

Effluent Quality Assessment

City of Port St. Joe WWTF

Gulf County

NPDES #FL0020206

Sampled October 1, 2007

April 2008

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

City of Port St. Joe WWTF, S.R. 382, NE US 98, Port St. Joe, Gulf County, Florida, NPDES #FL0020206. Effluent samples for this facility were collected on October 1, 2007.

Introduction

City of Port St. Joe Wastewater Treatment Facility (WWTF) is a Domestic Wastewater Treatment Facility (DWWTF) which was reclassified from an Industrial Wastewater Treatment Facility (IWWTF) on Dec. 5, 2007. City of Port St. Joe WWTF was reclassified after the paper mill which contributed to most of the flow was shut down. Prior to reclassification, Port St. Joe had a design flow of 34.75 million gallons per day (MGD) monthly average daily flow (MADF). The MADF from October 2006 to September 2007 was 3.315 MGD. The treatment process at the existing WWTF consists of primary clarification, aeration, and clarification before effluent is discharged via a Parshall Flume into the Gulf County Canal, a Class III Marine water body which flows into the Gulf of Mexico. The point of discharge (Outfall D-001) is located approximately at latitude 29º 50' 10" N, longitude 85º 18' 24" W.

The new permit (issued December 5, 2007) allows construction and operation of a new City of Port St. Joe WWTF. The facility's permitted capacity will be reduced from 34.75 MGD MDAF to 3.1 MGD annual average daily flow (AADF). The construction project includes a new master lift station (with influent screening, influent flow measurement via a Parshall flume, grit removal, and influent pumping), the addition of high-rate filters, effluent disinfection via chlorine contact chambers and a new effluent pump station. The facility will have a permitted limited wet weather discharge at the existing D-001 outfall until such time as the Reuse Land Application System (R-001 and R-002) is completed. The reuse system will consist of a 2.63 MGD AADF permitted capacity slow-rate restricted public-access spray field irrigation system (R-001). R-001 consists of eight zones and a total area of 62.62 hectares (154.73 acres). The Reuse system will also have a 0.6 MGD AADF permitted capacity rapid infiltration basin system (R-002). R-002 consists of two rapid-rate infiltration basins having a total area of 6.6 hectares (16.30 acres).

The facility has no Administrative Orders (AO). The facility is currently under Consent Order (CO) OGC# 06-0326-23 for acute toxicity violations (Acute test failures: February, March and August 2001; January and June 2002; March, July and October 2004; and April 2005). The facility has a mixing zone for aluminum, copper, iron, mercury, and silver. The mixing zone is 800 m in length and extends 400 m upstream and 400 m downstream of the point of effluent discharge into the Gulf County Canal. (Facility information provided by Kim Allen of FDEP Northwest District.)

Methods

Samples were collected from the NPDES sampling point (Parshall Flume) for Outfall D-001 by Glenn Butts (FDEP Northwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

See Appendix A for the completed chain of custody form.

The 48-hour acute screening toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp. Although the 48-hour acute screening toxicity test does not reflect the required permit conditions, passing test results provide confidence that the required permit conditions would likely be met.

An aliquot of the algal growth potential (AGP) sample was salinity adjusted to meet the minimum salinity requirement of the test species for the marine AGP test. Freshwater and marine AGP tests were performed.

Toxicity Test Results

Tests were performed October 2 - 4, 2007.

Ceriodaphnia dubia 48-hour acute screening bioassay –	LC_{50} > 100%, 5% mortality* in 100% sample at 48 hours
Cyprinella leedsi 48-hour acute screening bioassay –	LC_{50} > 100%, 0% mortality* in 100% sample at 48 hours

The bioassay sample was not acutely toxic to the test organisms.

*NOTE: In a 48-hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500(1)(a)4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3)(a), F.A.C.).

See Appendix B for bioassay bench sheets. See Appendix C for results of the last 20 standard reference toxicant (SRT) tests and the bench sheets and statistical analyses of the SRT tests that correspond to these facility tests. See Appendix D for test organism receipts.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 80.6 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen-limited. The predicted AGP based on inorganic nitrogen concentrations was 34.5 (±20%) mg dry wt/L (Table 1; Miller et al. 1978).

The effluent Algal Growth Potential (AGP) was 21.3 mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Shultz found that AGP values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters, implying nutrient enrichment (personal communication with Ron Raschke USEPA Region 4, 1987).

See Table 1 for AGP results.

Chemistry Results

The total residual chlorine (TRC; 0.06 mg/L) detected in the bioassay sample in the laboratory is thought be due to interference in the sample since the effluent was not chlorinated at the time of sampling. Total ammonia was not detected in the bioassay sample in the laboratory. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.029 mg/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was ≤ 0.02 mg/L.

Copper and nickel were detected in the effluent at levels that comply with Class III marine water quality criteria (62-302.530, F.A.C.). Arsenic, atrazine, iron, and zinc were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL). The effluent chlorophyll *a* concentration was very high, at 180 μg/L (Table 2).

See Table 2 for results of analytes detected in the effluent, and corresponding limits. See Appendix E for a complete list of chemical analyses performed.

Conclusion

The effluent sample collected from the NPDES sampling point for Outfall D-001 for this facility on October 1, 2007, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The effluent AGP results exceeded the "problem" threshold for fresh and marine receiving waters. Effluent water quality samples did not exceed any applicable water quality standards or violate any permit conditions.

Literature Cited

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Table 1. Measured and predicted algal growth potential (AGP; mg dry weight/L) of the freshwater species *Pseudokirchneriella subcapitata* for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation, the AGP (salinity adjusted) of the saltwater species *Dunaliella tertiolecta,* and ratios of nitrogen to phosphorus for samples collected from City of Port St. Joe on October 1, 2007.

City of Port St. Joe						
Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	AGP (Salinity Adjusted)	Inorganic N:P ratio	Total N:P ratio
Effluent	80.6	34.5 ± 6.9	181.6 ± 36.3	21.3	9.5	2.0

Table 2. Effluent limits (at time of sampling), Class III Criteria for predominantly marine waters and chemical data for samples from City of Port St. Joe WWTF collected on October 1, 2007.

