9 (8)	7.9 / / 8.2	24.0 / / 24.7	7.6 / / 7.2	0.315 / / 0330
	B	D24	+0 10 / 10 / 10	/ 8.3 /	/ 24.4 /	/ 7.2 /	/ 0.280 /
	C	MF corrected chamber # 9-27-06	10				
	D		10				
6.0	A	D15	10+0 / 10 / 9 10	7.9 / / 8.1	24.0 / / 24.7	7.3 / / 7.0	10.51 / / 10.3
	B	D16	9+0 / 8 / 8	/ 8.2 /	/ 24.3 /	/ 7.4 /	/ 10.6 /
	C		10				
	D		8				
7.0	A	D17	7+0 / 6 10 / 6	8.0 / / 8.0	24.0 / / 24.9	7.3 / / 6.8	12.32 / / 12.6
	B	D18	10+0 / 8 23 / 8	/ 8.1 /	/ 24.4 /	/ 7.2 /	/ 12.4 /
	C		7				
	D		10				
8.0	A	D19	+6 / 5 10 / 5	8.0 / / 8.0	24.0 / / 24.9	7.3 / / 6.6	14.01 / / 14.3
	B	D20	+0 5 / 4 10 / 4	/ 8.1 /	/ 24.6 /	/ 7.3 /	/ 14.2 /
	C		6				
	D		5				
9.0	A	D21	+0 1 / 1 / 1	8.0 / 8.1 / 8.0	24.0 / 24.4 / 24.9	7.2 / 7.1 / 6.4	15.85 / 15.9 / 16.1
	B	D22	+0 0 / — / —		24.4 MF wrong space 9-9-06	7.1 MF wrong space 9-9-06	
	C		1				
	D		–				
10.0 (10.0 J.D.)	A	D23	+0 0 / — / —	8.0 / — / —	24.0 / — / —	7.3 / — / —	17.12 / — / —
	B	D24	1+0 (8) / 1 / 1	/ 8.1 / 8.1	/ 24.6 / 24.7	/ 6.7 / 6.4	/ 17.2 / ↑ (17.4)
	C	MF corrected chamber # 9-27-06	–				wrong space MF for JD 9-27-06
	D		1				shell debris in replicate space,
	A						
	B						
	C						
	D						
Loaded / measured by:			JD	MF	JD	aw	MF	JD	aw	MF	JD	aw	MF	JD	aw	MF	JD
Recorded by:			JD	MF	JD	aw	MF	JD	aw	MF	JD	aw	MF	JD	aw	MF	JD

Investigators' Signatures
Brian Anderson
Gina Lupo
James Daniels
Marshall Faircloth
Najibi Wellendorf
REVIEWER

Concentrations prepared by: JD
Loading verified by: —
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.9 max. 26.3 mean 25.5
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.5 max. 25.4 mean 24.9

Remarks: (A) Transcription error recorded # in Reps "C & D" BA 9-6-06
(B) Transcription error JD 9.8.06

Statistical Results: Method: Spearman-Karber
48 / 96 hour LC50: 7.68
95% Confidence Interval: lower 7.29 upper 8.10

Revised 02/21/06

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Ceriodaphnia dubia Acute Standard Reference Toxicant Test

DATE: 9-05-06 DURATION: 48 h TOXICANT : NaCl
SPECIES: *Ceriodaphnia dubia*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
1.50	20	0
2.00	20	12
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 1.92
95% LOWER CONFIDENCE: 1.81
95% UPPER CONFIDENCE: 2.03

Cyprinella leedsi Acute Standard Reference Toxicant Test

DATE: 9-6-06 DURATION: 48 h TOXICANT : NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
6.00	20	2
7.00	20	3
8.00	20	9
9.00	20	19
10.00	20	19

SPEARMAN-KARBER TRIM: 10.00%

SPEARMAN-KARBER ESTIMATES: LC50: 7.93
95% LOWER CONFIDENCE: 7.57
95% UPPER CONFIDENCE: 8.32

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NELAC Accredited

Organism Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Date: 9/5/06

Shipped to: F-DEP

P.O. No: _____

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150+	4 Days	MS060901	25°C	~18.2‰
Menidia beryllina	150+	11 Days	SS060825	25°C	~18.6‰
Cyprinella leedsi	150+	12 Days	CL060824	25°C	
Pimephales promelas	150+	11 Days 9/5/06	FM060825-1515 9/5/06	25°C	

Packed by: Frank Gangi

Shipped Via: FedEx

Notes: _____

Thank you for your order.

Appendix H

Typical Values for Selected Parameters in Florida Waters

Percentile Distribution (1617 stations)

TEST SITE 1

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	Measured
Total Kjeldahl Nitrogen	0.30	0.39	0.56	0.73	0.87	1.00	1.11	1.26	1.49	1.93	2.80	**1.1**
Total Ammonia	0.02	0.02	0.04	0.05	0.06	0.08	0.11	0.14	0.20	0.34	0.60	**0.044**
Nitrate plus Nitrite	0.01	0.01	0.03	0.05	0.07	0.10	0.14	0.20	0.32	0.64	1.05	**0.011**
Total Phosphorus	0.02	0.03	0.05	0.06	0.10	0.13	0.18	0.25	0.39	0.74	1.51	**0.045 I**
Orthophosphate	0.01	0.01	0.03	0.04	0.05	0.08	0.11	0.17	0.27	0.59	1.37	**0.018**
Turbidity (NTU)	0.60	0.90	1.20	1.45	2.10	2.80	3.60	4.50	6.65	10.45	16.30	**3.8**

TEST SITE 2

Parameter	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	Measured
Total Kjeldahl Nitrogen	0.30	0.39	0.56	0.73	0.87	1.00	1.11	1.26	1.49	1.93	2.80	**0.08 UY**
Total Ammonia	0.02	0.02	0.04	0.05	0.06	0.08	0.11	0.14	0.20	0.34	0.60	**0.01 UY**
Nitrate plus Nitrite	0.01	0.01	0.03	0.05	0.07	0.10	0.14	0.20	0.32	0.64	1.05	**ND**
Total Phosphorus	0.02	0.03	0.05	0.06	0.10	0.13	0.18	0.25	0.39	0.74	1.51	**0.056 IY**
Orthophosphate	0.01	0.01	0.03	0.04	0.05	0.08	0.11	0.17	0.27	0.59	1.37	**0.01**
Turbidity (NTU)	0.60	0.90	1.20	1.45	2.10	2.80	3.60	4.50	6.65	10.45	16.30	**3.7**

NTU = Nephelometric turbidity units.

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

Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

ND = No data.

Adapted from Joe Hand, FDER, personal communication, 1991 (data collected 1980-1989).

The Bioassay of Anguilla Fish Farm effluent sampled on September 18, 2006, NPDES #FL0278076.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 2 7 8 0 7 6 11	12 0 6 0 9 1 8	18 **B**	19 **S**	20 1

Remarks

66

The Priority Pollutants Analysis for Bioassay of Anguilla Fish Farm effluent sampled on September 18, 2006, NPDES #FL0278076.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 2 7 8 0 7 6 11	12 0 6 0 9 1 8	18 **X**	19 **S**	20 1

Remarks

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Biological Analyses of the Anguilla Fish Farm effluent sampled on September 18, 2006, NPDES #FL0278076.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 F L 0 2 7 8 0 7 6 11	12 0 6 0 9 1 8	18 **S**	19 **S**	20 1

Remarks

66