City of Port St. Joe WWTF NPDES# FL0020206	Class III Standards	Effluent Limits	Effluent Grab Sample	
Organic Constituents (µg/L)				
Atrazine	-	-	0.056	I
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1,500	≤ 2,300 p	60	U
Arsenic	≤ 50	Report p	1.7	I
Cadmium	≤ 8.8	Report p	0.02	U
Calcium (mg/L)	-	-	34.8	
Chromium-III	-	-	1	U
Chromium-VI	≤ 50	Report p	1	U
Copper	≤ 3.7	≤ 13 p	2.51	
Iron	≤ 300	≤ 700 p	39	I
Lead	≤ 8.5	Report p	0.2	U
Magnesium (mg/L)	-	-	44.1	
Mercury	≤ 0.025	≤ 0.5 p	-	
Nickel	≤ 8.3	Report p	1.85	
Selenium	≤ 71	Report p	0.5	U
Silver	≤ 2.3	≤ 2 p	0.025	U
Zinc	≤ 86	Report p	8	I
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.096	
Total Phosphorus	-	Report p	2.4	Y
Total Ammonia	-	-	0.029	fY
Un-ionized Ammonia	-	Report p	≤ 0.02	c
Nitrate and Nitrite	-	Report p	0.88	Y
Total Kjeldahl Nitrogen	-	-	3.9	Y
Organic Nitrogen	-	-	3.871	c
Total Nitrogen	-	-	4.78	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0 s	-	7.1	
pH (SU)	6.5 - 8.5 s	6.5 - 8.5 s	7.7	
Conductivity (µmhos/cm)	-	-	1,104	
Temperature °C	-	-	27.2	
Total Residual Chlorine (mg/L)	≤ 0.01 s	-	0.06	£
Total Suspended Solids (mg/L)	-	≤ 56.69 * p	21	
Total Dissolved Solids (mg/L)	-	-	648	
Turbidity (NTU)	< 29 t	-	18	
Chlorophyl-a (µg/L)	-	-	180	
Phaeophytin-a (µg/L)	-	-	31	
Color (pt-Co)	-	Report s	75	
BOD, 5 day (mg/L), N - uninhibited	-	≤ 49.75 * p	7.3	L
Chloride (mg/L)	-	-	100	
Sulfate (mg/L)	-	-	100	
Flow (MGD)	-	≤ 34.75 m	3.315 a	
Hardness (mg $CaCO_3$)	-	-	268.50	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms	≤ 800 s	Report s	-	

Value exceeds the Class III Water Quality Criteria or permit limits

a - Annual average
c - Value is calculated
f - Analyte was also detected in the field blank
m - Monthly average
p - Limit is based on a 24 hour composite sample
s - Single grab sample
t - Shall not exceed 29 NTUs above background
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
L - Actual value is known to be greater than value given
U - Material analyzed for but not detected; value reported is the method detection limit
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
£- Measured in Bioassay Lab. Result thought to be due to interference in the sample
*- Converted from lbs/day

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2007-10-01-36
City of Port St. Joe

Requester: Michael Tanski
Field Report Prepared By: G. Butts

Customer: NW-DIST
Collected By: G. Butts, M. Sumner
Send Final Report To Greg Smith

Project ID: FYI3
Sampling Agency: FDEP NW DISTRICT
G. Butts

PMAS: 1143

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	PORT ST JOE WWTP	☐ Comp ☒ Grab	Date 10-01-07 Time 1135		
	Field ID: #1	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L): 7.12	Storet Station Number: GMS 1023M01339	
	Matrix (Include type e.g. Salt, Fresh, etc): FRESH — Temp (C): 27.15 — pH: 7.65	Sample Depth: 0.106 ☒ m ☐ ft	1164	☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)	NPDES Number: FL0020206
	Latitude o ' " — Longitude o ' "	Comments: 0.54 gal			

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
	NW DISTRICT CHEM LAB PENSACOLA	☐ Comp ☒ Grab	Date 10-01-07 Time	Date 0645 Time	
	Field ID: BLANKS	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc): FRESH — Temp (C) — pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' " — Longitude o ' "	Comments			

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

Lab ID *	Location	Comp / Grab	Collection (begin) Date Time Eastern Central	Collection (end) Date Time Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab	Date Time	Date Time	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number	
	Matrix (Include type e.g. Salt, Fresh, etc) — Temp (C) — pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude o ' " — Longitude o ' "	Comments: 3 bottles JD 1000 10.2.07 tg.			

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
G Butts	10-01-07 1406	FAX						10.2.07 920

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Screen Bioassay Bench Sheets

Facility: Port St Joe, City of
Address: S.R. 382, NE U.S. ~~98~~ 98 BA
City: Port St. Joe County: Gulf
Contact/District: NW- DISS/ Glenn Burts
NPDES Permit #: FL 0020206
LIMS Job #: TLA-2007-1002-29 LIMS Sample #: 1049717
Lims Data Entry: 10-9-07 MF Data Entry Verification: 10.9.07 JD

Sample Collection: Date: 10-1-07 Time: 11:35
Hold Time Start: Date: 10-1-07 Time: 11:35

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.

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: ____

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C
Incubator # 2 min 24.8 max 25.5 mean 25.2
Incubator # ____ min____ max____ mean____
Room B246 min 24.2 max 25.4 mean 25.3

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
Dave Alexander
Marshall Faircloth

Anita C. Wolfe
REVIEWER

Water Quality Parameters	20% DMW	Moderately Hard Water/ (Well Water)	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Method	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A		Not Measured			BA
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03				~~0.91~~ 0.05	HACH	JD	BA
Alkalinity (mg/L as $CaCO_3$):	~~285~~ 285	142				291	HACH	BA	MF
Hardness (mg/L as $CaCO_3$):	84	136				261	HACH	BA	MF
Total Ammonia (mg/L as N):	<0.017	<0.017				<0.017	DENVER	MF	BA
Salinity (ppth):	<1	<1				0.4	YSI / (Mettler)	BA	MF

V 1.4 9/12/05

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1049717 Test #: 1/2 SOP#:TA 07 01 Test Started: Date 10.2.07 Time: 1345
Organism/Batch/Age: C.dubia / 39-07 / <24hr Test Ended: Date 10.4.07 Time: 11:30
Chamber/Test Volume: 30 / 20 ml Diluent/ Batch: DMW / 9.22.07
Food/Batch: YCT 9.26.07 P.sub 9.9.07 Artemia 0hr — 24hr — 48hr — 72hr — Artemia Lot# —
Feeding: (Prior to Test) (Prior to Renewal) Daily

Concentration	Replicate	Chamber #	0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	A	5	5	5			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
100%	A	A	5	5	4 1D			
	B	B	5	5	5			
	C	C	5	5	5			
	D	D	5	5	5			
Loaded/Verified by: BA / JJ		Checked by:	JJ	JJ	BA			

m = missing d = dead BR/AR = Before/After Renewal

Comments:

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 5 LC50: >100%
If Calculated: 95% CI______ Method______

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

PAGE V 2.1 11/01/2005

000032

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample #: 1049717 Test #: 2/2 SOP#:TA 07 02 Test Started: Date 10.2.07 Time: 13:00

Organism/Batch/Age: C.dubia/10-2-07/13 days Test Ended: Date 10.4.07 Time: 11:45

Chamber/Test Volume: 1000 / 500 ml Diluent/ Batch: Well / 10.1.07

Food/Batch: YCT – P.sub – Artemia 0hr 10.2.07 24hr – 48hr – 72hr – Artemia Lot# 651-536-90

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	F1	5	5	5			
	B	F2	5	5	5			
	C	F3	5	5	5			
	D	F4	5	5	5			
100%	A	F5	5	5	5			
	B	F6	5	5	5			
	C	F7	5	5	5			
	D	F8	5	5	5			
Loaded/Verified by: JD / BA		Checked by:	JD	JD	BA			

m = missing d = dead BR/AR = Before/After Renewal

Comments:

Test Results:

Screening Tests: Report LC50 as >100%, =100%, or <100%.

% mortality in 100% sample: Ø LC50: >100%

If Calculated: 95% CI ______ Method ______

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

PAGE V 2.1 11/01/2005

000033

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1049717 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		M			
pH (S.U.)	7.9		7.9			
Temperature °C	24.4		24.4			
Dissolved Oxygen mg/L	7.3		7.8			
Conductivity (µmhos) mmhos	174		189			
(initials) Measured by:	BA		BA			
(initials) Recorded by:	BA		BA			

Comments:

Concentration 100%	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	M		M			
pH (S.U.)	8.1		8.8			
Temperature °C	24.7		24.1			
Dissolved Oxygen mg/L	6.9		7.7			
Conductivity (µmhos) mmhos	1083		1087			
(initials) Measured by:	BA		BA			
(initials) Recorded by:	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:

000034

V 2.0 2/24/0

Page

FDEP Biology Laboratory - Bioassay Parameter Bench Sheet

LIMS Sample # : 1049717 **Test #:** 2 of 2

TEST SOP #: TA07_ 02 **Test Species:** *Ceriodaphnia dubia* (*Cyprinella leedsi*) *Pimephales promelas* *Americamysis bahia* *Menidia beryllina* Other:_____

Concentration C4.1	0 Hr.	24 Hr.	48 Hr. before renewal	48 Hr. after renewal	72 Hr.	96 Hr.
Replicate	A	B	C			
pH (S.U.)	7.9	8.2	8.3			
Temperature °C	24.3	24.1	24.4			
Dissolved Oxygen mg/L	7.3	6.9	7.1			
Conductivity ~~µmhos~~ mmhos	271	276	284			
(initials) Measured by:	JD	JD	BA			
(initials) Recorded by:	JD	JD	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.)	8.1	8.4	8.6			
Temperature °C	24.1	24.3	24.7			
Dissolved Oxygen mg/L	6.8	6.6	6.9			
Conductivity ~~µmhos~~ mmhos	1074	1068	1113			
(initials) Measured by:	JD	JD	BA			
(initials) Recorded by:	JD	JD	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:

000035

V 2.0 2/24/04

Page

Appendix C. SRT Bench Sheets and Statistical Analysis

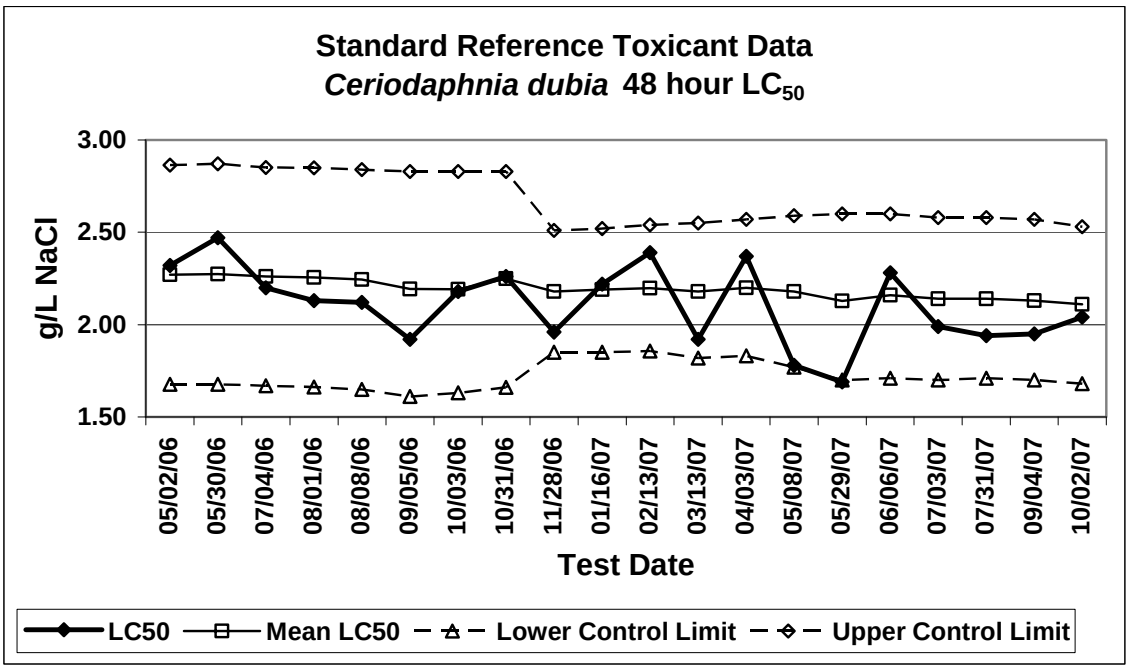
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/02/06	2.32	2.27	0.30	1.68	2.87
05/30/06	2.47	2.27	0.30	1.68	2.87
07/04/06	2.20	2.26	0.30	1.67	2.85
08/01/06	2.13	2.26	0.30	1.66	2.85
08/08/06	2.12	2.24	0.30	1.65	2.84
09/05/06	1.92	2.19	0.30	1.61	2.83
10/03/06	2.18	2.19	0.30	1.63	2.83
10/31/06	2.26	2.25	0.29	1.66	2.83
11/28/06	1.96	2.18	0.17	1.85	2.51
01/16/07	2.22	2.19	0.17	1.85	2.52
02/13/07	2.39	2.20	0.17	1.86	2.54
03/13/07	1.92	2.18	0.18	1.82	2.55
04/03/07	2.37	2.20	0.18	1.83	2.57
05/08/07	1.78	2.18	0.21	1.77	2.59
05/29/07	1.69	2.13	0.23	1.70	2.60
06/06/07	2.28	2.16	0.22	1.71	2.60
07/03/07	1.99	2.14	0.22	1.70	2.58
07/31/07	1.94	2.14	0.22	1.71	2.58
09/04/07	1.95	2.13	0.22	1.70	2.57
10/02/07	2.04	2.11	0.21	1.68	2.53

Means are of the last 20 SRT tests.
Lower Control Limit = mean - 2 * Std Dev
Upper Control Limit = mean + 2 * Std Dev

CV = 10.15
EPA reference 75th quartile CV = 29%



Appendix C. (continued)

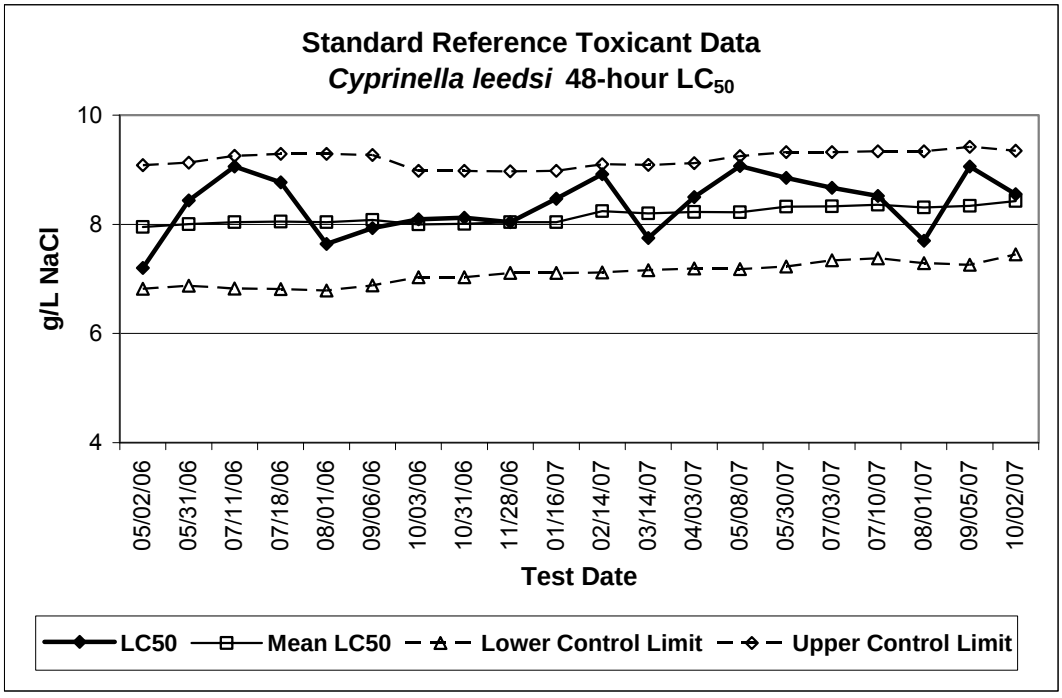
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 48-hour Acute Toxicity
Cyprinella leedsi (bannerfin shiner) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
05/02/06	7.2	7.95	0.57	6.82	9.09
05/31/06	8.44	8.00	0.56	6.88	9.13
07/11/06	9.06	8.04	0.61	6.82	9.26
07/18/06	8.77	8.05	0.62	6.81	9.29
08/01/06	7.64	8.04	0.63	6.79	9.29
09/06/06	7.93	8.08	0.60	6.88	9.27
10/03/06	8.09	8.00	0.49	7.03	8.98
10/31/06	8.12	8.01	0.49	7.03	8.98
11/28/06	8.04	8.04	0.46	7.11	8.97
01/16/07	8.47	8.04	0.54	7.11	8.98
02/14/07	8.92	8.24	0.56	7.12	9.10
03/14/07	7.75	8.20	0.55	7.16	9.09
04/03/07	8.50	8.23	0.53	7.19	9.12
05/08/07	9.07	8.22	0.52	7.18	9.25
05/30/07	8.85	8.32	0.56	7.23	9.32
07/03/07	8.67	8.33	0.50	7.34	9.32
07/10/07	8.52	8.36	0.49	7.38	9.34
08/01/07	7.7	8.31	0.51	7.29	9.34
09/05/07	9.06	8.34	0.54	7.26	9.42
10/02/07	8.55	8.43	0.47	7.45	9.35

Means are of the last 20 SRT tests.
Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

CV = 5.58
EPA reference 75th quartile CV = 19%



Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

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

Method from EPA-821-R-02-012
Test Type: 48 hour non-renewal / (7) day renewal
Test Page 1 of 2

Diluent/ Batch #: brw / 1 9.22.07
Toxicant/ Batch#: NaCl / 1.10.407

Test Beginning: Date: 10-2-07 Time: 13:30
Test Ending: Date: 10-6-07 Time: 11:00

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	85	Hach	BA
Hardness (mg.L as $CaCO_3$):	84	Hach	BA
Total Ammonia (mg/L as N):	<0.07	Denver	MF
Salinity (ppth):	21	Mettler	BA

Organism Batch #/ Age: 39.07 / <24 hours
Feeding: (Prior to test) (Prior to renewal) / Daily
Food: YCT, P.subcapitata, Artemia: Lot # –
Food Batch: 7-24-07 4-4-07 0hr – 24hr – 48hr – 72hr –
Chamber size: 30 mL
Test volume: 20 mL per replicate

Conc. g/L µg/L mg/L	Rep.	Chamber #	Number Live 0 hr	24 hr	48 hr	pH (SU) 0 hr	24 hr	48 hr	Temperature (°C) 0 hr	24 hr	48 hr	D.O. (mg/L) 0 hr	24 hr	48 hr	Uncorrected Conductivity (µmhom/cm) 0 hr	24 hr	48 hr
			~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~
Control	A	A	5	5	5	8.0		7.9	24.0		24.7	7.3		7.6	0.176		0.182
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
1.5	A	A	5	5	5	8.0		7.9	24.0		24.4	7.3		7.4	3.07		3.44
	B	B	5	5	5												
	C	C	5	5	5												
	D	D	5	5	5												
2.0	A	A	5	5	4 1D	8.1		8.0	24.0		24.3	7.3		7.5	4.00		4.59
	B	B	5	5	5												
	C	C	5	5	3 2D												
	D	D	5	5	1 4D												
2.5	A	A	5	5	0 5D	8.1		8.0	24.0		24.2	7.3		7.5	4.9		5.12
	B	B	5	5	0 5D												
	C	C	5	5	0 5D												
	D	D	5	5	0 5D												
3.0	A	A	5	2 3D	0 2D	8.1		8.0	24.0		24.2	7.3		7.3	5.85		6.35
	B	B	5	4D	CHD												
	C	C	5	0 5D	-												
	D	D	5	3 3D	0 2D												
4.0	A	A	5	0 5D	–	8.1	8.1		24.0	24.0		7.3	7.3		7.61	7.69	
	B	B	5	0 5D	–												
	C	C	5	0 5D	–												
	D	D	5	0 5D	–												
	A																
	B																
	C																
	D																
Loaded / measured by:			BA	JD	BA	BA	JD	BA	BA	JD	BA	BA	JD	BA	BA	JD	BA
Recorded by:			NA	JD	BA	BA	JD	BA	BA	JD	BA	BA	JD	BA	BA	JD	BA

Investigators' Signatures
James Daniel
Bruce Beck
Marshall Faircloth
Loretta C Wolfe
REVIEWER

Concentrations prepared: BA
Loading verified by: MF
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min 24.8 max 25.7 mean 25.3
Incubator # ___ min ___ max ___ mean ___
Room B246 min 24.7 max 25.4 mean 25.3

Comments:

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 2.04
95% Confidence Interval: lower 1.94 upper 2.16

PAGE 000037

revised 08/24/06 SP

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Diluent/ Batch #: Well / 10.1.07
Toxicant/ Batch#: NaCl / 10.1.07

Test Beginning: Date: 10.2.07 Time: 12:30
Test Ending: Date: 10-6-07 Time: 11:15

Water Quality Parameters	Diluent	Method	Initials
Total Residual Cl_2 (mg/L):	<0.03	Hach	JD
Alkalinity (mg/L as $CaCO_3$):	142	Hach	BA
Hardness (mg.L as $CaCO_3$):	136	Hach	BA
Total Ammonia (mg/L as N):	<0.017	Denver	MF
Salinity (ppth):	<1	Mettler	BA

Organism Batch #/ Age: 10-2-07 / 13days
Feeding: (Prior to test) / (Prior to renewal) / Daily
Food: YCT — P.subcapitata — Artemia: Lot # GSL-536-90
Food Batch: — — 0hr MF 24hr — 48hr MF 72hr —
142-07 14407
Chamber size: 1000 mL
Test volume: 500 mL per replicate

Conc. µg/L mg/L	Rep.	Chamber #	Number Live 0 hr	24 hr	48 hr	pH (SU) 0 hr	24 hr	48 hr	Temperature (°C) 0 hr	24 hr	48 hr	D.O. (mg/L) 0 hr	24 hr	48 hr	Uncorrected Conductivity µmhom/cm mmhos/cm 0 hr	24 hr	48 hr
			~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~	~~48 hr~~	~~72 hr~~	~~96 hr~~
Control	A	D1	10	10	10	8.0		8.2	24.0		24.5	7.3		6.6	0.223		0.338
	B	D2	10	10	10		8.2			24.3			6.4			0.286	
	C																
	D																
6	A	D3	10	10	10	7.9		8.0	24.1		24.6	7.0		6.7	10.5		10.9
	B	D4	10	10	10		8.1			24.3			6.7			10.5	
	C																
	D																
7	A	D5	10	~~7~~ 10	10	7.9		8.0	24.1		24.7	7.1		6.5	12.8		12.7
	B	D6	10	10	9 10		8.0			24.3			6.6			12.8	
	C																
	D																
8	A	D7	10	>30	7	7.8		8.1	24.1		24.4	7.1		6.5	14.3		14.6
	B	D8	10	10	10		8.0			24.2			6.5			14.0	
	C																
	D																
9	A	D9	10	6 40	5 10	7.8		8.1	24.0		24.5	7.2		6.6	15.8		15.9
	B	D10	10	1 40	1		8.0			24.1			6.5			15.5	
	C																
	D																
10	A	D11	10	0 10	—	7.8		—	24.0		—	7.1		—	17.6		—
	B	D12	10	0 10	—		7.9			24.2			6.2			12.4	
	C																
	D																
	A																
	B																
	C																
	D																
Loaded / measured by:			JD	JD	MF	JD	JD	BA	JD	JD	BA	JD	JD	BA	JD	JD	BA
Recorded by:			JD	JD	MF	JD	JD	BA	JD	JD	BA	JD	JD	BA	JD	JD	BA

Investigators' Signatures
James Dardis
Marshall Faircloth
Drue Aitken
Loretta C. Wolfe
REVIEWER

Concentrations prepared by: JD
Loading verified by: BA
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Temperature Range °C:
Incubator # 2 min. 24.8 max. 25.7 mean 25.3
Incubator # ___ min. ___ max. ___ mean ___
Room B246 min. 24.7 max. 25.9 mean 25.3

Comments:
@ 24hr 7A-10 JD

Statistics: Method: Spearman-Karber
48 / 96 hour LC_{50}: 8.55
95% Confidence Interval: lower 8.27 upper 8.84

PAGE 000039

revised 08/24/06 SP

Appendix C. (continued)

DATE: 10/02/07 TEST NUMBER: 1 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	7
2.50	20	20
3.00	20	20
4.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 2.04
95% LOWER CONFIDENCE: 1.94
95% UPPER CONFIDENCE: 2.16

DATE: 10/02/07 TEST NUMBER: 1 DURATION: 48 h
TOXICANT : NaCl
SPECIES: *Cyprinella leedsi*

RAW DATA: Concentration (g/L)	Number Exposed	Mortalities
.00	20	0
6.00	20	0
7.00	20	1
8.00	20	3
9.00	20	14
10.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 8.55
95% LOWER CONFIDENCE: 8.27
95% UPPER CONFIDENCE: 8.84

Appendix D. Test Organism Receipt

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: 10/1/07

Shipped to: FDEP

P.O. No: N/A

Species	Quantity	Age	Brood Number	Temperature	Salinity
Mysidopsis bahia	150	4 DAYS	MS070927	25°C	20
Menidia beryllina	150	12 DAYS	SS070919	25°C	20
Cyprinella leedsi	150	12 DAYS	CL070919	25°C	
Pimephales promelas	150	7 DAYS	FM070924	25°C	

Packed by: JW

Shipped Via: Fed Ex

Notes:

Thank you for your order.

Appendix E. Chemical Analyses performed on the effluent from the City of Port St. Joe Outfall D-001, sampled on October 1, 2007.

Date Sampled	Field ID	Analysis Group	Components	Result	Remarks	Units	MDL	PQL
10/1/2007 12:35	Effluent	AGP/LN	Algal Growth Potential-Salinity Adjusted	21.3		mg DryWt/L	3	3
10/1/2007 12:35	Effluent	AGP/LN	Algal Growth Potential	80.6		mg DryWt/L	0.3	0.9
10/1/2007 12:35	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	31		ug/L	0.8	2.4
10/1/2007 12:35	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	180		ug/L	1.8	5.7
10/1/2007 12:35	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day	7.3	L	mg/L	0.2	2
10/1/2007 12:35	Effluent	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
10/1/2007 12:35	Effluent	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
10/1/2007 12:35	Effluent	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
10/1/2007 12:35	Effluent	Metals	Arsenic	1.7	I	ug/L	0.5	2
10/1/2007 12:35	Effluent	Metals	Magnesium	44.1		mg/L	0.04	0.16
10/1/2007 12:35	Effluent	Metals	Selenium	0.5	U	ug/L	0.5	2
10/1/2007 12:35	Effluent	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/1/2007 12:35	Effluent	Metals	Nickel	1.85		ug/L	0.25	1
10/1/2007 12:35	Effluent	Metals	Chromium	1	U	ug/L	1	4
10/1/2007 12:35	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/1/2007 12:35	Effluent	Metals	Copper	2.51		ug/L	0.25	1
10/1/2007 12:35	Effluent	Metals	Aluminum	60	U	ug/L	60	240
10/1/2007 12:35	Effluent	Metals	Iron	39	I	ug/L	30	120
10/1/2007 12:35	Effluent	Metals	Zinc	8	I	ug/L	5	20
10/1/2007 12:35	Effluent	Metals	Calcium	34.8		mg/L	0.02	0.08
10/1/2007 12:35	Effluent	Nutrients	Turbidity	18		NTU	0.05	0.05
10/1/2007 12:35	Effluent	Nutrients	NO2NO3-N	0.88	Y	mg N/L	0.008	0.02
10/1/2007 12:35	Effluent	Nutrients	Ammonia-N	0.029	Y	mg N/L	0.01	0.02
10/1/2007 12:35	Effluent	Nutrients	Total-P	2.4	Y	mg P/L	0.1	0.3
10/1/2007 12:35	Effluent	Nutrients	TDS	648		mg/L	15	60
10/1/2007 12:35	Effluent	Nutrients	Sulfate	100		mg SO4/L	2	5
10/1/2007 12:35	Effluent	Nutrients	TSS	21		mg/L	4	16
10/1/2007 12:35	Effluent	Nutrients	Chloride	100		mg Cl/L	2	5
10/1/2007 12:35	Effluent	Nutrients	Alkalinity	293		mg CaCO3/L	0.65	2.5
10/1/2007 12:35	Effluent	Nutrients	O-Phosphate-P	0.096		mg P/L	0.004	0.01
10/1/2007 12:35	Effluent	Nutrients	Kjeldahl Nitrogen	3.9	Y	mg N/L	0.08	0.2
10/1/2007 12:35	Effluent	Nutrients	Color	75		PCU	25	25
10/1/2007 12:35	Effluent	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remarks	Units	MDL	PQL
10/1/2007 12:35	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2
10/1/2007 12:35	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4
10/1/2007 12:35	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
10/1/2007 12:35	Effluent	Pesticides	Alachlor	0.6	U	ug/L	0.6	2.4
10/1/2007 12:35	Effluent	Pesticides	Atrazine	0.056	I	ug/L	0.05	0.2
10/1/2007 12:35	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
10/1/2007 12:35	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
10/1/2007 12:35	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
10/1/2007 12:35	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
10/1/2007 12:35	Effluent	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
10/1/2007 12:35	Effluent	Pesticides	Ametryn	0.05	U	ug/L	0.05	0.2
10/1/2007 12:35	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
10/1/2007 12:35	Effluent	Pesticides	Metribuzin	0.1	U	ug/L	0.1	0.4
10/1/2007 12:35	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
10/1/2007 12:35	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
10/1/2007 12:35	Effluent	Pesticides	Diazinon	0.05	U	ug/L	0.05	0.2
10/1/2007 12:35	Effluent	Pesticides	Parathion Methyl	0.1	U	ug/L	0.1	0.4
10/1/2007 12:35	Effluent	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
10/1/2007 12:35	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
10/1/2007 12:35	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
10/1/2007 12:35	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
10/1/2007 12:35	Effluent	Pesticides	Hexazinone	0.1	U	ug/L	0.1	0.4
10/1/2007 12:35	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
10/1/2007 12:35	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
10/1/2007 12:35	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Fluorene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Heptachlor	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Pentachlorophenol	3	UJ	ug/L	3	12
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	4,4'-DDD	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	4,4'-DDE	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Dieldrin	1.5	UJ	ug/L	1.5	5.9

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remarks	Units	MDL	PQL
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Endosulfan sulfate	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Fluoranthene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Phenol	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	4,4'-DDT	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	5	UJ	ug/L	5	20
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Dimethyl phthalate	50	U	ug/L	50	200
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Heptachlor epoxide	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3	U	ug/L	3	12
10/1/2007 12:35	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
10/1/2007 12:35	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	UJ	ug/L	40	160
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Phenanthrene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Pyrene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Acenaphthylene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Endosulfan I	4	UJ	ug/L	4	16
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Isophorone	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Endrin	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Endrin aldehyde	4	UJ	ug/L	4	16
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Hexachloroethane	3	U	ug/L	3	12
10/1/2007 12:35	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	alpha-BHC	1.5	UJ	ug/L	1.5	5.9

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remarks	Units	MDL	PQL
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3	U	ug/L	3	12
10/1/2007 12:35	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Acenaphthene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Aldrin	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Benzidine	99	UJ	ug/L	99	400
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	UJ	ug/L	15	59
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	5	UJ	ug/L	5	20
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Endosulfan II	4	UJ	ug/L	4	16
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Naphthalene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	delta-BHC	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	gamma-BHC	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Anthracene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	U	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3	U	ug/L	3	12
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Chrysene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3	U	ug/L	3	12
10/1/2007 12:35	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.99	UJ	ug/L	0.99	4
10/1/2007 12:35	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3	UJ	ug/L	3	12
10/1/2007 12:35	Effluent	Priority Organic Pollutants	beta-BHC	1.5	UJ	ug/L	1.5	5.9
10/1/2007 12:35	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	U	ug/L	9.9	40
10/1/2007 12:35	Effluent	Field Parameters	Specific Conductance	1104		umhos/cm		
10/1/2007 12:35	Effluent	Field Parameters	Temperature	27.15		C		
10/1/2007 12:35	Effluent	Field Parameters	pH	7.65				
10/1/2007 12:35	Effluent	Field Parameters	Dissolved Oxygen	7.12		mg/L		
10/1/2007 7:45	BLANKS	Metals	Zinc	5	U	ug/L	5	20
10/1/2007 7:45	BLANKS	Metals	Silver	0.025	U	ug/L	0.025	0.1
10/1/2007 7:45	BLANKS	Metals	Aluminum	60	U	ug/L	60	240
10/1/2007 7:45	BLANKS	Metals	Calcium	0.02	U	mg/L	0.02	0.08
10/1/2007 7:45	BLANKS	Metals	Nickel	0.25	U	ug/L	0.25	1
10/1/2007 7:45	BLANKS	Metals	Cadmium	0.02	U	ug/L	0.02	0.08
10/1/2007 7:45	BLANKS	Metals	Selenium	0.5	U	ug/L	0.5	2

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remarks	Units	MDL	PQL
10/1/2007 7:45	BLANKS	Metals	Arsenic	0.5	U	ug/L	0.5	2
10/1/2007 7:45	BLANKS	Metals	Chromium	1	U	ug/L	1	4
10/1/2007 7:45	BLANKS	Metals	Iron	30	U	ug/L	30	120
10/1/2007 7:45	BLANKS	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
10/1/2007 7:45	BLANKS	Metals	Lead	0.2	U	ug/L	0.2	0.8
10/1/2007 7:45	BLANKS	Metals	Copper	0.25	U	ug/L	0.25	1
10/1/2007 7:45	BLANKS	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
10/1/2007 7:45	BLANKS	Nutrients	Total-P	0.02	U	mg P/L	0.02	0.06
10/1/2007 7:45	BLANKS	Nutrients	Ammonia-N	0.027		mg N/L	0.01	0.02
10/1/2007 7:45	BLANKS	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
10/1/2007 7:45	BLANKS	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
10/1/2007 7:45	BLANKS	Pesticides	Simazine	0.049	U	ug/L	0.049	0.2
10/1/2007 7:45	BLANKS	Pesticides	Chlorpyrifos Methyl	0.098	U	ug/L	0.098	0.39
10/1/2007 7:45	BLANKS	Pesticides	Ethion	0.049	U	ug/L	0.049	0.2
10/1/2007 7:45	BLANKS	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
10/1/2007 7:45	BLANKS	Pesticides	Metribuzin	0.098	U	ug/L	0.098	0.39
10/1/2007 7:45	BLANKS	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
10/1/2007 7:45	BLANKS	Pesticides	Alachlor	0.59	U	ug/L	0.59	2.4
10/1/2007 7:45	BLANKS	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
10/1/2007 7:45	BLANKS	Pesticides	Metolachlor	0.49	U	ug/L	0.49	2
10/1/2007 7:45	BLANKS	Pesticides	Azinphos Methyl	0.2	U	ug/L	0.2	0.8
10/1/2007 7:45	BLANKS	Pesticides	Ametryn	0.049	U	ug/L	0.049	0.2
10/1/2007 7:45	BLANKS	Pesticides	Parathion Methyl	0.098	U	ug/L	0.098	0.39
10/1/2007 7:45	BLANKS	Pesticides	Naled	0.78	U	ug/L	0.78	3.1
10/1/2007 7:45	BLANKS	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
10/1/2007 7:45	BLANKS	Pesticides	Hexazinone	0.098	U	ug/L	0.098	0.39
10/1/2007 7:45	BLANKS	Pesticides	Diazinon	0.049	U	ug/L	0.049	0.2
10/1/2007 7:45	BLANKS	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
10/1/2007 7:45	BLANKS	Pesticides	Phorate	0.049	U	ug/L	0.049	0.2
10/1/2007 7:45	BLANKS	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
10/1/2007 7:45	BLANKS	Pesticides	Fonofos	0.098	U	ug/L	0.098	0.39
10/1/2007 7:45	BLANKS	Pesticides	Atrazine	0.049	U	ug/L	0.049	0.2
10/1/2007 7:45	BLANKS	Pesticides	Prometryn	0.15	U	ug/L	0.15	0.6
10/1/2007 7:45	BLANKS	Pesticides	Ethoprop	0.098	U	ug/L	0.098	0.39
10/1/2007 7:45	BLANKS	Pesticides	Chlorpyrifos Ethyl	0.049	U	ug/L	0.049	0.2
10/1/2007 7:45	BLANKS	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6

Appendix E. (continued)

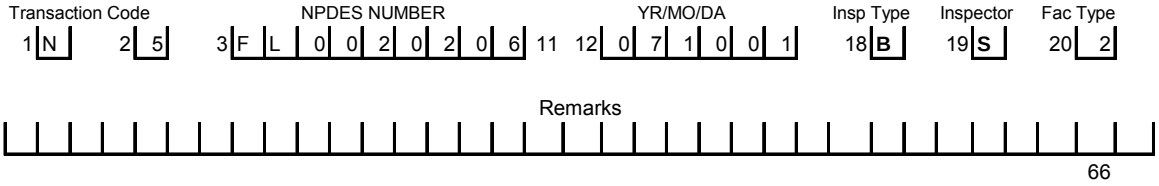
Date Sampled	Field ID	Analysis Group	Components	Result	Remarks	Units	MDL	PQL
10/1/2007 7:45	BLANKS	Pesticides	Bromacil	0.2	U	ug/L	0.2	0.8
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2,4-Dimethylphenol	9.8	U	ug/L	9.8	39
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2-Chlorophenol	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	4,4'-DDT	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Benzo(a)anthracene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Dimethyl phthalate	49	U	ug/L	49	200
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Heptachlor epoxide	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Pentachlorophenol	2.9	U	ug/L	2.9	12
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Phenol	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	alpha-BHC	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.9	U	ug/L	2.9	12
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Heptachlor	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2	U	ug/L	2	7.8
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2,4-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.9	U	ug/L	2.9	12
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Aldrin	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Chrysene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Di-n-octyl phthalate	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.9	U	ug/L	2.9	12
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	gamma-BHC	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2-Nitrophenol	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	4,4'-DDE	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Benzidine	98	U	ug/L	98	390
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Benzo(a)pyrene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Butyl benzyl phthalate	4.9	U	ug/L	4.9	20
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Fluorene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Pyrene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	3,3'-Dichlorobenzidine	39	U	ug/L	39	160
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2	U	ug/L	2	7.8
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Acenaphthylene	0.98	U	ug/L	0.98	3.9

Appendix E. (continued)

Date Sampled	Field ID	Analysis Group	Components	Result	Remarks	Units	MDL	PQL
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Anthracene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Benzo(k)fluoranthene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Endosulfan I	3.9	U	ug/L	3.9	16
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Hexachloroethane	2.9	U	ug/L	2.9	12
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Isophorone	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.9	U	ug/L	2.9	12
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Phenanthrene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2,4-Dinitrophenol	15	U	ug/L	15	59
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	4,4'-DDD	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	4-Nitrophenol	15	U	ug/L	15	59
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Acenaphthene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Di-n-butyl phthalate	4.9	U	ug/L	4.9	20
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Endosulfan sulfate	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	delta-BHC	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2-Chloronaphthalene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	15	U	ug/L	15	59
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Diethyl phthalate	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Endrin	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Fluoranthene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Hexachlorobenzene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Naphthalene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Nitrobenzene	2	U	ug/L	2	7.8
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	beta-BHC	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2,4-Dichlorophenol	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	2,6-Dinitrotoluene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Benzo(b)fluoranthene	0.98	U	ug/L	0.98	3.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Dieldrin	1.5	U	ug/L	1.5	5.9
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Endosulfan II	3.9	U	ug/L	3.9	16
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Endrin aldehyde	3.9	U	ug/L	3.9	16
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	Hexachlorobutadiene	2.9	U	ug/L	2.9	12
10/1/2007 7:45	BLANKS	Priority Organic Pollutants	N-Nitrosodimethylamine	2	U	ug/L	2	7.8

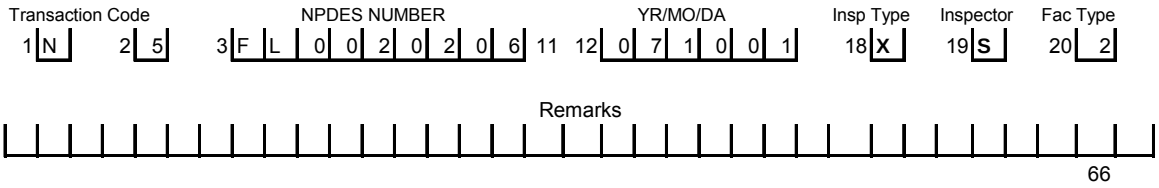
The Bioassay of City of Port St. Joe effluent sampled on October 1, 2007. NPDES #FL0020206.

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



The Priority Pollutants Analysis of City of Port St. Joe effluent sampled on October 1, 2007. NPDES #FL0020206.

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



Biological Analyses of City of Port St. Joe effluent sampled on October 1, 2007. NPDES #FL0020206.

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

